



Assessing the potential future use of financial instruments in Croatia

A study in support of the ex-ante assessment for the deployment of EU resources during the 2014-2020 programming period

Final report

September 2015

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Glossary of terms

Access networks (last mile)	A portion of network that stretches between end users (households, enterprises and public institutions) and first network concentration node.
Advisory Service Agreement (ASA)	Advisory Service Agreement between the EIB and the MRDEUF in relation to the provision of support for the purpose of preparing an ex-ante assessment in line with Article 37 of EU regulation 1303/2013
Agency for Mobility and EU programmes (AMPEU)	The Agency for Mobility and EU Programmes is the National Agency responsible for the implementation of the Erasmus+ programme in Croatia. Apart from implementing the Programme, by selecting the applications - project proposals, performing contractualisation and financing, and monitoring the realisation of projects, the Agency also promotes the Programme and assists applicants and beneficiaries in their process of creating a project idea and running the project.
Agency for Science and Higher Education (ASHE)	ASHE cooperates closely with higher education institutions, scientific organisations and other stakeholders in higher education and science for a variety of reasons.
Agency for Transactions and Mediation in Immovable Properties (APN)	A public institution with the aim to buy and sell properties on Croatian land with funds provided from the state budget or from other sources (capital market, commercial banks and other financial institutions, citizens - buyers of apartments).
Agency for Vocational Education and Training and Adult Education (AVETAЕ)	Agency for Vocational Education and Training and Adult Education is a public institution, founded June 2010 by the Act on Agency for Vocational Education and Training and Adult Education.
Aggregation networks (backhaul, middle-mile)	Networks that collect traffic from access networks towards backbone networks and comprise a portion of network between first concentration nodes and core networks nodes.
Alternative investment fund (AIF)	An investment fund established by a manager of alternative investment funds for the purpose of raising capital through a public or private offering and investing this capital in different types of assets.
Asymmetric Digital Subscriber Line (ADSL)	A type of digital subscriber line (DSL) technology, a data communications technology that enables data transmission over copper telephone lines.
Atlantic group (ATGR)	A large Croatian company and one of the leading food companies in the region.
Black NGA areas	Areas where only one NGA network is in place or is being deployed in the coming 3 years and there are no plans by any operator to deploy a NGA network in the coming 3 years.
Business Angel Investors (BAs)	Individuals who provide capital for a business start-up, usually in exchange for convertible debt or ownership equity.
Business Support Organisation (BSO)	An organisation which provides general and low value -added support services and advice to entrepreneurs. They need to help develop and deliver products and services, which are appropriate to enterprises consistent with their position in the growth cycle.

Capital Adequacy Ratio (CAR)	The ratio of bank's capital to its risk. CAR is used as an assurance that bank can absorb a reasonable amount of loss.
Central European Free Trade Agreement (CEFTA)	A trade agreement between non-EU countries in Southeast Europe.
Centre for Monitoring Business Activities in the Energy Sector and Investments (CEI)	National coordinating and implementing authority for energy efficiency (EE) established by the Croatian government with the objectives of seeking solutions for improving the financial effectiveness of companies fully or partially public-owned operating in the energy sector.
City Housing and Municipal Services Company (GSKG)	A public company established in December 1990 with experience in property management and maintenance of buildings.
Co-Financing	Public or private financing brought to match ESI resources.
Cohesion Fund (CF)	The CF are financial resources investing in the transport networks and in the environment in EU Countries with a GDP lower than 90% of the EU 28 average. The fund actively promotes green economic growth while reducing economic and social disparities by improving regional connectivity and accessibility.
Co-Investment	Private investment over and above Co-Financing.
Common Provisions Regulation (CPR)	Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006
Common Strategic Framework (CSF)	The CSF should facilitate the development of Partnership Contracts and programming documents.
Croatian Agency for SMEs, Innovations and Investments (HAMAG – BICRO)	An independent institution under the supervision of the Ministry of Entrepreneurship and Crafts. Its activities include fostering the establishment and development of small business entities, financing operations and development of small business entities through loans and guarantees. The Agency also provides financial support to innovative and technology-oriented enterprises in Croatia.
Croatian Bank for Reconstruction and Development (HBOR)	A development and export bank established with the objective to provide efficient financial support for the reconstruction and sustainable development of the Croatian economy.
Croatian National Bank (CNB)	It is the central bank of Croatia.
Croatian Regulatory Authority for Network Industries (HAKOM)	A supervisory body whose scope of activities and competences cover the supervision of financial markets, financial services and supervised entities providing those services.

Croatian Regulatory Authority for Network Industries (HAKOM)	Regulator of the electronic communications market and postal services market.
Cross-impacts	Impacts that an intervention from one Priority Axis has on an intervention or result from another Priority Axis.
Data Over Cable Services Interface Specification 3.0 (DOCSIS 3.0)	Next generation of DOCSIS, an international telecommunications standard that allows cable television operators add high-speed and telephony data to their current cable TV systems.
Digital Agenda for Europe (DAE)	The Digital Agenda for Europe aims to reboot Europe's economy and help Europe's citizens and businesses to get the most out of digital technologies.
DSCR (Debt Service Coverage Ratio)	Amount of cash flow available to meet annual interest and principal payments on debt
Economic Cooperation Funds (FGS)	Private equity/ venture capital (PE/VC) funds in Croatia.
Energy Efficiency (EE)	EE is a way of managing and restraining the growth in energy consumption.
Energy Efficiency Directive (EED)	This Directive establishes a common framework of measures for the promotion of EE within the Union in order to ensure the achievement of the Union's 2020 20% headline target on EE and to pave the way for further EE improvements beyond that date. Most recent version is 2012/27/EU
Energy Efficiency Finance Facility	Finance facility set up by EIB in cooperation with the EC.
Energy Management Information System (EMIS)	A database in which every public building in Croatia is obliged to enter data on energy consumption.
Energy Performance Contract (EPC)	EPC is a form of 'creative financing' for capital improvement which allows funding energy upgrades from cost reductions.
Energy Services Company (ESCO)	An ESCO is a company that offers energy services which may include implementing energy-efficiency projects (and also RE projects) and in many cases on a turn-key basis.
Enterprise Expansion Fund (ENEF)	ENEF is a part of WB EDIF that supports the expansion of SMEs with a high-growth potential established in the Western Balkans.
Enterprise Innovation Fund (ENIF)	ENIF is a part of WB EDIF that supports innovative SMEs in the Western Balkans in their early and expansion stage by providing equity finance through local funds management companies.
Environmental Protection and Energy Efficiency Fund (EPEEF)	A non-budgetary national fund established in 2003, with the objective of raising earmarked funds for financing the preparation, implementation and development of programmes, projects and similar activities in the field of: environmental protection, EE, and the use of RES.
ERDF Regulation	EU regulation 1301/2013.

European Agricultural Fund for Rural Development (EAFRD)	The EAFRD are financial resources aiming at supporting rural development.
European Bank for Reconstruction and Development (EBRD)	The EBRD is a multilateral development bank founded in 1991, using investment as a tool to build market economies. Initially focused on the countries of the former Eastern Bloc, it expanded to support development in 30 countries from Central Europe to Central Asia. Besides Europe, member countries of the EBRD are from all 5 continents (North America, Africa, Asia and Australia), with the biggest shareholder being the United States.
European Commission (EC)	The executive body of the European Union. The EC is responsible for proposing legislation, implementing decisions, upholding the Union's treaties and day-to-day management of the EU.
European Investment Fund (EIF)	European Investment Fund, part of the EIB group that provides funding to small and medium-sized enterprises (SMEs) through venture capital and risk finance instruments.
European Maritime and Fisheries Fund (EMFF)	The EMFF are financial resources aiming at supporting fishery policy.
European Regional Development Fund (ERDF)	The ERDF are financial resources aiming to strengthen economic and social cohesion in the European Union by correcting imbalances between its regions.
European Social Fund (ESF)	The ESF is Europe's main instrument for supporting jobs, helping people get better jobs and ensuring fairer job opportunities for all EU citizens.
European Strategy for the Danube Region (EUSDR)	The EUSDR is a macro-regional strategy adopted by the European Commission in December 2010 and endorsed by the European Council in 2011. The Strategy was developed in order to address common challenges together. The Strategy seeks to create synergies and coordination between existing policies and initiatives taking place across the Danube Region.
European Structural and Investment Funds (ESIF)	Collective noun for the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund.
Ex-Ante Assessment	As in Article 37 (2) of the CPR. MS/MA are required to conduct ex-ante assessments before supporting financial instruments, including: rationale/additionality against existing market gaps and demand/supply, potential private sector involvement, target final recipients, products and indicators
Ex-Ante Conditionality	Refers to a concrete and precisely pre-defined critical factor, which is a prerequisite for, and has a direct and genuine link to, and direct impact on, the effective and efficient achievement of a specific objective for an investment priority or a Union priority.
Excessive deficit procedure (EDP)	An action launched by the European Commission against any European Union (EU) Member State that exceeds the budgetary deficit ceiling

	imposed by the EU's Stability and Growth Pact Legislation.
External coherence	External coherence of the OP is its contribution to the EU Strategy goals of smart, sustainable and inclusive growth and its alignment with other relevant instruments.
Fiber To The Home (FTTH)	A delivery of a communications signal over optical fiber from the operator's switching equipment all the way to a home or business, thereby replacing existing copper infrastructure such as telephone wires and coaxial cable.
Financial Agency (FINA)	Croatian company in the field of financial mediation and the application of information technologies.
Financial Instrument (s) (FI)	Investment fund vehicle as defined in EU regulations for the deployment of ESIF or other EU resources by way of investment or the provision of guarantees.
Foreign Direct Investment (FDI)	A controlling ownership in a business enterprise in one country by an entity based in another country.
General Block Exemption Regulation (GBER)	As in Commission regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty.
Green for Growth Fund (GGF)	A public-private partnership established in December 2009 to promote EE in its target region and to reduce CO ₂ emissions. Its mission is to contribute, in the form of a public-private partnership with a layered risk/return structure, to enhance EE and fostering renewable energies in the Southeast Europe Region including Turkey and in the European Eastern Neighbourhood Region, predominantly through the provision of dedicated financing to businesses and households via partnering with financial institutions and direct financing.
Greenhouse Gases (GHG)	A gas that contributes to the greenhouse effect by absorbing infrared radiation.
Grey NGA areas	Areas where only one NGA network is in place or is being deployed in the coming 3 years and there are no plans by any operator to deploy a NGA network in the coming 3 years.
Guarantee	Commitment to support all or one part of the capital and interest due in the event of default on a loan granted by a banking establishment.
Hrvatska poštanska banka (HPB)	Largest Croatian-owned bank (the Government of Croatia is the majority owner), and in the country ranking 7 th in term of total assets.
Holding Fund (HF)	Vehicle or organisation acting as a fund of funds in relation to the deployment of EU resources under the 2007-2013 and/or 2014-2020 programming cycles.
Hrvatski Telekom (HT)	The largest telecom operator in Croatia.
Instrument for Pre-Accession Assistance (IPA)	The Instrument for Pre-accession Assistance (IPA) is the means by which the EU supports reforms in the 'enlargement countries' with financial and technical help.
Intelligent Energy	The Intelligent Energy Europe Programme (IEE) aims to contribute to

Europe Programme (IEE)	secure energy supplies, and to create a sustainable and competitive Europe.
International Finance Corporation (IFC)	A member of the World Bank Group and an international financial institution that offers investment, advisory, and asset management services to encourage private sector development in developing countries.
Integrated Territorial Investment (ITI)	An ITI is a territorial development tool that enables the implementation of a territorial strategy in an integrated manner while drawing funds from at least two different priority axes in the same or different programmes.
Internal / External Coherence	A coherent programme strategy facilitates the achievement of objectives by taking advantage of potential synergies while avoiding hindrances caused by possible contradictions and gaps.
Internal Rate of Return (IRR)	The discount rate often used in capital budgeting that makes the net present value of all cash flows from a particular project equal to zero.
Investment Priority (IP)	Subdivision of a Priority Axis as related to a Thematic Objective. In accordance with Article 96 of the CPR, an operational programme shall consist of priority axes, and shall correspond, without prejudice to Article 59 of the CPR, to a thematic objective and comprise one or more of the investment priorities of that thematic objective, in accordance with the Fund-specific rules. Where appropriate and in order to increase the effectiveness in a thematically coherent integrated approach, it should be possible for a priority axis to relate to more than one category of region and combine one or more complementary investment priorities from the ERDF, ESF and the Cohesion Fund under one or more thematic objectives.
ITS	Intelligent Transport System
Joint European Resources for Micro to Medium Enterprises (JEREMIE)	JEREMIE is a joint initiative developed by the European Commission (Directorate General for Regional Policy) in co-operation with the European Investment Bank Group and other financial institutions in the framework of the 2007-2013 programming period in order to make cohesion policy more efficient and sustainable.
Joint European Support for Sustainable Investment in City Areas (JESSICA)	JESSICA is an initiative of the European Commission developed in co-operation with the European Investment Bank (EIB) and the Council of Europe Development Bank (CEB) in the framework of the 2007-2013 programming period. It supports SUDand regeneration through financial engineering mechanisms.
Local and Regional Self-Government Units (LRSGUs)	These units are Croatian municipalities, cities and counties.
Management Fees	Fees related to the management of a FI, fund of funds, or other investment fund type vehicles.
Managing Authority (MA)	Public administration designated by the Member State to manage ESI Funds.
Market Gap	Failure in the market where there exists a mismatch between the supply and demand of financing.

Member State (MS)	One of the member states of the European Union.
Ministry of Construction and Physical Planning (MCP)	The Ministry of Construction and Physical Planning performs administrative and other tasks related to construction, physical planning and housing, and participates in the development and implementation of programmes from European Union funds and other forms of international assistance in these fields.
Ministry of Economy (MoE)	The Ministry of Economy is in charge of the development of the economy. The administrative and other tasks carried out by it comprises: the development and competitiveness improvement of the Croatian economy, instruments and measures of the economic policy; industrial policy and innovation and new technologies' policy; managing a guarantee fund for the promotion of industry; tasks referring to implementation and use of intellectual and industrial property rights and promotion of creativity in industry and trade in order to develop competitiveness of the Croatian economy; energy policy of the Republic of Croatia; mining; strategy to facilitate and promote investment and exports.
Ministry of Entrepreneurship and Crafts (MoEC)	The Ministry of Entrepreneurship and Crafts conducts administrative and other tasks related to small and medium size enterprises; trade; cooperatives; export incentives and foreign investments and promoting competitiveness in areas of small and medium size businesses; uniform regional business development; effect of economic system instruments and economic policy measures on the development of trades, cooperatives, small and medium size enterprises and business activities of artisans and entrepreneurs; and other activities.
Ministry of Maritime Affairs, Transport and Infrastructure (MMTI)	MMTI performs administrative and other tasks related to: internal and international maritime transport, nautical, road, rail, air and postal transport; system traffic cable cars, funiculars and ski lifts and traffic on inland waterways ; planning, development and implementation of strategic documents and transport infrastructure projects; protection of sea from pollution from ships; sea ports, maritime property and delimitation of maritime property, marine insurance and maritime agencies; ports on inland waterways; inland freight-transport centres; airports; inspection activities within its jurisdiction; electronic communication (telecommunications and radio communications) and post, information society and postal services; preparation of draft laws and other regulations in the field of electronic communications and postal services, proposing strategies, studies, guidelines and program development of electronic communications and postal services in the Republic of Croatia; proposing measures and plans for the development and improvement in the field of electronic communications, information society and national information infrastructure and postal services, proposing projects and programs of development of information and communication technology (ICT) and services of the information society, cooperation in planning, harmonisation and implementation of development activities for national information

	infrastructure, preparation of proposals for measures and plans to encourage the development and improvement of the situation on the market of ICT services, applications and products and the ICT infrastructure, providing technical support in the screening and assessment of compliance of legislation with the EU acquis.
Ministry of Regional Development and EU Funds (MRDEUF)	MRDEUF (Directorate for Strategic Planning) is responsible for monitoring the overall implementation of projects and programmes financed from EU programmes and for the monitoring the execution of decisions and recommendations adopted by bodies that oversee the monitoring of implementation.
Ministry of Science, Education and Sport (MSES)	The Ministry of Science, Education and Sport is in charge of administrative and other activities relating to the following: preschool education, elementary school and secondary education in the country and abroad; curriculum; textbooks, educational standards; development of the educational system; professional education and permanent education of kindergarten and school teachers; student standard; inspection and professional and pedagogic control; establishment of educational institutions and control of their compliance with the laws; securing financial and material conditions for work in education; qualifying the children, youth and adults for acquiring technical knowledge and skills, and activities of various associations in its domain.
Multiannual Financial Framework (MFF)	The MFF lays down the maximum annual amounts ('ceilings') which the EU may spend in different political fields ('headings') over a period of at least 5 years. The upcoming MFF covers seven years: from 2014 to 2020.
National Competitiveness Council (NCC)	The National Competitiveness Council (NCC) is an independent policy advisory body.
National Council for Information Society (NCIS)	National council responsible for policy in the field of information society.
National Council for Science, Higher Education and Technology Development (NCSHETD)	The council responsible for science, higher education and technology development.
National Croatian Science Foundation (CSF)	The National Foundation for Science in Croatia. It reports on key competitiveness issues facing the Croatian economy together with recommendations on policy actions required to enhance Croatia's competitive position.
National Energy Efficiency Action Plan (NEEAP)	The plan is drawn up and adopted in accordance with the European Directive 2006/32/EC on energy end-use efficiency and energy services (ESD). It lays down the energy savings objectives and forms a basis for

	drawing up triennial national plans on EE for three triennial periods up to 2016.
National Framework Programme for the Development of Broadband Infrastructure in Areas Lacking Sufficient Commercial Interest for Investments (ONP)	A national umbrella programme, that is, a state aid scheme that will cover a number of individual projects in a narrow local area, after its approval in accordance with the state aid rules. The Framework Programme covers only broadband access networks.
National Programme for the Development of Broadband Backhaul Infrastructure in Areas Lacking Sufficient Commercial Interest for Investments, as a Prerequisite for the Development of Next Generation Access Networks - (NP-BBI)	A national programme which defines construction of the NGN backhaul network.
National Reform Programme (NRP)	A document which presents the country's policies and measures to sustain growth and jobs and to reach the Europe 2020 targets.
Next Generation Access Network (NGA)	NGA includes all infrastructural and technological solutions that are partially or fully based on optical elements and which promise to provide broadband services with better characteristics compared to the existing basic broadband networks. NGA networks can provide fast and ultrafast access with speeds greater than 30 Mbit/s. Speed indicated informally refers only to the direction of the user, respectively downlink in wireless networks.
Next Generation Network (NGN)	NGN is a packet-based network able to provide telecommunication services and able to make use of multiple broadband, QoS-enabled transport technologies and in which service-related functions are independent from underlying transport-related technologies. It offers unrestricted access by users to different service providers. It supports generalized mobility which will allow consistent and ubiquitous provision of services to users.
Non-Governmental Organisation (NGO)	A NGO is the term commonly used for an organisation that is neither a part of a government nor a conventional for-profit business.
Operational Programme (OP)	Programming documentation as defined in the EU regulations in relation to the deployment of EU resources.
Operational Programme on Competitiveness and Cohesion (OPCC)	Croatia's strategy for contributing to the delivery of the Union strategy for smart, sustainable and inclusive growth and for achieving economic, social and territorial cohesion, with a focus on investments in growth and jobs.

Operational Programme on Efficient Human Resources (OPEHR)	Croatia's strategy for contributing to the delivery of the Union strategy for smart, sustainable and inclusive growth and for achieving economic, social and territorial cohesion, with a focus on the improvement of the socio-economic conditions in Croatia.
Pari-passu	Situation where a transaction is made under the exact same terms and conditions by public and private investors, with private investor contribution which has economic significance and with simultaneous interventions by both types of investors.
Partnership Agreement (PA)	The Partnership Agreement sets out arrangements to ensure alignment with the union strategy of smart, sustainable and inclusive growth as well as the fund-specific missions pursuant to their treaty-based objectives, including economic, social and territorial cohesion (article 15(1) (a) CPR).
PIU	Programme Implementing Unit.
Priority Axis	Priority Axes define the most important development directions of the Operational Programme.
Privredna banka Zagreb d.d. (PBZ)	One of the largest banks in Croatia (ranking 2 nd in term of total assets), a part of the Intesa Sanpaolo Group.
Programme of Subsidised Housing Construction (POS Programme)	The POS Programme is established with the aim to provide Croatian households with more favourable financial conditions compared to the market.
Public Private Partnership (PPP)	A PPP is a government service or private business venture which is funded and operated through a partnership of government and one or more private sector companies.
Renewable Energy Sources (RE/RES)	RE is generally defined as energy that comes from resources which are naturally replenished on a human timescale such as sunlight, wind, rain, tides, waves and geothermal heat.
Return On Average Assets (ROAA)	An indicator used to assess the profitability of a firm's assets. It is most often used by banks and other financial institutions as a means to gauge their performance. As return on average assets (ROAA) is calculated at period ends (quarters, years, etc.), it does not reflect all of the highs/lows but is merely an average of the period.
Return On Average Equity (ROAE)	An adjusted version of the return on equity (ROE) measure of company profitability, in which the denominator, shareholders' equity, is changed to average shareholders' equity.
Science and Innovation Investment Fund (SIIF)	A project financed under the Regional Competitiveness Operational Programme 2007-2013 and implemented by the Ministry of Science, Education and Sport.
Small and/or Medium Enterprises (SMEs)	SME stands for small and medium-sized enterprises – as defined in EU law: EU recommendation 2003/361.
Smart Specialisation Strategy (S3)	Smart Specialisation is a strategic approach to economic development through targeted support to Research and Innovation (R&I). It will be the basis for ESIF interventions in R&I as part of the future Regional and

	Cohesion Policy's contribution to the Europe 2020 jobs and growth agenda.
Specific Objective	The result to which an investment priority or Union priority contributes in a specific national or regional context through actions or measures undertaken within such a priority.
Strategic Objective	A broadly defined objective that an organisation must achieve to make its strategy succeed.
Société Générale-Splitska Banka (STBA)	One of the largest banks in Croatia (ranking 6 th in term of total assets), owned by Société Générale.
Standard & Poor's (S&P)	An American financial services company and credit-rating agency.
State intellectual Property Office (SIPO)	The State Intellectual Property Office of the Republic of Croatia is the State administration body with responsibilities in the field of protection of intellectual property rights.
Sustainable Energy Action Plan (SEAP)	A key document for the implementation of EE, RES and environmentally friendly fuels projects at the town level.
Sustainable Urban Development (SUD)	Within the framework of sustainable urban development, it is considered necessary to support integrated actions to tackle the economic, environmental, climate, demographic and social challenges affecting urban areas, including functional urban areas, while taking into account the need to promote urban-rural linkages. Please note that for the purpose of this study, SUD does not specifically refer to art. 7 of the CPR.
Technical Assistance (TA)	Grants for technical support, which could be in relation to the implementation of a financial instrument (FI) and/or are provided for the preparation of prospective investments.
The Assignment	The present study exercises as defined under the ASA.
Thematic Objective (TO)	Priority theme as defined in EU regulations for the deployment of ESI Funds resources in relation to the 2014-2020 Programming Period.
Trans European Network for Transport (TEN-T)	Network of trans European transport infrastructure as defined in the Reg. EC 1315/2013 as amended.
Transmitters and Communications Ltd. (OIV)	A state owned company that operates in the broadcasting and telecommunication industries providing services, network solutions and infrastructure behind television or radio, as well as fixed and mobile telecommunications.
Urban Development Fund (UDF)	An Urban Development Fund invests in public-private partnerships and other projects included in an integrated plan for sustainable urban development.
Venture Capital (VC)	Venture capital is capital invested in a project in which there is a substantial element of risk, typically a new or expanding business.
Western Balkans Enterprise Development & Innovation Facility (WB EDIF)	An EU funded initiative - launched in December 2012 by the EC, the EIF, the European Bank for Reconstruction and Development and the EIB, acting as co-lead international financial institutions - which aims to create a more favourable financing environment for SMEs and a sustainable long-term equity market in the Western Balkans, as well as TA for strategic

	investments, particularly in infrastructure, EE and private sector development, to support socio-economic development and EU accession across the Region.
Western Balkans Investment Framework (WBIF)	A joint initiative of the EU, IFIs, bilateral donors and the governments of the Western Balkans, it supports socio-economic development and EU accession across the Western Balkans through the provision of finance and TA for strategic investments, particularly in infrastructure, EE and private sector development.
Western Balkans Sustainable Energy Financing Facility (WeBSEFF)	A financing facility under which the EBRD provides credit lines to partner banks in the Western Balkans to on-lend to businesses and municipalities wanting to invest in EE and small-scale RE projects.
White NGA areas	Areas where NGA networks do not at present exist and where they are not likely to be built within 3 years.
Zagrebačka banka (ZABA)	One of the largest banks in Croatia (ranking 1 th in term of total assets), part of the UniCredit Group.
Zagreb Stock Exchange (ZSE)	The only active Croatian Stock Exchange.

Executive summary

An increased use of Financial Instruments (FIs) in all Thematic Objectives (TOs), and across all sectors, has been recommended for the 2014-2020 programming period. The main objective is to move away from grant mechanisms towards FIs, especially revolving funds that could help leverage private sector resources.

In the current economic climate, financial intermediaries in the private sector are limited by solvency constraints and strict risk management requirements. These factors may make it more difficult for investment projects to secure financing. The objective of an ex-ante assessment is to provide an analysis of the market conditions at the time of analysis with a view to identifying any market failures that could impose barriers on project investments. If such market failures exist and can be described quantitatively/qualitatively, an ex-ante analysis will put forward recommendations for the most suitable financial products and implementation options that could remedy the identified market failures. In this ex-ante study, such recommendations have been described in the chapter entitled “Proposed Investment Strategy and implementation arrangements”. It is important to emphasise that the Proposed Investment Strategy (PIS) offered here is indeed a proposed one and, therefore, not meant to be restrictive. Even though the OPCC resources suggested for the FIs/grants are considered as being most suitable, the PIS does not seek to restrict the MA from directing other OPCC resources towards other FIs/grants, or indeed from applying alternative solutions.

Accordingly, in line with the requirements of article 37 (2) of the CPR, the scope of this ex-ante assessment is to provide the MRDEUF with evidence-based analysis and guidance to support the use of financial instruments (FIs) over the 2014-2020 programming period in Croatia. The methodology used in the analysis follows the guidelines of the *Ex-ante assessment methodology* published by the EC in 2014¹.

The study focused on three main investment areas:

- Promoting EE and the use of RES in (i) buildings - private and public, residential and non-residential; (ii) the improvement of industrial production processes.
- Promoting sustainable urban and territorial development through infrastructure, renewal and regeneration schemes, sustainable urban transport, and other urban investments.
- Promoting private-sector investment in RDI in support of an innovative and competitive business and research environment.

This study also provides high level guidance and analysis of the use of FIs to enhance access to information and communication technologies, with emphasis on encouraging private-sector investment in the delivery of the “last-mile” for broadband services.

¹ Ex-ante assessment methodology for financial instruments in the 2014-2020 programming period – general methodology covering all thematic objectives – Volume I. Available at: http://ec.europa.eu/regional_policy/sources/thefunds/fin_inst/pdf/ex_ante_vol1.pdf

Market assessment of priority investment areas

Energy Efficiency and the use of renewable energies in (i) buildings - private and public, residential and non-residential; (ii) the improvement of industrial production processes

The MRDEUF has allocated approximately EUR 625² million of the OPCC to support transition to low-carbon economy (TO4) in the 2014-2020 Programming Period. The OPCC envisages the deployment of FIs for:

- Promoting EE and RES in industry and enterprises.
- Supporting EE, smart energy management and RES in public infrastructure, including public buildings and the housing sector.

Accordingly, the study analyses the possibility of deploying FIs in these investment priorities and specific objectives, the details of which are given in the table below.

Table 1 Allocation of resources from the OPCC 2014-2020 in the EE sector

TO	ESIF	Investment priorities (IP)	Specific objectives (SO)	Resources allocated per SO (EUR)
4	ERDF	4b - Promoting EE and RE use in enterprises	4b1 - Increasing EE and use of RES in manufacturing industries	60,000,000
			4b2 - Increasing EE and use of RES in the private service sector (tourism and trade)	40,000,000
		4c - Supporting EE, smart energy management and RE use in public infrastructure, including in public buildings	4c1 - Reduction of energy consumption in public sector buildings	211,810,805
			4c2 - Reduction of energy consumption in residential buildings	100,000,000
				411,810,805

Buildings (private, public, residential and non-residential)

Even though the total energy consumption in Croatia has decreased over the recent years (e.g. 4.7% lower in 2012 than in 2011, and 12.6% lower than in 2007), the Croatian household sector is still energy-inefficient. Croatia's average energy consumption per household (kWh/m²) is higher than in the neighbouring EU countries. Residential, public and commercial buildings are the largest energy consumers. In 2012, they had a 43% share in the final energy consumption, two-thirds of which was in the residential sector, and one-third in the public and commercial sectors. In order to reduce that, the III National Energy Efficiency Action Plan (NEEAP) has laid down the energy savings objectives to be achieved by 2016 and by 2020, respectively.

² EU fund plus national counterpart (table 18c-CPCC adopted)

Investment needs

For **public sector buildings**, approx. EUR 504 million would have to be invested to achieve a reduction of approx. 262.50 million kWh (as foreseen by the NEEAP). This value is in line with the Strategic Environmental Action Plans (SEAPs) developed by Croatian cities, which estimate financing needs amounting to approx. EUR 500 million. The interviews and workshops carried out with the relevant stakeholders during this ex-ante study suggested a pipeline of projects worth approx. EUR 83-85 million, with most of them (approx. EUR 70-72 million) requiring short-term investments. For **private buildings**, approx. EUR 1.10 billion would have to be invested to meet the 2020 III NEEAP target. The interviews and workshops carried out with the relevant stakeholders during this ex-ante study suggested a pipeline of projects for approx. EUR 46.5 million, most of them (c. EUR 40.5 million) requiring medium-term investments.

Industrial production processes

The industrial sector accounts for approx. 17% of the final energy consumption in Croatia. It is the third largest energy consumer after transport (33%) and housing (43%). Energy-intensive industries account for more than half of the sector's consumption. The non-metallic minerals industry is the largest industrial consumer (35 % of total industrial energy consumption), whilst the other two big energy users are the food (18.2%) and the chemical (15.8%) sectors. According to interviews, inefficient production processes account for a large part of energy consumption. Projects in this market segment are typically capital intensive, with limited positive impact on the core business of enterprises and limited economic benefits (energy savings) in the medium term.

Investment needs

Even though a tangible pipeline of projects was not identified in this sector, as projects might be supply-side driven and manifest themselves only when suitable finance is available, this ex-ante assessment has estimated that investments to improve industrial production processes could be in the range EUR 300-700 million over 2016-2022.

Conclusions

The supply of finance by commercial banks, the EPEEF, and the HBOR would not be enough to meet the expected demand for investment, thereby suggesting a **funding gap**. Most of the projects in this area have been financed via grants so far. The identified sub-optimal investment situations include:

- Buildings and industrial production processes
 - Due to the limited experience in EE investment, banks tend to consider them high risk and are either not willing to provide project finance or offer it at high interest rates, limited maturity of loans, and high collateral requirements. This hampers the ESCO market development, and makes it difficult to finance projects for both the municipalities (following budget limitations introduced by the Tax Act) and private owners due to high collateral requirements.
 - Due to limited private sector participation, beneficiaries have to cover co-financing of public funds through own resources, and so not all potentially viable projects are funded.
 - Due to the limited availability of skilled personnel and financing experience, both public and private actors in the EE sector underestimate the benefits of energy-cost reductions, resulting in limited interest in EE financing.
- Buildings

- Most of the public and private buildings require deep, capital intensive renovations. This requires considerable investments, characterised by long-term return and low profitability, which makes them unattractive to potential funders.
- Due to the lack of sustainable financial products, the majority of EE investments in buildings so far have been financed via grants or with the own funds of private owners or ESCOs.
- Industrial production processes
 - A combination of low profitability, low attractiveness of bank loans, and limited own resources have resulted in companies being largely unwilling to implement EE improvements in their production processes.
 - As EE investments are not the core budgeting priority for many companies, there are no sufficiently-developed projects or long-term project portfolios.

Given the above, financial instruments, if deployed via an effective, well-managed implementation structure, could alleviate several of the aforementioned problems, thereby bringing **added value** to the Croatian financial market, as outlined below (*this added value description applies to FIs in all investment priorities described later on in this Executive Summary*).

In particular, FIs could add value by:

- Offering financing on attractive terms, in line with State aid regulations, which could boost financial sustainability of projects.
- Facilitating access to finance for undercapitalised companies.
- Leveraging additional private and public resources and, through their revolving mechanism, contribute to bridging the funding gap to meet the 2020 III NEEAP targets.
- Building capacity by providing technical assistance to: (a) raise the awareness of the benefits of EE investments, (b) support beneficiaries in designing feasible projects, and (c) promote financial discipline required for repayable financial products.

FIs in the EE in buildings/industrial processes sector could include:

- **Loans** (medium and long-term) to facilitate medium and long-term financing on attractive terms (soft loans), thus supporting financial feasibility of projects.
- **Equity** for ESCOs to improve their credit rating and help with commercial financing, allowing for larger-scale investments.

FIs could be further supported by grants for technical assistance, especially in project pre-development phases.

The proposed financial instruments for the EE/RE sector, with the budgetary allocations between private commercial buildings, improvements of industrial production processes and public lighting systems, can contribute significantly to cover the market gap identified for each of the three above-mentioned sub-sectors.

In particular, as detailed in the study, based on the current status of both the supply-side and the demand-side for investments in the EE/RE sector, the opportunity to launch FIs could well address the need for long-term financing provided with a more risk taking approach in terms of economic sector, nature of beneficiaries and project risks. This initiative would fill a need since, based on the key findings of the report, the Croatian banking system, although bearing an overall appreciable liquidity level, is

seen as reluctant in providing financing for projects with long-term return and relatively moderate profitability, as those typical of the EE/RE sector, where investments are already very low and which many possible promoters (e.g. corporates) consider just as ancillary to their core activities.

However, the study also highlighted very significant room (and actual need) for the implementation of other actions and policies, specifically grants, in parallel with FIs. This view is justified by the following elements:

- From a quantitative angle, while the investment targets set by NEEAP for the period 2014 – 2020 amount to approx. EUR 1.65 bn (without including industrial buildings), based on the study, FIs are expected to cover needs for approx. EUR 0.28 bn (including 2x leverage). As a result, an additional supply of financial resources for EUR 1.37 bn would be required to cover the total demand. Furthermore, as the demarcation analysis suggested:
 - FIs will be targeted at a limited number of private and public project promoters expected to be able to take on a revolving FI, and capable of preparing and implementing a sustainable investment project. The majority of potential promoters are affected either by debt-capacity constraints (e.g. in the case of hospitals and other public sector promoters) or by technical-capacity constraints (preparation of projects);
 - Certain projects present limited revenue-generating capacity (e.g. because of small scale) and so could not be realistically supported by FIs, which are revolving in nature.
- In addition, it has to be noted that Croatia is new to FIs, so it is reasonable to expect that, even if implemented immediately, as suggested in the study, the actual results expected by the FIs would be actually achieved over a certain time frame. This is due to the natural need of “learning by doing” for all the involved actors (stakeholders, financial intermediaries, beneficiaries, etc.) in respect to operational, legal and procedural aspects, apart from the time required to set up the immediate procedural, procurement and legal framework for implementation. It is, therefore, recommended that, in order to facilitate the achievement of the general objectives set out in the OPCC, and of the specific objectives arising from the various national programmes (e.g. NEEAP), the MA consider to pair FIs with the more consolidated grants programme, in particular targeting those categories of beneficiaries and projects which cannot be reached through FIs.

Given the current circumstances, FIs are not considered a priority for EE interventions in private residential buildings, including multi-apartment buildings and family houses. Consequently, the implementation of such projects by using grant schemes might be necessary before the potential for use of financial instruments could be confirmed. The level of grants support required might differ across projects in the EE sector (depending on the type of buildings), and will need to be established by the MA in the course of OPCC implementation.

Consequently and to conclude: the implementation of a tailor-made decentralised FI is not suggested, at this stage, for the improvement of EE performance of private residential buildings, due, inter alia, to difficulties in estimating financial benefits of many small EE projects for private promoters, and high administrative costs of managing many fragmented projects. The MA could consider dedicating to this market segment traditional grants programmes first, such as the one carried out by the EPEEF and, later on, following the identification of a concrete project pipeline, an “off the shelf” Financial Instrument,

(Cfr. Financial Instrument for the energy efficiency in the residential buildings: http://www.fi-compass.eu/sites/default/files/publications/presentation_201501_Brussels_ESIF_Thomas-de-Bethune.pdf).

Sustainable Urban and Territorial Development

The MRDEUF has allocated approx. EUR 190³ million of the OPCC for the implementation of Sustainable Urban Development projects over 2014-2020 to cover:

- Development of infrastructure, including Intelligent Transport System installations.
- Development of park & ride infrastructure and systems, including intermodal terminals, development of facilities, car parks, etc.
- Purchase and modernisation of passenger rolling stock (trams, eco-buses, light rail) with low CO₂ emissions.
- Improvement of EE in public lighting.

Accordingly, the study analyses the possibility of deploying FIs for these investment priorities and specific objectives, the details of which are presented in the table below.

Table 2 Allocation of resources from the OPCC 2014-2020 in the SUD sector

TO	ESIF	Investment priorities	Specific objectives	Resources allocated per SO (EUR)
4	ERDF	4c - Supporting EE, smart energy management	4c4 - Improvement of the efficiency of the public lighting system*	20,000,000
7	CF	7ii - Developing and improving environmentally-friendly (including low-noise) and low-carbon transport systems	7ii2 - To increase the number of transported passengers in urban public transport	170,000,000
				190,000,000

* FIs for this investment priority are not envisaged in the OPCC

Urban mobility

Public transport is the predominant form of transport in most of the large and medium-sized Croatian cities, although no significant public transport services are provided, apart from taxis and school buses, in about one third of the cities. In addition, there are limited reliable and comfortable connections between and within regions, and lack of multi-modal transport options, with intermodal terminals being extremely rare. CO₂ emissions from public transport are high, accounting for approximately a quarter of all transport-generated emissions.

Investment needs

Stakeholder consultation has helped identify a list of urban mobility projects valued at approx. EUR 80 million, with most of them (approx. EUR 59 million) requiring investment support in short to medium term.

This appears to be far below potential demand for investment in urban development for the 2014-2020 period, which even under cautious assumptions is likely to be at least in the EUR 100-200 million range.

³ EU fund plus national counterpart (table 18c-CPCC adopted)

Public lighting

Public lighting consumes 446.33 GWh of electricity, which is approximately 3% of the total final electricity consumption in Croatia. It is expected that measures to be implemented in public lighting under the III NEEAP could produce savings of up to 60 GWh/year.

Investment needs

Approximately EUR 59 million would have to be invested to achieve the 2020 EE targets set by the III NEEAP. The stakeholder consultation for this study helped identify a list of projects worth EUR 1 million.

Conclusions

Market failures and sub-optimal investment conditions exist in Croatia's urban development sector. The current supply of finance by commercial banks, the EPPEF, and the HBOR has been estimated to fall short of meeting the expected demand for investment, suggesting a **funding gap** in the market. The potential demand for funding remains unmet, also because financial products offered are unsuitable and/or expensive. Insufficient availability of finance, however, is not the only factor preventing projects from going forward, with other limiting factors including the following:

- There are legal ceilings on investments made by cities due to borrowing restrictions imposed on municipalities.
- Small municipalities are restricted in long-term programming of strategic investments due to limited budgets.
- Since urban mobility infrastructure-related projects require a balanced mix of revenue-generating and other operations to ensure financial sustainability, development of complex capital-intensive projects requires considerable time and expertise, which is not always available in Croatia.
- Since most Croatian cities are small in size, public lighting projects need a critical mass (a minimum number of lighting spots) to reach financial sustainability. Hence, it is crucial to find effective ways of bundling projects to generate this critical mass.
- Urban development is not encouraged because financial products currently available on the market are too expensive.

Given the above, financial instruments, if deployed via an effective, well-managed implementation structure, could alleviate several of the aforementioned problems, thereby bringing **added value** to the Croatian financial market.

The analysis indicates that there is substantial potential to employ SF in the SUD investment area, particularly if SUD is understood to include wider urban development and regeneration investment. Nevertheless, in the investment areas considered as a priority by the MA, particularly urban transport, the revenue generation mechanisms currently in place to remunerate a potential lender or investor are limited; furthermore it has to be taken into account that SUD is only partially covered through the OP and, with respect to public transport, currently the project pipeline appears to be very limited. Thus, apart from public lighting, which is proposed to be included in EE (SO 4c4 - Improvement of the efficiency of the public lighting system), the present ex-ante analysis does not appear to provide sufficient evidence to justify the immediate introduction of financial instruments in SUD.

Consequently, it is felt that at this stage SUD projects in public transport should be supported through grant funding where appropriate, before the suitability of financial instruments could be confirmed and instruments designed in a way to be attractive to final recipients. The proposed financial products, as

well as budgetary allocations between the instruments, could be examined at a later stage in the course of OPCC implementation. At that time, further analysis could be carried out to determine if the introduction of financial instruments is warranted, revising the current ex-ante assessment if necessary.

In this context, it is important to note that JASPERS is currently cooperating with the Croatian Ministry of Transport in the development and concrete application of a robust methodology to support the production of local/region transportation plans, which will include a systematic assessment of needs of the transport system and the related investment requirements. Once these plans are produced, they are expected to provide a stronger basis to determine - possibly also in cooperation with JASPERS (and the Ministry of Transport itself) - the best way to employ revolving instruments of the type proposed in the present study to achieve the local and urban transportation objectives under the OPCC.

Notwithstanding the above, FIs in the SUD sector could provide significant value added and include:

- **Loans** (medium and long-term) to facilitate medium and long-term financing on attractive terms (soft loans), thus supporting financial feasibility of projects.
- **Equity** for PPPs/SPVs to leverage additional financing and help share operational risks.
- **Equity** for ESCOs in the public lighting investment area to make projects financially viable and help leverage additional financing.

Private-sector investment in RDI to support an innovative and competitive business and research environment

The MRDEUF has allocated approximately EUR 782⁴ million of the OPCC (under TO1) for RDI investments (including FIs) over 2014-2020 to support creation of innovative enterprises and research climate. Accordingly, the study analyses the possibility of deploying FIs for these investment priority and specific objectives, the details of which are given in the table below.

Table 3 Allocation of resources from the OPCC 2014-2020 in the RDI sector

TO	ESIF	Investment priorities	Specific Objectives	Resources allocated per SO (EUR)
1	ERDF	1b – Promoting business investment in R&I, developing links and synergies between enterprises, research and development centres	1b1 – Increased development of new products and services resulted from R&D activities	205,000,000
			1b2 – RDI activities of business sector	125,470,426
				330,470,426

Croatia is recognised as a moderate performer in terms of innovation compared to many of its EU peers. The overall investment in RDI (0.75% of GDP) is significantly below the EU average (2.02% of GDP), below the national target (1.4% of GDP), and well below the target of 3% of GDP set out in the Europe 2020 strategy. RDI takes place in both the private and the public sectors, but with a different level of intensity – the largest share of total spending on RDI is in the public sector (0.41% of GDP vs 0.34% for private investment into RDI). Business investment in RDI also seems to be undermined by the lack of cooperation between companies and R&D centres.

⁴ EU fund plus national counterpart (table 18c-CPCC adopted)

Investment needs

Due to issues related to commercial sensitivity, ongoing financial negotiations between corporates and commercial banks, and the challenges associated with separating investment in RDI from other corporate investments, it has not been possible to identify a tangible project pipeline. However, according to the assumptions made in this study, it is estimated that investments between EUR 634 million and 1.90 billion would be needed over 2014-2022 to meet the OPCC target and, consequently, to raise the overall investment in RDI to 1.4% of GDP by 2020.

Conclusions

The finance currently supplied in Croatia has been estimated to be insufficient for meeting the expected demand for RDI investment, suggesting a **funding gap** in the market.

Insufficient availability of finance, however, is not the only factor preventing RDI projects from going forward, with other limiting factors including the following:

- As commercial loans are primarily given to a highly-concentrated small group of large corporates, SMEs have almost no, or at very high cost, access to finance.
- Due to lack of financial knowledge and experience of FIs, companies hardly look for other type of financing than loans.
- Due to high-risk aversion amongst finance providers, RDI projects are hardly financed by commercial banks.
- Owing to problems with valuations of RDI-driven entities and innovative companies, banks tend to extend credit on the basis of tangible assets rather than project quality.
- RDI financing is very limited because of a poor choice of financial products and services, and an immature VC/PE market.

Market failures and sub-optimal investment conditions exist in Croatia's RDI sector. There is significant potential demand for funding. It remains unmet because financial products offered are either unsuitable, or expensive, or limited. Given the above, financial instruments, if deployed via an effective, well-managed implementation structure, could alleviate several of the aforementioned problems, thereby bringing **added value** to the Croatian financial market.

FIs in the RDI sector could provide significant value added and include:

- **Loans** (senior, medium & long-term) to facilitate medium and long-term financing, thus supporting financial feasibility of projects.
- **Quasi-equity** mezzanine financing (e.g. subordinated debt) to help make projects financially viable.
- **Equity** to help leverage additional financing, bring in financial and technical know-how from investors, make projects financially viable, and to share operational risks.

The study indicates that the scope to employ FIs in the RDI investment area exists, albeit for what is currently a niche market which can only address a part of the investment gap, with a focus on a limited range of sophisticated beneficiaries and likely to take a certain time to deliver effective results. Because of this, RDI projects would undoubtedly benefit from a robust dose of grant support, where appropriate and whilst the use of FIs consolidates enough to allow stakeholders (e.g. financial intermediaries, final recipients) to progress on their learning curve.

Well-designed debt and equity FIs in TO1 should provide broad support for research and innovation. They should help improve the capacities of enterprises driven by R&D, as well as innovation at all stages of development and throughout the different stages of the research and innovation cycle. Financial instruments for RDI enterprises should be primarily implemented bottom-up and tailored to their needs and specific objectives.

While the analysis recognises that currently FIs could only partially address the investment gap, and should be in any event used in conjunction with grants, delayed implementation may increase the risk that learning-by-doing effects – which over 2007-2013 proved to be of utmost importance in the experience of financial instruments in new areas of application – are not timely triggered. Thus, even if a decision were to be made not to implement immediately FIs in the RSI investment area on a full-scale basis, it is suggested that adequate attention should be paid to the development of the proposed FIs, as well as to the budgetary allocations between the instruments, relatively early in the course of OPCC implementation, possibly through a piloting phase (with a Call for Expression of Interest to raise attention throughout the market and a tranching mechanism to disburse funds in subsequent stages) which could allow to capture learning effects and activate supply-side impacts to stimulate demand from potential beneficiaries while mitigating risks of a failure in the initiative. In addition it has to be noted that Croatia is new to FIs so it is reasonable to expect that, even if it were decided to implement them in the short term through a pilot process, the actual results expected by the FIs will be achieved only over a certain time frame because of the natural need of the above-mentioned learning-by-doing for all the involved actors (stakeholders, financial intermediaries, beneficiaries, etc.) in respect to operational, legal and procedural aspects, beside the time required to set up the immediate procedural, procurement and legal framework for implementation.

In addition to FIs, **grants** should be provided to:

- Projects in the seed development stage.
- Projects in the start-up and early-growth stages which show potential for growth. To this end, grants should be offered:
 - For projects: the investment cost is fully covered by company's own resources and by the requested grant plus a bank loan (demonstrated by a commitment letter from the bank), and where the investment does not exceed 25% of the company's equity.
 - For start-up companies (shorter than 5 years of operations): the investment cost is fully covered by the company's own resources and by the requested grant plus a bank loan (demonstrated by a commitment letter from the bank).
- Should an FI be implemented, there is no need to create a demarcation line with grants for projects in the start-up and early-growth stages, as the two components are fully complementary. Indeed, FIs could be provided:
 - To support the projects/companies balance-sheet requirements to qualify for bank credit and, consequently, to get grant funding for the remaining part of the investment.
 - To support projects that show higher financial performance, and which could have access to bank credit with FI's support only, if grants were no longer available.

Enhance access to ICT, encouraging private-sector investment into the “last-mile” for broadband services

The MRDEUF has allocated approx. EUR 362⁵ million of the OPCC over 2014-2020 to provide support to investments in ICT, under TO2. The OPCC envisages the use of FIs for IP2a “extending broadband deployment and the roll-out of high-speed networks and supporting the adoption of emerging technologies and networks for the digital economy”.

Accordingly, the study analyses the possibility of deploying FIs for these investment priorities and specific objectives, the details of which are presented in the table below.

Table 4 Allocation of resources from the OPCC 2014-2020 in the ICT and broadband sector

TO	ESIF	Investment priorities	Specific objectives	Resources allocated per SO (EUR)
2	ERDF	2a - Extending broadband deployment and the roll-out of high-speed networks and supporting the adoption of emerging technologies and networks for the digital economy	2a1 – Development of NGN broadband infrastructure in areas without sufficient commercial interest for investments in NGN broadband infrastructure, for maximum increase of social and economic benefits	209,370,040

Croatia is significantly lagging behind the EU average penetration level of broadband connections, the Next-Generation Access network (NGA) coverage, and the Next Generation Network (NGN) coverage. Although Croatia had already achieved a good basic broadband coverage, the total NGA network coverage was only 33% in 2013, which put Croatia far behind the EU average NGA coverage of 62% in that year. To improve upon this, Croatia will seek to implement the targets of the Europe 2020 strategy and the “Digital agenda for Europe”.

Investment needs

The ONP specifies that investments of up to EUR 712.2 million are needed to reach 100% of the national NGA broadband coverage and close the existing, and foreseen, coverage gaps in commercially unprofitable areas by 2020. At least 58% of this amount is expected to be covered by private investment, with the remaining 42% coming from public resources and ERDF. It is envisaged that support from the ERDF will contribute to increasing the national NGA network coverage by at least 20%.

Conclusions

The financing for improving access to ICT in Croatia has been estimated by this study as insufficient to meet the expected demand, suggesting a **funding gap** in the market.

Insufficient availability of finance is only one of the factors preventing projects from going forward, with other limiting factors including the following:

- Broadband roll-out projects are generally funded only by the operators, so that limited supply of external financing may limit their investment capacity.
- Insufficient administrative capacity and lack of knowledge of LRGuS in implementation of such projects may slow down, or prevent, development of local projects.

⁵ EU fund plus national counterpart (table 18c-CPCC adopted)

- Croatia's geography, i.e. rural and suburban areas with lower population density and numerous islands, makes connecting houses to the Next Generation Access (NGA) much more challenging.

This study has not been able to identify potential FIs which could help the private sector bolster investments in ICT to achieve the goals of the DAE.

Grants vs FIs

A clear demarcation line should be drawn between the categories of projects supported by grants and by FIs to avoid any cannibalisation of the two (with the exceptions in the RDI sector described above). To achieve this end, the Value of DSCR (Debt Service Coverage Ratio) can be used as a discriminant:

- DSCR below 1 = grant support.
- DSCR in the range 1 -1.25 (EE/RE) or 1.3 (SUD) = FI support.
- DSCR above 1.25 (EE/RE) or 1.3 (SUD)= commercial banks support.

Grants should be provided to finance investments that show at least one of the following:

- Financial terms are such that the payback period is longer than the amortisation of the technical investment (even for potentially valuable investment opportunities).
- A return on investment that is not compatible with the project risk (e.g. for EE/RE below 5%, for SUD investment IRR below 8%-10%).

Proposed Investment Strategy and implementation arrangements

Delivery and management of FIs under priority investment areas

Given the characteristics of the Croatian financial market and the investment needs outlined above, it is believed that the optimal delivery structure would be through an "FoF implementing entity", which would coordinate and implement the establishment of three Funds of Funds (FoF) for each priority investment area: EE, SUD and RDI⁶. As indicated above, no FIs have been recommended for ICT.

The overall objectives of the MA to implement FIs in these three priority investment areas are:

- To take advantage of the revolving mechanism of FIs. The use of FIs enables the MA to create a financial tool to recycle the financial resources slated for the supported projects, creating an independent source of funding that will be additional to other resources which could be available in future programming periods.
- To use the ERDF for leveraging additional public and private funding for eligible investments, including private capital and/or public resources from regional and national sources.
- To promote long-term development and build the capacity of local and regional administrations to develop and implement projects that would be financially self-sustainable with long-term economic, social and environmental benefits.

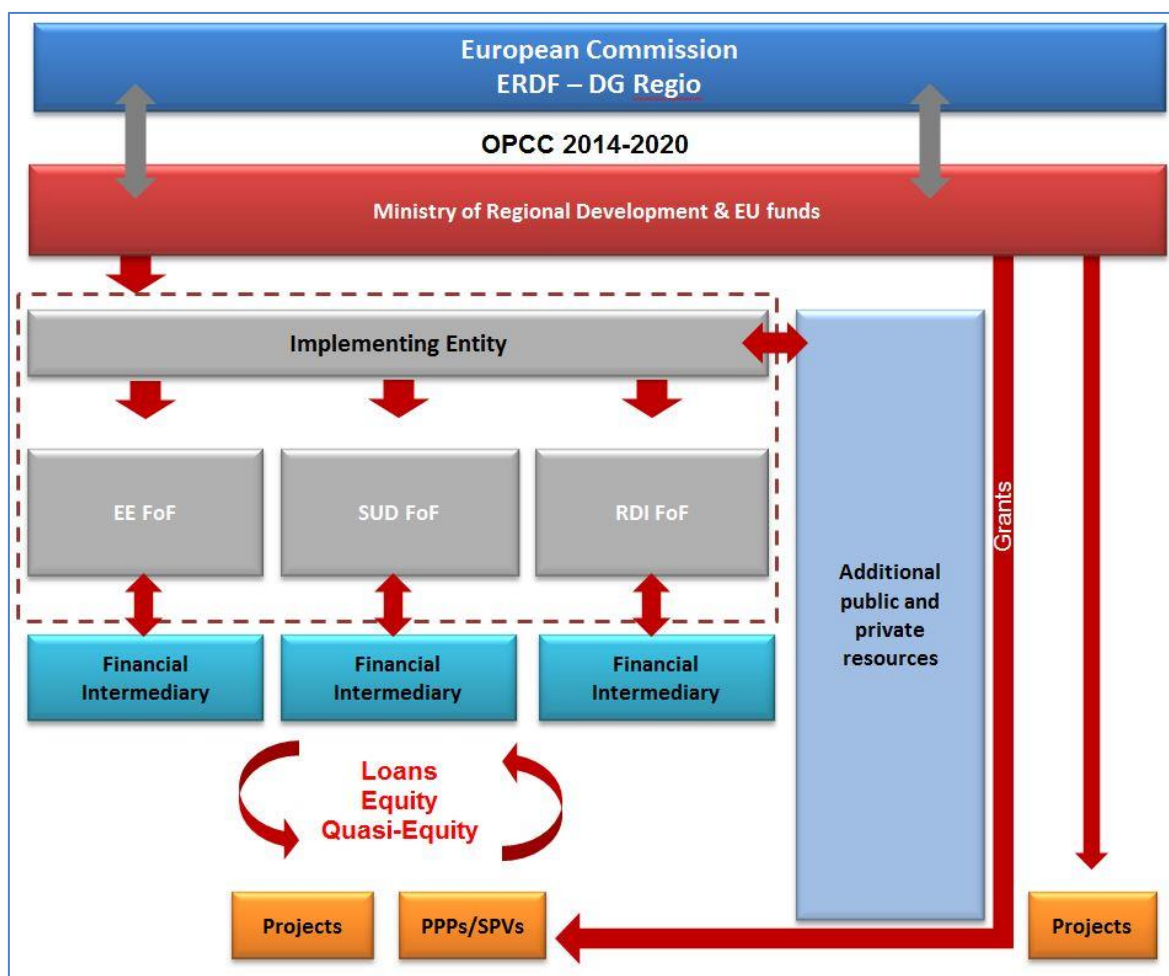
FIs implementation structure

⁶ Indications on the governance structure are explained in greater detail in chapter 6.2.

A **double-layer structure** is proposed for the implementation of FIs in Croatia:

1. **An FoF Implementing Entity:** it is proposed that the responsibility of coordinating and implementing the establishment of the dedicated sector-specific FoFs is given to an “FoF implementing entity”. Its function would be to host the tasks related to the establishment and joint operation of the three sector-specific FoFs within a single organisational framework. This should allow the MA to delegate complex and specialised tasks related to FIs, and achieve economies of scale in coordinating and monitoring FoF operations, while maintaining a unitary strategic approach. The precise legal nature of the Implementing Entity should be determined with a view to minimising transaction and setting-up costs.
2. **Three dedicated Funds of Funds:** each of the three FoFs would be the direct recipient of ESI funds, responsible for selecting and signing funding agreements with financial intermediaries, and monitoring and controlling FIs implementation. Each FoF is related to a single TO in order to simplify monitoring and reporting of expenses, and to facilitate re-balancing of resources among specific objectives. The three funds could be established as a separate block of finance with dedicated bank accounts on the balance sheet of the Implementing Entity.
 - a) **EE FoF:** to support EE in public and private commercial buildings, industrial production processes, and public lighting.
 - b) **SUD FoF:** to develop and improve environmentally-friendly (including low-noise) and low-carbon transport systems, including multimodal links to promote sustainable regional and local mobility.
 - c) **RDI FoF:** to promote investment in RDI, develop links and synergies between enterprises, R&D centres, and the academia.

Figure 1 Proposed governance and implementation structure



Source: EIB, 2015

Table 5 Composition of the proposed funds by investment areas

Fund	Target area	SO	Current OP allocation per SO (EUR)	Quantification of demand in the 2016-2022 period		Proposed envelope		Products
				Policy level (EUR)	Tangible pipeline (EUR)	OPCC contribution (EUR)	Financial intermediary contribution (EUR)	
EE FoF	Public residential and non-residential buildings	4c1	211.81 million	505 million	85 million	50-100 million	50-100 million	<ul style="list-style-type: none">• MT/LT soft loans• Equity for ESCOs• Technical Assistance
	Private (commercial) buildings	4b2	40 million	1.08 billion	46.5 million			
	Improvement of industrial production processes	4b1	60 million	700 million	10.2 million			
	Public lighting system	4c4	20 million	58.8 million	1.05 million			
Total (a)	-		331.81 million	2.36 billion	142.8 million	100-200 million		
SUD FoF	Urban public transport	7ii2	170 million	340 million	C. 80.5 million	50-100 million	50-100 million	<ul style="list-style-type: none">• MT/LT soft loans• Equity for PPPs/SVPs• Technical Assistance
Total (b)	-		170 million	340 million	80.5 million	100-200 million		
RDI FoF	Private-sector investment into RDI	1b1 and 1b2	330.47 million	0.63 – 1.90 billion	102 million	30-50 million	30-50 million	<ul style="list-style-type: none">• MT/LT soft senior loans• Quasi-equity (mezzanine financing)• Equity• Technical Assistance
Total (c)	-		330.47 million	0.63 – 1.90 billion	N/A	EUR 60-100 million		
Total (a+b+c)	-		832.28 million	3.31-4.59 billion	325.3 million	EUR 260 – 500 million		

Governance of the proposed implementation structure

- **Managing Authority:** responsible for the management of resources under the OPCC. Active MA participation in the implementation process is required to ensure that an FoF deploys the FIs in a way that is consistent with the OPCC objectives and performance criteria. In particular, the MA and the intermediate bodies (e.g. ministries) would take direct responsibility for the operations of the Implementing Entity and of each FoF through the Investment Committee.
- **Investment Committee:** the supervisory body in charge of FoF management, consisting of representatives of the MA, intermediate bodies (e.g. ministries) and co-investors. A single Investment Committee could supervise the operation of the Implementing Entity and each sector-specific FoF. A Strategic Committee could also be set up to supervise the investment strategy implementation, and to separate policy supervision from credit decisions.
- **FoF manager:** delegated by the Implementing Entity to carry out an FoF investment strategy, specifically:
 - Run calls for expression of interest select financial intermediaries.
 - Review business plans submitted by financial intermediaries.
 - Negotiate operational agreements with financial intermediaries.
 - Monitor and control operations according to the terms and conditions of the operational agreement.
 - Report to the Investment Committee on the progress of operations.
 - Provide treasury management of the funds.
- **Financial Intermediaries:** selected by the FoF manager. Responsible for implementing investment strategies in the priority areas by investing in projects and channelling investments to final recipients. Additional financing provided by the financial intermediaries would provide FIs leverage. Financial intermediaries ensure that the financed projects meet the eligibility criteria and are socio-economically and technically viable.

EE, SUD and RDI FoF characteristics

EE FoF: invests in improving EE in public and private commercial buildings, and in public lighting. It should be set up at national level to achieve a critical mass.

Table 6 EE FoF - key characteristics of financial products

Financial product	Pricing	Maturity	Advantages	Final recipient
MT/LT soft loans	0-2% (average pricing offered by JESSICA in similar initiatives)	Up to 10-15 years, with possible grace period during the investment phase	<ul style="list-style-type: none"> • Alleviate the lack of long term financing registered in the supply side analysis • Provide financing at the best available market conditions (can 	<ul style="list-style-type: none"> • Public bodies / institutions / bodies (owner of public buildings/public assets)

Financial product	Pricing	Maturity	Advantages	Final recipient
			<ul style="list-style-type: none"> arrive to 0% interest rate) • Unlock spending by public administration which is now under borrowing restrictions⁷ 	
MT/LT soft loans	Lowest possible market values (e.g. 3%)	Up to 5-10 years, with possible grace period during the investment phase	<ul style="list-style-type: none"> • Alleviate the lack of long term financing registered in the supply side analysis • Provide financing at the best available market conditions: yearly interest rate reduced by 2%-3% on average • Reduce collateral requirements 	<ul style="list-style-type: none"> • Enterprises (SMEs, large enterprise, ESCOs)
Equity	FI's target return on equity could be expected to be lower than the one sought by market investors ⁸	Exit strategy to be set on a case by case basis	<ul style="list-style-type: none"> • Increase the capitalisation of ESCOs facilitating their access to credit • Provide a financial product which is not currently available in Croatia for ESCOs • Boost the confidence levels of potential equity investors (experience in other countries has shown that equity investments in SMEs (ESCOs included) through public assistance schemes tend to attract private investors, especially in those countries where raising capital remains a challenge) 	<ul style="list-style-type: none"> • ESCOs

Eligible projects: EE/RES in public and private (commercial) buildings, improvement of EE in public lighting, and EE/RES in industrial production process. Potential projects would have to comply with the eligibility criteria under OPCC SO 4b1, 4b2, 4c1 and 4c4.

EE FoF envelope: a conservative contribution from the OPCC to the EE/RES FoF is recommended at **EUR 50-100 million**. With an additional contribution from financial intermediaries of **EUR 50-100 million**, the **total envelope of the EE FoF could be projected at EUR 100-200 million**.

EE FoF - expected results: it is assumed that with an OPCC contribution of EUR 100 million, leverage of 1.3x and 2x could be achieved at FoF level, with additional leverage of 1.67x at final recipient level. For **buildings**, energy savings could be achieved of between ca. 133.67 and ca. 200.65 million kWh/year (26.97-41.50 million in the commercial sector, and 106.70-164.16 million in the public sector). An FI with 2x leverage could contribute to the achievement of almost 298% of the reduction in primary energy consumption of **public buildings** targeted for 2023, whilst an FI with 1.3x leverage could achieve 194%. For **commercial buildings**, an FI with 2x leverage could contribute to the achievement of almost 45% of the energy savings in the service sector (commercial included) targeted for 2023, whilst an FI with 1.3x leverage could achieve 29%. For **public lighting**, energy savings have been calculated as the reduction in

⁷ As laid down in the relevant legislation, the expenditure of resources from OPs (including the sums to be allocated through FI and with the exception of co-financing originating from State) are not subject to the Stability Pact. Therefore, such financial product could potentially bring liquidity to municipalities, including those subject to the stability pact, which generally limits the borrowing from municipalities.

⁸ Basing on existing examples, expected profits for this kind of investment from the market are around 10-20%, while the FI could accept around 5% IRR provided that state aid rules are respected.

energy consumption achievable by replacing existing light bulbs with more efficient and less energy-consuming LED lamps. An FI with 2x leverage could contribute to the achievement of almost 47.8% of the reduction in electricity consumption targeted for 2023, whilst an FI with 1.3x leverage could achieve 31.1%.

SUD FoF: invests in the SUD sector, specifically urban transport. It should be set up at national level to achieve a critical mass.

Table 7 SUD FoF - key characteristics of financial products

Financial product	Pricing	Maturity	Advantages	Final recipient
LT soft loans	0-2% (average pricing offered by JESSICA in similar initiatives)	Longer maturity (15/20 years) with possible additional grace period	<ul style="list-style-type: none"> Alleviate the lack of long term financing registered in the supply side analysis; Provide financing at the best available market conditions, in a market characterised by relatively high interest rates and heavy collateral requirements Unlock spending by public administration which is now under borrowing restrictions⁹ Reduce some of the uncertainty associated with investment projects during the construction phase, which can be quite complex due to their high price tag and very long project life 	<ul style="list-style-type: none"> Regional and local authorities, public service companies; Local authorities or companies established by local authorities which manage and organize public transport services Consortiums of public transport managers Consortiums of local (transport) authorities
MT soft loans	Lowest possible market values (e.g. 3%)	Longer maturity (10/15 years) with possible additional grace period	<ul style="list-style-type: none"> Alleviate the lack of long term financing registered in the supply side analysis Provide financing at the best available market conditions, in a market characterised by relatively high interest rates and heavy collateral requirements 	<ul style="list-style-type: none"> Project developers
Equity	It is reasonable to assume that the FI's target return on equity will be lower than the one sought by market investors ¹⁰	N/A (depending on the exit strategy for each equity investment)	<ul style="list-style-type: none"> Increase the capitalisation of ESCOs or SPVs facilitating their access to credit Boost the confidence levels of potential equity investors (experience in other countries has shown that equity investments in SMEs (ESCOs included) through public assistance schemes tend to attract private investors, especially in those countries where raising capital remains a challenge) FIs can help to augment the investment process by coordinating investment strategies, connecting international investors, and taking on some of the risk during the construction phase 	<ul style="list-style-type: none"> Project developers (PPPs/SPVs) and ESCOs

⁹ As laid down in the relevant legislation, the expenditure of resources from OPs (including the sums to be allocated through FI and with the exception of co-financing originating from State) are not subject to the Stability Pact. Therefore, such financial product could potentially bring liquidity to municipalities, including those subject to the stability pact, which generally limits the borrowing from municipalities.

¹⁰ Basing on existing examples, expected profits for this kind of investment from the market are around 10-20%, while the FI could accept around 5% IRR provided that state aid rules are respected.

Eligible projects: urban public transport. Potential projects would have to comply with the eligibility criteria under OPCC SO7ii2.

SUD FoF envelope: a contribution from the OPCC to the SUD FoF is recommended at **EUR 50-100 million**. With an additional contribution from financial intermediaries of **EUR 50-100 million**, the **total envelope of the SUD FoF could be projected at EUR 100-200 million**.

SUD FoF - expected results: it is assumed that with an OPCC contribution of EUR 100 million, 1.3x and 1.5x leverage could be achieved at fund level, with additional leverage of 1.78x at final recipient level. It is estimated that with the 1.3x leverage, investing about 29% of the total fund envelope could facilitate the achievement of the targets for the indicators “New passenger rolling stock” and “Electric vehicle filling stations” set for 2023. With the 1.5x leverage, 25% of the total envelope would need to be invested to achieve the 2023 targets.

RDI FoF: invests in R&D to support innovative products, processes and/or services at national level to achieve a critical mass. A separate ex-ante assessment for SMEs under TO3 recommends FIs providing loans and guarantees. The RDI FoF proposed under TO1 would provide financial products that could complement those offered to SMEs, mid-caps and large corporates.

Eligible projects: RDI projects complying with the eligibility criteria under OPCC SO 1b1 and 1b2.

Table 8 RDI FoF - key characteristics of financial products

Financial product	Pricing	Maturity	Advantages	Final recipient
MT/LT senior loans	Low interest Rates with extended grace periods	Longer maturity Maturity could be adapted to project needs	<ul style="list-style-type: none"> Flexible and could be used for various RDI investments Offers longer maturity than loans from commercial banks 	<ul style="list-style-type: none"> Innovative SMEs, mid-caps and larger corporates RDI companies
Quasi-equity (mezzanine)	Usually priced higher than senior debt	Maturity could be adapted to project needs	<ul style="list-style-type: none"> Subordinated loans - unsecured loans with a lower ranking compared to senior debt. They can help bridge equity requirements posed by banks vs equity contributions offered by project sponsors Participating loans – do not provide a fixed return. Their remuneration is linked to the performance the underlying business without affecting the ownership structure. They can offer investment incentives to lenders/investors, whilst protecting the ownership interests of borrowers 	<ul style="list-style-type: none"> Innovative SMEs, mid-caps and larger corporates RDI companies
Equity	It is reasonable to assume that the FI's target return on equity will be lower than the	N/A (depending on the exit strategy for each equity investment)	<ul style="list-style-type: none"> Bolster capitalisation of innovative and RDI companies, potentially facilitating their access to credit Bolster confidence levels of potential equity investors. Experience in other countries has shown that equity investments in SMEs through public assistance schemes tend to attract private investors, especially in those countries where raising capital remains a 	<ul style="list-style-type: none"> Innovative SMEs, mid-caps and larger corporates RDI companies

Financial product	Pricing	Maturity	Advantages	Final recipient
	one sought by market investors ¹¹		challenge <ul style="list-style-type: none"> Equity investments in RDI companies could help them bring in know-how (financial, technological, managerial) from the investors Loans could be blended with equity or quasi-equity instruments to tailor the funding (at commercially attractive terms) to the capital requirements and RDI risks of the company or project to be financed 	

RDI FoF envelope: a contribution from the OPCC to the RDI FoF is recommended at **EUR 30-50 million**. With an additional contribution from financial intermediaries of **EUR 30-50 million**, the **total envelope of the RDI FoF could be in the range EUR 60-100 million**.

RDI FoF - expected results: it is assumed that with an OPCC contribution of EUR 50 million, an overall leverage (both at fund and final recipient level)¹² of 1.5x and 2.5x could be achieved.

It is envisaged that, with an OPCC contribution of EUR 50 million, business expenditure on research and development could range between EUR 75 and 125 million. These investments are estimated to create between 235 and 141 Full Time Equivalent in the field of R&D, of which between 140 and 84 of researchers. R&D projects supported given the amount of investments envisaged ranges between 375 and 625.

Technical Assistance

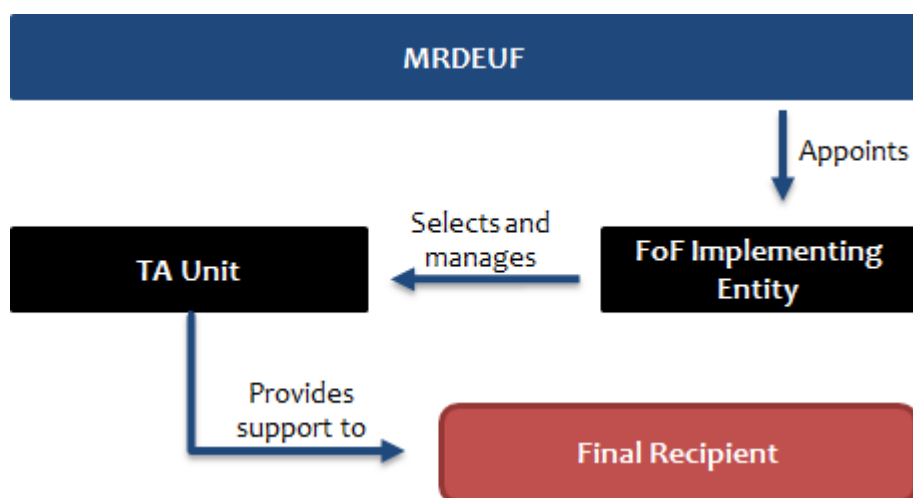
Given budget constraints and limited experience of Croatian public and private sectors in managing financial instruments in the investment areas of interest, it is recommended that technical assistance should be offered to projects that are expected to be financed with FIs to facilitate development of a robust project pipeline.

In line with the possibility envisaged by the CPR, it is strongly recommended that Technical Assistance is provided by the EE and SUD funds, both for the benefit of financial intermediaries and final recipients. Without prejudice to the possibility of delivering TA to financial intermediaries, it is recommended to focus TA's provision on final recipients, as this can be delivered through an FI and is likely to be more effective in facilitating the establishment of a project pipeline.

¹¹ Basing on existing examples, expected profits for this kind of investment from the market are around 10-20%, while the FI could accept around 5% IRR provided that state aid rules are respected.

¹² Benchmarks from Slovakian and Slovenian cases.

Figure 2 Proposed TA structure



TA will support final recipients with specific focus on:

- Conceptual development and structuring of a project
- Preparation of tendering procedures and contractual arrangements (when relevant)
- Assistance with project preparation (e.g. aggregation of projects to create a critical mass, energy audits, cost-benefit analysis, financial analysis and structuring)
- Assistance in ensuring conformity with EU policies.

Monitoring, Reporting and Evaluation system of the FI

As far **monitoring and reporting** are concerned, according to Annex IV to the CPR (Article 1(d) and Article 2(d)) provisions for monitoring of the implementation of investments and of deal flows including reporting by the FI to the financial intermediary and/or the MA, are the compulsory parts of each funding agreement and strategic document. The monitoring provisions should also be compliant and help MAs to meet their reporting requirements defined in Article 46 of the CPR. Article 46 “Report on implementation of financial instruments” of the CPR also sets out the requirements for the MA when reporting on operations comprising FIs to the Commission.

In this light, two basic elements are necessary to consider for the monitoring system:

- Result and output indicators defined by the OPCC to monitor the progress of the FIs;
- Standard financial indicators to assess the performance of the funds.

As far as the reporting is concerned, it could be done:

- **On a monthly basis** for key data such as total amounts disbursed, number of loans approved/signed/disbursed, total number of urban projects supported, total number of touristic projects approved, number of housing renovated under EE programmes.
- **On a quarterly basis** for more fine-tuned information such as split between different types of projects under each investment priority, the volume of savings for energy consumption, number of approved projects by region.

As for the **evaluation**, the CPR requires Managing Authorities to carry out evaluations which assess the effects of the ESIF programmes. More in details, a **mid-term evaluation** shall be carried out by July 1

2017 to measure the progress made in meeting the OPCC's objective and whether the resources of the OPCC have been used efficiently and an **end-period evaluation** shall be carried out by 31 December 2022, evaluating ex-post the impact and Union added value of the OPCC.

Provisions for updating the ex-ante assessment

The ex-ante assessment should be reviewed when the MA considers that it no longer accurately represents the market conditions existing at the time of implementation. Some of the factors that could necessitate the updating of the assessment are:

- Poor accuracy of the proposed targets compared to the observed results.
- Financial assistance through the established product/implementation structure is unable to meet effective demand (e.g. volumes too low).
- Inaccuracy in assessing the risk taken by the FIs: the risk profile of an FI is significantly higher than expected, leading to significant losses for the FI and jeopardising its revolving mechanism.
- Unexpected political risks: the MA could decide to deploy ESIF resources via FIs in those investment priorities which have not envisaged FI deployment before.
- Deterioration in economic conditions that could render FIs unsustainable.
- All market failures have been addressed and there is no further need for FIs.

The structure and the contents of the report are in line with the contents of the ex-ante assessment, as envisaged in article 37(2) of the CPR. A completeness checklist is provided in annex 14.

1 Introduction

1.1 Objectives and rationale of the study

The scope of the Assignment is to provide MRDEUF with evidence-based analysis and guidance to support the use of FIs in Croatia in the 2014-2020 programming period. The final deliverables provided at the end of the Assignment may be used by the Croatian authorities for the purpose of preparing an ex-ante assessment in line with Article 37 of the CPR or other studies that may be required to enable the Croatian authorities to take the necessary decisions regarding the design and implementation of FIs during the period 2014-2020 in the investment areas covered by the Assignment.

The scope of the Assignment is outlined below through Tasks and Sub-tasks:

- TASK 1: General considerations and guidance on the use of FIs in the Republic of Croatia;
- TASK 2: Specific guidance and analysis of the use of FIs in three main areas of application:
 - Task 2.1: Promoting private-sector investment into RDI in support of an innovative and competitive business and research environment;
 - Task 2.2: Promoting EE and the use of RE in (i) buildings - private and public, residential and non-residential; (ii) the improvement of industrial production processes;
 - Task 2.3: Promoting sustainable urban and territorial development through infrastructure, renewal and regeneration schemes, sustainable urban transport and other urban investments.
- TASK 3: High level guidance and analysis of the use of FIs to enhance access to information and communication technologies, with emphasis on encouraging private-sector investment into the delivery of the “last-mile” for broadband services.
- TASK 4: Conclusions and next steps.

Article 37 (2) of the CPR stipulates the required content of an ex-ante assessment around seven main areas, namely:

- a) Analysis of market failures or suboptimal investment situations and the estimated level and scope of public investment needs;
- b) Assessment of the value added of the FI, consistency with other forms of public intervention in the same market and possible state aid implications;
- c) Estimate of additional public and private resources to be potentially raised by the FI, including assessment of preferential remuneration when needed;
- d) Identification of lessons learnt from similar instruments and ex-ante assessments carried out in the past;
- e) Proposed investment strategy, including an assessment of its possible combination with grant support, options for implementation arrangements, financial products and target groups;
- f) Specification of expected results including measurement of indicators;
- g) Provisions allowing the ex-ante assessment to be reviewed and updated.

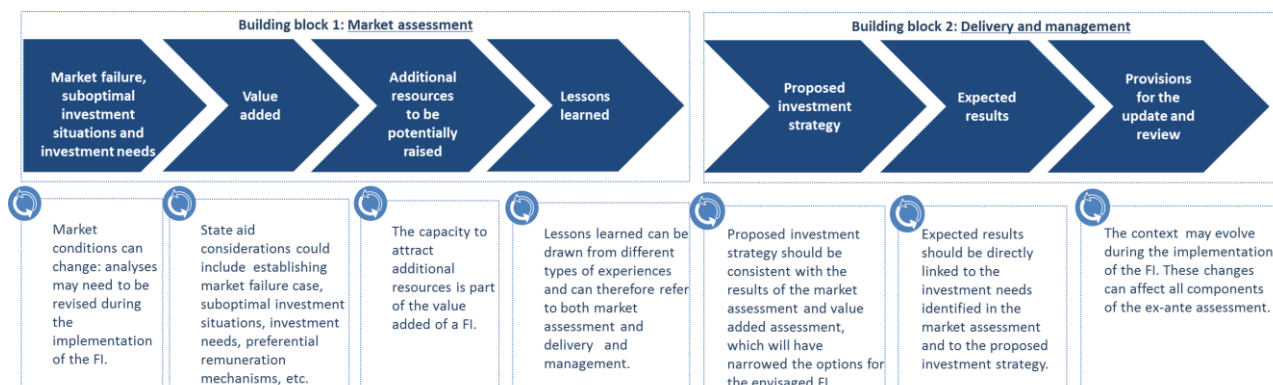
1.2 Structure of the study

Drawing from the *Ex-ante assessment methodology* published by the EC (2014)¹³, this Assignment has been carried out on an iterative basis across **two building blocks** as presented below:

¹³ Ex-ante assessment methodology for financial instruments in the 2014-2020 programming period – general methodology covering all thematic objectives – Volume I. Available at: http://ec.europa.eu/regional_policy/sources/thesefunds/fin_inst/pdf/ex_ante_vol1.pdf

- **Building Block 1: Market assessment;**
- **Building Block 2: Delivery and management.**

Figure 3 : Two building blocks in the ex-ante assessment



Source: Ex-ante assessment methodology for FI in 2014-2020 - General Methodology (Volume I)

The structure of the report follows the provisions of the aforementioned methodology and is in line with the contents of the ex-ante assessment, as envisaged in article 37(2) of CPR.

The structure of the study is outlined below with references to each article of the CPR.

- **Chapter 1** provides an outline of the study, describing its objectives, rationale and the methodological approach used to develop it;
- **Chapter 2** introduces the policy framework relevant to the use of FIs in the 2014-2020 programming period in Croatia, including the identification of investments which are most suitable for support via FIs;
- **Chapter 3** describes the economic context in Croatia, an essential first step before determining the existence of market failures and suboptimal investment situations;
- **Chapter 4** provides an analysis of the supply of financing available across all the sectors under analysis (Cfr. art. 37 (2)(a) of CPR);
- **Chapter 5** is one of the two core Chapters of the ex-ante assessment developed in sector-specific sub-sections that cover the crucial steps of the ex-ante analysis in **Building Block 1: Market assessment**, including:
 - **An analysis of market failures, sub-optimal investment situations, and investment needs** (Cfr. art. 37 (2)(a) of CPR) for policy areas addressed with a view to contributing to the achievement of specific objectives set out under a priority and to be supported through FIs. This part is analysed in the following Sub-chapters:
 - Sub-chapter 5.1.1 – for EE;
 - Sub-chapter 5.2.1 – for Sustainable Urban Development;
 - Sub-chapter 5.3.1 – for RDI;
 - Sub-chapter 5.4.1 – for Broadband
 - **An assessment of the value added of the FIs** (Cfr. art. 37 (2)(b) of CPR) considered to be supported by the ESIF. This part is analysed in the following chapters:
 - Sub-chapter 5.1.2 – for EE;
 - Sub-chapter 5.2.2 – for Sustainable Urban Development;

- Sub-chapter 5.3.2 – for RDI.
- **An estimate of additional public and private resources** (Cfr. art. 37 (2)(c) of CPR) that could be potentially raised by the FI down to the level of the final beneficiary (expected leverage effect), including an analysis of the consistency with other forms of public intervention addressing the same market. This part is analysed in the following chapters:
 - Sub-chapter 5.1.3 – for EE;
 - Sub-chapter 5.2.3 – for Sustainable Urban Development;
 - Sub-chapter 5.3.3 – for RDI.
- **An assessment of lessons learnt** (Cfr. art. 37 (2)(d) of CPR) from similar instruments and ex-ante assessments carried out by the Member State in the past, and how these lessons should be applied going forward. This part is analysed in the following chapters:
 - Sub-chapter 5.1.4 – for EE;
 - Sub-chapter 5.2.4 – for Sustainable Urban Development;
 - Sub-chapter 5.3.4 – for RDI.
- **Chapter 6** covers the crucial steps of the ex-ante assessment included in **Building Block 2: Delivery and management**, namely:
 - **The proposed investment strategy and implementation arrangement for the FI** (Cfr. art. 37 (2)(e) of CPR), covered in sub-chapter 6.1, that include:
 - **The proposed implementation arrangement for the FIs**, which includes, among others, a review of the options for implementation arrangements within the meaning of Article 38 of the CPR as well as the role that TA can play (sub-chapters 6.1.2 6.1.6);
 - **The proposed investment strategy**, which includes the financial products to be offered, the final recipients targeted, the envisaged combination with grant support as appropriate (sub-chapter 6.1.5);
 - **Aid and state aid implication**, (Cfr. art. 37 (2)(b) of CPR), presented in sub-chapter 6.1.7.
 - **A specification of the expected results** (Cfr. art. 37 (2)(f) of CPR), analysed in sub-chapter 6.2, which details how the FI is expected to contribute to the achievement of the indicators set out for each specific objective under the relevant priority;
 - **Provisions allowing for the ex-ante assessment to be reviewed and updated** (Cfr. art. 37 (2)(g) of CPR), covered in chapter 6.4, which outlines the main elements that might bring the MA to review or update the present report.

This study is compliant with the requirements of the CPR. **Ex-ante assessment completeness checklist of the art. Article 37(2) and Article 37 (3) of the CPR is presented in annex 14.**

1.3 General methodology¹⁴

The study is built on the basis of data and information collected through:

- **A review of the existing documentation** for the four sectors analysed. This includes past sectoral assessments and evaluations, statistical data, policy documents, etc.;
- **Interviews with the relevant stakeholders**, covering both the demand-side and the supply-side, including the representatives of MRDEUF and other Ministries;
- **Workshops** with the representatives of Croatia's major cities and a selection of SMEs, covering the

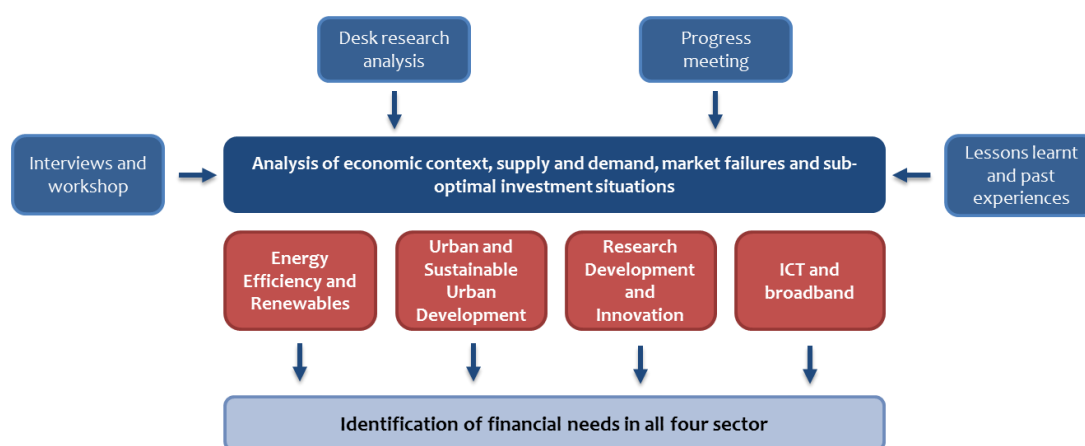
¹⁴ More details on the methodological approach adopted in the study is presented in the inception report.

demand-side;

- **Progress meetings** with the Steering Committee members to discuss, complete, adjust and validate the methodology and the progress of the study.

The findings of the different streams of data and information collection have been synthesised to provide material for an analysis of the economic context in Croatia, discuss the different aspects of supply and demand in the country and identify the relevant market failures and sub-optimal investment situations. Then the financing needs of each sector have been identified to provide recommendations for the possible set-up of FIs in Croatia over the 2014-2020 programming period.

Figure 4 : The methodological approach to the development of this Assignment¹⁵



Source: Pwc elaboration, 2015

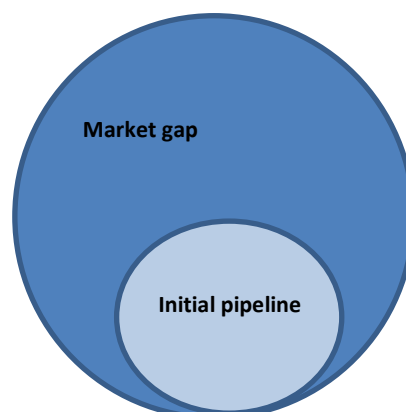
For each analysed sector, the study identifies **priority target areas for FI intervention**, i.e. specific investment areas that show a gap in the financing market (**market gap**). Aspects considered in the analysis are both quantitative (not enough resources potentially available from different supply sources to cover the estimated demand) and qualitative (financing products offered are not suitable for the specific market conditions/projects characteristics).

Beside the identification of a market gap, the study **verifies the existence of a concrete set of projects** for which promoters could not find any source of finance in the market so far (the approach which was followed is presented below).

¹⁵ As recommended in the EC Ex-ante assessment methodology: <http://www.fi-compass.eu/resources/product/64>

Such projects, which are also part of the identified market gap as exemplified in the figure below, could form an initial pipeline of investments for future FIs (**initial project pipeline**).

Figure 5: Market gap and initial pipeline



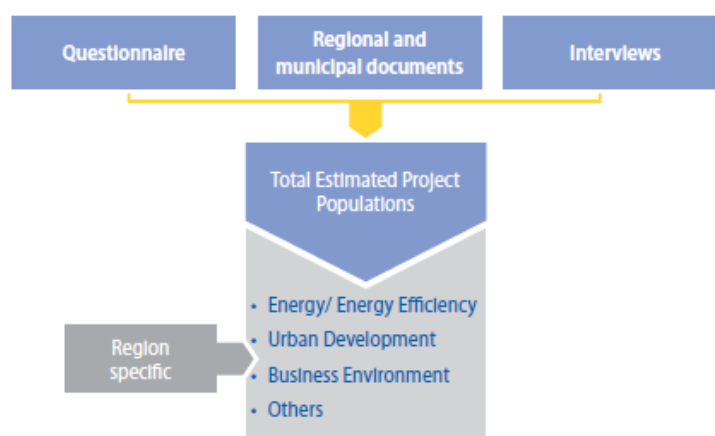
Please note that all amounts have been converted from HRK to EUR, with the exchange rate used of 1 EUR = 7.65 HRK¹⁶

1.4 Specific methodology used for the identification of the initial project pipeline

The identification of **initial project pipelines** in the analysed sectors follows the methodology described below:

- 1) **Collection of information from different sources**, as highlighted in the figure below.

Figure 6: Sources of information



Source: Ex-ante assessment methodology for financial instruments in the 2014-2020 programming period.

- 2) **Classification of projects.**

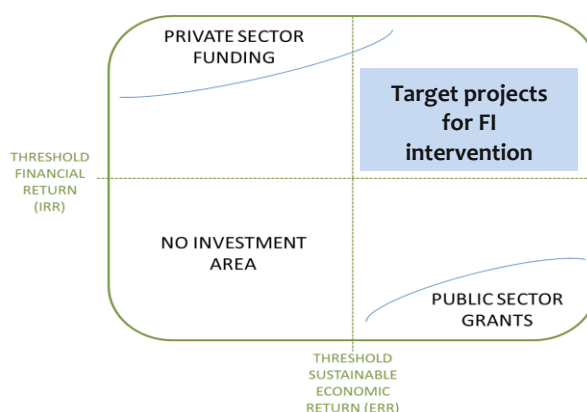
¹⁶ Average exchange rate for Croatia across 2014, according to EIB forex rate. Information available through the following link:

<https://www.ecb.europa.eu/stats/exchange/eurofxref/html/eurofxref-graph-hrk.en.html>

Assuming that the key economic metric of a project is its economic rate of return (ERR), measured through tools like Cost-Benefit Analysis, and its key financial performance metric is its internal (financial) rate of return (IRR), projects can be classified into:

- **Type A:** project with high financial as well as economic returns. This is the “private sector funding” area, where no market failure can be identified.
- **Type B:** projects that offer some financial return, but not enough to reach the minimum rate required by the market (IRR). At the same time they show a strong economic return (ERR) reflecting in principle their contribution to the objectives of the OPCC. These are the “target projects for FI intervention”.
- **Type C:** projects which show a relevant economic performance (ERR), but cannot generate a sufficient financial remuneration (IRR). These projects can be primarily supported by “public sector grants”. In specific cases, projects initially belonging to this category can be improved in terms of financial performance to then move to Type B.
- **Type D:** projects whose both the financial and economic performances are inadequate. No investment should be undertaken by either the private or public sector (“no investment area”).

Figure 7: Classification of projects¹⁷



The table above is based on “theoretical” demarcation criteria (as previously stated, the expected financial rate of return and the economic rate of return of a potential project). However, “empirical” experience shows that there might be cases where:

- Even in spite of a negative (or null) financial rate of return, should the project promoter be bankable, it would be possible to consider financing such project with a FI;
- A project could be good enough (i.e. have a relatively high financial rate of return) to be funded by the private sector but fail to raise capital because it has been developed by a promoter that for specific reasons (e.g. existing banking limits reached, etc.) has no access to credit or other forms of capital; then a FI could be used.

The key here is that the investment strategy of a potential FI should be targeting the identified investment area, but be flexible enough to allow at opportunistic level to also finance projects falling outside the designed investment space.

¹⁷ Economic performance of projects is measured on the horizontal axis, while financial performance on the vertical axis. Hurdle rates of projects – i.e. minimum acceptable economic performance and minimum acceptable financial performance – are identified by the blue lines.

3) Identification of initial project pipelines.

Subsequently the observed projects (as per the step above) were further clustered on the basis of the following approach:

- a. Projects classified as Type B (or Type C with potential to improve financial performance) are included in the initial project pipeline.
- b. Assuming the investment period for FIs is 8 years (2016-2023), projects in the initial pipeline are segmented between those expected to be ready for financing in the short term (up to 2 years), in the medium term (up to 5 years) and in the long term (more than 5 years), on the basis of their current stage of development / implementation.

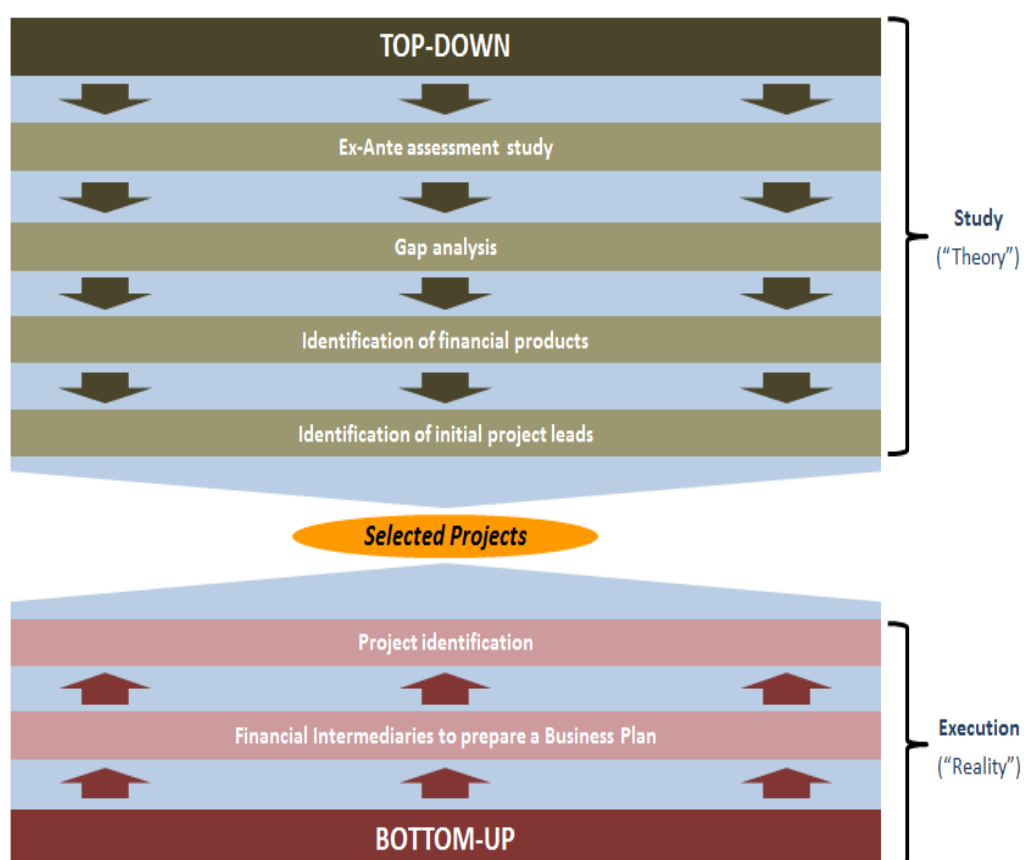
It is worth mentioning that the implementation of FIs can boost the development process of existing and new projects, as it happened in past experiences (e.g. out of the 20+ projects ultimately financed by the EE/RE Urban Development Fund established within the JESSICA initiative in Sardinia, Italy, no one had reached the final development stage when the JESSICA initiative was launched by the MA in 2012).

4) Limits of the exercise:

- **Partial observation.** The initial project pipeline has been identified in the relatively limited timeframe of this Assignment.
- **Inhomogeneous / incomplete information provided by stakeholders.** Level of details provided by stakeholders is not sufficient to carry out a detailed examination of each project in the pipeline.
- **No review of bankability / financial sustainability of projects** carried out, since it is out of the scope of an ex-ante assessment.
- **Preliminary exercise, not representing the final project pipeline.** The identification of a project pipeline suitable for FIs investment takes place through three stages, with increasing level of details / concreteness. The exercise developed for this assignment represents only the first stage. In details:
 - i. Stage 1 (study about FIs): a preliminary pipeline of projects to serve as examples is identified in the ex-ante evaluation;
 - ii. Stage 2 (selection of financial intermediaries): a more detailed project pipeline is identified in the context of selecting the financial intermediaries which will then operate on the ground to implement the FIs (the business plan which they will be asked to present will have to include a project pipeline originated by them);
 - iii. Stage 3 (launch of FIs): the final project pipeline is then established by the financial intermediaries at the launch of FIs on the market.

The figure below summarises the process described above.

Figure 8: Development of the project pipeline



2 Policy guidance on the use of FIs in Croatia

This study analyses the possibility of implementing FIs within the OPCC, which has an overall available budget of ca. EUR 7.81 billion¹⁸. The analysis, as agreed with the MA, concentrates on the TOs 1, 3, 4 and 7. The total amount of resources allocated to the analysed TOs is ca. EUR 4.04 billion¹⁹.

2.1 Energy Efficiency and the use of renewable energy in (i) buildings - private and public, residential and non-residential; (ii) the improvement of industrial production processes

The OPCC allocates approximately EUR 625²⁰ million to the implementation of measures under TO4.

Under TO4, the OPCC envisages the use of FIs for:

- IP 4b - promoting EE and RE use in industry and enterprises, and specifically for:
 - SO 4b1 - Increasing EE and use of RE in **manufacturing industries** (iron and steel, non-ferrous metal, chemical, glass, pottery and building material, ore-extraction, textile, leather and clothing, paper and printing, engineering and other metal and other industries excluding food, drink and the tobacco industry).
 - SO 4b2 - Increasing EE and use of RE in the **private service sector** (tourism and trade). Beneficiaries are enterprises (including both larger enterprises and SMEs).
- IPs 4c - supporting EE, smart energy management and RE use in public infrastructure, including in public buildings and in the housing sector, and specifically for:
 - SO 4c1 - Reduction of energy consumption of the **public sector buildings**. Main groups of beneficiaries are owners of public buildings, regional and local authorities, and public service companies.
 - SO 4c2 - Reduction of energy consumption of the **residential buildings** (multi-apartment buildings and family houses). The main groups of beneficiaries are the owners of residential buildings.

The following table presents the most relevant information with regard to the analysed IPs within TO4. In particular:

- The column entitled “Resources allocated per IP (EUR)” shows the overall allocation by a given IP (within TO4);
- The column entitled “Resources allocated per SO (EUR)” and those following to the right relate to the specific objectives for which the study analyses the possibility of FIs implementation.

¹⁸ EU fund plus national counterpart (table 18c-CPCC adopted)

¹⁹ EU fund plus national counterpart (table 18c-CPCC adopted)

²⁰ EU fund plus national counterpart (table 18c-CPCC adopted)

Table 9: Allocation of resources from the OPCC 2014-2020 in the Energy Efficiency and Renewable Energy sector (TO4)

TO	ESIF	Relevant investment priorities (IP)	Resources allocated per IP (EUR)	Relevant specific objectives	Resources allocated per SO (EUR)	Target group/beneficiaries	Planned use of FI
4	ERDF	4b - Promoting EE and RE use in enterprises	100,000,000	4b1 - Increasing EE and use of RES in manufacturing industries	60,000,000	Enterprises (including SMEs and larger enterprises)	Yes
				4b2 - Increasing EE and use of RES in private service sector (tourism and trade)	40,000,000	Enterprises (including SMEs and larger enterprises)	Yes
		4c - Supporting EE, smart energy management and RE use in public infrastructure, including in public buildings, and in the housing sector	411,810,805	4c1 - Reduction of energy consumption of the public sector buildings	211,810,805	Public bodies / institutions / bodies (owner of public buildings)	Yes
				4c2 - Reduction of energy consumption of the residential buildings [...]	100,000,000	Physical persons (owners of residential buildings / houses) as final recipients	Yes
Total			511,810,805		411,810,805		

2.2 Sustainable urban and territorial development

The OPCC allocates approximately EUR 2.11 billion for the implementation of measures under TO4 and TO7 (ca. EUR 625 million for TO4 and ca. EUR 1.48 billion for TO7)²¹.

Under TO4, the MA expressed its interest to investigate whether FIs could be implemented under the SO 4c4, in particular with regard to the improvement of EE in public lighting systems, although the use of such instruments for this purpose is not planned in the OPCC. Possible projects include the replacement of the current (old) lights with more efficient ones, and a wider introduction of LED technology.

Under TO7, the MA intends to examine the feasibility of using FIs for the specific objective 7ii2 under the IP7ii (developing and improving environmentally-friendly - including low-noise - and low-carbon transport systems, including inland waterways and maritime transport, ports, multimodal links and airport infrastructure, in order to promote sustainable regional and local mobility).

Possible projects include:

- Development of infrastructure (among which ITS installations);
- Development of park & ride infrastructure and systems (including intermodal terminals, development of facilities, car parkings, etc.);
- Purchase and modernisation of the passenger rolling stock (trams, eco-buses, light rail) with low CO₂ emissions.

The following table presents the most relevant information with regard to the analysed IPs within TO4 and TO7. In particular:

- The column entitled “Resources allocated per IP (EUR)” shows the overall allocation by a given IP;
- The column entitled “Resources allocated per SO (EUR)” and those following to the right relate to the specific objectives for which the study analyses the possibility of FIs implementation.

²¹ EU fund plus national counterpart (table 18c-CPCC adopted)

Table 10: Allocation of resources from the OPCC 2014-2020 in the Urban and Sustainable Urban Development sector (TOs 4,7)

TO	ESIF	Relevant investment priorities (IP)	Resources allocated per IP (EUR)	Relevant specific objectives	Resources allocated per SO (EUR)	Target group/beneficiaries	Planned use of FI
4	ERDF	4c - Supporting EE, smart energy management and [...]	411,810,805	4c4 - Improvement of the efficiency of the public lighting system	20,000,000	Regional and local authorities, public service companies	No
7	CF	7ii - Developing and improving environmentally-friendly (including low-noise) and low-carbon transport systems [...]	350,000,000	7ii2 - To increase the number of transported passengers in urban public transport	170,000,000	Local authorities or companies established by local authorities which manage and organize public transport services; consortiums of public transport managers can apply for financing as well as consortiums of local authorities	Yes
Total			761,810,805		190,000,000		

2.3 Private-sector investment into RDI in support of an innovative and competitive business and research environment

Both TOs 1 and 3 relate to investments in RDI to support an innovative business and research climate. However, as the possibility of implementing FIs under TO3 has already been investigated through a different ex-ante assessment report²², this study will focus only on TO1. The OPCC allocates approximately EUR 782 million to the implementation of measures under TO1.

Under the TO1, the use of FIs is envisaged for IP 1b (increase of RDI activities of enterprises and business sector through creation of a favourable innovation environment) and for the SOs 1b1 and 1b2. The main target groups and beneficiaries related to the IP1b are SMEs, large enterprises, groups of enterprises, including clusters and consortia, in particular those operating within sectors identified under the Croatian S3 Strategy (Health and quality of life, Energy and sustainable environment, Transport and mobility, Security and Agro-food and Bio-economy).

The following table presents the most relevant information with regard to the analysed IP 1b within TO1. In particular:

- The column entitled “Resources allocated per IP (EUR)” shows the overall allocation by a given IP;
- The column entitled “Resources allocated per SO (EUR)” and those following to the right relate to the specific objectives for which the study analyses the possibility of FIs implementation.

²² ESEP Consortium (2014) Ex-ante Assessment Report – Financial Instruments Business Competitiveness, Employment, Social Enterprise.

Table 11: Allocation of resources from the OPCC 2014-2020 in the RDI sector (TO1)

TO	ESIF	Relevant investment priorities (IP)	Resources allocated per IP (EUR)	Relevant Specific Objectives (SO)	Resources allocated per SO (EUR)	Main beneficiaries/target groups	Planned use of FI
1	ERDF	1b – Promoting business investment in R&I, developing links and synergies between enterprises, research and development centres [...]	330,470,426	1b1 – Increased development of new products and services resulted from R&D activities	205,000,000	SMEs; large enterprises; groups of enterprises; including innovation clusters and consortiums and as possible partner research and knowledge-dissemination organisations, particularly operating in sectors identified under Croatian S3.	Yes
				1b2 – RDI activities of business sector increased [...]	125,470,426	Legal entities operating as Centres of Competence (founded by local or regional government, in cooperation with scientific and/or research institutions, clusters or enterprises operating in the most prospective sectors recognized locally, and other public institutions).	Yes
Total			330,470,426		330,470,426		

2.4 Enhance access to ICT, encouraging private-sector investment into the “last-mile” for broadband services

The resources available for TO2 amount to ca. EUR 362 million²³ over the 2014-2020 programming period.

Under TO2, the OPCC envisages the use of FIs for IP2a “extending broadband deployment and the roll-out of high-speed networks and supporting the adoption of emerging technologies and networks for the digital economy”. Beneficiaries might include local and regional authorities (municipalities, towns and counties) from white NGN areas, while individuals and enterprises represent the target groups. Among the listed target groups, priority will be given to business zones, business support institutions, and enterprises.

Under the scheme for the development of NGN access last-mile networks, priority will be given to complex project proposals, ensuring the introduction of fibre infrastructure (FTTx) in the last-mile network segment and proposed by the local and regional authorities, which:

- Cover areas with higher demand prospects (with respect to existing internet connections or broadband penetration);
- Assure connections to targeted business zones, business support institutions and enterprises;
- Show higher socio-economic impact of availability of NGA access networks, especially the impact related to business activity in the project area.

Please note: MRDEUF has consulted the EC on state aid matters related to the use of ESIF to support last-mile broadband projects. Currently (before receiving a formal response from the EC) the provision of funding at sub-commercial terms in this investment area is not permitted. However, an instrument providing support at market conditions would not normally be considered as state aid, and so an assessment of the possible use of FIs in this investment area can be done in this study.

The following table presents the most relevant information with regard to the analysed IP within TO2. In particular:

- The column entitled “Resources allocated per IP (EUR)” shows the overall allocation by a given IP;
- The column entitled “Resources allocated per SO (EUR)” and those following to the right relate to the specific objectives for which the study analyses the possibility of FIs implementation.

²³ ESEP Consortium (2014) Ex-ante Assessment Report – Financial Instruments Business Competitiveness, Employment, Social Enterprise.

Table 12: Allocation of resources from the OPCC 2014-2020 in the ICT and broadband sector (TO2)

TO	ESIF	Relevant investment priorities (IP)	Resources allocated per IP (EUR)	Relevant specific objectives	Resources allocated per SO (EUR)	Beneficiaries/target groups	Planned use of FI
2	ERDF	2a - extending broadband deployment and the roll-out of high-speed networks and supporting the adoption of emerging technologies and networks for the digital economy	209,370,040	2a1 – Development of NGN broadband infrastructure in areas without sufficient commercial interest for investments in NGN broadband infrastructure, for maximum increase of social and economic benefits	209,370,040	Local and regional authorities (municipalities, towns and counties) from white NGA areas / Citizens and enterprises (particularly business zones, business support institutions and enterprises)	Yes
Total			209,370,040		209,370,040		

2.5 Technical Assistance

The OPCC allocates ca. EUR 236 million to provide TA in the period 2014-2020. The key objectives of the TA actions within the OPCC are to increase administrative capacity for future Cohesion Policy implementation, adopt a better strategic approach in the development of projects, and build up more robust project pipelines.

The main types of TA actions described in the OPCC are: strengthening administrative and technical capacities, building project pipelines, raise public awareness, support studies on several sectors, enhance planning and coordination, etc. TA resources could therefore be relied upon when FIs are being set up, especially considering that **previous experiences in other EU MSs shows how TA can play a key role in assisting MAs when implementing revolving funds**²⁴. TA could be delivered in various ways, e.g. through a separate body within an institutional entity, or a body appointed directly via the new FI.

²⁴ This report provides some examples of where TA may be critical and of lessons learnt from previous TA-supported FIs implementations (e.g. the EPEEF TA in the chapter about EE/RE in public building and industrial production processes).

3 Croatian economic context

This section of the study contains an **overview of the economic context** in Croatia. As recommended in the *Ex-ante assessment methodology for financial instruments*, the assessment of market failures and suboptimal investment situations needs to be seen against the backdrop of the wider economic context, e.g. GDP growth, unemployment (for more details see Annex 1: Croatian economic context).

Croatia has been severely hit by the financial crisis and the deleveraging of the banking sector, which have resulted in a contraction of new investments and affected competitiveness and employment. Indeed, **Croatia has been in recession since 2009** and, consequently, the Croatian real GDP per capita is expected to barely exceed 2006 levels only in 2016, suggesting a lost decade of growth. However, according to the recent forecast by the European Commission²⁵, the recession is expected to end in 2015.

Gross Domestic Product

After the real GDP declined by 0.9% in 2013 and by 0.4% in 2014²⁶, **the European Commission forecasts that the Croatian recession will come to an end** in 2015, with a weak GDP growth by 0.2% for the year, to be achieved exclusively from net exports. Standard and Poor's (S&P)²⁷ also anticipated the end of the recession in the second half of 2015, with real GDP growth at 0% by the end of the year. S&P expect a gradual rise of GDP after 2015, with GDP growth of 1% in 2016.

The decline in investment has been one of the main contributors to the continuing recession. Investments in 2013 were more than a third lower than the 2008 peak and have stagnated in 2014. The investment share in GDP has also decreased from 22% in 2008 to 13.5% in 2013. Despite the existing investment opportunities in Croatia within sectors such as tourism, infrastructure and energy²⁸, **in 2013 FDI was equal to only 1/5th of the level achieved in 2008**, mainly due to the ongoing economic crisis (which determined a lower profitability of foreign-owned domestic enterprises and banks) and the lack of structural reforms²⁹.

Along with the decline in investments, **one of the main drivers of Croatia's GDP contraction has been the reduction in personal consumption resulting from high unemployment and deleveraging of households.**

Employment

The unemployment rate in Croatia increased from approximately 10% in 2007 to around 17.3% in 2013³⁰, with youth unemployment up from 20.3% in 2007 to 50% in 2013³¹.

²⁵ European Economic Forecast, Winter 2015. Available at: http://ec.europa.eu/economy_finance/eu/forecasts/2015_winter/hr_en.pdf

²⁶ According to the Croatian Bureau of Statistics

²⁷ Source of information is based on Standard & Poor's analysis of Croatia from 2015/01/23 available on the following link: <http://www.standardandpoors.com/prot/ratings/articles/en/us/?articleType=HTML&assetID=1245380097484>

²⁸ A detailed list of the projects can be found on the following link: <http://www.aik-invest.hr/wp-content/uploads/2013/12/Investment-Opportunities-Catalogue-December-2013.pdf>

²⁹ Croatian National Bank; Annual report 2013; Available at: <http://www.hnb.hr/publikac/godisnje/2013/e-god-2013.pdf>

³⁰ European Economic Forecast, Winter 2015

According to the data of the European Commission, the general unemployment in 2014 decreased to around 17% and is forecast to drop further to 16.8% in 2015. However, it appears that the decline of registered unemployment is driven by discouraged job seekers leaving the labour force either permanently or temporarily, including by emigration, and is unlikely to generate additional spending capacity in the economy.

Public debt

The increasing general government³² gross debt has placed additional pressure on funding conditions for the Croatian public sector, as well as on country's risk premium.

According to the EC, general government gross debt in 2014 amounted to 81.4% of GDP and is expected to peak in 2016 at 88.7% of GDP. Public debt reached HRK 261 billion (EUR 34.12 billion) in ESA 2010³³ terms at end-October 2014. This increasing ratio is mainly the result of the persisting budget deficit and continued GDP decline.

According to the EC, the general government deficit in 2014 is expected to stand at 5.0% of GDP. Expenditure appears to have evolved mostly in line with the authorities' plans, except for some additional outlays from flood-related reconstruction costs in the second half of 2014. In 2015, changes in the personal income tax law leading to lower tax revenues for cities are expected³⁴ to push the budget deficit up to 5.5% of GDP³⁵, to then remain stable in 2016. The estimated structural deficit³⁶ is in the tune of 3.5% of GDP in 2014, and is expected to deteriorate in 2015 and 2016. According to S&P, Croatia can meet the GDP 3% deficit target (euro convergence) only in 2018, and not in 2016 as planned.

In addition, according to S&P³⁷ the country's net external liability position is relatively high, so that Croatia will continue to depend on external financing in order to service its debt. The general government has increased external leveraging over 2012-2014, with external debt set to reach an estimated 29.8% of GDP at end-2015, up from 9.5% in 2008. Foreign currency denominated debt is 68%, making government's position more challenging.

Exchange rate

The Croatian National Bank (CNB) follows a managed floating exchange rate regime, where the exchange rate of the domestic currency is not rigidly fixed against a foreign currency or basket of currencies, but is mostly determined by the foreign exchange market.

³¹ Eurostat; Available at: <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tipslm8o&plugin=1>

³² General government consists of: Central government, Local government and Social security funds

³³ European system of national and regional accounts in the European Union (referred to as "ESA 2010"), enforceable (by Regulation (EU) No 549/2013) from 1st of September 2014 onward, replacing the previous ESA95.

³⁴ European Economic Forecast, Winter 2015

³⁵ Ibidem.

³⁶ The actual budget deficit net of the cyclical component, one-offs and other temporary measures

³⁷ Source of information is based on Standard & Poor's analysis of Croatia from 2015/01/23, available on the following link: <http://www.standardandpoors.com/prot/ratings/articles/en/us/?articleType=HTML&assetID=1245380097484>

According to S&P, the aforementioned managed floating exchange rate policy limits monetary policy flexibility as does the highly euroised economy (more than 70% of loans and more than 60% of deposits are denominated in or linked to foreign currency, predominantly the euro).

Credit rating

According to Moody's Investor Service, Croatia's sovereign rating is Ba1, reflecting the vulnerability of government finances to the slow pace of recovery from a multi-year recession, exacerbated by deleveraging and a loss of competitiveness. Standard & Poor's believe that external balance will remain stable and fiscal consolidation will be facilitated by a favourable interest rate environment and future policy rigour under the European Commission's excessive deficit procedure. On that basis **Standard and Poor's issued a 'BB' long-term** and a 'B' short-term ratings on Croatia, with a stable outlook.

In essence, **the credit standing of Croatia will be determined by the success of the structural and fiscal reforms that the country is expected to implement in the near future.** On the one hand, the current short- and long-term debt ratings reflect the level of net general government debt and the slow pace of structural and fiscal reforms, which hamper the resumption of economic growth and cast doubt over the long-term sustainability of Croatia's public finances. On the other hand, those same ratings take into account the medium-term opportunities arising from Croatia's accession to the EU (e.g. new growth areas, improvement of competitiveness, access to external funding, productivity enhancements).

The introduction of FIs is expected to contribute to an overall enhancement of the economic conditions in Croatia (including the employment rate) by improving the quality of projects, leveraging private investment in public-interest objectives and combining more efficiently grants with revolving instruments (as explained more in detail later in this report).

4 Supply side analysis across the four investment areas

The supply-side analysis presented in this Chapter covers the existing supply of finance to support investment areas targeted for possible FI assistance, namely EE/RE, SUD, RDI and ICT. The Chapter includes an overview of the banking sector in Croatia and an analysis of the available financial products, with a specific focus on lending to central government, municipalities, enterprises and households. This is followed by an overview of the supply of finance provided by other market players, both international (i.e. EIB, EBRD, IFC, World Bank) and national (HBOR, HAMAG-BICRO). Finally an overview of the Croatian capital market and of specialised funds (e.g. EPEEF, SIIF, EIB-supported funds) is provided, followed by a summary highlighting supply-side market weaknesses that may contribute to cause sub-optimal investment situations in the areas under consideration.

4.1 Banking market in Croatia

4.1.1 Overview

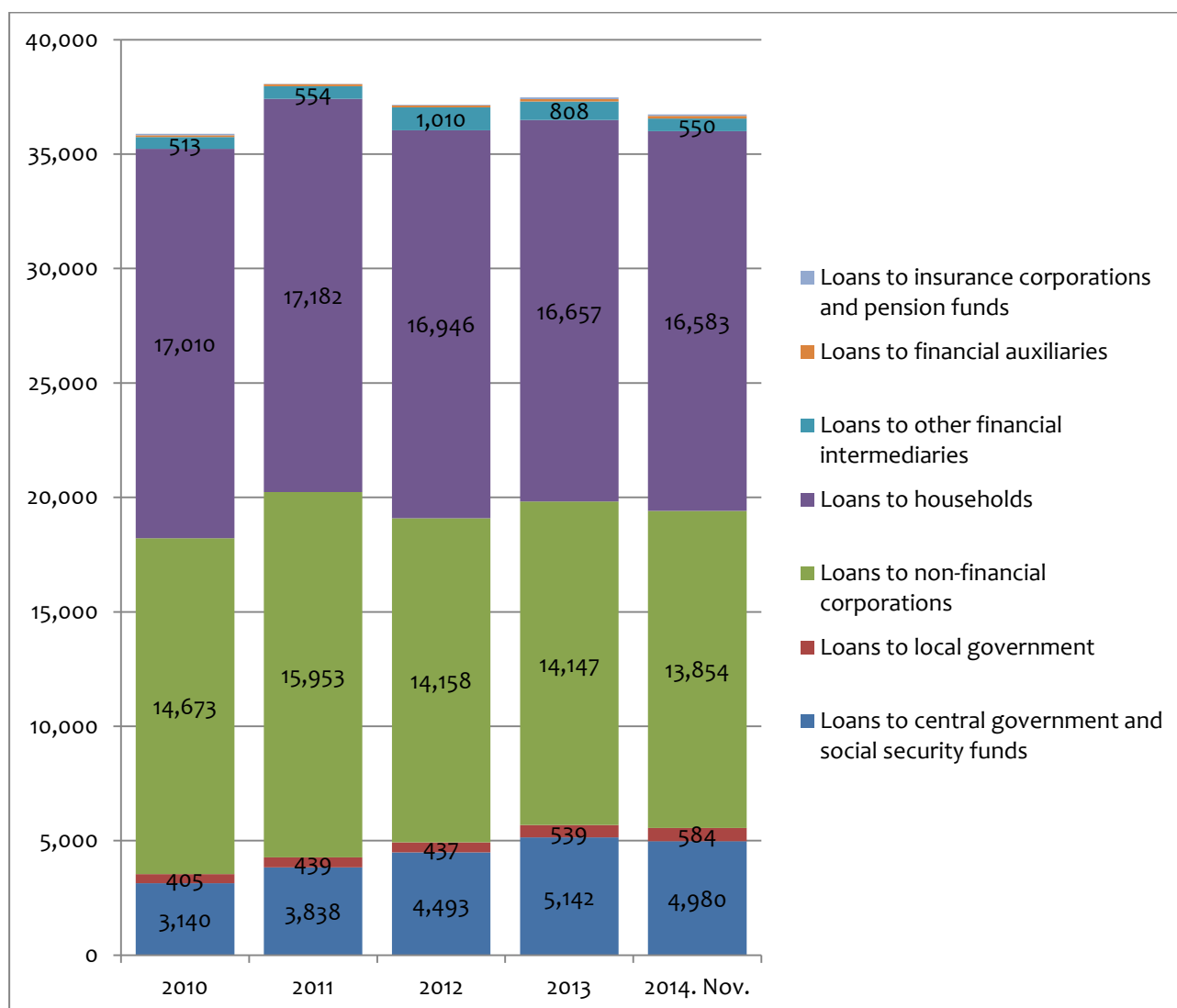
There are 28 banks³⁸ operating in Croatia. Two are state-owned, 11 are private domestically-owned and 15 private foreign-owned. In addition, there are also 5 housing savings banks and 26 credit unions³⁹.

Loans are the most popular⁴⁰ financial product offered by the banks. The figure below shows the total volume of loans outstanding from credit institutions.

³⁸ According to CNB http://www.hnb.hr/supervizija/esupervizijabanke_i_stedionice.htm (including the only savings bank Tesla štedna banka d.d), January 2015

³⁹ Please note that annex 3 provides a comprehensive breakdown of the relevant banking products.

Figure 9: Distribution of credit institutions' loans by domestic institutional sectors from 2010 to November 2014 (end period in million EUR)



Source: Croatian National Bank; Bulletin 210; January 2015

As shown above, after a significant increase in 2010-2011 across all the sectors, since 2012 there has been a decline in lending to non-financial corporations and households (the two largest ones), caused by the continuing economic and financial crisis, while in contrast lending to local⁴¹ and central government⁴² and to social security funds^{43,44} has increased over the same period. It should be noted, however, that lending to local government remains low in absolute terms; as explained below, this is due to a number of challenges encountered by municipalities seeking to obtain financing such as legal debt limits,

⁴¹ Local government includes units of local and regional self-government and institutional units established and controlled by the local government.

⁴² The central government consists of state administration bodies (ministries, offices of the Government of the Republic of Croatia, state administration organisations and state administration offices in counties) and Croatian Motorways, Rijeka – Zagreb Motorway, Croatian Roads, Croatian Waters, Croatian Radiotelevision and Croatian Railways Infrastructure.

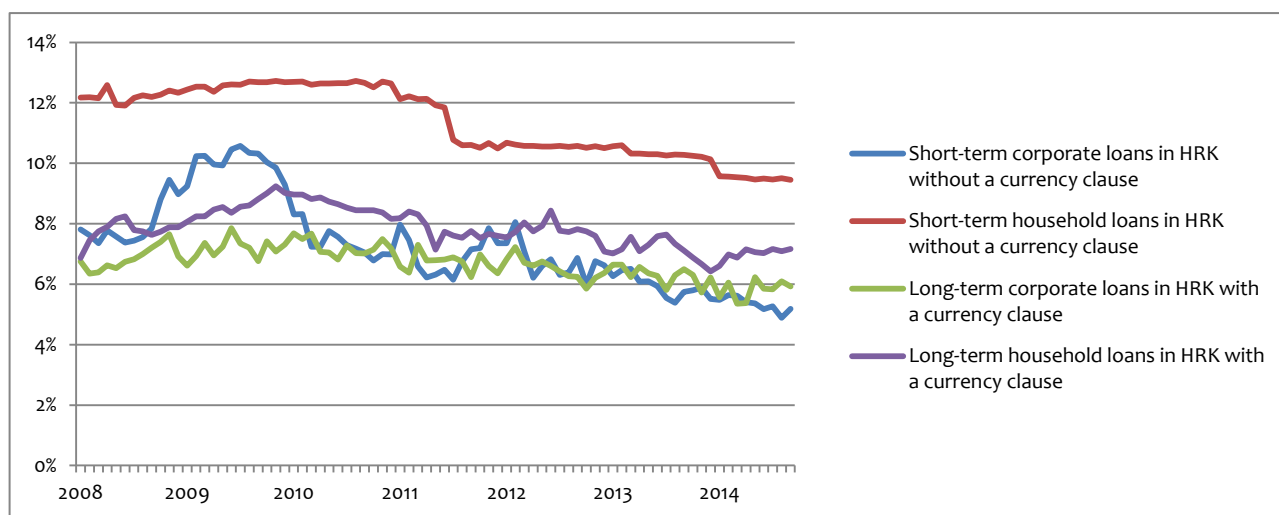
⁴³ Social security funds include the Croatian Pension Insurance Administration, the Croatian Institute for Health Insurance and the Croatian Employment Service.

⁴⁴ The reported increase was significantly affected by changes in sector classification, i.e. the transfer to the European System of Accounts (ESA 2010) in 2014, the transfer of shipyards' debt to the public debt of the Republic of Croatia in 2012, as well as by the increase of the EUR/HRK exchange rate.

volatile revenues and in some cases a lack of experience in dealing with the financial sector (e.g. low capacity in smaller municipalities).

The contraction in the volumes of loans to non-financial corporates and households has been accompanied by a decline in interest rates, as shown in the figure below. Moreover, in the period from 2008 to the end of 2009, at the outbreak of the crisis, most of the interest rates peaked, followed by a downward trend which continued until the end of 2014.

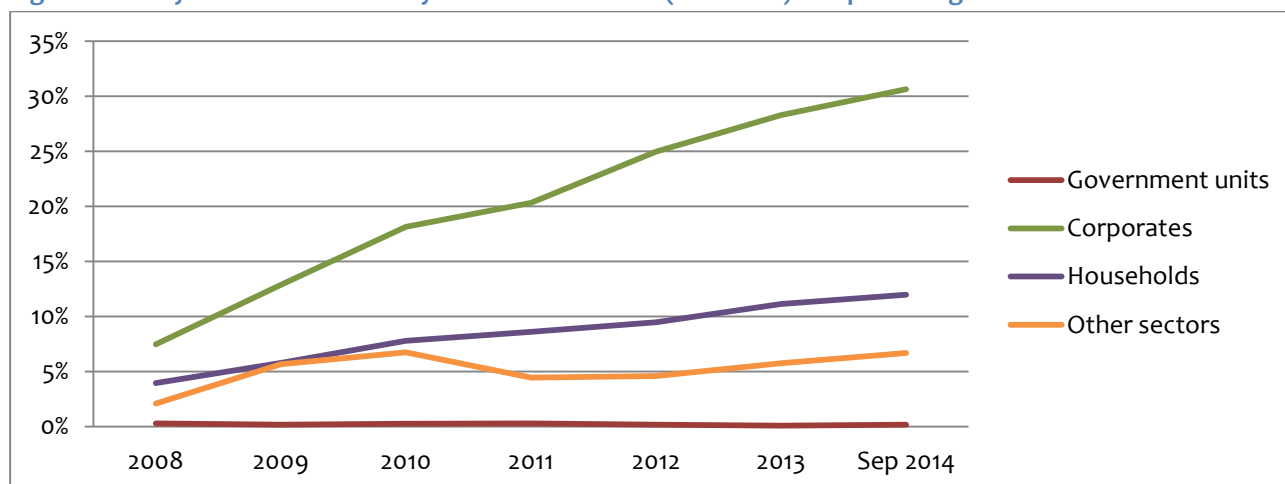
Figure 10: Average lending interest rates of credit institutions⁴⁵ over 2008-2014



Source: Croatian National Bank 2015

From a qualitative perspective the long-term recession has caused a gradual but significant deterioration of the bank assets, while the increase in non-performing loans has affected the profitability of the banking system. Figure 11 below shows the increasing percentage of partly recoverable and fully irrecoverable loans (together, bad loans) in Croatia from 2008 to 2014.

Figure 11: Partly recoverable and fully irrecoverable loans (bad loans) as a percentage of total loans



Source: Croatian National Bank 2014

⁴⁵ Short-term household loans denominated in the EUR currency's interest rates are not shown as such loans are practically not extended by Croatian banks.

The unfavourable macroeconomic conditions in Croatia since the 2008 financial crisis, and the increase of non-performing loans to private businesses and households, have both resulted in **a shift of lending from those sectors to the public sector, in particular central government**^{46 47}. A consequence of this has been an **increase in the percentage of loans to the public sector** of banks' loan portfolios⁴⁸, i.e. from 8.5% in 2008 to 15.2%, in 2013. However this trend might be reversed due to the country's credit rating vulnerability (for details see Annex 1: Credit rating) and the increasing size of public debt which would not leave too much room for further growth (for details see Annex 1: Public debt).

In conclusion, **while the Croatian banking sector is highly capitalised (CAR of 21.32%⁴⁹ as of Q3 2014), the aggregate portfolio quality has deteriorated in parallel with the continued recession**. At 15.3%, the high share of non-performing loans represents as a major constraint to the banks' risk appetite and therefore limits credit expansion.

Specifically, for the areas under consideration in this study, **access to finance is likely to act as a significant barrier for investments by households and private enterprises under the current economic conditions**.

4.1.2 Lending to the public sector

As the lending activity has shifted towards the public sector, lending to local government has also increased, with particular emphasis on long term loans (over 5 years), which increased by 64% from 2010 to November 2014, as shown in the table below. The increase in loans given to the central government is mostly related to medium-term lending (between 1 and 5 years), which grew by 246% in the same period. The structure of loans to Local and Central Government from 2010 to November 2014 is presented in the table below.

⁴⁶ Government units consist of central and local government. The central government consists of state administration bodies (ministries, offices of the Government of the Republic of Croatia, state administration organisations and state administration offices in counties) and Croatian Motorways, Rijeka – Zagreb Motorway, Croatian Roads, Croatian Waters, Croatian Radiotelevision and Croatian Railways Infrastructure. Local government includes units of local and regional self-government and institutional units established and controlled by the local government.

⁴⁷ It is however worth bearing in mind that the EC's Stability and Growth Pact has been subject to tightened limits in recent years and therefore constrains excessive public borrowing

⁴⁸ However, the reported increase was affected by the changes in sectorial classification, i.e. the transfer to the European System of Accounts 2010 (ESA 2010) in 2014 and the transfer of shipyards' debt to the public debt of the Republic of Croatia in 2012.

⁴⁹ The legally prescribed minimum of Capital Adequacy Ratio (CAR) is 12%

Table 13: Distribution of credit institutions' loans to central and local government (end of period, in million EUR⁵⁰)

Category	2010	2011	2012	2013	2014 Nov.
Loans to central government (A)	3,140.01	3,837.91	4,493.08	5,142.25	4,979.80
Up to 1 year	215.41	177.63	384.13	117.49	227.40
Over 1 and up to 5 years	753.40	1,170.29	1,338.98	2,282.56	2,603.35
Over 5 years	2,171.20	2,490.00	2,769.96	2,742.20	2,149.05
Loans to local government (B)	404.86	439.27	437.45	538.78	583.91
Up to 1 year	42.22	34.13	19.66	27.78	28.08
Over 1 and up to 5 years	72.44	61.54	103.78	93.41	53.41
Over 5 years	306.88	335.50	299.54	425.71	502.42
Total	3,544.88	4,277.18	4,930.54	5,681.03	5,563.71

Source: Croatian National Bank: Bulletin 210; January 2015

There are legal limits on the aggregate level of public debt for local government. In order to be able to look for debt financing, local governments have to obtain approval from the Croatian Government⁵¹. The legal limits state that the collective annual debt liabilities of all local municipalities in Croatia cannot exceed 3% of their aggregate revenues in the previous year⁵². According to the Ministry of Finance, total cumulated revenues of the local government sector in Croatia amounted to approximately EUR 2 billion over 2012-2013⁵³. This means that the collective annual increase in public debt is limited to approximately EUR 60 million per year⁵⁴. As the loans to local governments increased annually by an average of EUR 45 million over the reference period, it appears that cities are currently using around 75% of their annual borrowing potential. Therefore **there remains some theoretical scope for the Croatian local government (i.e. the municipalities) to increase debt borrowing** for investment needs, including in the sectors considered by this study.

Even though lending activity to local government has increased in recent years, there are still **challenges related to securing financing for municipal projects and their capacity to absorb additional financing**, including the **legal limits on the level of public debt affecting individual municipalities** – in addition to the **3% limits** indicated above, another national law⁵⁵ limits the annual debt liabilities of *individual* municipalities and self-governing regions to a maximum of **20% of the revenues** realised in the previous fiscal year. Exceptions to the mentioned limits are foreseen for debt incurred to support - the use of renewable energies, the use of EU resources and territories of “special state concern”⁵⁶ as well as for carrying forward unused levels of indebtedness from previous years.⁵⁷

⁵⁰ Based on exchange rate HRK/EUR 7.65

⁵¹ Budget Act ("Official Gazette", no. 87/08., 136/12. and 15/15.)

⁵² Law on Execution of the State Budget of the Republic of Croatia for 2015 ("Official Gazette", no. 148/14)

⁵³ Source www.mfin.hr Data for 2014 not currently available

⁵⁴ The larger than 3% increase between 2012-2013 appears to be explained by both the introduction of a legal exception from the mentioned limits for loans for energy efficiency projects as of January 2013 and municipalities carrying over of unused finance. Loans for such investments are not accounted in the above limits.

⁵⁵ Pravilnik o postupku zaduživanja te davanja jamstava i suglasnosti jedinica lokalne i područne (regionalne) samouprave (NN, 55/09 i 139/10)

⁵⁶ Law on areas of special state concern (http://narodne-novine.nn.hr/clanci/sluzbeni/2008_07_86_2750.html, <http://www.urban.org/PDF/cr-statcon.pdf>)

⁵⁷ Law on Execution of the State Budget of the Republic of Croatia for 2015 ("Official Gazette", no. 148/14).

Some examples of debt limits for selected cities are shown in the table below. Representatives of **some cities** participating in the workshops confirmed that **these additional limits could be an issue** for them and **potentially restrict their capacity to absorb additional financing**, especially for cities with smaller budgets, or cities that were approaching the imposed limit.

Table 14: Examples of debt limit on selected cities in EUR

City	Revenues realised in 2013 (EUR)	Maximum permitted annual level of debt payment liabilities in 2014 (EUR)	Population
City of Zagreb	975,980,421	195,196,084	792,875
City of Rijeka	90,828,062	18,165,612	128,624
City of Zadar	42,656,439	8,531,288	75,062
City of Dugo Selo	5,298,366	1,059,673	17,466

Source: Based on information from State Audit Office and Croatian Bureau of Statistics

However, municipal revenues are difficult to predict – the main source of revenues in municipal budgets comes from taxes, predominantly personal income and local income taxes. These revenue sources fluctuate substantially from year to year (more so in the last years due to the financial and economic crisis), making it difficult to predict future income streams accurately. The most recent example of this tendency was a change in the personal income tax law that led to a significant decrease of municipal revenues.

In case of future changes to the Croatian credit rating, banks may be induced to limit their exposure to central government (as also mentioned in the interviews with some banks).

4.1.3 Lending to the private sector

This section covers lending by credit institutions to private borrowers, specifically non-financial corporates and households.

4.1.3.1 Lending to non-financial corporations

The table below provides an overview of credit institutions' exposure to loans to enterprises over 2010-2014.

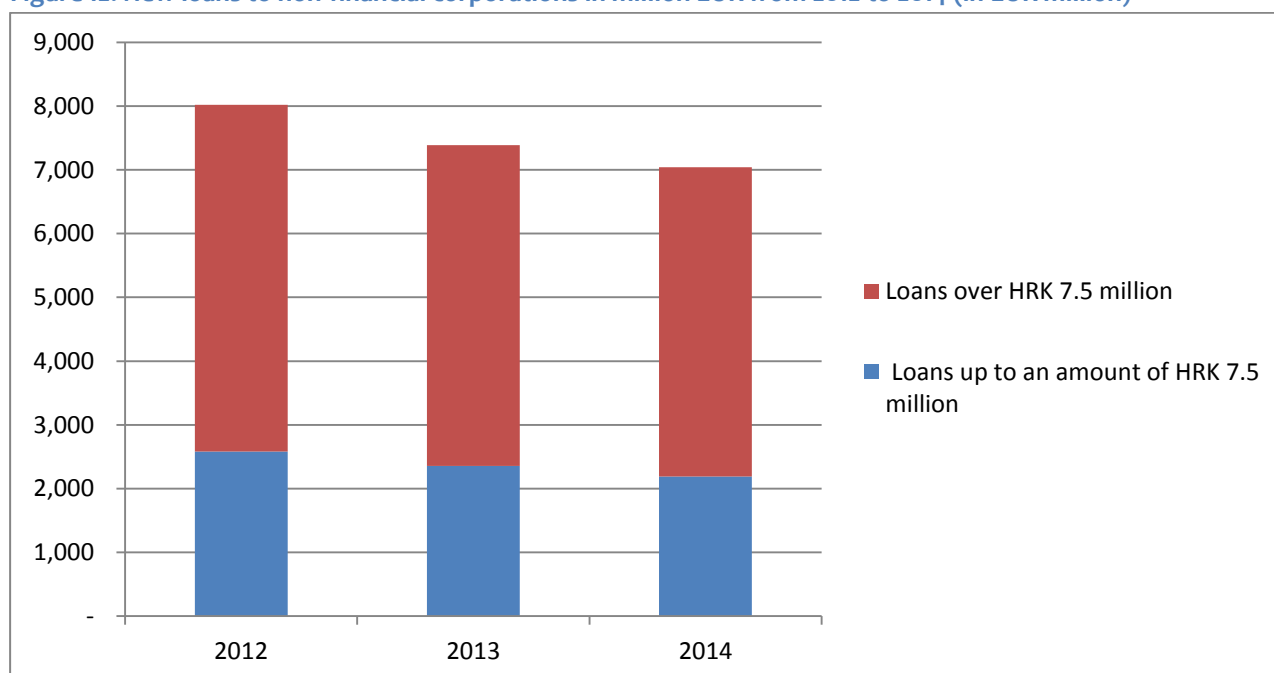
Table 15: Distribution of credit institutions' loans to non-financial corporations (in million EUR), end of period

Category	2010	2011	2012	2013	2014 Nov.
Loans to non-financial corporations	14,673.10	15,953.06	14,158.42	14,146.94	13,854.22
Up to 1 year	3,536.46	3,727.73	3,057.40	2,982.07	2,991.07
Over 1 and up to 5 years	4,768.81	4,675.32	3,669.97	3,423.33	3,164.88
Over 5 years	6,367.83	7,550.00	7,431.05	7,741.54	7,698.27

Source: Croatian National Bank: Bulletin 210; January 2015

The table shows that **long-term loans dominate the structure of lending to non-financial corporations**. In November 2014, long-term loans accounted for 56% of total loans while medium-term loans accounted for 23% and short-term loans for 22%. This shift towards long-term loans may reflect banks' growing confidence in the post-2008 financial market, as well as the decline in long-term interest rates which may have led corporates to restructure their debt from short term to long term.

Figure 12: New loans to non-financial corporations in million EUR from 2012 to 2014 (in EUR million)



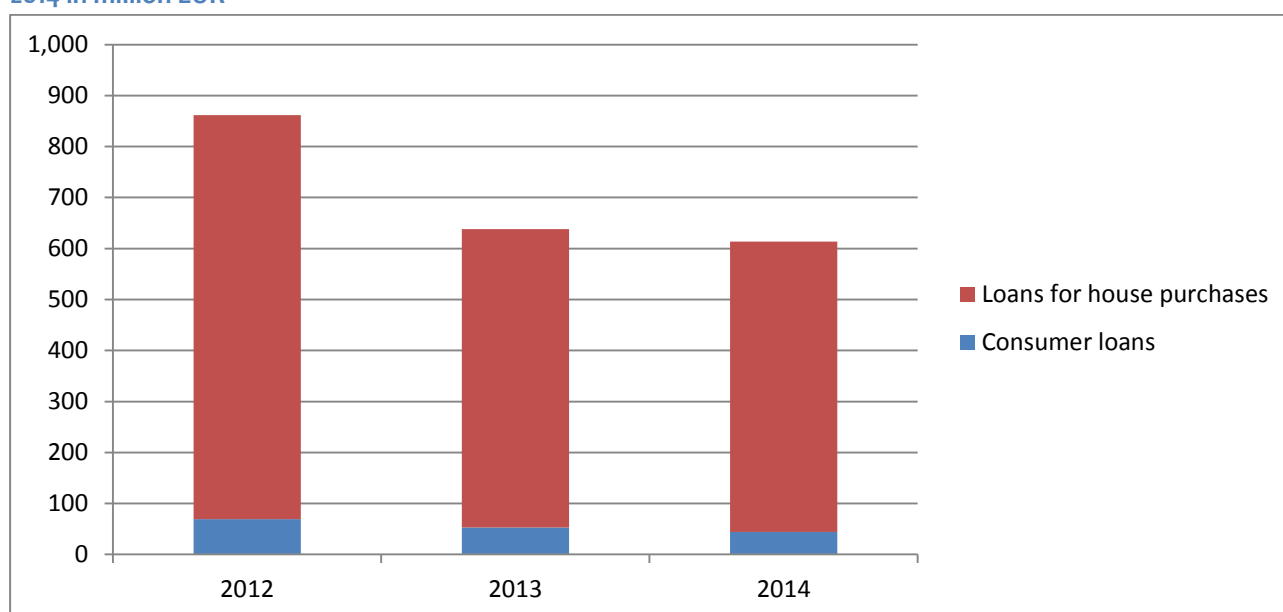
Source: Croatian National Bank

Lending to enterprises has decreased since 2012. In the period 2012-2014, the monthly average amount of new loans to corporates was EUR 623.53 million and around 68% of those loans were over HRK 7.5 million (ca. EUR 980,000), as shown in the preceding figure.

4.1.3.2 Lending to households

The figure below shows a breakdown of new loans extended to households over 2012-2014.

Figure 13: New loans to households (revolving loans, credit cards loans and overdrafts excluded) from 2012 to 2014 in million EUR



Source: Croatian National Bank

Between 2012 and 2014, new loans to households **declined by 29%** from EUR 861 to EUR 613 million per year, with loans for house purchases recording the biggest fall. The breakdown of outstanding household loans according to maturity is given in the table below.

Table 16: Distribution of credit institutions' loans to households according to maturity (in million EUR)

Category	2010	2011	2012	2013	2014 Nov.
Loans to households	17,010.09	17,182.34	16,945.91	16,656.97	16,583.31
Up to 1 year	1,580.75	1,586.68	1,631.76	1,569.66	1,591.90
Over 1 and up to 5 years	1,435.02	1,343.11	1,238.16	1,254.88	1,293.80
Over 5 years	13,994.34	14,252.55	14,075.99	13,832.43	13,697.61

Source: Croatian National Bank; Bulletin 2010; January 2015

Most of the outstanding household loans are long term (approximately 83%). They dropped slightly throughout the observed period along with the medium term loans.

Summary of the issues related to the banking market's provision of finance to the private sector.

Based on the analysis of the banking sector, the **key challenges related to securing financing for private projects** were:

- Banks are generally unwilling to finance a project based on the sole merit of the investment (e.g. the prospects of savings), i.e. on a project finance basis), but rely on an asset-based financing approach and the evaluation of client creditworthiness. There are examples of lending on a project finance basis, but according to the interviews and the desk research these projects are found almost only in the sector of RE and are supported by feed-in tariff contracts (which make project cash-flows rather predictable⁵⁸);
- Insufficient ability to provide equity and/or collateral to secure lending;
- Potential decreases of credit limits allowed from parent banks to their Croatian subsidiaries, due to the lowering of Croatia's sovereign credit rating (as some stakeholders suggested);
- Uncertainties related to the legal system; for instance, in the case of EE projects, banks may be unwilling to give loans to ESCOs because they fear that if contract obligations towards the energy service provider are not met at some point (i.e. the client stops paying the provider), it may take a long time for the service provider (i.e. the borrower) to recover the money owed and repay the loan;
- Limited focus of banks on certain sectors. While lending for RE projects is relatively well-known, banks in Croatia tend to deploy most of their specialised and skilled teams to sectors other than EE and RDI;
- The increase in the share of non-performing loans following the economic and financial crisis has increased banks' risk aversion and the regulatory burden, with negative implications on lending volumes;

⁵⁸ Some concrete examples of RE projects within feed-in tariff include: 1) wind power plant Danilo- Total investment value of this project amounts to EUR 70 million. The investor is RP Global and project was financed by IFC and UniCredit. However, due to confidentiality concerns the funding terms supplied by the UniCredit are unknown; 2) wind power plant Ogorje- total investment value of this project is EUR 47 million. For the purpose of this project Erste Group Bank AG, Erste&Steiermaerkische Bank, Splitska Banka and Societe Generale approved a long term loan in amount of EUR 47 million with the maturity period up to 14-years.

- The poor quality of documentation submitted to apply for financing was raised in interviews with some banks when discussing about quality of business plans and feasibility studies submitted by project promoters in their funding applications.

4.2 International Financial Institutions, public and private sector actors

This section presents the key International Financial Institutions (IFIs), public sector actors and commercial banks active in providing specialised finance to the target sectors of this study in Croatia.

4.2.1 International Financial Institutions

European Investment Bank

Since 2001, the European Investment Bank has signed lending operations worth some EUR 4.2 billion in Croatia, including 65 individual loans. Over the 2010-2014 period the EIB have invested EUR 2.3 billion in the Croatian economy: most of this (76%) has gone to SMEs, while and water, sewerage, solid waste and urban development projects (11%) and transport and telecommunications (9%) have also been notable beneficiaries. In 2013, the Bank signed financing contracts in Croatia totalling EUR 633 million, which more than doubled the amount for each of the two previous years (EUR 305 million in 2011 and EUR 300 million in 2012)⁵⁹. In 2014 EIB loans in Croatia came to a total amount of EUR 535; 95% of this figure went to sustaining Croatia's SMEs and midcaps.

The Bank is now supporting projects that focus on assisting Croatia's integration within the Union, covering the key sectors of Croatia's economy, ranging from transport, environmental and energy infrastructure to manufacturing and services, including support to SMEs via local financial institutions.

The European Bank for Reconstruction and Development

The operations of the European Bank for Reconstruction and Development in Croatia focus on: mitigating the impact of the crisis and restoring sustainable growth; leveraging the benefits of EU accession to advance transition; restructuring and commercialising public sector enterprises. The total portfolio of financing built up by the EBRD up to January 2015 amounts to a net investment of EUR 3.1 billion. The portfolio consists of 161 projects, most primarily in four sectors: 1) energy, 2) financial institutions, 3) industry, commerce and agribusiness, and 4) infrastructure.

International Finance Corporation⁶⁰

Since 1993, the International Finance Corporation investment in Croatia has totalled EUR 745.25 million, including EUR 260.40 million mobilised from IFC's partners, in 31 projects in a variety of sectors including general manufacturing, tourism, and agribusiness. IFC prioritised investments in Croatia's less developed regions and those contributing to economic diversification and regional integration. IFC's committed investment portfolio in Croatia as of June 2014 is EUR 227.08 million.

The World Bank⁶¹

Since Croatia joined the World Bank in 1993, it has provided financing for 51 projects to the sum of USD 3.5 billion (ca. EUR 2.98 billion).

⁵⁹ See the annex for a list of EIB loan operations.

⁶⁰ The source of information for this section is <https://www.worldbank.org/content/dam/Worldbank/document/eca/Croatia-Snapshot.pdf>

⁶¹ The source of information for this section is <https://www.worldbank.org/content/dam/Worldbank/document/eca/Croatia-Snapshot.pdf>

The World Bank's current portfolio in Croatia consists of 13 ongoing projects (for the period from 2006-2017) with a total net commitment of USD 800 million (ca. EUR 656.89 million), of which about 60 percent has been already disbursed. The World Bank's operations in Croatia are defined by the Country Partnership Strategy (CPS), agreed by the Government in June 2013 and covering the period until 2017. The CPS is centred on supporting Croatia's convergence within the EU.

4.2.2 National financial institutions

Croatian Bank for Reconstruction and Development⁶²

The Croatian Bank for Reconstruction and Development (HBOR) was founded by the Republic of Croatia and is entirely state-owned. Within the Croatian banking system, HBOR plays the role of a development and export bank established to support the reconstruction and sustainable development of the Croatian economy.

HBOR's lending activities cover a large segment of the Croatian economy, including areas of interest for this study, such as infrastructure, environmental protection, SME development (innovation), EE, and EU funds. To perform these operations, HBOR utilises a variety of financial products, including soft-loans, export credit insurance, short term insurance, guarantees and mezzanine capital as from recently. Most of HBOR loan facilities are offered with subsidised interest rates which vary across sectors and/or types of undertakings.

HBOR can also on-lend funds provided by the EIB to finance EE and RE projects, with RE sector receiving more than EE.

Croatian Agency for SMEs, Innovations and Investments HAMAG – BICRO

HAMAG-BICRO is an independent institution acting under the supervision of the Ministry of Entrepreneurship and Crafts. Its activities include facilitating the establishment of small business entities and financing their operations and development through loans and guarantees. The Agency also provides financial support to innovative and technology-oriented enterprises by assisting the commercialisation of knowledge and awareness raising on the value of innovations, supporting the transfer of knowledge and technological solutions from the scientific sector to the real economy, promoting the establishment and development of technology infrastructure and participating in the development of the venture capital industry.

Before merging in May 2014 with HAMAG INVEST, the Business Innovation Croatian Agency BICRO was the main hub for the provision of research and development support to technology and knowledge-based SMEs. One of the support programmes most relevant to this study (esp. in the RDI sector) was Razum, which provided finance to start-ups and established SMEs to carry out applied research leading to the introduction of new or improved products or services. Eligible projects were those in the pre-commercialisation phase, and financing was offered in the form of conditional grants, also known as repayable advances. Other support programmes included: Proof of Concept, IRCRO - Research and Development Programme for collaborative RDI between domestic SMEs and RDI organisations and

⁶² The source of information for this section is http://www.zagreb-energyweek.info/assets/files/2014/TRACE-conference-15.05.2014/8_HBOR-Prezentacija%20Za_tita%20okoli_a%20i%20Zgradarstvo%20-%20svibanj%202014%20%20godine%20-%20Zagreb.pdf

EUREKA – the latter similar to IRCRO, but focusing on RDI collaboration with partners from other EUREKA participating countries.

4.2.3 Key Croatian commercial banks

The main Croatian commercial banks are Zagrebačka banka (Unicredit Group), Privredna banka Zagreb, Erste & Steiermärkische bank, Raiffeisenbank Austria d.d., Société Générale-Splitska Banka, Hrvatska poštanska banka. Most of the following banks have programmes in cooperation with HBOR. The details of these programmes can be found in the Annex 3: Supply side analysis- financial products provided by commercial banks and HBOR in Croatia.

Zagrebačka banka (Unicredit Group)

Zagrebačka banka (ZABA) offers a wide range of financial products and services to small businesses, corporates and individuals.

The bank opened an EU desk in 2007, which has been very active within IPARD (Instrument for Pre accession in Agricultural and Rural Development) and has also had experience with CARDS PHARE funds (mainly issued guarantees according to the EU rules). It is important to mention that **ZABA, in cooperation with EIF, has allocated resources of about EUR 7 million to RDI projects (Risk Sharing Facility with the EIF)**, with the possibility of expanding them, depending on market response.

Privredna banka Zagreb

Privredna banka Zagreb (PBZ) is a member of the Intesa Sanpaolo Group. It is the 2nd largest bank in Croatia in terms of total assets which amount to HRK 65.8 billion (ca. EUR 8.61 billion).

Apart from the aforementioned programmes, the PBZ also offers loans to EE and urban development sectors (see Annex 3).

Erste & Steiermärkische bank

Erste & Steiermärkische Bank d.d. is part of the Erste Group Bank, one of the largest financial services providers in Central and Eastern Europe. Erste & Steiermärkische Bank d.d. is a universal bank geared to retail customers and small and medium-sized businesses, with a market share by assets amounting to about 15%.

Raiffeisenbank Austria d.d.

Raiffeisenbank Austria d.d. (RBA) is one of the largest banks in Croatia, ranking 4th in term of total assets, worth around HRK 33 billion (ca. EUR 4.3 billion). RBA shareholder is Raiffeisen SEE Region Holding GmbH, Vienna with 100 per cent in capital stock.

In addition to the financial products listed in Annex 3, RBA offers 1%, 2% and 3% of interest subsidy to local authorities. RBA has an EU-desk and it has gathered experience with EU funds over the years, especially with respect to IPARD.

Société Générale-Splitska Banka

Société Générale-Splitska Banka is among the largest banks in Croatia, ranking 6th in term of total assets worth around HRK 27.33 billion (ca. EUR 3.57 billion). The bank, owned by Société Générale, operates as a universal bank on the domestic market providing finance to public and private clients and is not specialised in any particular industry.

The conditions of loans offered by the bank vary from project to project, according to the collaterals available and the credit rating of the applicant.

Hrvatska poštanska banka

Hrvatska poštanska banka (HPB) is ranked 7th in term of total assets, worth around HRK 18.3 billion (ca. EUR 2.39 billion). The Government of Croatia is the majority shareholder of the bank. The HPB owns the companies HPB Invest d.o.o., HPB Nekretnine d.o.o. and HPB Stambena štedionica d.d. which compose together the HBP Group.

Overall, the HPB does not offer specialised sector products and lending conditions vary from project to project, according to the collaterals available and the credit rating of the applicant. The most common HPB product is investment loans. It is important to mention the existence of green loans for SMEs, and the participation of the bank in syndicated loans depending on the project.

Annex 3 includes the terms of financing facilities available from the commercial banks and the HBOR on the Croatian market. It appears **that interest rates of commercial banks are still rather high, and that loans at lower interest rates are extended only by the HBOR.**

In conclusion, as explained in section 4.1, the **commercial banks are scaling down their lending operations in Croatia.** Given a volatile and unpredictable market, it is difficult to offer a reliable forecast of their future lending activities in the investment areas of interest for the study.

This difficulty is compounded by the risk that commercial banks may scale down substantially their operations in the Croatian market due to low profitability⁶³ and the poor credit rating of the country.

4.2.4 Building societies

Currently, five building societies operate in Croatia, of which four are foreign-owned and one domestic, including:

1. PRVA STAMBENA ŠTEDIONICA d.d.
2. WÜSTENROT STAMBENA ŠTEDIONICA d.d.
3. PBZ STAMBENA ŠTEDIONICA d.d.
4. RAIFFEISEN STAMBENA ŠTEDIONICA d.d.
5. HPB STAMBENA ŠTEDIONICA d.d.

Total assets of the building societies at the end of 2014 amounted to HRK 7.77 billion (c. EUR 1 billion).

Out of those five building societies, only **Prva stambena štedionica d.d.** (owned by ZABA) and **Wüstenrot stambena štedionica d.d.** offer loans for EE. Details of the aforementioned loans are listed in Annex 3.

⁶³ From 2011 to June 2014, the average ROAA for the entire banking sector decreased from 1.2% to 0.8%, while in the same period ROAE decreased from 6.9% to 4.6%.

4.3 Capital market

The Croatian capital market is regulated by the Capital Market Act. All market activities are supervised by the Croatian Financial Services Supervisory Agency (HANFA).

Zagreb Stock Exchange

The Zagreb Stock Exchange or ZSE is Croatia's only stock exchange. At the end of 2014 the number of listed shares was 203 and of listed bonds 39. As some companies mentioned in this study are listed on the ZSE (e.g. Agrokor Group, Genera, Atlantic), there is some potential for raising SME finance there. The sections below offer an outline of the capital market in Croatia.

Pension funds

The domestic pension funds industry could be an important player and potential co-investor⁶⁴ for suitably structured FIs. The Pension Insurance Act from 2002 established guidelines for the development of a new Croatian pension system based on the three pillars of pension insurance:

- i. Croatian Pension Insurance Institute
- ii. Mandatory Funds, with total assets of HRK 68.65 billion (ca. EUR 8.97 billion) in January 2015: the following are operating in Croatia:
 - a. AZ OMF
 - b. Raiffeisen OMF
 - c. PBZ Croatia osiguranje – OMF
 - d. Erste Plavi OMF
- iii. Voluntary Pension Fund, with total assets of EUR 357.65 million, as of February 2015.

Investment funds

Investment funds are another player on the Croatian capital market. The activity of investment funds is regulated by HANFA according to the Act on Open-Ended Investment Funds with Public Offering and Alternative Investment Funds Act.

According to HANFA, open-ended investment funds with public offering had net assets of EUR 1.75 billion in January 2015.

UCITS is an open-ended investment fund with public offering established by a UCITS management company. In Croatia there are currently 84 UCITS funds.

An alternative investment fund (AIF) is an investment fund established by a manager of alternative investment funds for the purpose of raising capital through a public or private offering and investing this capital in different types of assets in accordance with the provisions of the Alternative Investment Funds Act and a predefined AIF investment strategy and objective, to the exclusive benefit of unit-holders in the AIF concerned.

⁶⁴ Pension funds may invest in different asset classes according to the Heading 11 of the Pension Act which also prescribes their investment limits. As in the interview with the managing company of one pension fund they could be potentially interested in participating in providing private funding in a FI scheme, depending on its structure.

Total net assets of AIFs on June 2014 amounted to HRK 2.4 billion (ca. EUR 313 million). An AIF may be of an open-ended or a closed-ended type. As of January 2015 in Croatia there are:

- 5 AIFs with public offering;
- 24 AIFs with private offering; and,
- 15 AIF management companies.

Some of the AIF management companies also manage the so-called Economic Cooperation Funds (FGS). FGSs were set up as a result of a public intervention worth HRK 1 billion (ca. EUR 130 million) of *pari passu* co-investment into PE/VC vehicles, in order to revive investor confidence in VC and equity markets, and with the aim to invest in companies to create jobs and strengthening existing business and start-ups. Details of FGSs' capitalisation are given in Table 17 below.

Table 17: FGSs' planned capital and net assets in June 2014⁶⁵ in EUR

Name of Fund	Planned size of FGS (EUR)	Private capital (EUR)	Public capital (EUR)	Net Assets (June 2014)
Alternative Private Equity FGS	78,431,373	39,215,686	39,215,686	4,094,496
Honestas FGS	20,261,438	10,130,719	10,130,719	1,422,239
Nexus FGS	49,673,203	24,836,601	24,836,601	42,541,507
Prosperus FGS	44,444,444	22,222,222	22,222,222	19,709,488
Qauestus FGS	68,627,451	34,313,725	34,313,725	13,748,258
TOTAL	261,437,908	130,718,954	130,718,954	81,515,989

Source: HANFA 2015

From 2011 to 2015 the funds invested EUR 109.96 million (representing 42% of the target funds' capitalisation) in 18 undertakings.

Beside private equity/venture capital actors, there is also an active network of Business Angels (BAs) called **CRANE, which is a source of finance for RDI in Croatia**. The network consists of 15 individual investors interested in equity investment in small companies and start-ups. Since 2009, CRANE invested EUR 1.3 million in 13 undertakings with individual investments ranging from EUR 50,000 to EUR 200,000. CRANE promotes innovative entrepreneurship and business skills and work with institutions supporting business incubation processes. CRANE receives approx. 300 expressions of interest a year of which only 5-10% meet the eligibility criteria.

4.4 Specialised sector-focused funds and facilities

A number of specialised funds and facilities are active in providing financial support for activities relevant to the four sectors under consideration.

⁶⁵ It should be noted that in the meantime some private investors have pulled back their investments from FGSs (such as from Questus Private Equity) and therefore the capitalization of FGSs is currently lower than represented in the Table 17.

4.4.1 Energy efficiency and the use of renewable energies in Croatia

This sub-section presents some of the funds and facilities implemented in Croatia focusing on the energy sector (EE and RES investments), including regional funds.

4.4.1.1 National programmes

Programmes co-financed by the Environmental Protection and Energy Efficiency Fund

The Croatian Environmental Protection and Energy Efficiency Fund (EPEEF) is a non-budgetary national fund established in 2003 with the objective of raising earmarked funds for financing the preparation, implementation and development of programmes, projects and similar activities in the field of environmental protection, EE, the use of RES and waste management.

Funds for financing the operations of the EPEEF are secured, in conformity with the 'polluter pays principle'⁶⁶, from environmental fees and other charges collected in accordance with specific environmental regulations⁶⁷. Its allocations are determined on the basis of the National Energy Efficiency Action Plan (NEEAP) and national energy programmes. EPEEF manages the programmes related to private asset owners, whilst those related to the public sector are under the direct control of the Agency for Transactions and Mediation in Immovable Properties (APN).

EPEEF investment areas relevant to this study include:

- The protection, preservation and improvement of the quality of air, soil, water and sea, and mitigation of climate change and protection of the ozone layer;
- Encouraging clean production, preventing and reducing waste and emissions in the production process;
- Encouraging the use of RES (solar, wind, biomass, etc.);
- Encouraging sustainable construction;
- Stimulate sustainable economic activities, i.e. sustainable economic development;
- Encouraging educational, research and development projects, programmes, projects and other activities, including demonstration activities.

There are several specific energy renovation programmes funded by the EPEEF, which are set in accordance with the provisions of the NEEAP. Worth mentioning is that EPEEF directly manages the programmes related to private asset owners, whilst those related to public ones, are under the direct control of APN.

The programmes are⁶⁸:

- Programme for energy renovation of public sector buildings 2014-2015;
- Programme for energy renovation of public sector buildings 2016-2020 (to be prepared);
- Programme of energy renovation of single family homes 2014-2020;
- Programme of energy renovation of multi-apartment buildings;

⁶⁶ The 'polluters pay' principle foresees that those who produce pollution should bear the costs of managing it to prevent damage to human health or the environment.

⁶⁷ The Law on Fund for Environmental Protection and Energy Efficiency prescribes fees and special fees paid by taxpayers to pay for environmental protection and energy efficiency, including: environmental pollution charges; user fees environment; charges for burdening the environment with waste; special environmental charge for motor vehicles.

- Programme of energy renovation of commercial non-residential buildings 2014-2020.

Following calls for tenders, fund resources can be allocated to either local or regional authorities, legal entities, or natural persons investing their own financial resources in eligible projects. Support is provided through the following instruments:

- Loans (zero interest rate, 2 years grace period, 5 years payback period, up to HRK 13 million, ca. EUR 1.7 million);
- Grants under “de minimis” scheme, which will be changed in future to grants under the Global Block Exemption Regulation (GBER) for EE.

The fund disburses grant financing to companies and individuals for eligible project costs, as follows:

- Up to 80% of eligible costs in areas of special state concern, those classified in the first group of islands and the natural protected areas;
- Up to 60% of eligible costs in the second group of islands or mountain areas;
- Up to 40% of eligible costs in areas located in the other areas of Croatia (most common case).

Table 18 below shows EPEEF’s planned amount of financial resources for EE programmes and projects for 2014-2020.

Table 18: EPEEF's planned amounts of financial resources for energy efficiency programmes and projects for the period from 2014-2020

Title of the measure	Duration	Executive body	Monitoring bodies	Sector	Financing EPEEF (HRK)	Financing OTHERS (HRK)	Yearly expected financing (HRK)	Expected energy savings in 2016 (kWh)	Expected energy savings in 2020 (kWh)
Programme of energy renovation of multi-apartment buildings	2014-2020	MCP, building managers, distributors and suppliers of thermal energy	MCP, MENP and CEI	Household	664,500,000		664,500,000 (including ESI funds)	202.78 million	608.33 million
Programme of energy renovation of commercial non-residential buildings 2014-2020	2014-2020	EPEEF implementation, MCP programme	MCP, MENP, ME and MT	Service			3,200,000,000 (overall by 2020)	273.61 million	638.33 million
Programme of energy renovation of single family homes 2014 - 2020	2014-2020	EPEEF	MCP, MENP and CEI	Household	71,000,000	136,500,000	207,000,000	168.06 million	392.39 million
Programme of energy renovation of public sector buildings 2014-2015	2014-2015	MCP, APN, EPEEF	MCP, MENP and CEI	Service	82,750,000	117,250,000	200,000,000	62.78 million	63.00 million
Programme of energy renovation of public sector buildings 2016-2020	2016-2020	MCP, APN, EPEEF	MCP, MENP and CEI	Service	2,000,000	725,000,000	727,000,000	39.90 million	199.5 million

Source: the third NEEAP for the 2014-2016 periods

The Agency for Transactions and Mediation in Immovable Properties (APN) is a public institution with the aim to **buy and sell** publicly owned properties on Croatian land with funds provided from the state budget or from other sources (capital market, commercial banks and other financial institutions, apartment buyers). As an investor, APN plans the construction of apartments in certain areas, in accordance with public funds and housing needs, in line with the **Programme for Implementation of Subsidised Housing Construction** (POS Programme).

Table 19 presents an overview of planned and achieved disbursement of funds from APN in 2011-2013.

Table 19: Overview of APN financing support (values in HRK, in brackets the number of applications)

Type of support	Disbursement	2011	2012	2013
Loans for upgrading, extension and construction of single family homes	Planned	2,410,114 (20)	993,949 (18)	992,250 (5)
	Supported	1,695,436 (10)	668,042 (6)	319,847 (2)
Subsidies and state guarantees for housing loans (POS Programme)	Planned	27,994,580 (1,566)	15,309,715 (845)	-
	Supported	27,883,675 (1,462)	15,205,387 (791)	-
Loans from Program (POS+ Programme)	Planned	-	-	-
	Supported	-	-	20,018,331 ⁶⁹

Source: APN website 2015

APN is also responsible for the implementation of the **Programme of Energy renovation of public buildings** which has already been described in a previous section of this report.

As emerged in interviews, due to ongoing issues (change of regulation in force, subsequent difficulties in the legal interpretation about the regulations to apply - old regulation when the application was submitted, or new regulation when the application was assessed), **none of the existing projects has entered the building phase** – all were postponed. For that reason, it was not possible to sign some specific contracts (e.g. police buildings, homes for children, and schools).

For 2014-2015, 669 applications have been submitted under the Programme, and profitability studies and energy audits are currently under way as part of the appraisal procedure. APN is currently co-financing the first zero-energy building.

4.4.1.2 Main facilities offered by Croatian commercial banks

Croatian banks, including the HBOR, offer financing facilities for EE/RE⁷⁰ projects. Their terms are presented in Annex 3. In general, **interest rates of commercial banks are still high, and loans at lower interest rates are extended only by the HBOR.**

⁶⁹ 2,612 million EUR as of 20/12/2014, www.hnb.hr

⁷⁰ As reported previously, for projects in RE this is because of the feed-in tariff subsidy for such investments

Below, are some examples of the facilities offered by commercial banks. Although a certain number of projects have been financed by those facilities, high interest rates commanded by the banks, and the other challenges described in the previous paragraphs, make it difficult to have the facilities' funds disbursed on a larger scale⁷¹.

Programme for financing energy efficiency projects offered by Privredna banka Zagreb d.d.

In cooperation with EIB, Privredna banka Zagreb d.d. (PBZ) developed a programme for financing EE projects implemented by SMEs and LRSGUs. The programme offers incentives (EU grants), as well as free TA to clients willing to implement measures generating energy and financial savings. PBZ also has a financing programme for projects on EE and RES, concluded with the GGF, which can be utilised by all types of clients. There is a line of credit for citizens with whom they can finance energy renovation projects or EE improvement projects for residential real estate. Citizens can use this PBZ "Energio" line of credit to finance:

- the purchase of a higher energy class (A, A+, and B) real estate;
- the purchase of real estate with EE improvements;
- the purchase of building land for the construction of low-energy and passive houses;
- the construction, extension, addition, and completion of low-energy and passive houses, as well as EE improvements of an existing home.

A total of 19 projects on EE and RES have been financed by PBZ, with a total value of approximately HRK 30 million.

Programme for financing energy efficiency projects offered by Zagrebačka banka d.d.

Zagrebačka banka is one of the market leaders in financing projects related to EE and RES in Croatia. The "green loan", with a fixed interest rate of 6% and a repayment period of up to six years, is a financial product for those wishing to introduce EE/RE measures in buildings, but the terms are not considered to be attractive, as individuals can obtain ordinary housing loans. Loan amounts vary from HRK 15,000 to HRK 300,000 and the loan application processing fee is calculated as 0.5% of the loan amount. Mortgages are not required for loans of up to HRK 200,000 and no other credit insurance instrument is required with a one-off payment into Design Savings amounting to 15% of the loan.

4.4.1.3 Facilities offered at international level

Green for Growth Fund South-East Europe

Established in 2009 as a closed-end investment company accessible to institutional investors only, the Green for Growth Fund (GGF) is a public-private partnership that aims to promote EE and RE in Southeast Europe, including Turkey, and the European Eastern Neighborhood region. Initiated by the EIB and KfW Entwicklungsbank and supported by a pool of donor institutions, international financial institutions and private investors, the GGF carries out the following activities:

- Providing capital (from senior loan to equity) to financial institutions (i.e. local commercial banks, non-bank financial institutions such as microfinance institutions and leasing companies and other

⁷¹ Interviewees in banks, besides a few cases mentioned in this report, were not ready to reveal the amount of extended loans from the facilities they offer, stating business confidentiality reasons. From desk research we were able to find the amount of loans one major Croatian bank placed in EE projects, but since these loans included among other also loans for purchasing apartments with high energy performance class, we have found these data not relevant to this study.

selected financial institutions) which then on-lend to households, businesses, municipalities and public sector for EE initiatives or RE projects. This area represents the bulk of GGF's investments;

- Providing direct financing to non-financial institutions (i.e. energy service companies, RE companies or projects, small-scale RE and EE service and supply companies) that meet GGF's energy saving and/or emissions targets and comply with GGF's technical criteria and exclusion list;
- Providing a Technical Assistance Facility to support project initiatives and help financial institutions to develop demand-oriented products.

Since the international financial institutions promoting this initiative are already active in the EE/RE space within the region, the GGF is complementary to the existing programmes and funding sources.

The GGF has supported Privredna banka Zagreb and Zagrebačka banka. Some details are provided in the table below.

Table 20: Overview of GGF financing support

Borrower	Privredna banka Zagreb	Zagrebačka banka
Product	Credit facility from GGF	Senior loan from GGF
Size (EUR m)	25.0	20.0
Signature date	December 2012	December 2013
Purpose	<ul style="list-style-type: none"> • Financing (through on-lending) of EE and RE projects • Target investments (illustrative): small wind farms, biomass or hydropower plants; replacement of old windows and doors (for both private households and businesses); energy-efficient overhaul of manufacturing companies 	<ul style="list-style-type: none"> • Providing (through on-lending) medium- and long-term financing to SMEs and corporate clients in the EE and RE spaces • Target investments (illustrative): small wind farms, biomass or hydropower plants; improvement of insulation (walls, windows); overhaul of machinery and processes in manufacturing companies
Expectations from investments financed through product	CO ₂ emission savings of ca. 44.000 tons per year	<ul style="list-style-type: none"> • Energy savings of up to 34.000 MWh per year • CO₂ emission savings of up to 12.000 tons per year

Source: GGF website 2015

Energy Efficiency Finance Facility

The EE Finance Facility, set up by the EIB in cooperation with the EC, offers the following:

- Grants given by the European Commission for EE;
- Three partner banks in Croatia (HBOR, PBZ and ERSTE) cooperate with the EIB;
- Grants are blended with EIB Loans and loans from partner banks;
- Investors in EE and RES projects: profiting from Loans (EIB and partner bank) plus the EC investment grant;
- EC Grants can support up to 13% of eligible investment costs for SME, for other investors up to 7.5%.

The main project eligibility criteria are the following:

- EE measures in building and industry and RE energies;
- Investors / End borrowers: individuals, private and public entities;
- Sound and financial viable projects;
- Energy/Green House Gas Savings Indicators to fulfil (-20% industry, -30% building);
- CAPEX: between EUR 40.000 and EUR 2.5 million (less than EUR 250.000 for residential sector); for RES up to EUR 5 million;
- Eligibility compliance is checked by an ad-hoc expert (company IC Consulenti) that can assist also in project design.

Western Balkans Sustainable Energy Financing Facility

The Western Balkans Sustainable Energy Financing Facility (WeBSEFF) is a financing facility under which the EBRD provides credit lines to partner banks in the Western Balkans to on-lend to businesses and municipalities which want to invest in EE and small-scale RE projects. WeBSEFF is part of the EBRD's Sustainable Energy Financing Facility (SEFF) family. It is part of the Regional Energy Efficiency Programme for the Western Balkans (REEPWB). REEPWB uses a combination of financing instruments (such as WeBSEFF), TA and policy support to create a sustainable market for EE in the region.

The grant amounts for projects which meet energy savings and/or CO₂ reduction criteria is from 5% to 10% of the loan amount for business operators, or from 10% to 15% of the loan amount for LRSGUs. Furthermore, this line also offers free TA that includes preliminary estimates of savings in the initial stages of a project, as well as evaluations on whether a project meets the required eligibility criteria for grants.

Table 21: Project portfolio for WeBSEFF

Project	Aim	Loan Amount (EUR)
Slavonski Brod - Heat and electricity production	Reconstruction of the boiler room	100,000
Zagreb - Vehicles and transport	Replacement of old vehicles with new vehicles conforming with EU forms	23,700
Zagreb - Heat and electricity production	Switching from steam to gas heating	280,822
Tršće - Heat and electricity production	Biomass cogeneration	2,500,000
Total		2,904,522

Source: WeBSEFF website 2015

Technical Assistance funds related to EE and RES

In addition to funds set up to promote and finance specific investment projects, there are some funds aimed only to TA that the Croatian authorities are able to access as part of region-wide initiatives.

Table 22: Overview of the TA funds

Name	Financier	Objective	Fund value (EUR)	Activities	Date
GIZ open regional fund	GIZ German Government	Energy consumption in Southeast Europe is made more sustainable through more efficient energy utilisation/regional networks of energy – relevant institutions are acting as drivers for innovation	8.8 million	EE, distribution direct to end beneficiaries	July 2008 – September 2015
CEI Trust Fund Italian Government at EBRD	Italian Government and EBRD	EE where the CEI intends to support region-wide projects to support region-wide projects aiming at promoting a sustainable energy development strategy by enhancing regional cooperation on EE and the development of investment projects. Special attention is paid to industrial and residential areas as well as to technology transfer.	36.5 million (Italian grant)	EE, RE	1992 – unlimited

Source: CEI and GIZ websites 2015

4.4.2 RDI investments

This sub-section presents some of the funds and facilities implemented in Croatia that focus on the RDI sector. They include regional funds, apart from the other financial products for RDI mentioned in the preceding sections (i.e. mainly offered by HBOR, HAMAG BICRO and some commercial banks). The terms of the facilities offered by Croatian commercial banks and HBOR are given in detail in Annex 3.

Guarantee Fund and Competitiveness and Innovation Framework Programme in Croatia

The Guarantee agreement, signed in August 2014 between the EIF and Hrvatska banka za obnovu i razvitak (HBOR), aims at encouraging commercial banks to extend loans to micro-entrepreneurs, especially start-ups, through the set-up of a scheme requiring **lower collateral requirements**.

The Competitiveness and Innovation Framework Programme (CIP), which ran from 2007 to 2013, had been put in place to boost European productivity, innovation capacity and sustainable growth. Under the Guarantee Fund, a new micro-loan programme is being implemented through which bills of exchange and debentures or pledges on the financed equipment will be considered as sufficient collateral. Loans are approved with a tenor of up to 5 years, up to 1-year grace period included. The maximum amount of a loan is EUR 25,000 in HRK equivalent value. The loan programme is implemented through commercial banks which have signed a co-operation agreement with HBOR.

Science and Innovation Investment Fund

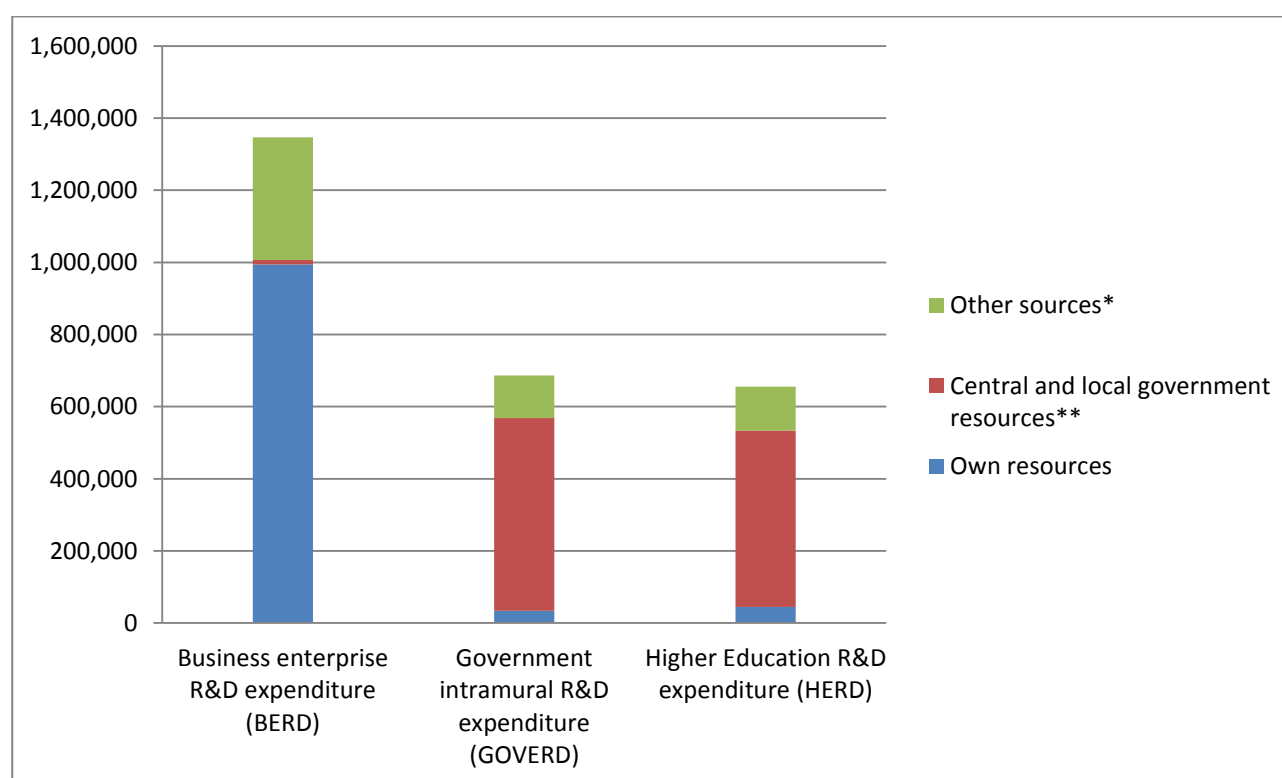
The Science and Innovation Investment Fund (SIIF) is an initiative financed under the Regional Competitiveness Operational Programme 2007-2013 and implemented by the Ministry of Science,

Education and Sport, Its objective is to boost commercialisation of research and technology transfer. The Fund has been implemented in two phases. Five projects that received EUR 5 million funding from the first phase have been successfully implemented. In the second phase (SIIF II), 19 new projects were financed, covering higher education institutions and public scientific organisations from Knin, Rijeka, Osijek, Slavonski Brod, Split and Zagreb. The total value of funds amounts to over EUR 11.2 million, accompanied by TA to the total value of EUR 279,410.

Overview of the sources of finance for RDI

The figure below provides an overview of the sources of finance for RDI by sector in 2013 (latest data available).

Figure 14: Sources of finance for RDI by sectors in 2013 (values in thousands HRK)



Source: Croatian Bureau of statistics (2015) Statistical report - Research and Development, 2013

* Including banks, public enterprises, non-profit institutions, foreign investors.

** Including public funding disbursed through e.g. HAMAG-BICRO programmes, Science and Innovation Investment Fund (SIIF), and other national programmes.

As shown in the figure above, while the BERD expenditure was mostly covered through the internal (own) resources of enterprises, GOVERD and HERD received a higher proportion of central and local government funding.

4.4.3 SUD and territorial development

While various urban projects have been financed by both IFIs and national financing institutions, it appears that no dedicated funds have been set up to support urban development in Croatia so far.

The facilities for urban development offered by Croatian commercial banks and HBOR are presented in detail in Annex 3.

4.4.4 Broadband technologies

No dedicated national banking product for broadband investment has been identified in this study. However, from 2011 to 2013, the Croatian Regulatory Authority for Network Industries (HAKOM) has granted EUR 5.2 million for development of broadband networks to the areas of special state concern, hilly and mountainous areas, and islands. The beneficiaries included “Transmitters and Communications Ltd.” OI, and Hrvatski Telekom (HT).

4.4.5 Overview of main sources of finance available in Croatia per investment area

The following figure provides a summary of the main available sources of finance for the target investment areas, with the annual estimated amounts, main products offered, and main product terms.

Table 23 : Overview of main sources of finance available in Croatia per investment area

Investment area	Source of finance	Yearly available amount	Main products offered	Characteristics (pricing, maturity, etc.)
EE/RE public buildings	EPEEF	EUR 9.4 million	Grants	40,60 and 80% of eligible costs
	Commercial banks	n.a.	Loans	Pricing - on a project by project basis Maturity - up to 10 years Collateral - on a project by project basis
	HBOR	EUR 3.7** million (for private and public buildings)	Loan	Pricing - 4% fixed or more* Maturity - up to 14 years Grace period - from 1 to 3 years Collateral - bills of exchange, debentures, etc.
EE/RE private buildings	EPEEF	EUR 23.2 million	Grants and zero interest rate loans (for commercial buildings only)	According to “de minimis rules”
	Commercial banks	EUR 15m million ⁱⁱ only for households	Loans	Pricing - c. 5% Maturity - up to 5 years Collateral - mortgage, insurance policy, bill of debentures, etc.
	HBOR	EUR 3.7** million (for private and public buildings)	Loans	Pricing - 4% fixed or more* Maturity - up to 14 years Grace period - from 1 to 3 years Collateral - bills of exchange, debentures, etc.
EE/RE industrial processes	EPEEF	EUR 1.7 million	Grants and zero interest rate loans	According to <i>de minimis</i> rules
	Commercial banks	n.a.	Loans	Pricing - some banks e.g. ZABA are offering “lower than commercial interest rate” Maturity - up to 5 years Collateral - financial collateral, mortgage, insurance policy, etc.
	HBOR	EUR 1.3 million ⁱ	Loans****	Pricing - 4% fixed or more* Maturity - up to 14 years Grace period - from 1 to 3 years Collateral - bills of exchange, debentures, etc.
SUD	EPEEF	EUR 5.7 million ⁱⁱⁱ	Grants	40, 60, and 80% of eligible costs
	Commercial banks	EUR 45million***	Loans	Pricing - some banks are offering “lower than commercial interest rate”

Investment area	Source of finance	Yearly available amount	Main products offered	Characteristics (pricing, maturity, etc.)
				Maturity- “depending on the project to project basis” Collateral- “ In accordance with internal regulation”
	HBOR	n.a.	Loans****	Pricing- 4% fixed Maturity- up to -14 years Grace period- up to 5 years Collateral- Bills of exchange and debentures and other collateral customary in banking practice in the risk sharing model with commercial banks
RDI SME	HAMAG-BICRO	EUR 4.8 million**	Conditional loans, guarantees, grants	Guarantees - up to EUR 915,000 Grant - up to 70% of eligible costs Conditional loans- 70% of eligible costs
	ZABA (EIF)	EUR 7 million ⁱⁱⁱ	Loans	Pricing- “Depending on the project to project basis” Maturity- up to 7 years Collateral-“In accordance with internal regulation”
	SIIF	EUR 11.2 million ⁱⁱⁱ	Grants	n.a.
	Commercial banks	EUR 16.5 million ** (for both large and SMEs)	Loans	Pricing - 4%-7% Maturity- “Depending on the project to project basis” Collateral- “Depending on the project to project basis”
	HBOR	n.a.	Loans	Pricing- 2% fixed or more Maturity- up to -14 years Grace period- up to 3 years Collateral- Bills of exchange and debentures and other collateral customary in banking practice in the risk sharing model with commercial banks
RDI Large Corporates	Commercial banks	EUR 16.5 million (for both large and SMEs)	Loans	Pricing- 4%-7% Maturity- “Depending on the project to project basis” Collateral- “Depending on the project to project basis”
Broadband	Commercial banks, own equity, intra-company loans	n.a.	Loans	Pricing- 4%-7% variable for commercial loans

Source: PwC elaboration, 2015 based on the data gathered during the supply side analysis

* It should be noted that for financing of this area HBOR temporarily (first 6 months of 2015) reduced its interest rates by one percentage point. Therefore HBOR's interest rate at the time of the writing of this report is 3% for this area.

** Amounts refer to loans in previous period

*** Yearly average amount of long term loans to local government from 2010 till the end of 2014

**** HBOR very recently introduced a subordinated loan model for among other environmental protection including EE/RE in industrial processes and for urban development projects. The loan from the model is subordinated to the commercial loan given for the project and it is started to be repaid after the commercial loan is repaid. The interest rate depends on the project. As it only started the implications of this model are still unknown.

ⁱ Average yearly loans extended for 2013-2014

ⁱⁱIn 2014 EPEEF disbursed EUR 22,4mn for EE renovations for multi-apartment buildings and family homes. If we conservatively assume that the average incentive intensity was 60%, although it was probable closer to 40% as the renovations were done mainly in more developed Croatian counties, and we assume that for the remaining 40% owners of buildings used commercial loans, we are coming to the above figure.

ⁱⁱⁱ refers to the public lighting and public transport

ⁱⁱⁱⁱ one-off values.

4.5 Summary of the supply-side analysis

Supply-side - General findings

While the Croatian banking system is well developed thanks to the presence of approximately 30 different banking institutions, with a mix between domestic (11), state owned (2) and international players (15), plus 5 saving banks and 26 credit unions, the current financial crisis poses a serious challenge to its capacity to provide medium and long-term financing to (i) low/medium IRR projects (typically within the EE and SUD investment areas) and (ii) potentially more profitable projects with a higher risk profile (e.g. RDI).

Key findings:

- A) The surge in the share of non-performing loans following the economic and financial crisis has increased the banks' risk aversion and the regulatory burden, with negative implications on lending volumes. The associated higher risk premium dampened the propensity to lend, particularly for the low-to-medium IRR⁷² investment projects promoted by the private sector (lending to non-financial corporates decreased by 5.5% between 2010 and 2014). **ISSUE: limited risk appetite, high cost of lending, high/expensive collaterals/securities;**
- B) In addition, because of the increasing regulatory pressure on capital requirements, the banking sector tends to focus on shorter-term lending (in the public sector short term loans <5 years increased by >200% in the 2010-2014 period) in pursuit of operations that offer higher yields and lower risks. **ISSUE: focus on high IRR projects, limited provision of long-term financing;**
- C) While lending to the public sector has increased, lending to local government has remained at a relatively low level due to a number of challenges encountered by municipalities seeking to obtain financing such as legal debt limits, volatile revenues and in some cases a lack of experience in dealing with the financial sector and/or structuring financing proposals for infrastructure projects (e.g. low capacity in smaller municipalities). The poor quality of application materials was raised in interviews with some banks when discussing RE projects⁷³. Further on, the problem of banks' low familiarity with certain sectors (e.g. EE, RDI) is often compounded by the insufficient quality of business plans and feasibility studies submitted by project promoters in their funding applications. **ISSUE: legal lending limits for municipalities, project preparation and structuring, non-project/investment based financing;**
- D) Average long-term lending rates from 2008 to 2014 (currency clause) ranged between 6%-8%, an interest rate difficult to accept for promoters of low/medium IRR projects (such as those within EE and SUD). **ISSUE: cost of financing higher than project financial return;**

⁷² Internal Rate of Return.

⁷³ The "balance" of the supply-side bottleneck (i.e. unfamiliarity of banks v poor project applications) is not possible to determine at an aggregate level and varies per sector and bank.

- E) Banks are generally unwilling to finance projects based on the credibility of the investment or the prospects of savings (i.e. on a project finance basis), but rely on more traditional project finance basis. **ISSUE: non-project/investment based financing;**
- F) Legal system uncertainties, for instance, in the case of EE projects, banks may be unwilling to give loans to ESCOs because they fear that if contract obligations towards the energy service provider are not met at some point (i.e. the client stops paying to the provider), it may take a long time for the service provider (i.e. the borrower) to recover the money owed and repay the loan. **ISSUE: legal constraints;**
- G) In some cases bank funding for individual projects may not be sufficient to cover their entire cost because of (i) specific exposure limits (for example in projects promoted by private sector), (ii) absence of other financiers and (iii) limited resources invested by the promoter. **ISSUE: quantitative constraints on bank financing;**
- H) Lack of product sophistication, with limited offering for risk-taking products such as subordinated loans, hybrid equity instruments and equity. **ISSUE: product offering.**

The **supply of financing for projects is distributed unevenly across the target sectors** under consideration, with **banks more willing to provide financing for EE/RE than for sustainable urban and territorial development and RDI**. Also, bank support to investments in RDI and broadband is often not recorded as such, as it is extended as generic lending for capital expenditures. **Loans (debt financing) remain the dominant product**. Against this backdrop, financial instruments providing long-term/equity financing could remove the reluctance of financial intermediaries to engage in medium and long-term investment.

Last but not least, there are very few **project finance transactions promoted by the public sector**, indicating a lack of expertise in the field (the PPP/PFI market in Croatia accounted for less than 1% of the total EU PPP/PFI market in the period 1990/2014).

Supply-side - Sector-specific findings

Financing EE/RE in buildings and industrial production processes

Key findings:

- A) There is no structured approach for financing EE projects. Public and private sector can obtain funding from EPEEF, commercial banks and/or HBOR, to support EE investment in buildings and/or industrial processes
- B) Commercial banks, despite available funding by the IFIs for EE, charge relatively high interest rates and have high collateral requirements.
- C) While HBOR is the only financial institution offering favourable conditions (interest rates of 3%, maturity up to 14 years, grace period up to 3 years), there are still limitations to such financing, as commercial banks for their part of the loan in the “risk-sharing model” developed with HBOR request similar collaterals as in their “regular” lending business. In the “direct lending” model, especially for larger projects, HBOR may also request higher collateralisation according to their project risk assessment. HBOR also ask for equity participation by project promoters which, although lower than the one requested by commercial banks, is often difficult to provide for smaller companies. EPEEF also offers very favourable conditions (grants or zero interest loans covering up

to 40%, 60%, and 80% of eligible costs), but the combination of these two sources appears to be limited and not enough to cover existing demand/stimulate new investment.

- D) With regards to the financing that EPEEF currently offers, the main issues are:
- I. Limited funding of the EPEEF's own budget;
 - II. In the case of grants provided by EPEEF, the investor is reimbursed after the completion of works, which creates some pre-financing issues;
 - III. "De minimis" allocation, which is not sufficient for larger investments (i.e. commercial non-residential buildings such as hotels, industrial projects, etc.).
- E) Exposure limit prevents from offering the total financial need to projects.

Financing sustainable urban development

Key findings:

- A) In recent years banks have shifted part of their lending to the private sector by increasing their lending to the public sector as banks consider the latter less risky. The LGUs have benefited from this additional lending, increasing annually their debt by an average of EUR 45 million since 2010.
- B) The funds which may be borrowed by cities and local authorities are however legally limited by the existing regulatory framework as previously described. According to calculations taking into consideration the legal constraints on their borrowing capacity, cities are currently using 75% of their borrowing potential, therefore there remains some scope for them to increase borrowing to cover investment needs for the specific objectives considered by this Assignment (EUR 15 million yearly).

Financing RDI interventions

Key findings:

- A) Banks have decreased lending to the private sector and this is likely to have a negative impact on the supply of funding for corporate RDI;
- B) They do not account for RDI loans separately from other corporate loans;
- C) Have good relationships with IFIs, however very small amounts from IFIs are dedicated to RDI (e.g. EIF's Risk Sharing Instrument for ZABA, EUR 7 million for RDI) as opposed to EE sector financing.

Even though programmes for financing of RDI exist (such as the HBOR's programme "Inventions") that offer favourable conditions (e.g. fixed 2% interest rate, maturity of up to 14 years, grace period of up to 3 years) they focus only on projects promoted by small companies. Commercial banks do offer loans to large corporates, however these are not purpose-specific and do not have such favourable interest rates (variable rate, currently in the 4%-7% range).

The interviews indicated that guarantees currently offered by HAMAG-BICRO are not sufficient for larger RDI projects (guarantees are up to about EUR 915,000). In addition, the existing non-refundable public support to RDI projects consists mainly of tax incentives (totalling about EUR 13.5 million in 2013) and grants such as those from HAMAG-BICRO (about EUR 2.5 million provided in 2013).

Financing broadband

Key findings:

Broadband roll-out projects are generally funded by companies' own equity (e.g. Hrvatski Telekom) and in some cases by commercial (e.g. Metronet) and intra-company loans (e.g. Vipnet). No dedicated national banking product for broadband roll-out has been identified and, like in the RDI case, banks do not account for broadband loans separately from general corporate loans.

In addition, in 2011-2013 HAKOM has granted EUR 5.2 million for the development of broadband networks in areas of special state concern, hilly and mountainous areas and on islands. Beneficiaries were, among others, Transmitters and Communications Ltd (Oiv) and Hrvatski Telekom (HT).

Supply side benefits from introducing Financial Instruments

In light of the issues reviewed above, the introduction of FIs has the potential to benefit the supply side and therefore enable the realisation of valuable projects.

- Diversify the supply of financial products

Most funds and facilities in Croatia in the sector consisted of loans (HBOR and commercial banks) and grants, while the use of other types of financial products provided by financial institutions has been limited (e.g. soft loans provided by HBOR and EPEEF and guarantees from HAMAG-BICRO). The equity market including capital market, private equity and business angels, is not sufficiently developed. Also, being Croatia the most recent member of EU there is still no experience of financial institutions, funds and administration with managing more complex FIs. IFIs such as the EIB could play a positive role structuring and managing future FIs and potentially providing leverage.

- Offer better funding terms

The FIs could help to overcome issues related to high interest rates and collaterals requested by banks as will be considered in the investment strategy chapter. The limited funds currently and in the future available to EPEEF could be substituted by a FI where additional leverage from public and private actors could substantially increase the funds to be invested in EE projects. The facilities offered by the IFIs and potentially by pension funds could be utilized for such leverage. For EE investment projects with longer payback period blending grants and FIs should be considered taking however into consideration the most recent regulation on such blending.

- Improve conditions (and likelihood of getting funding) for Local Authorities

FIs, if introduced, could help to overcome some of the challenges that LRGUs are currently facing:

- A) Projects financed by FIs funded by ESI funds are by law not subject to previously mentioned legal borrowing limits (although this is the case also for grants);
- B) FIs include leverage which would permit more projects in the Croatian urban sector than in case those projects are financed by grants;

- C) If projects are financed also by grants the FIs could cover the remaining part which should otherwise be covered by banks;
- D) In case of grants, for beneficiaries it is only possible to obtain an advanced payment for their projects while FI can be immediately deployed with a whole amount;
- E) The issue outlined in the interviews on the insufficient administrative capacity of LRGUs might be solved by the TA provided by the FI.

- Improve conditions (and likelihood of getting funding) for the private sector

FI could help to overcome the issues noted for large corporates, for example with loans provided at better market conditions. FIs in the form of equity or quasi-equity could be helpful for projects with longer payback period and fill the incomplete range of financial products present on Croatian market (e.g. Private equity and venture capital markets), for SMEs.

Financial instrument such as a soft loan could be provided to companies together with a grant in order to overcome the rather expensive commercial loans (400 bps margins or more for some companies) with some further advantages:

- A) A FI, as opposed to grants, may be deployed almost immediately and in its entirety;
- B) For grants there is a longer application process and only an advanced payment in the beginning of the investment;
- C) The FI could address the issue of limited guarantee sizes available at the moment by offering guarantees of larger size for such projects;
- D) The leverage of FI, by deploying additional private or international public funding, could bring to higher amounts of financing at disposal of Croatian enterprises;
- E) TA from the FI might be used in the preparation phase of the projects, especially for SMEs (e.g. due diligence cost, feasibility study costs, etc.) to overcome issues mentioned in this study.

5 Building block 1: Market assessment of priority investment areas

The analysis of the investment areas presented in this chapter follows the methodology from the **Building block 1 - market assessment**, in line with the good practice *Ex-ante assessment for financial instruments* (Vol I - general methodology) published by the European Commission.

For **EE/RE, SUD** and **RDI** sectors (in that order), Chapter 5 offers a description and analysis of the key elements of the potential demand for investments from both the public and private sectors (market, main players operating in the market, key features of projects, estimate of the demand for intervention). They are then compared to the findings of the supply analysis to identify potential gaps in the financing market (**market gap**), both from a quantitative perspective (i.e. not enough resources potentially available from different supply sources to cover the estimated demand) and from a qualitative perspective (i.e. financing products offered are not suitable for the specific market conditions/projects characteristics). The **value added of the use of FIs** is then explored along with the possibility to use FI to attract **additional public and private resources**. Additionally, **specific existing experience** of FIs implementation in the same / similar target areas across Europe offers an overview of key success factors to take into account (**lessons learnt**) while defining the structure of possible FIs.

A similar exercise is carried out for **Broadband**, although only as high-level guidance and analysis and with a focus on the “last-mile” for broadband services.

5.1 Energy Efficiency and the use of renewable energy in (i) buildings - private and public, residential and non-residential; (ii) the improvement of industrial production processes

5.1.1 Analysis of market failures, suboptimal investment situations and investment needs

The following paragraphs provide details on analysis performed and related results by type of intervention:

- Energy efficiency improvement of buildings (private and public, residential and non-residential);
- Energy efficiency improvement in production processes.

5.1.1.1 Buildings – private and public, residential and non-residential

Description of the market

Building stock

Residential buildings represent 73% of the Croatian building stock with more than 760,000 units. Overall, public stock accounts for 7% of the total while commercial buildings represent approximately 19%⁷⁴. The table below provides an overview of residential and non-residential building stock by period of construction.

⁷⁴ Source: Long-Term Strategy for Mobilising Investment in the Renovation of the National Building Stock of the Republic of Croatia.

Table 24: Building stock in Croatia by main type, gross floor area and number

Year of construction	Multi-apartment buildings ⁷⁵			Single family homes ⁷⁶			Commercial buildings ⁷⁷			Public buildings ⁷⁸		
	Number	%	Area	Number	%	Area	Number	%	Area	Number	%	Area
Before 1940	37,201	13%	5,830,983	64,391	14%	10,092,805	2,338	5%	1,498,159	12,365	15%	1,545,813
1941–1970	85,959	30%	13,473,337	151,507	32%	23,747,572	12,587	28%	8,064,602	22,525	28%	2,815,845
1971–1980	59,882	21%	10,398,113	93,109	20%	16,167,887	6,733	15%	5,251,934	19,021	24%	1,882,000
1981–1987	44,434	15%	9,401,527	68,348	14%	14,461,473	4,323	10%	5,108,279	10,158	13%	2,152,000
1988–2005	38,358	13%	8,177,401	75,615	16%	16,120,249	10,596	24%	8,107,287	11,059	14%	2,722,497
2006–2009	18,256	6%	6,199,252	13,762	3%	4,673,079	6,199	14%	6,352,000	3,673	5%	2,073,747
2010–2011	6,600	2%	1,957,449	4,976	1%	1,475,551	1,952	4%	2,158,198	1,395	2%	610,000
Total	290,689	100%	55,438,063	471,708	100%	86,738,615	44,728	100%	36,540,459	80,196	100%	13,801,902
% of Total	33%	-	29%	53%	-	45%	5.0%	-	19%	9%	-	7%

Source: Ministry of Construction and Physical Planning (2014), Long-Term Strategy for Mobilising Investment in the Renovation of the National Building Stock of the Republic of Croatia.

As shown in the above table, within the individual types of stock the oldest stock, represented by buildings constructed before 1940, ranges between 5% (commercial buildings) and 15% (public buildings) of the total, while the most modern constructions (built since 2006) peak at 18% (commercial buildings).

While single family homes are 100% privately owned, 10% of multi-apartment buildings are owned by legal persons or by public sector entities. Owners of multi-apartment buildings which include six or more apartments are required to appoint a building manager to perform administrative and maintenance services on behalf of the landlord. Accordingly multi-apartment buildings may be administered by one or more managers.

Some 15% of the stock owned by central government is composed by residential buildings (this ratio is similar for counties and municipalities, but a breakdown by use is not available). Building managers also administer some publicly-owned buildings. For commercial buildings, available statistics include only those where the majority is privately owned.

Table 25 provides an overview of the national residential and non-residential buildings stocks by the respective climatic zone.

⁷⁵ Multi-apartment buildings (MAB) are privately owned buildings with three or more building units.

⁷⁶ The category of single-family homes (SFH) covers buildings with at most 2 housing units in private ownership.

⁷⁷ The commercial buildings include offices (financial institutions, liberal professions and other), hotels and restaurants, wholesale and retail trade, and industrial buildings.

⁷⁸ The statistics for public buildings relate to ownership and not use.

Table 25: Overview of national residential and non-residential building stock by climate zone

Climate Zone	Multi-apartment buildings		Single family homes		Commercial buildings		Public buildings	
	Number	Area	Number	Area	Number	Area	Number	Area
Continental	186,922	35,648,303	303,322	55,775,475	29,968	24,482,108	53,731	9,247,275
% of Total	64.3%	64.3%	64.3%	64.3%	67.0%	67.0%	67.0%	67.0%
Coastal	103,767	19,789,760	168,386	30,963,140	14,760	12,058,351	26,465	4,554,628
% of Total	35.7%	35.7%	35.7%	35.7%	33.0%	33.0%	33.0%	33.0%
Total	290,689	55,438,063	471,708	86,738,615	44,728	36,540,459	80,196	13,801,902

Source: Ministry of Construction and Physical Planning (2014), Long-Term Strategy for Mobilising Investment in the Renovation of the National Building Stock of the Republic of Croatia

Energy consumption in buildings

Despite the decrease in total energy consumption in Croatia in recent years (e.g. in 2012 it was 4.7% lower than 2011 and 12.6% lower compared to 2007), there is still room for improvement. Croatian **real-estate stock** does not have the optimal level of energy efficiency, as evidenced by the country's energy consumption per household. At 4,000 kWh/year per dwelling in 2011, Croatia still had a slightly higher energy consumption than the EU-27 average. At peer level, Croatian households used marginally less energy than in the neighbouring Slovenia⁷⁹.

The real estate stock (housing and commercial) in Croatia **is the largest energy consumer** with 43% share in the final energy consumption in 2012, two-thirds of which is from the residential sector and one-third from the public and commercial sectors (OPCC, 2014). It is estimated that 10–20% of the total electricity consumed is used for cooling and air-conditioning purposes, which is one of the basic reasons behind the occurrence of peak loads in the electric power system, especially during the Summer months. Moreover, it is estimated that **cooling and air-conditioning market demand will quadruple in the next five years** and it will be followed by an increase in required electricity⁸⁰.

Energy consumption for residential buildings heating purposes varies considerably according to building's age and location:

- 80% of heat consumption is due to residential buildings in the continental areas of Croatia;
- 85% of heat consumption is due to residential buildings constructed before 1990, of which building stock of energy class D or lower accounts for more than 80%. Interestingly, the energy consumption in buildings developed before 2006 shows only a moderate decline, while a more evident drop is registered after 2007;
- 70% of the energy consumption in households is due to cooling and heating purposes, reflecting a district heating system that besides being old and inefficient has low geographical coverage.

The table below illustrates an estimated annual final energy consumption for heating, cooling, domestic hot water generation and lighting per m² in coastal and continental Croatia, by category of the Croatian national building stock.

⁷⁹ Enerdata, "Energy Efficiency Trends for households in the EU", May 2015.

⁸⁰ The Third NEEAP for the period 2014-2020 period.

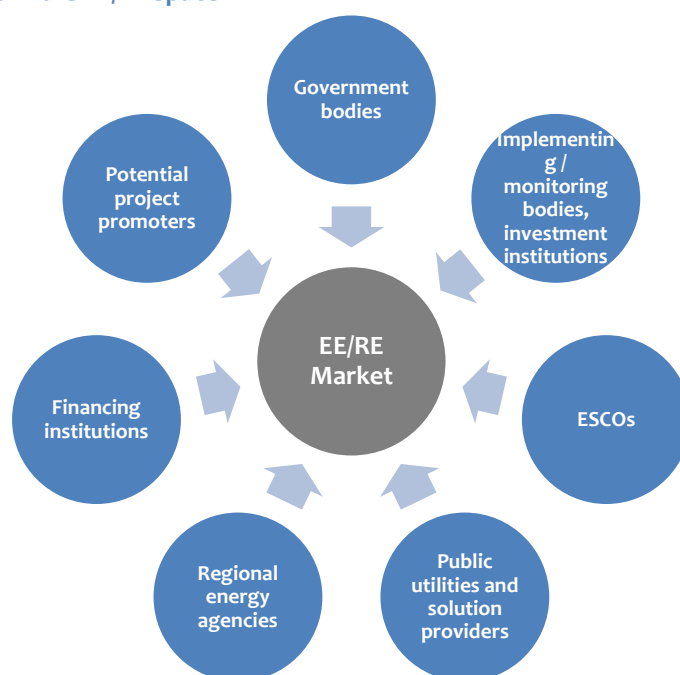
Table 26: Annual final energy consumption for heating, cooling, DHW generation and lighting (kWh/m² per year)

Build-cat.	Continental Croatia							Coastal Croatia						
	Up to 1940	1941 – 1970	1971 – 1980	1981 – 1987	1988 – 2005	2006 – 2009	2010 – 2011	Up to 1940	1941 – 1970	1971 – 1980	1981 – 1987	1988 – 2005	2006 – 2009	2010 – 2011
Multi-apart. Build.	477	354	336	318	265	159	124	216	159	152	143	120	72	57
Single family homes	530	566	537	509	424	255	198	249	265	253	239	200	120	94
Public build.	237	367	473	374	332	282	148	119	224	336	281	385	305	139
Comm. Build.	286	443	570	451	400	340	178	143	270	404	339	464	368	167

Source: Ministry of Construction and Physical Planning (2014), Long-Term Strategy for Mobilising Investment in the Renovation of the National Building Stock of the Republic of Croatia.

Key actors

The following key actors have been identified as most relevant in the EE/RE sector for public and private buildings (a more detailed description is provided in Annex 4):

Figure 15: Key actors in the EE/RE space

- Government bodies (designing and implementing policies – they provide for budgetary measures but do not act directly as financing entities). They include:
 - The Ministry of Construction and Physical Planning (MCP);
 - The Ministry of Regional Development and EU Funds (MRDEUF);
 - Ministry of Economy (MoE).
- Implementing and monitoring bodies and investment institutions (public or private bodies in charge of the implementation of EE/RES national policies by disbursing financing and/or monitoring the investments):

- EPEEF;
- Local and Regional Self-Government Units;
- Agency for Transactions and Mediation in Immovable Properties;
- Centre for Monitoring Business Activities in the Energy Sector and Investments.
- ESCOs. The majority of ESCOs involved in EE/RE interventions on public buildings are construction companies. They suffer from limited competencies in providing energy service management and limited access to commercial bank financing. The ESCO market in Croatia is still at early stage of development, with a number of obstacles still hindering the possible scaling-up of the model.

Challenges currently faced by ESCOs

- Lack of standard contracts and lack of proper baseline energy consumption models.
- Lack of awareness of commercial banks that ESCO model investments are cost-effective. Commercial banks often perceive ESCO projects as high-risk, requiring high collateral / guarantees. Asset based loans are not applicable to energy saving interventions financed through the ESCO model (since an ESCO would not own the real estate asset which it provides energy-efficiency solutions to). Revenues are represented by fees agreed with the owners of the property through contractual obligations (in which the technical performance to be achieved through ESCO's intervention is also defined), and currently banks do not possess sufficient specialist knowledge to conduct an acceptable risk analysis (if interested in financing ESCOs, however, they could either develop or acquire such skillset on the market).
- Interest rate subsidies from EBRD combined with the EPEEF grant are only available to the grant beneficiary and not the ESCO. The ESCO is, however, financing the investment.

- Public utilities and solution providers (organisations that run and maintain the infrastructure for a public service – e.g. gas, electricity, water and sewage). The two main ones are:
 - Plinarco;
 - HEP d.d..
- Regional energy agencies (they not only encourage public administration offices to meet their EE requirements but also encourage them to implement various EE and RES measures). The most relevant ones are:
 - REA Kvarner;
 - REGEA;
 - REA North;
 - MENEa;
 - IRENA.
- Financing institutions, including:
 - Commercial banks;
 - HBOR;
 - EIB and other IFIs.
- Potential project promoters:
 - Asset owners (e.g. enterprises, municipalities, landlords, etc.);
 - Building managers of public and private multi-apartment buildings (e.g. GSKG).

Identification of demand for EE/RE interventions in public and private residential (and family homes) and non-residential buildings

Drawing upon the guidance contained in the *Ex-ante assessment methodology for financial instruments* (Vol IV - low carbon), four methods have been used to estimate the amount of investment needed for EE/RE interventions (the same methodology has been used for public sector and private sector buildings):

1. Amount needed to achieve energy efficiency gains as % of energy savings on current consumption under different scenarios;
2. Amount needed (and related energy saving potential) to achieve the targets set by the III NEEAP 2013-2016, the strategic document which lays down the energy saving objectives which the Croatian government is committed to achieve by 2020;
3. Amount needed to implement the SEAPs, i.e. documents developed by the cities that contain planning of actions and EE/RE projects on buildings to support cities to combat climate change (applicable only to public buildings);
4. Amount of investment needed to implement the actual EE/RE projects identified through Interviews and workshops.

Public sector buildings

Estimate of the amount of investment needed to achieve energy efficiency targets.

As already explained, in 2010 the estimated usable floor area in **public sector buildings** was about 13.8 million m² in total. Of this floorspace, according to NEEAP 43.9% (ca. 6.06 million m²) is heated and could be targeted for EE/RE interventions.

Based on estimates of the Ministry of Construction and Physical Planning (MCP)⁸¹, the costs for retrofitting buildings implementing the measures which are envisaged in the “Technical Regulation” in place⁸² is approx. HRK 1,000 per m². Such regulation has to be applied within 2018 for public buildings and till 2020 for all other buildings. Directive 2010/31/EU is in force since 1 January 2015, requiring the implementation of integrated energy renovation measures which entail additional cost for ca. HRK 600 m² (i.e. total cost of HRK 1,600 per m²). The cost to retrofit public buildings for the 2014-2020 programming period can consequently be estimated as the average of those 2 figures, i.e. at approx. HRK 1,300 per m².

Taking into consideration these assumptions, it can be concluded that the **Croatian authorities will have to mobilise approximately HRK 7.88 billion (EUR 1.03 billion)** in order to retrofit **100% of public buildings** in order to achieve the targets. As for the energy savings achievable through the implementation of these measures, a distinction should be drawn between buildings located in the continental vs. the coastal areas. The specific energy savings achievable by the implementation of these measures are equal to ca. 155.26 kWh/m² per year for buildings in continental Croatia and ca. 76.53 kWh/m² for coastal

⁸¹ Ministry of Construction and Physical Planning (2014), Long-Term Strategy for Mobilising Investment in the Renovation of the National Building Stock of the Republic of Croatia.

⁸² (NN No 76/2007) Technical regulation on energy economy and heat retention in buildings, available at: <http://narodnenovine.nn.hr/clanci/sluzbeni/341775.tml>

Croatia⁸³. However, as a breakdown of the % of heated floor area per continental and coastal area in Croatia is not available, only a very rough estimation could be provided concerning the energy savings achievable by retrofitting the total public building stock in Croatia:

- It can be assumed that ca. 4.06 million m² (i.e. 43.9% of the total building stock) is heated usable floor area in Continental Croatia and;
- 1.99 million m² (i.e. 21.5% of the total building stock) in coastal Croatia;
- Accordingly, by retrofitting the total building stock of public building in Croatia, it can be estimated that energy saving will be achieved in the measure of **630.3 million kWh** for continental Croatia and **153.0 million kWh** of energy saving for coastal Croatia. Such energy saving are estimated to achieve yearly cost saving equal to HRK **93.10** per m² and HRK **45.89** per m² in continental and coastal Croatia⁸⁴.

Therefore, the implementation of retrofitting measures for public buildings could achieve cost saving for ca. **HRK 377.9 million** (EUR 49.40 million) in the continental areas and **HRK 91.8 million** (EUR 12 million) in the coastal ones. The combined investment of EUR 1.03 billion would therefore trigger cost savings totalling ca. EUR 61m (combining continental and coastal areas), equivalent to a yield of ca. 6% and a payback period of almost 17 years.

Table 27 recaps the calculation made above and illustrates the investment needs as well as energy and cost savings that would be generated by the retrofitting of public buildings under three different scenarios i.e. 100%, 50%, 25% of the total heated public building stock in Croatia.

⁸³ Ministry of Construction and Physical Planning (2014), Long-Term Strategy for Mobilising Investment in the Renovation of the National Building Stock of the Republic of Croatia.

⁸⁴ Ibidem.

Table 27: Investment needs, energy saving and cost saving per scenario in continental and coastal Croatia

% of retrofitted buildings	Total					Continental					Coastal				
	Area (m2 million)	Investment needs (HRK billion)	Energy saving (kWh million)	Cost saving (HRK million)	Return (Cost saving /investment needs)	Area (m2 million)	Investment needs (HRK billion)	Energy saving (kWh million)	Cost saving (HRK million)	Return (Cost saving /investment needs)	Area (m2 million)	Investment needs (HRK billion)	Energy saving (kWh million)	Cost saving (HRK million)	Return (Cost saving /investment needs)
100	6.06	7.88	783.3	469.7	6.0%	4.06	5.28	630.3	377.9	7.2%	2	2.6	153	91.8	3.5%
50	3.03	3.94	391.65	234.85		2.03	2.64	315.15	188.95		1	1.3	76.5	45.9	
25	1.52	1.97	195.83	117.43		1.02	1.32	157.58	94.48		0.5	0.65	38.25	22.95	

Source: PwC estimations on the basis Long-Term Strategy for Mobilising Investment in the Renovation of the National Building Stock of the Republic of Croatia.

Estimate of the amount of investment needed to achieve the targets set by the III NEEAP

To achieve the EE targets set by the national strategy for 2020, the NEAP foresees a set of specific measures targeting the **public sector buildings** (including central government buildings, as well as LRSGUs, public companies and kindergartens, schools and hospitals):

- The EE/RE improvement of 200 public buildings (equal to approx. 420,000 m²) by the end of 2015 for a total investment need of HRK 400 million;
- The EE/RE improvement of additional 210,000 m² of public buildings annually from 2016 till the end of 2020 for a total **annual** investment need of approx. HRK 727 million.

Note that the above investments require considerable public spending, most commonly financed with debt. However, access to debt of national and regional actors is limited by the indebtedness limits imposed by the Stability and Growth Pact. This may significantly limit the actual ability of the Croatian public sector (for example with regard to hospitals) to invest in energy efficiency.

So, according to the NEEAP public institutions will have to secure overall ca. **HRK 4 billion** (i.e. HRK 400 million + 5x727 million) for the 2014-2020 period (**c. EUR 504 million**)⁸⁵. According to NEEAP, by implementing these programmes, the reduced energy consumption in public buildings will be approximately 262.50 million kWh by 2020 and will result in approx. 1.50 million m² (420.000 + 210.000x5) of building stock being refurbished from 2014-2020, which corresponds to approx. 25% of the total heated public building stock in Croatia.

Estimation of the amount of investment needed to implement the SEAP

The SEAP developed by Croatian cities⁸⁶ include a number of initiatives targeting public buildings. Table 28 shows details of the building stock on which SEAP envisage EE/RE interventions by 2020.

Table 28: Potential project pipeline for public owned buildings

Building category	Building surface in m ²	Number of buildings
Educational institutions	299,764	180
Sports Facilities	80,360	37
Cultural institutions	85,778	48
The city administration	50,965	81
Healthcare	17,539	11
Other*	385,630	3,961
Total	920,036	4,318

Source: SEAPs of Croatian cities

* includes residential and business offices owned by the cities, offices and buildings of city-owned companies, fire department buildings, police stations, etc.

⁸⁵ The assumptions are based on the following elements: (i) According to the data from the National Energy Management Information System, a total of 13.8 million square meters of usable floor area of public sector are present in Croatia, 43.9% is heated; (ii) Energy renovation of buildings will be primarily be based on buildings constructed before 1987; (iii) Reconstruction costs are estimated in HRK 1,500 per m².

⁸⁶ So far, 39 Croatian cities have drawn up SEAPs (48 with municipalities), 11 of which have already been adopted by the project council. The cities are: Vinkovci, Brtonigla, Varaždin, Zadar, Ludbreg, Lastovo, Korčula, Mljet, Pirovac, Vela Luka, Donji Mihaljac, Beli Manastir, Belišće, Osijek, Poreč, Labin, Brdovec, Samobor, Ozalj, Velika Gorica, Bjelovar, Rovinj, Buzet, Krk, Otočac, Umag, Kastav, Barban, Buje, Grožnjan, Dugo Selo, Opatalj, Križevci, Ogulin, Gospić, Karlovac, Opatija, Pregrada, Slunj, Sveta Nedjelja, Duga Resa, Jastrebarsko, Sisak, Koprivnica, Zaprešić, Klanjec, Rijeka, Ivanić Grad and Zagreb.

According to the publicly available SEAP, it appears that the total estimated investment needs for the implementation of EE/RES measures amounts to ca. **EUR 500 million**. A breakdown of the investment needs per city is presented in the annexes. Such investments should lead to total annual energy saving of ca. **262.50 million kWh** (equivalent to EUR 20.6 million⁸⁷) by 2020.

Amount of investment needed as identified through interviews and workshops.

During the course of the assignment a concrete list of projects has been identified via interviews and desk research, for which financial sources have been only partially secured or not secured at all. Projects identified were screened against the criteria explained in Chapter 1.4. as illustrated in the table.

It is worth mentioning that the majority of stakeholders pointed out that implementing EE/RE interventions in buildings is a priority for them, but the extent to which they will be able to develop projects is strictly connected with the availability of resources, taking into consideration:

- (i) Funding needs,
- (ii) Pricing and tenor of the financial resources.

Technical assistance support is also needed to accelerate the time to market of projects and the financial sustainability of the investment

⁸⁷ Assuming ca. 0.6 HRK = 0.07 EUR per kWh, Savings in HRK were calculated in accordance with the electricity and gas prices specified in the annual reports Energy in Croatia (2012 prices were used for 2013), similarly to what envisaged in the NEEAP for the calculation of energy saving and cost saving. See the Annex 12 for details on the calculation.

Table 29: EE/RE on public buildings – Selected Project pipeline (methodology and explanation of classifications are reported in Chapter 1.4)

City	Project name	Project description	Project size (EUR million)	Project readiness (Short/medium/long term)	Qualitative description of economic performance (High, Moderate, Low)	Qualitative description of financial performance (High, Moderate, Low)	Classification by financial and economic performance (A, B, C or D) ⁸⁸
Zagreb	ZAGEE (Intelligent Energy Europe)	Identification of 87 building to refurbish introducing EE measures. The list include: <ul style="list-style-type: none"> • 15 Elementary schools; • 36 Kindergartens; • 6 Retirement homes; • 3 Health centres; • 3 City administration buildings; • 17 Buildings of local self-government; • 7 Secondary schools. 	29.4	Short term <ul style="list-style-type: none"> • Technical documents are almost finalised for all interventions. • Public tenders for the works are ongoing • Interventions are expected to start late 2015 / early 2016. 	High <p>All interventions are expected to generate positive impacts for the environment and for the society (e.g. young people, old people).</p>	Moderate to low <p>High investment costs compared to the potential for energy costs savings (low potential for schools and kindergartens due to limited range of functioning hours, moderate/high potential for the others; low energy prices).</p>	B/C
Split	Refurbishment of 23 public buildings	Refurbishment of kindergartens, elementary schools, cultural and sport	8	Medium term <ul style="list-style-type: none"> • Project documentation is currently under development. There is still 	High <p>All interventions are expected to generate positive impacts for the</p>	Moderate to low <p>High investment costs compared to the potential for energy costs savings</p>	B/ C

⁸⁸ See Chapter 1.4 above.

City	Project name	Project description	Project size (EUR million)	Project readiness (Short/medium/long term)	Qualitative description of economic performance (High, Moderate, Low)	Qualitative description of financial performance (High, Moderate, Low)	Classification by financial and economic performance (A, B, C or D) ⁸⁸
		institutions (halls, pools) – total of 36.535 square metres.		<p>a debate on whether to do complete refurbishment or partial refurbishment</p> <ul style="list-style-type: none"> • The decision is expected to be taken following the identification of available sources of finance. • No information on expected start date for the interventions. 	environment and for the society (e.g. young people, social inclusion).	(low potential for schools and kindergartens due to limited range of functioning hours, moderate/high potential for the others, low energy prices).	
Split	Refurbishment of “Dom mladih” (Youth home)	Energy efficiency interventions.	10	<p>Short term</p> <ul style="list-style-type: none"> • Detailed design is ready, but still subject to alterations. • No information on expected start date for the interventions. 	High The project is expected to generate positive impacts for the environment and for the society (e.g. young people, social inclusion).	Moderate to low High investment costs compared to the potential for energy costs savings (moderate/high potential for reducing energy consumption; low energy prices).	B
Rijeka	EE - Reconstruction of kindergarten Đurđice	The refurbishment of the kindergarten will be done in such a way to reduce the requirements for energy consumption for heating and cooling, use RE and reduce CO ₂ emissions.	1.89	<p>Short term</p> <ul style="list-style-type: none"> • Design process is ongoing. • Interventions are expected to start late 2015/early 2016. 	High The project is expected to generate positive impacts for the environment and for the society (e.g. young people).	Moderate Moderate investment costs, low potential for energy costs savings (limited range of functioning hours; low energy prices).	B
Rijeka	EE – Reconstruction	Replacing old windows in the	11.5	Short term	Moderate/High	Moderate	B/C

City	Project name	Project description	Project size (EUR million)	Project readiness (Short/medium/long term)	Qualitative description of economic performance (High, Moderate, Low)	Qualitative description of financial performance (High, Moderate, Low)	Classification by financial and economic performance (A, B, C or D) ⁸⁸
	of Croatian National Theatre Ivan pl. Zajc	Croatian National Theatre Ivan pl. Zajc. The goal is to increase EE, as well as to reduce energy loss during winter on heating and in summer on cooling, to solve the problem of inadequate external joinery and window.		<ul style="list-style-type: none"> Design process not yet started (however not expected to be very long, considering the type of intervention). Interventions are expected to start late 2015/early 2016. 	The project is expected to generate positive impacts for the environment and for the society (cultural heritage).	High investment costs, medium potential for energy costs savings (interventions limited to one measure; low energy prices).	
Rijeka	The Faculty of Medicine in the University of Rijeka	The Faculty of Medicine in the University of Rijeka is planning to improve EE performance of the medical school through specific interventions on the roof.	0.50	Medium term <ul style="list-style-type: none"> Design process not yet started. No specific information on expected starting date, however, according to EU Regulation, it must be done by 2017. 	Moderate The project is expected to generate limited positive impacts for the environment but high impact for the society (improved working conditions for young people .	Moderate High investment costs, compared to the medium/low potential for saving energy consumption through the proposed measure.	B/C
Rijeka	Dom mladih (Youth home)	EE interventions in Dom mladih.	10	Short term <ul style="list-style-type: none"> Final design is ready, however modifications are required. Process not yet started. 	High The project is expected to generate positive impacts for the environment and for the	Moderate High investment costs, medium potential for energy costs savings (low energy prices).	B

City	Project name	Project description	Project size (EUR million)	Project readiness (Short/medium/long term)	Qualitative description of economic performance (High, Moderate, Low)	Qualitative description of financial performance (High, Moderate, Low)	Classification by financial and economic performance (A, B, C or D) ⁸⁸
				<ul style="list-style-type: none"> No specific information on expected starting date of interventions. 	society (e.g. young people).		
Osijek	A biogas plant as part of the Scientific Centre for RES (ZCOIE) in Osijek	Realization of the project of the Scientific Centre for RES.	8.95	Short term Project is ongoing.	High The project is expected to generate positive impacts for the environment.	Moderate High investment costs compared to limited possibility for reaching costs reduction for energy consumption (low energy prices).	B
Velika Gorica	Refurbishment of public buildings	Energy efficiency improvement of Kindergartens, elementary schools, social homes.	3.5 - 5 ⁸⁹	Medium term <ul style="list-style-type: none"> The action plan has been recently accepted. No specific information on expected start date of interventions. 	High The project is expected to generate positive impacts for the environment and for the society (e.g. young people, disadvantaged people).	Moderate to low High investment costs compared to the potential for energy costs savings (low potential for schools and kindergartens due-limited range of functioning hours; low energy prices).	C
Karlovac	Investments in EE of city buildings	The project is based on the SEAP of the city of Karlovac and it includes the following measures; modernization of	0.78	Short tem <ul style="list-style-type: none"> Project development phase-started in 2014. No specific information on expected start date of interventions. 	High The project is expected to generate positive impacts for the environment and for the society (e.g. young people).	Moderate Limited potential for energy costs savings (low potential for schools and kindergartens due-limited range of functioning hours; low energy prices).	B

⁸⁹ The City is giving 10% subsidy additional to 40% of Ecofund for private buildings EE

City	Project name	Project description	Project size (EUR million)	Project readiness (Short/medium/long term)	Qualitative description of economic performance (High, Moderate, Low)	Qualitative description of financial performance (High, Moderate, Low)	Classification by financial and economic performance (A, B, C or D) ⁸⁸
		boiler with fuel oil for primary schools and kindergartens - replacement with the pellet boiler; modernization of boiler with fuel oil for primary schools and kindergartens - replacement with boilers on gas; Thermal insulation of the outer envelope and the roofs of the buildings owned by the City; Installation of high-energy windows for buildings owned by the City; Installation of thermostatic sets in the buildings owned by the City until 2020, of the total heated area of 12.000 m ² ; Introducing energy saving light bulbs					

City	Project name	Project description	Project size (EUR million)	Project readiness (Short/medium/long term)	Qualitative description of economic performance (High, Moderate, Low)	Qualitative description of financial performance (High, Moderate, Low)	Classification by financial and economic performance (A, B, C or D) ⁸⁸
		in the buildings owned by the City.					
Vinkovci	EE refurbishment of city pool and theatre	No specific information provided.	0.68	Long term No specific information on expected start date of interventions.	High The project is expected to generate positive impacts for the environment and for the society (e.g. social inclusion).	Moderate Limited possibility for reaching costs reduction for energy consumption, long payback period expected (mainly for the theatre).	B
Dugo Selo	Refurbishment of public building	Reconstruction and EE improvement of music school-in building of Dom hrvatske vojske.	3	Short term <ul style="list-style-type: none"> • Project development expected to start late 2015. • No specific information on expected start date of interventions. 	High The project is expected to generate positive impacts for the environment and for the society (e.g. social inclusion).	Moderate/low High investment costs compared to the low potential for reduction of energy costs.	B/C
Total investment (EURm)			Ca 83 -85				
Short term investment (EURm)			Ca 70-72				
Medium term investment (EURm)			Ca 12				
Long term investment (EURm)			< 1				

This initial list of projects indicates investment needs of ca. **EUR 85 million**, most of which is for projects that could be technically ready to be financed in the short to medium term.

Furthermore it is worth mentioning that **FINA**, the Croatian company operating in the field of financial media and information technologies, plans to refurbish six buildings in Zagreb, Rijeka, Vukovar, Gospić, Bjelovar and Kutina in 2015 (it was not possible to quantify the amount of investment required for the refurbishment).

To conclude the section relating to public buildings, the key data emerged in the analysis are summarised in the table below.

Table 30: Public sector buildings - key facts

Public sector buildings	
Heated usable floor area	Ca. 6.06 million m ²
Cost of retrofitting 100% of public buildings ⁹⁰	EUR 1.03 billion
Total cost saving by retrofitting 100% ⁹¹	Ca. EUR 60 million
Cost to achieve national targets 2020 (NEEAP)	Ca. EUR 504 million
Total investment needs ⁹²	Ca. EUR 85 million
Short term investment needs ⁹³	Ca. EUR 70-72 million

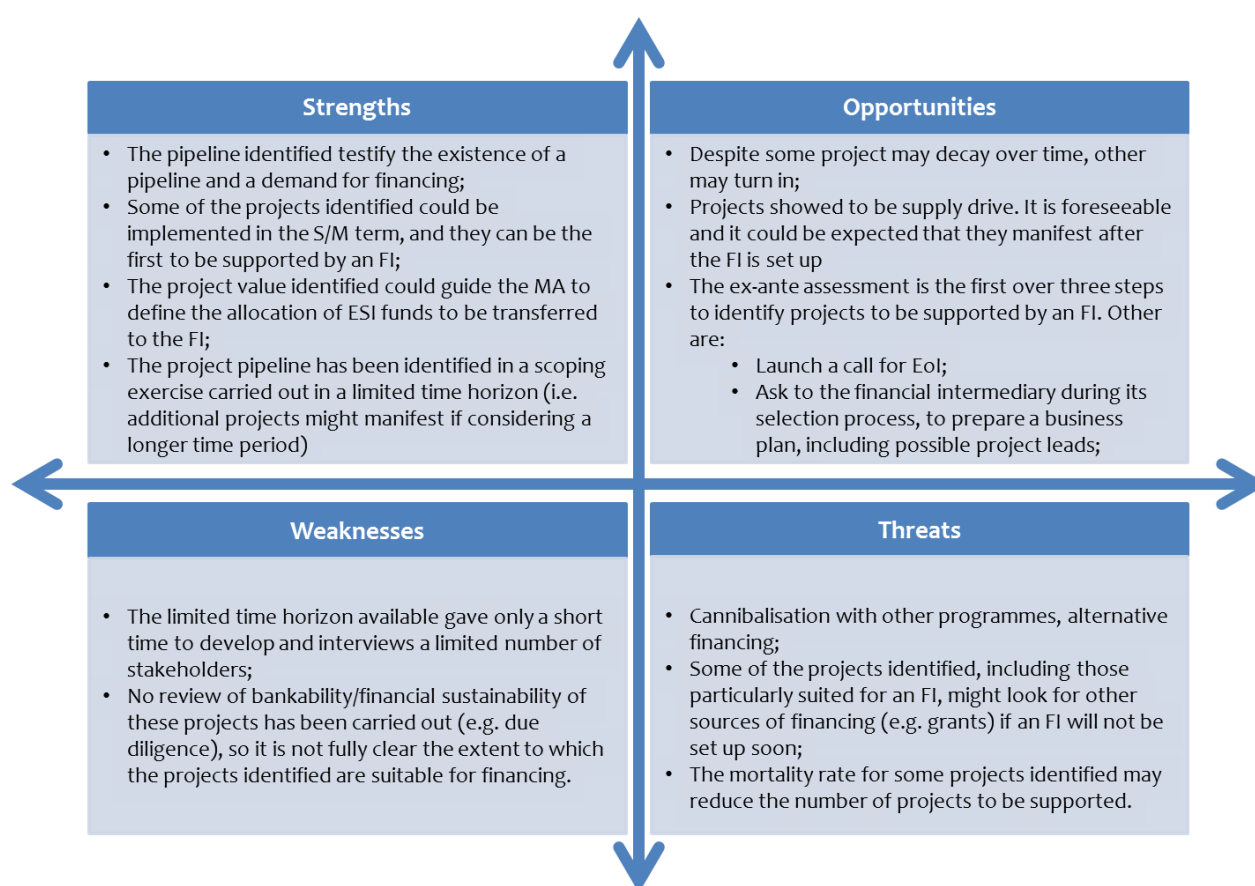
Table 36 below provides the SWOT analysis of the identified project pipeline.

⁹⁰ At a cost of HRK 1,300 per m².

⁹¹ Cost saving for ca. HRK 377.9 million (EUR 49.40 million) in the continental Croatia and HRK 91.8 million (EUR 12 million) in the coastal one.

⁹² Based on selected project pipeline.

⁹³ Projects that are expected to become ready to be financed in the short term (up to 2 years' time).



Private buildings

Estimate of total investment needed for EE/RE interventions on the building stock

As for **private buildings**, similar scenarios as those developed for public sector building could be developed. In Croatia, there are approx. 177 million m² of privately owned buildings. The table below provides a breakdown per building typology.

Table 31: Private building typology

Multi-apartment buildings		Single family homes		Commercial building		Total no	Total area (m ²)
No	Area (m ²)	No	Area (m ²)	No	Area (m ²)		
287,783	54,883,682	466,991	85,871,229	44,728	36,540,459	799,502	177,295,370

Source: Long-Term Strategy for Mobilising Investment in the Renovation of the National Building Stock of the Republic of Croatia.

According to the NEEAP, approximately 66.25% of the total usable floor area (ca. 117.5 million m²) of residential and commercial buildings is heated and can therefore be targeted of EE/RES interventions. Here, the same cost required for retrofitting a public building can be considered a proxy (HRK 1,300 m²); so it can be concluded that, in order to retrofit 100% of private buildings, the investment needs in Croatia equal to HRK 152.7 billion (**c. EUR 20 billion**).

A distinction should be drawn between buildings located in continental Croatia and coastal one. The table below provides the key information in this respect.

Table 32: Overview of cost and energy saving per location and building type

Building category	Continental Croatia		Coastal Croatia	
	Energy saving (kWh/m ² per year)	Cost saving by useful building area (HRK/m ² per year)	Energy saving (kWh/m ² per year)	Cost saving by useful building area (HRK/m ² per year)
Commercial buildings	206.24	123.67	101.18	60.67
Multi-apartment building	153.19	79.35	67.17	34.79
Single family homes	230.70	119.50	105.27	54.53

Source: Long-Term Strategy for Mobilising Investment in the Renovation of the National Building Stock of the Republic of Croatia.

By computing the respective energy and cost saving for each building category heated floorspace, it can be estimated an approx. 19.18 billion kWh of energy saving per year and HRK 10.28 billion (EUR 1.34 billion) of cost savings per year, if 100% of the private building stock in Croatia were to be refurbished, resulting in a yield of ca. 6.7% (EUR 1.34 billion / EUR 20 billion) and a payback period of about 15 years.

The following table illustrates the investment needs as well as the energy and cost savings that would be generated by the retrofitting of the private building stock in Croatia under 3 scenario: 100%, 50% and 25% of the total.

Table 33: Private building stock - Investment needs, energy saving and cost saving per scenario in continental and coastal Croatia (Cfr. calculation details in Annex 11)

Percentage of retrofitted buildings	Total				Continental				Coastal			
	Heated area (m2 million)	Investment needs (HRK billion)	Energy saving (kWh billion)	Cost saving (HRK billion)	Heated area (m2 million)	Investment needs (HRK billion)	Year energy saving (kWh billion)	Year cost saving (HRK billion)	Heated area (m2 million)	Investment needs (HRK billion)	Year energy saving (kWh billion)	Year cost saving (HRK billion)
100%												
Multi-apartment buildings	36.36	47.27	4.45	2.31	23.38	31.40	3.58	1.86	12.98	16.87	0.87	0.45
Single family homes	59.89	73.96	10.58	5.48	36.58	47.57	8.44	4.37	20.31	26.40	2.14	1.11
Commercial buildings	24.21	31.47	4.15	2.49	16.22	21.09	3.35	2.01	7.99	10.39	0.81	0.48
Total	117.30	152.70	19.18	10.28	76.18	99.04	15.37	8.23	41.28	53.66	3.82	2.04
50%												
Multi-apartment buildings	18.18	23.63	2.23	1.15	11.69	15.20	1.79	0.93	6.50	8.44	0.44	0.23
Single family homes	28.44	36.98	5.29	2.74	18.29	23.78	4.22	2.19	10.15	13.20	1.07	0.55
Commercial buildings	12.10	15.74	2.08	1.24	8.11	10.54	1.67	1.05	3.99	5.19	0.40	0.24
Total	58.73	76.35	9.59	5.14	38.09	49.52	7.68	4.12	20.64	26.83	1.91	1.02
25%												
Multi-apartment buildings	9.09	11.82	1.11	0.57	5.85	7.60	0.89	0.46	3.24	4.22	0.22	0.11
Single family homes	14.22	18.49	2.64	1.37	9.15	11.89	2.11	1.09	5.08	6.60	0.53	0.28
Commercial buildings	6.05	7.87	1.03	0.62	4.05	5.27	0.84	0.51	2.00	2.60	0.20	0.12
Total	29.36	38.17	4.80	2.57	19.05	24.76	3.84	2.06	10.32	13.41	0.95	0.51

Source: PwC calculation on the basis of Ministry of Construction and Physical Planning (2014), Long-Term Strategy for Mobilising Investment in the Renovation of the National Building Stock of the Republic of Croatia.

Estimation of the amount of investment needed to achieve the targets set by the III NEEAP

To achieve the EE target set by the national strategy for 2020 the NEAP foresees, among the others, a set of measures targeting the **private sector buildings** (residential and non-residential). The main ones are:

- (i) EE/RE annual interventions⁹⁴ on approximately 2,000 homes throughout Croatia until 2020 for total investment needs of HRK 207.5 million each year (**total investment to 2020: HRK 1.5 billion, or ca. EUR 196 million**);
- (ii) EE/RE interventions on approximately 500,000 m² per year of multi-apartment buildings⁹⁵ until 2020, for a total investment needs of HRK 510 million per year (**total investment to 2020: HRK 3.7 billion, or ca. EUR 487 million**);
- (iii) EE/RE interventions on commercial non-residential buildings, approximately 480,000 m² of heated usable floor area per year, (**total investment to 2020: HRK 3.2 billion⁹⁶, or ca. EUR 418 million**).

According to this plan, the minimal investment needed for the period 2014 -2020 in private buildings amounts to ca. **HRK 8.4 billion (ca. EUR 1.10 billion), or ca. EUR 155 million per year.**

Amongst the **commercial buildings**, of particular interest are Croatia's hotels, a building category that could trigger considerable energy saving by virtue of EE interventions.

Energy consumption in hotels accounts for between 3% and 6% of the total running costs and the magnitude of energy costs is second only to the staff. A study conducted amongst 20 hotels in the region of Rijeka city⁹⁷ showed that the ratio of energy costs over total costs raised from 2.94% in 1989 to 6.51% in 2001.

In Croatia, in 2013, there were about 131,000 hotel bed places. The table below shows a breakdown of energy consumption per bed place for each category of hotels.

Table 34: Number of bed places (as of August 31) and energy consumption.

	Number of beds in hotels (2013)	Gross floor area per bed in hotels (m ² /bed)	Energy consumption (kWh)
Hotels total	131,004		
*****	10,414	36.53	1,900 – 3,320
****	46,906	36.53	1,900 – 3,320
***	55,145	28.46	1,400 – 1,800
**	18,539	22.55	900 – 1,100

Sources: Croatian National Tourism Board (2013) Tourism in figures (2013) and MINT (2004a) and Pravilniko kategorizaciji (February 2004), www.mint.hr & MINT (2003b), Hoteli u Hrvatskoj (August 2003), www.mint.hr.

⁹⁴ One hundred single-family homes per county every year.

⁹⁵ Assuming to impact ca. 1% of the stock of c. 55.4 million m² of multi-apartment buildings.

⁹⁶ Borka Bobovec, Ph.D., M.Sc.Arch. Ministry of Construction and Physical Planning (2014) Third Project Workshop "Monitoring of energy efficiency in the EU" ODYSSEE-MURE 25/26 September 2014 Zagreb, Croatia - Energy efficiency in buildings: activities, trends, implemented and planned measures.

⁹⁷ Holjevac, I.A., Mogorović, M. (2002), Ekonomska analiza troškova energije u hotelima, Proc. of the 17 th International Scientific Meeting of Gas Experts, Opatija, Croatia, May 2002.

On the basis of the above data it can be estimated that the total surface of hotels in Croatia is ca. 4.08 million m². Assuming the same refurbishment costs adopted for the previous analysis (i.e. HRK 1,300 per m²), it can be estimated that if 100% of the surface of Croatian hotels were to be refurbished the **total investment needs required would be ca. HRK 5.31 billion** (c. EUR 690 million).⁹⁸

As 50% of the tourism infrastructure in Croatia was built between 1961 and 1980, when tourism industry recorded its highest growth rate in the Mediterranean area, and a further 16% of the buildings were built before 1930, it is reasonable to conclude that there is a high energy saving potential in the sector.

According to the Carbon Trust, the energy bill of a hotel could be reduced by 20% (and up to 50% in some cases) just by implementing simple, relatively inexpensive energy efficiency measures – for example: lighting controls, optimising room and water temperatures, and raising energy awareness among staff. These initiatives tend to be not very complex to implement but deliver material results. It is also noted that such energy efficiency measures are likely to benefit the reputation of the hotel itself.

According to market benchmarks presented in the table above, the total energy consumption in Croatian hotels can be estimated between 202.8 and 310 million kWh/year; in monetary terms, these amounts to **EUR 10-16 million** and **HRK 81-122 million**⁹⁹. By carrying out some EE/RE interventions, it can be estimated that energy savings will be achieved between 60 million and 90 million kWh.

Amount of investments needed identified through Interviews and workshops

As for the private commercial sector, during the course of the assignment, by means of interviews and desk research, a number of potential EE projects in the private commercial sector have been identified and classified. Results of such screening are provided in the next table, which illustrates a possible initial pipeline to be supported by an FI¹⁰⁰.

Interviews also identified a large potential for developing a pipeline of projects for improving EE of retail facilities (e.g. shopping malls). As mentioned earlier in this chapter, on average EE/RE interventions have payback periods longer than 15 years. In relation to that, promoters of potential projects, while expressing their interest in new investments, have highlighted the need of “supply-driven” financing with terms and conditions tailored to EE/RE project lifetime; specifically, besides the interest rate, a key element repeatedly highlighted was the tenor, which should be in line with the technical depreciation of the investment (in other words, the tenor of the financing has to be aligned with the payback period of the investment to make the project viable for the promoter).

⁹⁸ It has to be borne in mind that, as there are a number of factors (hotel size, category, services offered, occupancy, operational hours, shape and location of the building, climate, age of the building, EE of energy systems, as well as of energy management of the hotel) influencing energy consumption in hotels, it is difficult to make standard classifications of energy consumption in hotels. For instance, 89.3% of beds and 90% of hotels are placed in 7 coastal counties, traditionally warmer regions usually consuming less energy than the continental ones.

⁹⁹ Following the same assumption that HRK 0.06 = EUR 0.07 per kWh.

¹⁰⁰ Please note that the majority of projects identified related to the EE/RE interventions on touristic facilities.

Table 35: EE/RE on private buildings- Selected initial project pipeline (methodology and explanation of classifications are reported in Chapter 1.4)

City	Project name	Project description	Project size ¹⁰¹ (million EUR)	Project readiness (Short/medium/long term)	Qualitative description of economic performance (High, Moderate, Low)	Qualitative description of financial performance (High, Moderate, Low)	Classification of project (Type A-B-C-D)
Javorica	Construction of tourism and sports complex on lake Javorica	Construction of tourist and sports complex on lake Javorica (two hotels, sport complex, the family villas and etc.) with highest EE standards	15	Medium term <ul style="list-style-type: none"> Project is in its initial phase of development No information on expected start date for interventions 	High The project is expected to generate positive impacts for the environment and for the society (e.g. social inclusion, competitiveness of enterprises)	Moderate/low High investment costs to reach high EE standards compared to the concrete possibility to reach higher energy costs savings	B
Makarska	Nursing home and hostel	Refurbishment and EE improvement of existing real estate (building and land owned by project holder) into (i) Nursing home and center for medical tourism (ii) Hostel and amusement sport center	5	Medium term <ul style="list-style-type: none"> Partial project documentation ready No information on expected start date for interventions 	High The project is expected to generate positive impacts for the environment and for the society (e.g. social inclusion, young people, tourism)	Moderate/low High investment costs compared to energy costs savings	B
Mrkopalj	Eco hostel/hotel Prenka	The project involves the construction of a hostel/ hotel with its own organic farming and production of fruit and vegetable	1.73	Short term <ul style="list-style-type: none"> Interventions are expected to start in 2016. The start date is 	High The project is expected to generate positive impacts for the environment and for the	Moderate High investment costs to reach high EE standards compared to the	B

¹⁰¹ Please note that the project size indicated in the table is for a more comprehensive refurbishment of the buildings. Only part of it might be devoted to EE/RES interventions.

City	Project name	Project description	Project size ¹⁰¹ (million EUR)	Project readiness (Short/medium/long term)	Qualitative description of economic performance (High, Moderate, Low)	Qualitative description of financial performance (High, Moderate, Low)	Classification of project (Type A-B-C-D)
		products. The goal is to have an eco-hotel offering their guests organic food and drinks produced in a completely environmentally friendly way. Highest EE standards will be applied.		connected with the availability of financing sources. • If no other form of support available, the aim of the promoter is to apply the project for EU funding that would cover the budget up to 50-70%.	society (e.g. social inclusion, competitiveness of enterprises)	concrete possibility to reach higher energy costs savings	
Novalja	APARTHOTEL - HOSTEL	Re-development of unfinished business space into a youth hostel. Highest EE standards will be applied.	0.5	Medium term • Preparation of project documents in progress • No information on expected start date for interventions	High The project is expected to generate positive impacts for the environment and for the society (e.g. improved security, reduced decay of the site)	Moderate Limited possibility for incremental energy costs savings due to highest EE standards	B
Topusko	Renovation and furnishing of accommodation capacities of Toplica Hotel, Topusko	The aim of this project is to renovate and improve EE performance of the Toplica Hotel that has capacity of 180 rooms and 360 beds and create conditions to obtain 3 stars rating.	2	Medium term • Partial project documentation completed • Interventions are expected to start after 2016. • The start date is connected with the availability of financing sources.	High The project is expected to generate positive impacts for the environment and for the society (e.g. social inclusion, competitiveness of enterprises)	Moderate High investment costs compared to energy costs savings	B

City	Project name	Project description	Project size ¹⁰¹ (million EUR)	Project readiness (Short/medium/long term)	Qualitative description of economic performance (High, Moderate, Low)	Qualitative description of financial performance (High, Moderate, Low)	Classification of project (Type A-B-C-D)
Omiš	Tourist area Mala Luka	Development of hotel with the accompanying facilities. Highest EE standards will be applied.	5	Medium term <ul style="list-style-type: none"> Partial project documentation completed No information on expected start date for interventions 	High The project is expected to generate positive impacts for the environment and for the society (e.g. competitiveness of enterprises, tourism)	Moderate Limited possibility for incremental energy costs savings due to highest EE standards	B
Orebić	Hotel reconstruction in Orebić	The project consists of three old captain's house on a land of 1122 m2 that will be refurbished into hotel. Highest EE standards will be applied.	3.22	Short term <ul style="list-style-type: none"> The plan is to complete the documentation and securing finance in 2015 Finalisation of works and the opening of the business by Q2, 2016. 	High The project is expected to generate positive impacts for the environment and for the society (e.g. competitiveness of enterprises, tourism)	Moderate Limited possibility for incremental energy costs savings due to highest EE standards	B
Otočac	Hostel "Vrata Like"	Renovation of the hostel. Highest EE standards will be applied.	1.1	Short term <ul style="list-style-type: none"> Preparation of project documents in progress All authorisation obtained Interventions are expected to start in 	High The project is expected to generate positive impacts for the environment and for the society (e.g. competitiveness of enterprises, tourism)	Moderate Limited possibility for incremental energy costs savings due to highest EE standards	B

City	Project name	Project description	Project size ¹⁰¹ (million EUR)	Project readiness (Short/medium/long term)	Qualitative description of economic performance (High, Moderate, Low)	Qualitative description of financial performance (High, Moderate, Low)	Classification of project (Type A-B-C-D)
				2016			
Opatija	Hotel Opatija	Refurbishment of the hotel. Highest EE standards will be applied.	13	Medium term <ul style="list-style-type: none"> • Preparation of project documents in progress • No information on expected start date for interventions 	High <p>The project is expected to generate positive impacts for the environment and for the society (e.g. competitiveness of enterprises, tourism)</p>	Moderate <p>Limited possibility for incremental energy costs savings due to highest EE standards</p>	B
Total investment (EURm)			46.5				
Short term investment (EURm)			6				
Medium term investment (EURm)			40.5				
Long term investment (EURm)			-				

Source: Investment promotion centre – Croatian Chamber of economy. Available at: http://projekti.hgk.hr/projects?category_id=18

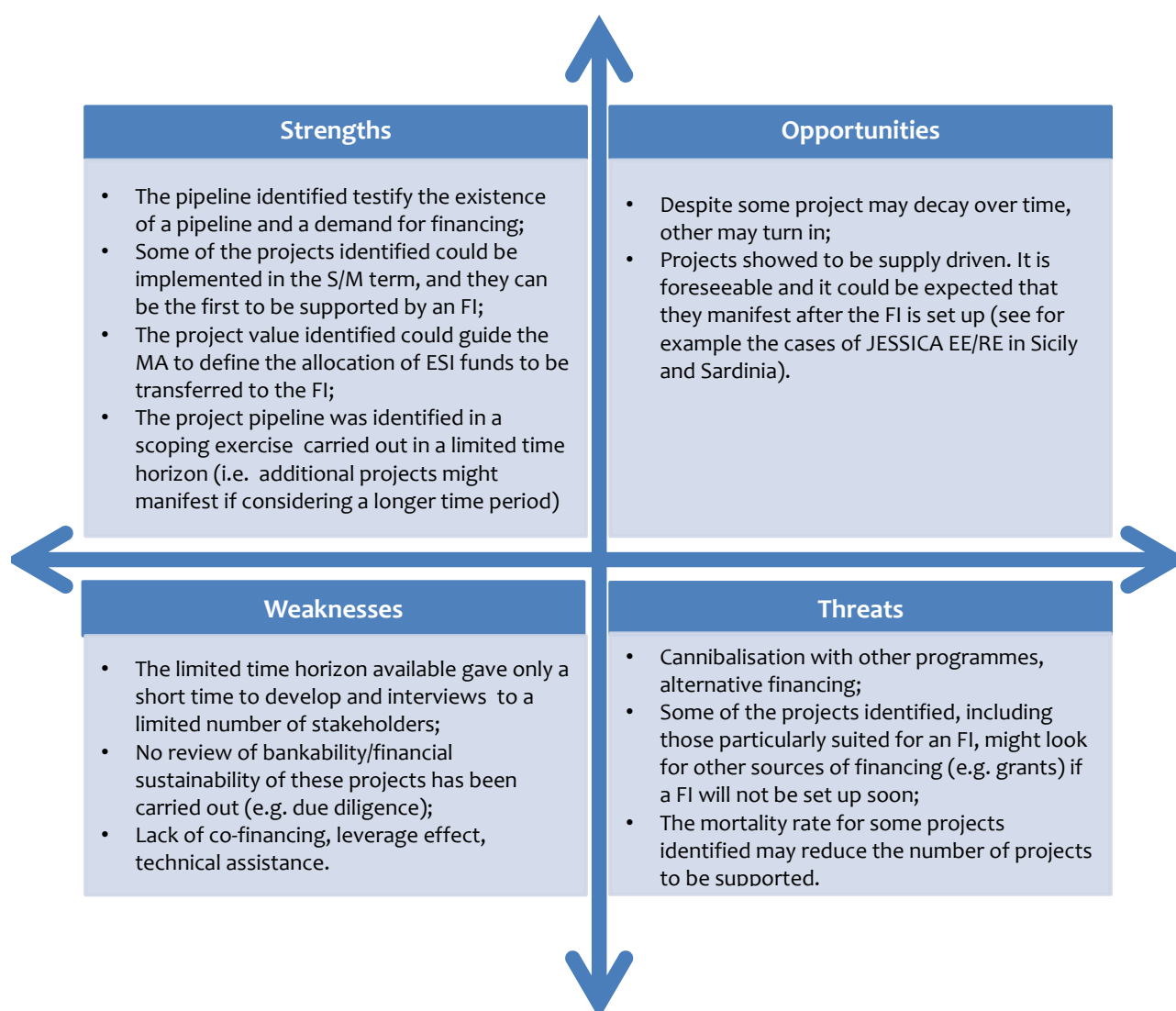
This initial list of projects shows potential investment needs of **ca. EUR 46.5 million**, most of them are expected to be developed and technically ready to be financed in the medium term (up to 5 years). This is not surprising, since availability of suitable resources of finance has been reported to be the main driver for the development of projects. It is also worth noting that a technical assistance support could contribute to significantly reduce the “time-to-market” of such projects.

On top of this list, it is worth mentioning:

- **AGROKOR**, owner of several buildings. For many of them EE interventions have been planned for the coming years.
- **Programme of revitalisation and energy retrofitting of city district Donji grad within Zagreb**. The City of Zagreb started the Programme of revitalisation and energy retrofitting of the city district Donji grad in March 2014 with the main goal of retrofitting at least 10% of the total building area by 2030 and 30% by 2050. As approx. 87% of buildings in the district are privately owned, it emerges that this programme will mainly target single- or multi-apartment buildings as well as commercial buildings. On average, specific investment costs would be HRK 1,300 per m² (166 EUR/m²), which would amount to a total value of **EUR 197 million**. The programme will be implemented as a pilot scheme for two blocks of buildings (21 multi-apartment buildings in total) in 2015.

Table 36 below provides the SWOT analysis of the identified project pipeline.

Table 36: SWOT analysis on the identified project pipeline



To conclude the section relating to private buildings, the key data emerged in the analysis are summarised in the table below.

Table 37: Private commercial sector buildings - key facts

Private commercial sector buildings	
Heated usable floor area	Ca. 117.5 million m ²
Cost of retrofitting 100% of private buildings	Ca. EUR 20.0 billion
Total cost saving per year by retrofitting 100%	Ca. EUR 1.34 billion
Minimal cost to achieve national targets 2020	Ca. EUR 1.10 billion
Total investment needs ¹⁰²	Ca. EUR 46.5 million
Medium term investment needs ¹⁰³	Ca. EUR 40.5 million

¹⁰² Based on selected project pipeline.

¹⁰³ Projects that are expected to become ready to be financed in the medium term (up to 5 years time).

Key findings of the demand analysis

- **Demonstrable growing market demand for financing of EE/RE projects in both public and private buildings** in Croatia. The age profile of Croatia's building stock (public, commercial and households), coupled with continental climatic conditions in much of the country, provides a strong base of demand for actions related to energy efficient renovations and replacement of older fossil fuel heating systems with RE.
- EE improvement of public buildings and private commercial assets is a priority for most stakeholders; in particular, significant potential has been detected within the touristic sector (hotels). However, the development of concrete projects is supply driven, i.e. the availability of suitable resources to finance such projects incentivises their development.
- In particular for **public buildings**:
 - EE/RE intervention on the entire public building stock requires a total investment of EUR 1.3 billion (potential energy saving: ca. 784 million KWh/year), out of which EE/RE interventions on public buildings to reach the national energy targets set by 2020 require a total investment of EUR 504 million by 2020 (potential energy saving: ca. 265 million KWh/year).
 - EE/RE intervention on public buildings foreseen in the SEAP requires a total investment of EUR 506 million by 2020.
 - The investment required to develop the initial pipeline of projects is about EUR 83-85 million.
 - Among public buildings, hospitals are the most energy consuming type and therefore their contribution will be essential to reach the national targets for EE.
- In particular for **private buildings**:
 - EE/RE intervention on the entire private building stock requires a total investment of EUR 20 billion (potential energy saving: ca. 19.18 billion KWh/year), out of which EE/RE interventions on private buildings to reach the national energy targets by 2020 require a total investment of EUR 1.08 billion by 2020 (potential energy saving: ca. 1,640 million KWh/year).
 - Amount of investment required to develop the concrete project identified is around EUR 46.5 million.
 - Among private buildings, hotels are among the most energy consuming and energy has a significant impact on the cost of operating the business. EE/RE interventions for the entire sector would require an estimated total investment of ca. EUR 700 million.

Gap analysis

After having analysed the key features of supply side and demand side for both the public and the private sectors, the gap analysis compares the expected demand for investments for new projects with the amount of financing currently available in the market for those projects. When the financing does not reach volumes large enough to fully cover the needs of project promoters, then the existence of a gap emerges and this section highlights it together with a qualitative assessment of the reasons behind it.

With respect to **public buildings**, the table below summarises the expected demand for EE/RE interventions as well as the estimated available sources of finance, up to 2022.

Table 38: Quantitative results of the gap analysis (values in EUR)

Supply (2016-2022)		Demand (2016-2022)	
EPEEF	Ca. 66 million*	EE/RE intervention on 100% of the public buildings	1,030 million
HBOR	Not possible to estimate at this stage	Investment to reach NEEAP targets up to 2020 (Policy level)	504 million
Commercial banks	Not possible to estimate at this stage**	EE/RE intervention on public buildings foreseen in the SEAP up to 2020	506 million
Total	Not possible to estimate in full at this stage	Total (100% public buildings)	c. 1,030 million

Source: PwC elaborations 2015

* Data from EPEEF financial plan projection 2015-2017. For further years we have assumed the same annual amount as for 2017.

** No specific data is available on the amount of finance devoted to EE intervention.

As indicated in the table above, **even if some of the components of the supply (i.e. the financing expected to be made available by HBOR and the commercial banks) cannot be estimated at this stage, the size of the total value of the expected demand (at approximately EUR 1 billion, out of which c 500 million to achieve the policy targets of NEEAP) makes it very unlikely that the supply will be enough to meet such expected demand.**

At the same time, while carrying out the analysis on the ground, PwC observed an **initial pipeline of potential projects** with a total value of ca. EUR 85 million (Cfr. Table 29). Based on the current development stage of these projects, 85% of them could be implemented in the short term.

With respect to private buildings, the table below summarises the theoretical demand for EE/RE interventions as well as the estimated available sources of finance, up to 2022.

Table 39: Quantitative results of the gap analysis

Supply (2016-2022)		Demand (2016-2022)	
EPEEF	Ca. EUR 163 million*	EE/RE intervention on 100% of the private buildings	<ul style="list-style-type: none"> Single Family Homes: EUR 4 billion Multi -apartment buildings: 10 billion Commercial non-residential buildings: EUR 4 billion*** Total: EUR 18 billion
Commercial banks	Ca. EUR 105 million (probably underestimated)**	EE/RE intervention on private buildings foreseen in the III NEEAP up to 2020 (Policy level)	<ul style="list-style-type: none"> Single Family Homes: EUR 190 million Multi-apartment buildings: EUR 480 million Commercial non-residential buildings: EUR 410 million Total: EUR 1.08 billion
HBOR	Not possible to estimate at this stage		
Total	Not possible to	Total (100% private)	c. EUR 18 billion

	estimate in full at this stage	buildings)	
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* Data from EPEEF financial plan projection 2015-2017

** In 2014 EPEEF disbursed EUR 22.4mn for EE renovations for multi-apartment buildings and family homes. If we conservatively assume that the average incentive intensity was 60%, although it was probably closer to 40% as the renovations were done mainly in more developed Croatian counties, and we assume that for the remaining 40% owners of buildings used commercial loans, we are coming to the above figure.

*** EUR 700 million would be required to retrofit hotels.

Source: PwC elaborations 2015

As indicated in the table above, **even if one of the components of the supply (i.e. the financing expected to be made available by HBOR) cannot be estimated at this stage, the size of the total value of the expected demand (at approximately EUR 18 billion, out of which c 1 billion to reach the policy targets set by the NEEAP) makes it extremely unlikely that the supply will be enough to meet such expected demand.**

In the limited timeframe of the study, it was possible to observe an **initial project pipeline** requiring ca. EUR 46.5 million, 86% of which in the medium term (taking into account only commercial buildings - Cfr. Table 35), which could increase to well over EUR 200 million taking into account the programme of revitalisation and energy retrofitting of city district Donji grad.

However, as indicated by interviewees, availability of finance is not the only factor limiting the possibility of projects to be financed. As in the case of public buildings, finance available in theory is most of the time not “put on the ground”, even where a solid business case can be made.

Among the most critical elements which determine a persistent market gap for both public and private buildings:

- Available financial products not in line with market needs:
 - Due to the average age and maintenance conditions of public assets, EE/RE interventions cannot be limited to minor measures (such as replacing windows, replacing lighting systems, etc.). The average return from these interventions could be estimated at ca. 5%, therefore implying a payback period for the investment of ca. 20 years: no financial product is currently available on the market with such tenor;
 - The appetite of the banking system for EE/RE projects is currently very limited; such projects are in fact perceived as carrying a high risk, mainly because of unsophisticated promoters, regulatory and other administrative burdens. As a result, commercial banks have not developed tailored products and generally offer unattractive terms (high annual interest rates, generally above 5% ¹⁰⁴, limited maturity of loans, high collateral requirements, mortgages, guarantees, etc.);
 - The ESCO model is at the moment underdeveloped, mainly because ESCOs experience difficulties in accessing finance (see above);
 - Due to the low cost of energy in Croatia, apartment owners do not see any immediate financial benefit and are not encouraged to undertake the investment to upgrade residential buildings, also because of the long payback period of the investment;

¹⁰⁴ Only HBOR offers better interest rates, however due to collateral requirements, the facility had a limited absorption rate, so far

- Specifically for interventions on residential buildings, the recourse to bank financing is reduced by the fact that commercial banks require joint liability of apartment owners in a block to guarantee the loan to fund the retrofitting of the whole building;
 - Administrative burdens and "slow, strict and complex" procedures to obtain financing (e.g. from EPEEF, as mentioned in some interviews);
 - In the case of individual apartments the following features have been highlighted: lower investment costs but limited energy savings, limited/no profitability of the intervention; financing is discouraged because of high interest rates and high collateral requested by commercial banks.
- Limited awareness and skills:
 - Limited availability of skilled personnel¹⁰⁵ (educational gap) both in the public and private sector to initiate, develop and implement EE/RES projects and projects to be awarded for EU funding (a significant number of potential projects have not been awarded because of incomplete/poorly developed project documentation);
 - Limited competencies in the EE field bring to underestimate energy cost savings and financial performance of projects, resulting in limited interest in financing energy saving interventions.
 - Very long time to market of projects;
 - Grants perceived as preferred solution for promoters;
 - Low energy prices limit the willingness of private owners of apartments/houses to invest in EE improvements;
 - Lack of support through technical assistance.
 - Red tape and legislative issues
 - The JRC¹⁰⁶ study highlights particular difficulties associated with the rules of public budgeting which make it difficult for public entities to finance EE investments from savings in energy costs. Local authorities, for example, may have to finance EE investments from their investment budget whereas the resulting savings are credited to the operational budget;
 - Changes of regulations may hamper smooth project implementation;
 - According to the European Commission, changes in tax law in Croatia are likely to increase public deficit as a percentage of GDP (from 5.0% in 2014 to 5.5% in 2015). As a result, and in light of the Stability and Growth Pact, municipalities may be limited in their ability to raise debt. The outcome would be less investment in EE measures¹⁰⁷.

Conclusions of the gap analysis - EE intervention on buildings (public + private)

- The expected amount of finance available in the market is not enough to cover the demand for reaching the national targets; terms which financial institutions effectively offer to project promoters tend to be difficult to accept (in terms of interest rate, collateral or both);
- The average age of buildings suggests that they require deep energy renovation interventions, which are capital intensive, require long payback periods and generate limited financial profitability;

¹⁰⁵ For instance, in the Ministry of Construction and Physical Planning only a couple of experts are employed so far for their IB1 tasks

¹⁰⁶ JRC ISPRA, "Financing Energy Efficiency: Forging the Link Between Financing and Project Implementation", May 2010

¹⁰⁷ European Commission, "European Economic Forecast, Winter 2015":
http://ec.europa.eu/economy_finance/publications/european_economy/2015/pdf/ee1_en.pdf

- As reported by stakeholders consulted, in many cases the development of EE renovation projects is driven by the availability of financial resources (supply driven projects);
- As presented in Table 40 below, the financial products currently offered by commercial banks and HBOR hardly match the needs of EE interventions in buildings (both public and private).

Table 40: Synthesis of the characteristics of the supply of finance and related issues in addressing market needs

	Finance supply characteristics	Identified Issues in addressing market needs
Commercial banks	<ul style="list-style-type: none"> • Pricing: depending on the project to project basis (4.75% fixed or more for private beneficiaries) • Maturity: up to 7 years • Collateral: mortgage, insurance policy, bill of debentures , etc. 	<ul style="list-style-type: none"> • Pricing not compatible with IRR of projects • Tenor not suited to long payback periods of projects • Limited access to finance due to heavy collaterals
HBOR	<ul style="list-style-type: none"> • Pricing: 4% fixed or more • Maturity: up to 14 years • Grace period: from 1 to 3 years • Collateral: bills of exchange, debentures and other collateral customary in banking practice, in the risk sharing model with commercial banks 	<ul style="list-style-type: none"> • Pricing not compatible with low IRR of projects • Tenor likely not to be suited to long payback periods • Limited access to finance due to heavy collaterals
EPEEF	<ul style="list-style-type: none"> • Lending provided under the <i>de minimis</i> regime 	<ul style="list-style-type: none"> • Not compatible with high investments costs of renovation projects

- Not surprisingly, the majority of EE interventions on buildings realised so far have been financed via grant or via own funds of private owners and own funds of ESCO. However, investments undertaken by ESCOs are limited to small scale, soft interventions (mainly on private assets) as their light capitalisation reduce both access to finance and availability of own funds, impacting on the size of affordable investments
- Limited technical experiences in the development of EE projects have been found both in the public sector and in the private one.
- The existence of **market gap** is confirmed by the identified initial pipeline of projects, composed by concrete projects that were not able to find any suitable source of finance so far. The amount of investment required to develop projects in the initial pipeline observed is c. **EUR 142 million, out of which more than 50% in the short term (up to 2 years)**.

5.1.1.2 Improvement of industrial production process

Description of the market

As of 2014 a total of 146.292 enterprises in Croatia were registered. The related building/ production premises surface was of ca. 806.745 m², of which approximately 360.000 m² (or 45%) can be classified as modern stock by European standards¹⁰⁸. The table below provides a break-down of enterprises.

¹⁰⁸ Jones Land LaSalle, Agency for Investment and Competitiveness, KPMG and Antal International (2013) Made in Croatia, Investor guide to Manufacturing and Logistics.

Table 41: Enterprises in Croatia – basic figures

	Number of enterprises			Number of employees		
	Croatia		EU-28	Croatia		EU-28
	Number	Proportion	Proportion	Number	Proportion	Proportion
Micro ¹⁰⁹	134,091	91.7%	92.4%	302,795	30.4%	29.1%
Small ¹¹⁰	10,091	6.9%	6.4%	193,449	19.4%	20.6%
Medium-Size ¹¹¹	1,722	1.2%	1.0%	180,239	18.1%	17.2%
SMEs	145,904	99.7%	99.8%	676,483	67.9%	66.9%
Large	388	0.3%	0.2%	319,945	32.1%	33.1%
Total	146,292	100.0%	100.0%	996,428	100.0%	100.0%

Source: 2014 SBA fact Sheet Croatia, available at: http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/files/countries-sheets/2014/croatia_en.pdf

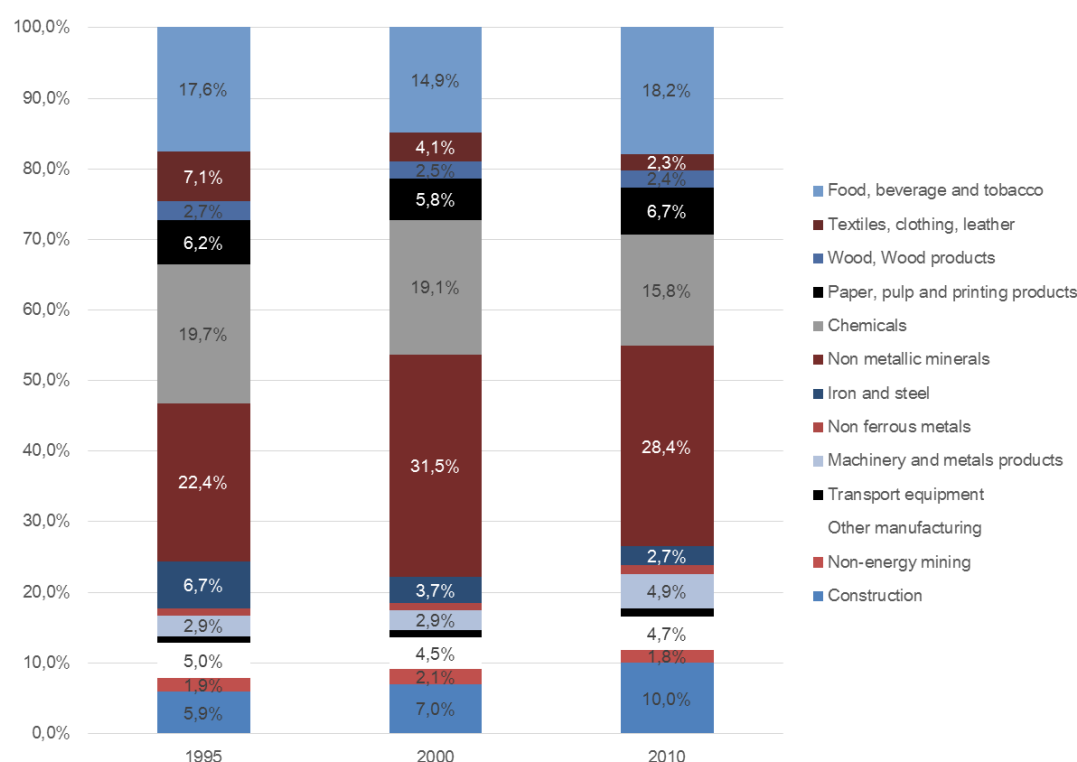
Energy consumption in industrial production processes

The industrial sector accounts for approximately 17% of the final energy consumption in Croatia, and is the third largest energy consumer after transport (which accounts for 33%) and housing (43%). Over 65% of the energy consumed in the industry sector comes from fossil sources. The next table shows the development of energy consumption in individual industrial branches from 1995 to 2010. Compared to the energy consumption in 2011, industrial energy consumption in 2012 was substantially reduced – by 11.5% – as a result of the overall GDP contraction following the deterioration of the macroeconomic conditions in both Croatia and EU 28.

¹⁰⁹ A microenterprise is defined as an enterprise which employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million.

¹¹⁰ A small enterprise is defined as an enterprise which employs fewer than 50 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 10 million.

¹¹¹ A medium-sized enterprise is defined as an enterprise which employs fewer than 250 persons and whose annual turnover does not exceed EUR 50 million or whose annual balance-sheet total does not exceed EUR 43 million.

Figure 16 : Industrial branches shares in final energy consumption

Source: Ministry of Economy (2013) Energy in Croatia

Energy-intensive industries account for more than half of the sector's energy consumption. The non-metallic minerals industry is the largest industrial consumer with around 35% of total industrial energy consumption, and its share in the monitored period has increased from 22.4% to 28.4%.

Two other very significant industries are the chemical industry, with its share reduced from 19.7% to 15.8%, and the food industry, whose share has increased from 17.6% to 18.2%. The shares of other industrial sub-sectors are significantly smaller.

As shown, mineral, chemical and food industries represent more than 50% of total energy consumption.

Key players of the market¹¹²

The main players identified are:

- The Ministry of Economy, intermediate body level 1 for supporting EE and use of RES in enterprises;
- Enterprises such as e.g. Pliva, Belupo, Atlantic Group, Saponia, Genera, Agrokor¹¹³, etc. utilising energy in their production processes;
- The Croatian Chamber of Commerce, a non-profit independent professional and business organisation supporting all business entities in Croatia to increase their competitiveness and build up their market position;
- Other players (e.g. banks, electric companies, etc.).

¹¹² A more extensive explanation of their role and activities is included in Annex 4.

¹¹³ For which projects in the food and beverage sector should be excluded as not eligible for EU financing as stated in the OPCC.

The type of industries to be supported by the OPCC under Specific Objective 4b1 are: iron and steel, non-ferrous metal, chemical, glass, pottery and building material, ore-extraction, textile, leather and clothing, paper and printing, engineering and other metal and other industries **excluding food, drink and tobacco industry**.

Demand for EE/RE interventions in industrial production processes

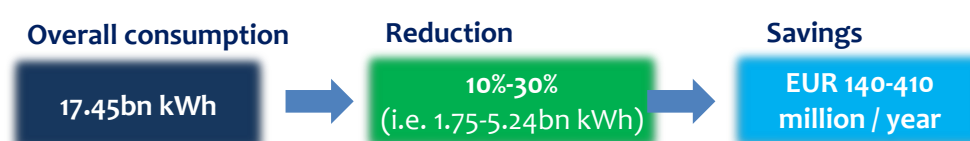
In order to estimate the potential demand for EE/RE interventions in the industrial processes, the following steps were taken:

1. Estimation of the total investment (and related energy saving potential) that would be needed if all the industrial sector were to improve efficiency of industrial processes;
2. Amount of investment needed to implement the actual project pipeline identified through Interviews with representatives of the EPEEF.

Estimation of the total investment (and related energy saving potential) that would be needed if all the industrial sector were to improve the efficiency of industrial processes

There are a number of energy-intensive corporates located in Croatia so that the potential for projects aimed at improving energy performance in industrial production is significant.

Over the period 2008-2012, the average yearly BERD (Business Expenditure in Research and Development) of corporates amounted to ca. EUR 150 million¹¹⁴, and ca. 65% of it is devoted to industrial production processes (in general). The expenditure that would be required to improve industrial production processes of all Croatian companies could be approximated in ca. **EUR 100 million per year**. By way of proxy it can be estimated that as the current overall energy consumption in the industry sector is 17.45 billion¹¹⁵ kWh, by reducing it by a conservative amount that could be reached by introducing EE improvements in the sector (e.g. 10-30%), energy savings in the measure of **EUR 140-410 million** could be achieved.



An approximate estimation of the financial demand in just a limited part of this sector (i.e. electric motor drives) can be given by the measures co-funded by the EPEEF called *Introduction of efficient electric motor drives*. The aim of this initiative is to introduce variable speed drive (VSD) management by frequency and/or amplitude¹¹⁶. According to EPEEF, in 2014 the fund published a call which received overall 58 applications for grants, of which only 18 got approved, for a total investment size of HRK 30.6 million (ca. EUR 4.02 million).

¹¹⁴ Source: S3 Strategy/Croatian Bureau of Statistics.

¹¹⁵ Croatia, Energy efficiency report. available at: <https://library.e.abb.com/public/00477b62684dea1548257a23004f937a/Croatia%20Energy%20efficiency%20Report.pdf?filename=Croatia%20Energy%20efficiency%20Report.pdf>

¹¹⁶ III NEEAP 2013-2016

Such data point to a potentially high demand for financing EE interventions in the field of industrial production processes. Considering that ca. HRK 30.6 million were allocated only in 2014, assuming that the same level of expense would be maintained for each year in the 2014-2020 period¹⁷, it could be estimated that **at least HRK 210 million (ca. EUR 27.53 million)** will be needed in this specific market segment. As it is assumed that 90% of the electricity consumption in the industry sector is due to pumps, ventilators, conveyors and other electric motor drives (i.e. components which are part of industrial production processes), it is expected that by implementing this measure, energy savings of about 210 GWh could be achieved by 2020.

Amount of investment needed to implement the concrete EE/RE projects identified through Interviews and workshops

Preliminary interviews with stakeholders and project promoters showed that the demand for the resources for the implementation of EE/RE projects is supply-driven. Indeed, project promoters expressed willingness to finance EE/RE projects if more advantageous conditions, like lower interest rate and longer maturity, were available in the market.

A first pipeline of concrete projects that could be identified is the 40 projects that did not get financed by the EPEEF call for tenders mentioned above, published by EPEEF under the measure “Introduction of efficient electric motor drives”. The approximate value of these projects amounts to HRK 68 million (**EUR 10.20 million**).

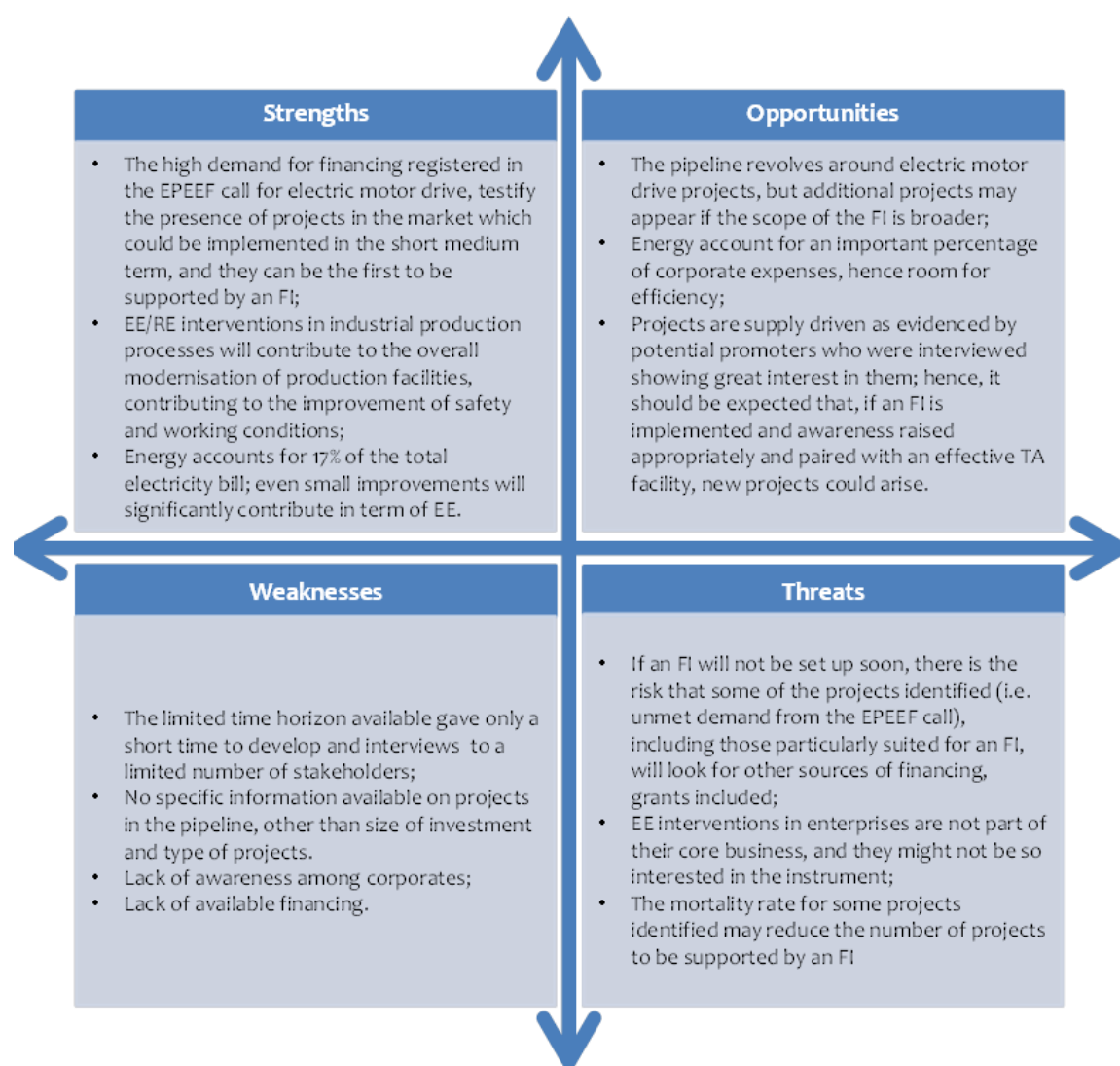
In addition, **PROSPERUS** has one investment in the RE sector related to the development of biogas plants on five locations (total power of 9 MW) and **Agrokor and Genera** have a pipeline of EE projects. Unfortunately the interviewee was not able to quantify the amount of investment required.

- The following key drivers were identified in relation to the financing of energy efficiency projects: direct cost savings and increased profitability: energy efficiency contributes toward reducing overall company expenses, increases productivity;
- enhanced competitiveness by allowing companies to consume less energy while maintaining or even increasing economic output;
- reductions in resource use and pollution, improved production and capacity utilisation, and less operation and maintenance, which lead to improved productivity and competitiveness;
- other benefits (e.g. improved safety and security, etc.).

Below a SWOT analysis of the observed project pipeline is presented.

¹⁷ Due the lack of concrete pipeline for EE in industrial production processes, for the purpose of providing an estimation of the potential gap, we have focused on financing needs for EE in electric motor drives for which there is some level of historical observable demand in Croatia. We therefore use the level of observed demand from the “Introduction of efficient electric motor drives” measure within the NEEAP in 2013 as a proxy for the number of projects that would potentially be seeking financing for EE in industrial production processes on an annual basis, and then project this figure forward across 2014-2020 period. It should therefore be recognised that this estimation is related only to a specific market sub-segment and cannot therefore be considered representative of all the possible interventions related to EE in industrial production processes.

Figure 17 SWOT analysis on the identified project pipeline



Gap analysis

The table below summarises the theoretical demand for EE interventions in industrial production processes as well as the estimated available sources of finance from 2016 to 2022.

Table 42: Quantitative results of the gap analysis

Supply (2016-2022)		Demand (2016-2022)	
EPEEF	EUR 14 million*	Improvement of 100% of production processes	EUR 700 million ¹¹⁸ , of which EUR 27.53 million for the introduction of electric motor drives as foreseen in the NEEAP
Commercial banks	EUR 100 million**		
HBOR	EUR 12 million***		
Total	ca. 126 EUR million	Total	EUR 700 million****

¹¹⁸ Obtained by multiplying the average annual demand in industrial production processes (i.e., EUR 100 million) calculated in the quantification of demand section, by the number of years considered in the table (i.e. 7).

* Data from EPEEF financial plan.

** Calculated as the 14% of the demand for the improvement of industrial production processes¹¹⁹

*** Average yearly loans extended for 2013-2014

**** Please note that this estimate refers to all improvement in industrial production processes, and not only those related to the EE sector. In any case, also by applying a reducing factor of e.g. 30%, there would still be a gap.

On the basis of stakeholders interviews, an **initial project pipeline** worth ca. EUR 10 million was identified.

As indicated by interviewees, availability of finance is not the only factor limiting project implementation. The factors highlighted include:

- Limited suitability of a
vailable financial products to meet market needs:
 - Measures specifically aimed at improving the energy efficiency of industrial processes are capital intensive investments, with indirect impact on the core business of enterprises and limited economic benefits (energy savings) in the medium term;
 - Commercial banks still apply relatively high interest rates making loans very expensive, as a consequence of conservative approach towards those that are generally perceived as low IRR, high-risk projects;
- Lack of awareness and skills:
 - Limited availability of skilled personnel (educational gap) in the private sector to initiate, develop and implement projects;
 - Limited technical skills to estimate energy savings and to plan EE/RE interventions – also because of lack of technical assistance – resulting in a lack of interest in energy saving interventions;
 - Lack of long-term EE investment plans and sufficiently developed projects. Beneficiaries apply in response to published EU calls and not a part of an EE/RES investment strategy. Certain enterprises are facing difficult financial situations due to the on-going effects of the crisis and give priority to cost reduction measures other than energy efficiency;
 - When looking for sources of financing, promoters tend to focus on grants.

Conclusions of the gap analysis - EE intervention on industrial production processes

- As specified in the demand analysis, 19% of energy consumption in Croatia relates to industrial processes and is affected by inefficient production processes; so EE interventions can have a meaningful impact;
- The analysis identified a potential market gap of up to EUR 570 million; if investments for such amount were made, they would result in the achievement of substantial cost savings;
- Resources of enterprises are typically dedicated to “core” investments, i.e. those with a direct impact on the main operating business whereas EE is often perceived as “ancillary”; however,

¹¹⁹ A study published by Eurochambers, “Energy Efficiency in the SME sector” (Brussels, 26 June 2014), based on a European survey carried out in 2010, shows that on average the resources drawn from European enterprises to cover EE interventions in industrial production processes were for 14% coming from loans. Accordingly, this value has been calculated as the 14% of EUR 700 million.

stakeholder interviews highlighted that there is a potential unexpressed demand that can turn into a concrete pipeline only once suitable financial resources become accessible;

- From banks' perspective, a combination of factors (such as, for example, exposure limits to each client, need to roll-over existing exposures) are significantly limiting the overall availability of finance for project promoters;
- **Market failure is identified by the lack of suitable financial products to finance interventions that show financial sustainability but only attract limited private resources.** So far, the main available source of funding for this kind of intervention is grants. This is confirmed by the **example of an initial pipeline of identified projects** (EUR 10 million) that is composed of concrete projects that after not being selected for grant financing, did not find any other source of finance to be realised; furthermore, when compared to FIs, grants – although not revolving in nature – impose some disadvantages to final beneficiaries, in particular the timing of the disbursement (which takes place only after every expense is paid for by the final beneficiaries and then certified);
- For an overview of the reasons why the financial products currently available on the market are not suitable to meet the needs of enterprises willing to undertake EE interventions, please refer to the table provided with respect to EE interventions in buildings;
- Last but not least, most of corporates in Croatia have limited know-how for developing robust project documentation to be submitted to financial Intermediaries for appraisal.

5.1.2 Value added of the FI

The value added of an FI investing in EE/RE of public and private buildings and in initiatives devoted to improve the energy efficiency of production processes encompasses qualitative and quantitative components described in the following sections.

5.1.2.1 Qualitative dimension of value added

The use of FIs provides significant benefits in all the sectors identified in the market analysis, as reported in the table below.

Table 43: Value added ensured by the use of FIs

Identified market failure	Public sector	Private sector	Industrial processes
Financial products currently available on the market are not suitable for matching the needs of this kind of investments (high interest rate, limited maturity of loans, high collateral requirements, etc.)	FIs can offer financial product ensuring better conditions		
Limited availability of skilled personnel to initiate, develop and implement EE/RE projects	FIs can be supported by a TA facility to encourage EE investments among final recipients		
Limited participation of the private sector in the investments make it difficult to cover the co-financing required for the available public funds	FIs structure, by covering part of the project-related risk, can attract additional public and private capital, generating a leverage effect		

Identified market failure	Public sector	Private sector	Industrial processes
The amount of finance available in the market is not enough to cover the demand for reaching the National targets in the long term	Revolving nature of the FIs ensures availability of funding for a longer period of time and leverage effect increases the amount of resources available		
Low IRR / profitability of projects	Better terms provided by FIs can increase the financial sustainability of the projects		
High investment cost of deep renovation EE projects vs limited budget availability of Municipalities	FIs can attract private investors or different investment schemes (e.g. ESCO models)	Not applicable	Not applicable

The key benefits of FIs are presented in detail in the table below, also elaborating on some of the points mentioned in the previous table, showing the value added of an FI over grant forms of assistance.

Table 44: The value added of an FI as compared to grants

Benefit	Value added of an FI compared to grants
Leverage creation	<p>FI enables additional support to be channelled to enterprises, public administrations and more generally final recipients, with a potentially greater financial impact than grants, due to the ability to attract additional public and private sector resources, thus multiplying the effects of ESI funds and national/regional contributions. According to published research¹²⁰, such leverage effect is even more prominent for small countries like Croatia, traditionally less attractive for international investments.</p> <p>As for the EE sector, this means that, as the investment generated by an FI is higher than those generated by a grant scheme, the quantitative value added of an FI compared to a grant scheme could be measured in terms of the achievement of:</p> <ul style="list-style-type: none"> • Higher cost and energy savings; • Higher environmental impact reduction (lower GHG emissions in atmosphere); • Higher number of jobs created due to the higher number of buildings renewed; • Higher reduction in the operating costs of industrial production.
Revolving nature	The funds are repayable . As these monies are repaid over the course of the project, they become available to finance additional projects. In such a way, the use of FIs can promote the long-term recycling of public funds and they potentially enable the reinvestment of ESI funds beyond the end of the programming period, helping achieve better value for money.
Encourage efficiency	FIs can encourage efficiency among final recipients through greater financial discipline through the heightened awareness of the need to repay loans (unlike grants). This factor emerges also as an 'assurance of quality' of the project.
Build capacity & share expertise	Use of FIs can help build institutional capacity through partnerships between the public and private sectors, can broaden the involvement of financial intermediaries/institutions in implementing EU regional policy and can encourage pooling of expertise and know-how, for example to improve the quality of projects. Additionally, the creation of public-private synergies ultimately results in an alignment of interests between public and private actors: on the one hand, they enable the pursuit of public policy objectives, which characterises public institutions, and on the other hand they bring in the commercial market mechanisms accompanying private investors.

¹²⁰ European Parliament (2013) Financial Engineering Instruments in Cohesion Policy.

Benefit	Value added of an FI compared to grants
Ensure better technical assessment of projects	The TA assistance to be financed out of an FI could ensure a better technical assessment of projects as to ensure that oversized and/or unsuitable projects are excluded from the support.

5.1.2.2 Quantitative dimension of the value added

The table below presents a comparison of duration and pricing between the current type of finance available in Croatia and the type of finance that could be provided by an FI, showing a potential quantitative added value of FI over more traditional types of financing available in Croatia.

Table 45: Comparison between financing characteristics currently available in Croatia and financing characteristics that could be provided by a FI

	Average Maturity			Average Pricing			
	Commercial Banks	HBOR	Financial Instrument	Commercial Banks	HBOR	Financial Instrument	Collateral
Public sector	Up to 10 yrs.	Up to 14 yrs.; incl. 1 – 3 yrs. grace period	10/15 yrs. + grace period	Depending on the project	4% fixed (lowest possible interest rate)	0-2%*	No
Private sector	Up to 5 yrs.	Up to 14 yrs.; incl. 1 – 3 yrs. grace period	5/10 yrs. + grace period	Ca. 5%	4% fixed (lowest possible interest rate)	1-yr IBOR ¹²¹ + 1%-2.2% ¹²²	Low / No

Source: PwC elaboration 2015, on the basis of information gathered during the supply-side analysis and data provided by the EIB.

* Average pricing offered by similar initiatives (e.g. JESSICA).

Please also note that further elaboration on the **quantitative dimension of the value added** is presented in chapter 6.2, in which a comparison between the investment generated by traditional grant financing and more innovative FIs is drawn.

5.1.3 Estimate of additional public and private resources

The financial instrument offers the possibly to channel additional investments into the FI leveraging the initial resources provided by the OPCC.

The table below illustrates the source of financing available in Croatia for EE interventions that could constitute additional public and private resources, presenting their characteristics (e.g. loans, guarantees, etc.) and whether they are dedicated to interventions in the building sector or in industrial

¹²¹ InterBank Offering Rate. Fixing of interest rate is typically made at signature, plus spread reflecting risk margin.

¹²² Based on Communication from the Commission on the revision of the method for setting the reference and discount rates 2008/C 14/02 ([http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008XC0119\(01\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008XC0119(01)&from=EN)); rating categories: investment grade; collateralization: low.

production processes. This indicative list has been drawn on the basis of the information presented in the supply side analysis.

Table 46: Potential additional public and private resources to consider¹²³

Source	Product					Market segment	
	TA as Grant	Inv. Resources as grant	Loans	Guarantee	Equity	Buildings	Ind. Prod. Processes
EPEEF		X	X			X	
Super ESCO company (see below)			X			X	
HBOR			X	X	X	X	X
International finance corporation			X				X
Commercial banks			X	X		X	X
EBRD ¹²⁴	X	X				X	X
APN ¹²⁵			X			X	
Energy efficiency finance facility		X	X			X	X
Housing saving banks			X				
Green for growth Fund South-East Europe			X			X	
Economic Cooperation funds ¹²⁶					X		X
Dedicated TA fund ¹²⁷	X					X	

Source: PwC elaboration, on the basis of the materials collected in the supply side section

Among the panorama of additional resources presented in the table, the so-called “**super ESCO Company**” is the financing model that financial experts from REGEA and Arhivanalitika are planning to put in place in Zagreb, in the city district of Donji grad. This model is developed in a three-step approach:

- **Step 1** – transformation of the existing city’s company GSKG (the largest building manager in *Donji grad* district) into a public ESCO company, that could ensure favourable loans during the first 12-18 months period;

¹²³ No quantification of data is reported, since details on the allocation of resources by source of financed/products and market segment is not available.

¹²⁴ In the framework of the Western Balkans Investment Framework and Western Balkans Sustainable Energy Financing Facility

¹²⁵ Programmes of subsidised housing construction - POS and POS+

¹²⁶ Which so far has invested in two projects in the EE sector.

¹²⁷ E.g. GIZ open regional fund and CEI trust fund

- Step 2 – creation of a basic revolving fund (Zagreb FORA fund for development¹²⁸) owned by the city and managed by either the ESCO or a financial institution that could invest its own resources;
- Step 3 – formation of a full scale revolving fund that uses maximum available EU grant support and funding from financial institutions to offer subsidised loans but also to trigger more investments.

It is also worth mentioning that in 2012 CEI proposed to establish a guarantee fund to be self-funded by the users. Although the fund was approved by the EPEEF, which was supposed to provide an initial HRK 30 million budget, it has never been implemented.

5.1.3.1 Consistency with other forms of intervention

As shown in the previous sections of the report, the presence of several existing funds dedicated to financing EE improvements in Croatia shows that there is the potential to attract considerable outside capital. Therefore, there is the need to ensure consistency with other forms of interventions, including grants and interventions at other political levels; through (i) creating a clear demarcation between projects supported by FIs and by grants and (ii) through the coordination between any financing through FIs and other programmes in the field of EE/RE.

As for the **first point**, it is strongly recommended to establish a **clear demarcation** between category of projects that will be supported through grants and category of projects that will be supported through FIs in order to avoid any cannibalization of the two initiatives. The following figure, drawing from the recommendation of the FI ex-ante assessment methodology, present the criteria the MA could consider establishing the demarcation.

Figure 18: Demarcation criteria for projects

Grant	Financial instrument	Commercial banks
Non-viable projects costs incurred are significantly higher than revenues generated and even a combination FI/grant does not make the project break-even or marginally viable (where revenues are energy cost savings).	Marginally viable projects costs incurred are slightly lower than the revenues generated (where revenues are energy cost savings)	Commercially viable projects costs incurred are much lower than the revenues generated (where revenues are energy cost savings)
With grant/FI combination marginally viable projects costs incurred are significantly higher than revenues generated, but a combination with a grant makes the project break-even or marginally viable (where revenues are energy cost savings).		

FI should target “Marginally viable projects” that fall under typologies B and C (for definitions of project classifications A-B-C-D, please see section 1.4).

¹²⁸ The ZORA fund for development is part of the programme for Revitalisation and energy retrofitting of city district Donji grad within the City of Zagreb. It will be funded out of own resources from the financial institutions that will take part in the programme and that are still to be selected in combination with available grant funding.

Value of DSCR (Debt Service Coverage Ratio)¹²⁹ can be used for a preliminary assessment of projects viability:

- DSCR below 1: Grant support
- DSCR in the range 1 -1.25: FI support
- DSCR above 1.25: Commercial banks support.

Moreover, grant support should be provided to finance investments showing at last one the following:

- the financial terms are such that the payback period is longer than the amortisation of the technical investment
- a return on investment that is not compatible with the project risk (e.g. for EE improvement of buildings IRR below 5%).

As for the **second point**, the MA could consider the creation of a dedicated unit to coordinate all forms of support and that can function as a one-stop-shop for EE/RE interventions, where project promoters could receive information on possible financial sources.

5.1.4 Review of lessons learnt from the past and similar existing Funds

5.1.4.1 Financial instruments targeting EE/RE in other EU MS

Introduction

Over the 2007-2013 programming period, 32 FIs targeting EE and RE were implemented in 11 countries. Seven were implemented through a HF model (Czech Republic, Greece, Spain, Italy, and the Netherlands).

Table 47: FIs for energy efficiency set up at the end of 2013

Member states	Number of HFs	Specific funds with a HF
Czech Republic	1	0
Greece	1	1
Spain	1	1
Italy	3	2
The Netherlands	1	1
Total	7	7

Source: Summary of data on the progress made in financing and implementing financial engineering instruments reported by the managing authorities in accordance with Article 67(2)(j) of Council Regulation (EC) No 1083/2006, 31 September 2014

The **main type of financial product offered by the FIs were loans** as this has proved to be the most effective measure to stimulate and support investments. The tables below illustrate the amount of OP contributions paid/committed.

¹²⁹ The DSCR is the ratio of cash available for debt servicing to interest, principal and lease payments.

Table 48: Types of FIs in the EU for energy efficiency

Financial Products	OP amounts disbursed to final recipients (in EUR million)	
	All specific funds	FIs for EE and RE
Loans	3,414.87	145.05
Guarantees	1,437.94	0
Equity / venture capital	1205.24	5.86
Other products	620.15	104.05
Total	6,678.20	254.96

Source: Summary of data on the progress made in financing and implementing financial engineering instruments reported by the managing authorities in accordance with Article 67(2)(j) of Council Regulation (EC) No 1083/2006, 31 September 2014

Selected examples

In order to provide an overview on how FI were implemented in the past and what were the key success factors, selected examples are provided.

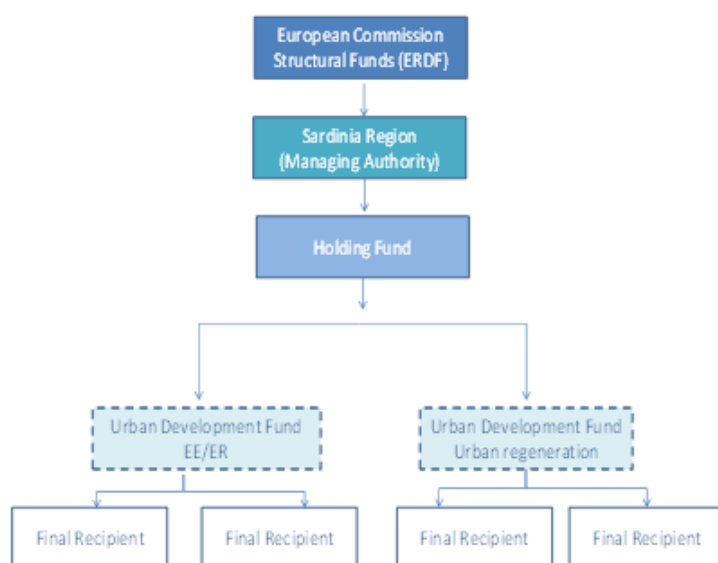
In particular:

- JESSICA HF in Sardinia;
- Example of deployment of FI for private buildings: Lithuania;
- Technical assistance: the successful experience of the European Energy Efficiency Fund (EEEF) National and regional funds/facilities.

JESSICA Holding Fund in Sardinia

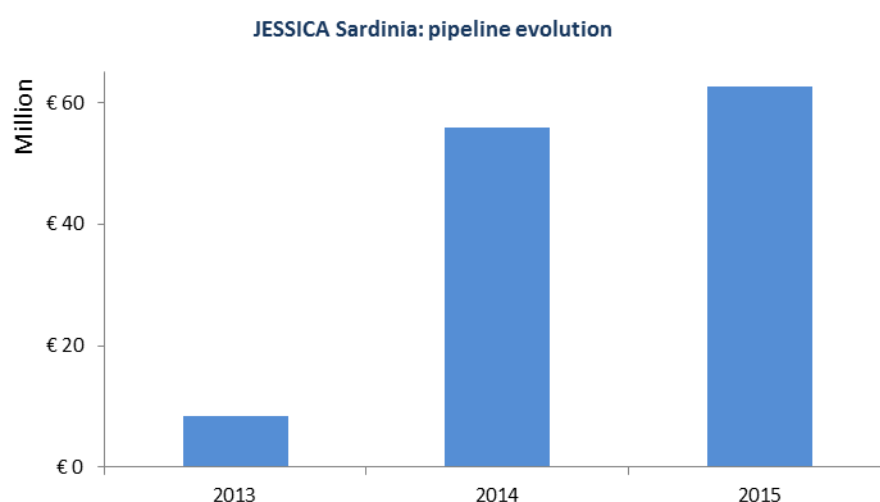
- **Description**
 - The JESSICA Holding Fund in Sardinia was created in July 2011 through the signature of a Funding Agreement between Regione Sardegna and EIB with a contribution of €70m from ERDF Sardinia OP 2007-2013.
 - The structure of the JESSICA Holding Fund Sardinia is the following:

Figure 19: Structure of the JESSICA Holding Fund in Sardinia



- One of the two selected financial intermediaries, is dedicated to EE/RE investments (Energy UDF). Total resources allocated: EUR 33m.
- The financial products offered are: direct lending (senior, junior and mezzanine) and equity.
- **Achievements**
 - Up to date, the Energy UDF has approved 27 projects amounting to ca. EUR 31 million (ca. 100% of the resources for investment) for a total CAPEX value of ca. EUR 180 million, therefore creating a **leverage effect > 5x**. The evolution of the project pipeline is shown in the graph below:

Figure 20 : JESSICA initiative in Sardinia: pipeline building



- The types of projects supported are: installation of photovoltaic systems on public buildings' rooftops, installation of biomass systems, replacement of public lighting systems, and other more general interventions aimed at introducing EE measures.

- These projects contribute to the policy objectives set out in the OP in terms of reduction in CO₂ emissions as well as capacity building in the public sector. Moreover, JESSICA has financed and promoted the implementation of projects which otherwise would have not been completed due to the lack of sufficient funding (reliance on grants/public sector would have not been enough to make them feasible) and it has introduced an innovative and more sustainable mean of financing in a context historically based on grant schemes and financially unsustainable projects.

Table 49: Approved projects per UDFs (values in million EUR)

Projects approved	CAPEX	JESSICA contribution	Signature	Disbursement
Project 1	0.2	0.2	✓	✓
Project 2	0.1	0.1	✓	✓
Project 3	1.3	0.5	✓	✓
Project 4	0.5	0.5	✓	✓
Project 5	0.1	0.1	✓	✓
Project 6	0.2	0.2	✓	✓
Project 7	0.2	0.2	✓	✓
Project 8	0.2	0.2	✓	✓
Project 9	0.3	0.1	✓	✓
Project 10	0.4	0.3	✓	✓
Project 11	0.2	0.2	✓	✓
Project 12	0.6	0.6	✓	✓
Project 13	0.2	0.2	✓	✓
Project 14	0.3	0.3	✓	✓
Project 15	0.2	0.2	✓	✓
Project 16	0.1	0.1	✓	✓
Project 17	0.4	0.4	✓	✓
Project 18	0.2	0.1	✓	✓
Project 19	0.3	0.2	✓	✓
Project 20	1.0	1.0	✓	✓
Project 21	4.8	0.9	✓	✓
Project 22	72.3	8.7	✓	Dec-15
Project 23	93.3	13.8	n.a.	n.a.
Project 24	0.1	0.1	n.a.	n.a.
Project 25	0.6	0.6	Sep-15	Dec-15
Project 26	0.3	0.3	Sep-15	Dec-15
Project 27	1.5	1.0	Sep-15	Dec-15
Total	179.8	31.1	15.2	6.5

Source: Annual Monitoring Report 2014 of JESSICA Sardinia

- **Lessons learnt (relevant for Croatia)**

- The MA used the process to select the financial intermediaries to build a concrete project pipeline (specifically, the call for EoI launched for the selection of the financial intermediaries

required each candidate to develop a detailed business plan including the identification of a concrete project pipeline);

- Financial intermediaries with a strong knowledge of the local market were a key success factor; territorial coverage proved to be crucial during the scouting phase and pipeline building
- Flexibility of Investment Strategy resulted to be a positive factor to adapt to changes in the market and projects;
- Fund of Funds allowed the MA to benefit of a single point of entry to deal with various issues arose during the implementation and investment phase (e.g. as reporting and controls manuals, procedures, amendments to operational agreements, evaluation of co-financing requirements, assessment of appropriateness of security structures, assessment of conflict of interests between JESSICA and private co-financing, projects scouting, interpretation of EU guidelines, etc.).
- Other success factors: private sector involvement, proactive and flexible governance, simple and swift procedures

Lithuania

• **Description**

- The Lithuanian fund for EE Housing Renovation was established under a JESSICA holding fund (managed by the EIB). Its overall volume is EUR 227 million, of which 127 million from ERDF contributions, without any domestic public funding¹³⁰. Private resources have been attracted to the fund via the domestic and Scandinavian banks responsible for structuring the loans to the final beneficiaries;
- TA is provided up to 100% through the Housing and Urban Development Agency, in order to cover studies and design work. Notwithstanding the requirement for all building occupants to agree to taking on the loan before the renovation investment can take place, the bulk of loan repayments can still be sourced from residents' energy bill savings. The Lithuanian fund is also able to offer special repayment terms for low-income families – up to 100% reimbursement of their instalments;
- It is worth mentioning that, despite evident benefits of EE upgrading in terms of comfort levels and heating cost savings, at the beginning the home-owners were not proactive in implementing modernisation projects and appeared cautious in taking on long-term loan commitments. However, in 2013 the new Government amended the programme by increasing the subsidies and by allowing building administrators to take out loans for the modernisation, whose repayment was bundled with the utility bills, in so doing facilitating arrangements with the lending institutions and placed the management of the loans in the hands of the building administrators; the loans were then repaid through the building administrators from the savings that residents would make on heating payments. In addition, the Government started working closely with municipalities and involving them in the housing modernisation programmes – including project selection and managing of municipal building modernisation programmes by municipal administrators.

¹³⁰ Of which EUR 127 million are from the ERDF, EUR 100 million are from national funding (EUR 100 million) and between EUR 20 million and EUR 40 million were expected from commercial banks

- **Achievements**

- According to FI-compass¹³¹, up to January 2015, more than 3,000 buildings have had their investment plans approved for a total JESSICA contribution of EUR 700 million. Of these, almost 1,000 have already started construction for a value of EUR 230 million, additional 750 have signed financing contracts with intermediaries and almost EUR 100 million have already been disbursed;
- In 2010 (latest monitoring data available) the total estimated energy saving amounted to ca. 82.25 GWh/year;
- Moreover, favourable loan products with affordable interest rates and sufficient subsidies have allowed for reducing the investment payback periods in some cases up to 10 years, in order to make investments more attractive and stimulate demand.

- **Lessons learnt (relevant for Croatia)**

- The undertaking and coordination of a sound and detailed preparation from a policy perspective resulted to be key to allow a complex effort to be successfully delivered on the ground, especially given the granular composition of the beneficiaries;
- The importance of planning in advance with a multi-year approach has proved of paramount importance to create the conditions for the programme to work and allow its progressive implementation on the ground.

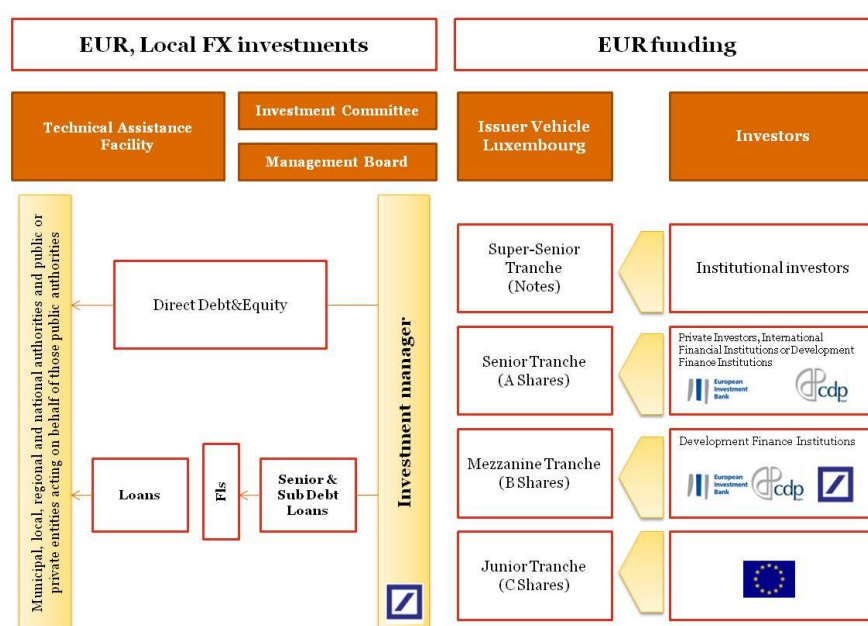
5.1.4.2 Technical assistance: the successful experience of the EEEF

The European Energy Efficiency Fund (EEEF) offers senior debt (with maturity up to 15 years), equity and mezzanine with more flexible maturity rates for projects at regional and local level.

The fund can co-invest as part of a consortium and participate through risk-sharing mechanisms with a local bank. The Investment Manager (IM) of the Fund, which is Deutsche Bank, is responsible for scouting and evaluation of investments, due diligence and preparation of the investment proposals. In order to lower or even neutralize municipalities' carbon footprint, the EC equipped EEEF with a **Technical Assistance Facility of EUR 20 million** to accelerate investments in the fields of EE, small-scale RE and clean urban transport.

While as a centralised FI the EEEF targeted medium-sized investment projects in the EU 28 area, the key innovative element of success is its investment strategy. The Technical Assistance Facility supported several public authorities in developing their projects by providing EC's Grants for up to 90% of the total costs and subject to a later financing by EEEF.

¹³¹ FI-compass, Financial Instruments 2014-2020 under the ESIF – FI experiences in energy efficiency

Figure 21 : EEEF's operational framework¹³²

Source: EEEF presentation at the Sustainable Energy Week (Brussels, April 13th 2011)

TA can be requested for the following activities: feasibility and market studies, project structuring, business plans, energy audits, preparation of tendering procedures and contractual arrangements, financial structuring and funding preparation/documentation and include any other assistance necessary to develop Investment Projects or projects to be submitted for financing under the fund (including projects where the fund co-finances projects which are supported by Structural and Cohesion Funds) excluding subsidies to investment (hardware) costs.

In mobilizing this instrument, some guidelines need to be followed:

- TA shall generate investment projects with a minimum leverage factor of up to 20 between TA's grants and project investment;
- Grants shall cover up to 90% of eligible costs for project preparation;
- Only projects, which are to be funded by the EEEF, can receive TA grants.

Furthermore, when selecting investments in TA, the IM screens projects under several criteria like:

- The EU added-value in assisting the given initiative, in terms of compliance with EU policies, firstly the expected impact on the 20/20/20 objectives, as a matter of coherence of the EEEF's operations;
- Their potential bankability, as a preliminary verification of initiative success and project long-term financial sustainability;
- The absence of supports by other TA facilities on the same project;
- The geographical balance, as defined by the Fund Strategy.

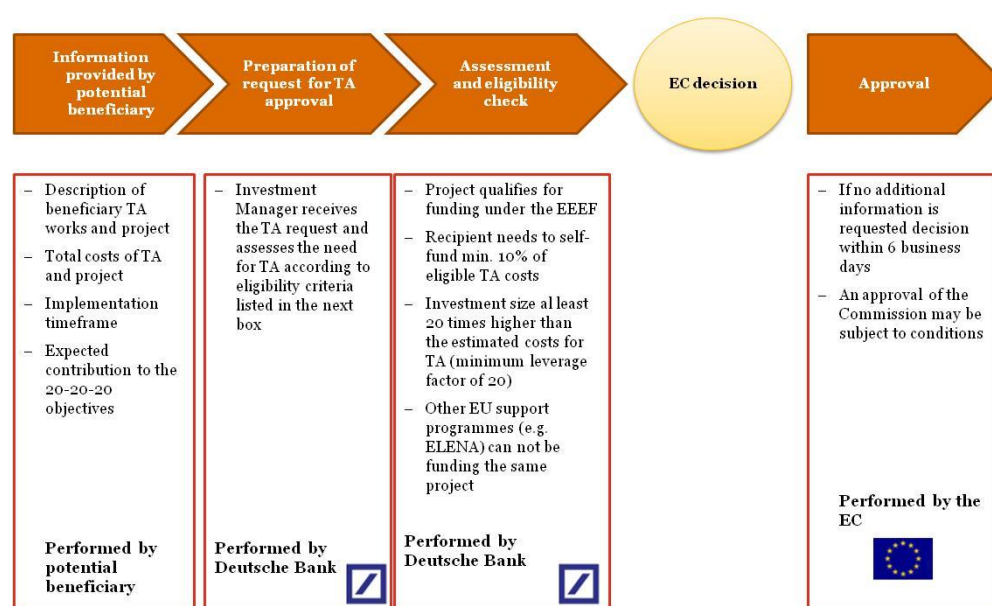
As described below, the selection process for investments in TA goes through four phases:

¹³² Loans to FI are not used yet.

1. **Information phase:** TA promoters/beneficiaries are required to provide detailed information about the envisaged TA works and a description of the beneficiary and the project. In such phase IM has personal meeting with municipalities/authorities and starts.
2. **Preparation phase:** IM prepares the TA application through some focused discussions.
3. **Submission phase:** IM prepares the TA request for selected projects, including the TA contract, the possible tendering process and information on additional funding.
4. **Approval phase:** the approval process ends with a decision made by the EC.

According to IM, the overall process can take up to 6 months, including the final approval by the EC, which takes from 1 to 2 weeks. Following the approval of the EC, the final beneficiary will sign a TA agreement with the IM.

Figure 22 : TA approval process



Source: Mid Term Evaluation of the EEEF- 2013 developed by PwC on behalf of the EC

Sixteen public authorities benefited from the Technical Assistance Facility in countries such as Spain, Portugal, France, Denmark, UK, Ireland, the Netherlands and Belgium. Through these TA projects, EEEF managed to initiate significant investment programmes in each of the Member States, up to a total volume of ca. EUR 450 million, helping to reach the ambitious targets of the EU regarding climate protection.

The successful example of the implementation of TA through the EEEF has the potential to be replicated in the other sectors under consideration in this Assignment.

5.1.4.3 National and regional funds/facilities

EPEEF

One of the main success factors enabling the EPEEF to become an important source of finance for EE/RE projects in Croatia has been the strong buy-in behind the project by the Croatian authorities. Also, in order to incentivise interventions, the fund provided grants that could cover fully the project preparation phase and partially (40-80% according to location) the project execution.

This grant component was particularly important as it contributed to reduce the payback period that for deep renovation projects has proven to be particularly long as it implies also the implementation of not so financially viable measures.

However, the examination of EPEEF's work programmes for 2013/2014 and 2015 financial plans reveal that assigned allocations have far outstripped their realised allocations in 2012 and 2013 due in part to two negative trends affecting their disbursement in the EE/RE sector. Namely that the public sector is the dominant beneficiary of their programmes but is hampered by low capacity to provide a mature project pipeline, while the commercial sector is not well informed.

There is a clear lesson to be learnt here that for future implementation of FIs targeting EE/RE in Croatia (either scaling up of existing funds or new instruments) there will have to be a **more concerted awareness raising campaign** and increased **TA for beneficiaries**. One interesting model might be the provision of TA for both recipients and financial intermediaries potentially through a combination of grants and FI.

5.1.4.4 Summary of lessons learnt for EE/RE

Key elements emerged from past implementation of FIs are:

- **Commitment:** a successful implementation of FIs is the outcome of a coordinated and result oriented approach from all parties involved. Strong commitment is then required by key stakeholders;
- **Selection of Financial Intermediaries:** territorial coverage (e.g. by local banks) proved crucial for the scouting of projects. Selecting more than one financial intermediary increases competition and the performance while diversifying risks;
- **Capabilities:** the following capabilities are required to set-up, implement and manage FIs: financial expertise, legal and administrative expertise, technical expertise, project management capabilities. The observation of the experience demonstrated that successful FIs were implemented when such capabilities were available at all FIs levels: MA, HF manager, Financial Institution, Final Recipients and Local Authorities;
- **Expertise:** ability to capitalise on existing expertise is an important success factor in the implementation of FIs. Although Croatia has not a long-standing experience with FIs, experiences of revolving instruments co-financed by EU or regional resources can be brought by experienced actors (e.g. EIB) who were involved in the deployment of FIs in the 2007-2013 period. Availability of supporting documentation (such as procedures, call for expression of interests, terms and conditions of agreements) and establishment network of contacts (e.g. network of financial intermediaries) are among major tangible benefits achieved by capitalising on experience in previous programming periods;
- **Availability of project pipeline:** a key success factor for the full allocation of funds. In most of the analysed cases, the project pipeline was not identified at the moment of developing the feasibility study. However, the MA decided to implement FIs to capture all the benefit expected to be achieved by FIs (capacity building, leverage effect, long term recycling of funds). The success of the

initiative was due to the actions taken by the MA to ensure that a project pipeline was available at the moment in which the money were invested, namely: hiring an experienced fund manager able to stimulate the involvement of financial and public sector in the initiative; using the selection of financial intermediaries to set up the project pipeline (selected financial intermediaries had presented concrete business plans with robust, pre-identified project pipeline (top-down approach));

- **Flexibility of IS:** possibility to adapt the IS a contractual/procedural perspective to changes in the market and projects;
- **Technical assistance:** project applicants (or project beneficiaries) would benefit enormously from such service, particularly during the pre-development phase when crucial project documentation is being prepared, such as feasibility studies, cost-benefit analyses and other technical documentation on which the merits of their projects will be judged. Doing so would help increase the number of feasible projects and develop the pipeline of investment-ready projects;
- **Milestones in Operational Agreements:** setting several milestones during the investment period makes it possible to monitor closely the performance of the intermediaries and the achievement of the investment objectives, and thus makes it possible to take the necessary corrective actions at an earlier stage.
- **Management Fee structure:** a management fee structure focused on contingent fees based on effective results incentivises performance.
- **Leverage:** inserting contractual leverage/cofinancing obligations increases the impact of FIs and the volume of the investments. Leverage objectives have proved to be more effective when set at portfolio rather than at project level.

Moreover, a review of the experiences gathered during the 2007-2013 period suggests that the following lessons should be incorporated into any envisaged FI targeting EE/RE:

- **Increase private capital involvement.** The management and distribution of funds is generally best done by actors closest to the market such as banks and other financial institutions. The aim is to attract more private capital and hence increase the leverage effect of the FIs in order to be able to maximise the benefits from the use of FIs. The selection of the financial intermediaries should be carried out with full impartiality, and on the basis of a thorough assessment that includes technical expertise and know-how. While public entities at higher level might be aware of policy objectives, they are not always aware of the needs of the market itself. Involving these actors early on in the roll-out of FIs, particularly during the design phase, is considered an example of best practice. This is because actors with good knowledge of the market would normally already have an established network of partners or beneficiaries in place which would help reduce the need for awareness-raising and would make the investment process via FIs more efficient.
- **Need for awareness-raising.** General awareness-raising and market-enabling activities are also necessary as many of the potential market participants in Croatia lack adequate understanding of the use and potential benefits of FIs, including the institutional set-up, administrative procedures,

funding requirements etc. This lack of understanding is a significant barrier to the implementation of FIs.

In order to address this barrier, MAs should support information campaigns, including seminars and consultations with local stakeholders to better familiarise them with FIs. These local stakeholders could include banks and other financial institutions, regional and municipal governments, along with industry groups such as chambers of commerce. Such outreach programmes could be supported with the publication of guidebooks to be made available to interested investors in print and online.

- **Cutting red tape.** Another important lesson learnt through both the Croatian and other MS experiences is the need to reduce the administrative and bureaucratic burden involved in applying for funding. Legal uncertainty has been a particularly problematic issue for the fledgling ESCO sector in Croatia.
- **Aligning incentives.** Because the success of FIs relies heavily on the financial intermediaries who implement them, it is a good practice to design intermediaries' compensation to incentivise the accomplishment of the FIs policy goals, not just the disbursement and repayment of funds. For example, management fees and other compensation for the intermediaries of an EE fund could be made conditional on certified improvements in the energy efficiency of the projects they approve so that the intermediary has an incentive to ensure the funds have the intended effect.
- **Avoiding overlapping calls.** Coordination needs to be ensured when separate entities are concurrently publishing calls for proposals/funding. This allows for the creation of synergies among calls. In the case where calls are published concurrently, clear and differentiated target recipients should be identified.

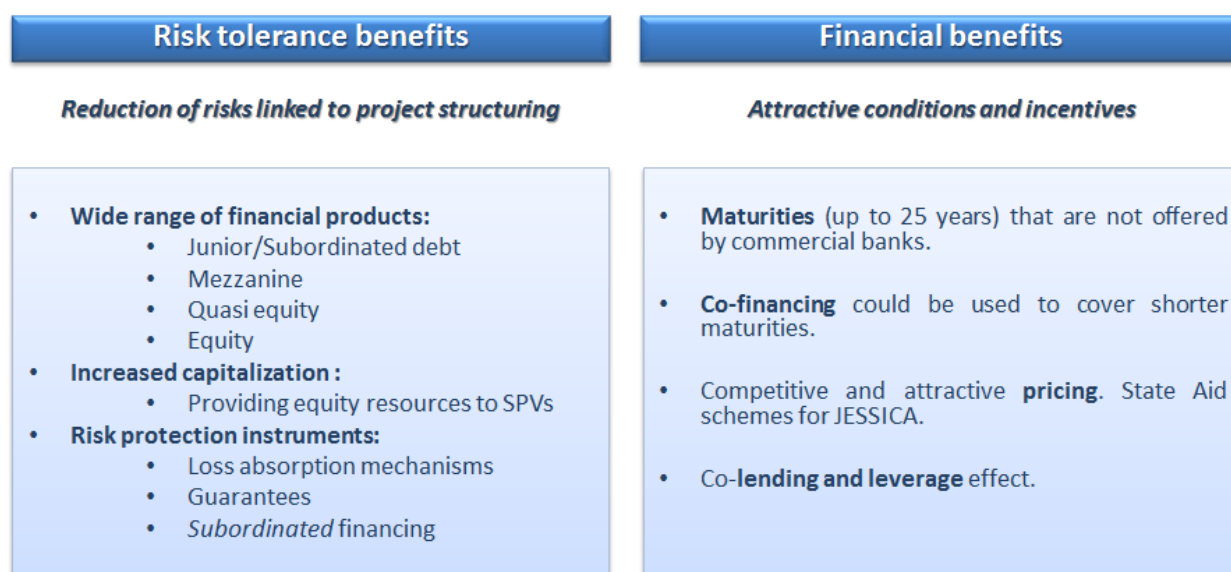
5.1.5 Conclusion of Building Block 1 - Market assessment

As explained below, the analysis performed indicates that there is considerable scope to establish FI in Croatia in the analysed sector.

- The advantages of FIs are: Possibility to offer **financial products suitable to the characteristics of projects**, thus avoiding use of grants when projects show a profitability;
- Possibility to offer **also grants** in form of Technical Assistance to project promoters;
- **Leverage effect:** mobilise other sources of public and private finance;
 - Facilitate / stimulate additional participation of **intermediary banks** (with the FIs not accounted for on the books of the banks);
 - If **subordinated**, it facilitates bank lending;
- Generate **finance for future investments** (revolving of fund);
- **Overcoming current limitations** in terms of pricing, maturity and collateral
- For **public-sector** projects:
 - Limited administrative costs;
 - Maturity can match or be higher than payback period;
 - May cover upfront (part of) the financing need of the investment;
- **Exit strategy is already defined** from the beginning;

- Brings a wide range of **risk tolerance** and **financial benefits** illustrated below:

Figure 23: Risk tolerance and financial benefits of the FIs



The advantages described above support the case for establishing FIs in the sectors covered in this report.

The only exception is the private residential sector, for which the use of FIs would be impacted by a number of factors that in essence compensate the general advantages and discourage the use of FIs:

- **Limited benefit of small scale EE project for private** promoters (which would have to reimburse the loan against a very long payback time);
- Difficult management of the **very fragmented number of beneficiaries** and the **high administrative costs** connected with the financing (e.g. contract, due diligence, etc.);
- Very **labour intensive activity for the financial intermediary**, which will pose a question on finding an available intermediary during the call for EoI;
- **Limited benefit in term of pre-financing**, given the low magnitude of intervention in the residential sector;
- **Low return of EE projects** (low energy prices make EE project payback long). Incentive to investment for private sector is very limited;
- **Difficulties to reach a minimum investment size** due to the need of agreement among various owners.

In this context the implementation of a tailor made decentralised FI is not suggested at this stage for improvement of EE performance of private residential buildings. The MA could consider dedicating to this market segment traditional grants programmes first, such as the one carried out by the EPEEF and, later on, following the identification of a concrete project pipeline, an “off the shelf” Financial Instrument, (Cfr. Financial Instrument for the energy efficiency in the residential buildings: http://www.fi-compass.eu/sites/default/files/publications/presentation_201501_Brussels_ESIF_Thomas-de-Bethune.pdf).

This is an area which the MA could consider in a separate study.

The proposed financial instruments for the EE/RE sector, with the budgetary allocations between private commercial buildings, improvements of industrial production processes and public lighting systems, can contribute significantly to cover the market gap identified for each of the three above-mentioned sub-sectors.

In particular, as detailed in the study, based on the current status of both the supply-side and the demand-side for investments in the EE/RE sector, the opportunity to launch FIs could well address the need for long-term financing provided with a more risk taking approach in terms of economic sector, nature of beneficiaries and project risks. This initiative would fill a need since, based on the key findings of the report, the Croatian banking system, although bearing an overall appreciable liquidity level, is seen as reluctant in providing financing for projects with long-term return and relatively moderate profitability, as those typical of the EE/RE sector, where investments are already very low and which many possible promoters (e.g. corporates) consider just as ancillary to their core activities.

However, the study also highlighted very significant room (and actual need) for the implementation of other actions and policies, specifically grants, in parallel with FIs. This view is justified by the following elements:

From a quantitative angle, while the investment targets set by NEEAP for the period 2014 – 2020 amount to approx. EUR 1.65 bn (without including industrial buildings), based on the study, FIs are expected to cover needs for approx. EUR 0.28 bn (including 2x leverage). As a result, an additional supply of financial resources for EUR 1.37 bn would be required to cover the total demand. Furthermore, as the demarcation analysis suggested:

- FIs will be targeted at a limited number of private and public project promoters expected to be able to take on a revolving FI, and capable of preparing and implementing a sustainable investment project. The majority of potential promoters are affected either by debt-capacity constraints (e.g. in the case of hospitals and other public sector promoters) or by technical-capacity constraints (preparation of projects);
- Certain projects present limited revenue-generating capacity (e.g. because of small scale) and so could not be realistically supported by FIs, which are revolving in nature.

In addition, it has to be noted that Croatia is new to FIs, so it is reasonable to expect that, even if implemented immediately, as suggested in the study, the actual results expected by the FIs would be actually achieved over a certain time frame. This is due to the natural need of “learning by doing” for all the involved actors (stakeholders, financial intermediaries, beneficiaries, etc.) in respect to operational, legal and procedural aspects, apart from the time required to set up the immediate procedural, procurement and legal framework for implementation. It is, therefore, recommended that, in order to facilitate the achievement of the general objectives set out in the OPCC, and of the specific objectives arising from the various national programmes (e.g. NEEAP), the MA consider to pair FIs with the more consolidated grants programme, in particular targeting those categories of beneficiaries and projects which cannot be reached through FIs.

Given the current circumstances, FIs are not considered a priority for EE interventions in private residential buildings, including multi-apartment buildings and family houses. Consequently, the implementation of such projects by using grant schemes might be necessary before the potential for use of financial instruments could be confirmed. The level of grants support required might differ across

projects in the EE sector (depending on the type of buildings), and will need to be established by the MA in the course of OPCC implementation.

In summary, there is room for the creation of an FI for commercial, public and industrial buildings as well as for industrial production processes, while for the private residential sector a tailor-made FI does not emerge as the best solution to adopt to address the identified market gap.

Based on the above summary of the analysis so far, and taking into account the key findings of the market assessment, the next step is to identify the most appropriate financial products that the MA could consider in order to deploy via FIs: in essence, they are **loans, guarantees, equity and mezzanine products**. In order to identify the most suitable financial products for EE, the following table gives the main advantages and disadvantages of each of them.

Table 50: Advantages and disadvantages of financial products in the field of energy efficiency

Product	Advantages	Weaknesses
Loan	<ul style="list-style-type: none"> • Easy to roll out (limited management costs and fees) making it preferable for public administration (especially small ones) that might not have the necessary skills to handle more complex financial schemes (e.g. mezzanine) • Except for variable rate loans, principal and interest obligations are known amounts which can be forecasted and planned for, easing the budgeting for public administrations or companies • Allows raising the ambition of the investment in terms of energy savings (e.g. when combining the loan with grants by means of interest rates subsidy) • Can also cover larger investments • Interest on debt can be deduced on the company's tax return lowering the actual cost of the loan • Largely flexible as it can be used for ambitious renovation/refurbishing project as well as for individual EE measures • The off-the-shelf instrument facilitates the use of ESI funds for soft loans in housing. Consolidated contractual duration facilitates the negotiation and the post-signature management for intermediary and beneficiary • One-year IBOR could be swapped to fixed rate with limited cost for the beneficiary • Margin component is fixed and not depending on the tenure • For good / satisfactory rating categories pricing with low collateralisation ranges between 220 and 400 basis points for the borrower for maturities longer than 20 years • No structuring or appraisal fees charged to the beneficiary 	<ul style="list-style-type: none"> • Leverage effect (on average 1:2) • Contractual covenants for the borrower • Impact on Stability Pact • Impact on overall financial structure
Guarantee	<ul style="list-style-type: none"> • Reduce the risk for banks and enables them to lend greater amounts which is particularly beneficial for ESCOs which cannot mortgage the building they are refurbishing • Higher leverage effect • Improves banks' risk-bearing capacity thus reducing collateral needs • For the beneficiary, theoretical potential reduction of final pricing 	<ul style="list-style-type: none"> • It provides only a risk reserve for the lender and does not provide liquidity • The cost of funding tends to be higher compared to simple loan (as the borrower has to pay the guarantee fee plus the interest rate of the loan) • Anecdotal evidence suggests that EE loans experience "market standard" or better credit performance so still loans are to be preferred (risk sharing facilities however can work during the transition phase aimed at making energy efficiency loans mainstream)

		<ul style="list-style-type: none"> • Unfunded, requires liquidity • Cannot cover all financial needs • Administrative costs, reporting obligations • High leverage effect can be obtained with portfolios, but only when they are very granular (therefore increasing costs) • Sometime lack of know-how to implement them at regional and local government levels might hamper their execution
Equity	<ul style="list-style-type: none"> • The remuneration is linked to the profitability of Investment in EE measures • It shares risks and liabilities or in other words, the equity investor has the same vested interest of the ESCO or company in which its investing (i.e. growth, profitability, and increase value) • The company can benefit from investor's management expertise. • Leverage effect improves overall financial structure thus facilitating access to additional financing 	<ul style="list-style-type: none"> • If the business growth, the company has to share a portion of the earnings with the equity investor making over time, the distribution of profits to other owners exceeding what the enterprise would have repaid on a loan (this is however less true for companies operating in the EE market as compared to for instance RDI sector) • Difficult to establish benchmarks for market remunerations; • Governance (entrepreneurs tend to avoid any dilution of control and sharing of executive decision-making) • Need for specialised intermediary to structure an equity investment, which is not only more complex but also more expensive and longer; • Possible conflict of interest • Raising equity finance is demanding, costly and time consuming, and may take management focus away from the core business activities, which could be however justified given the long duration of EE interventions
Mezzanine or quasi equity	<ul style="list-style-type: none"> • No expensive collateral requirement • It increases the amount of debt available while relinquishing little or no equity ownership • Flexible terms on repayment as they relate to amortisation, coupon rates and length of the loan • Mezzanine investors can provide valuable strategic assistance (e.g. subordinated debt investors often bring fresh insights to businesses because they are financially sophisticated) • When done at SPV Project level alleviates riskiness of projects facilitating leverage / additional financing 	<ul style="list-style-type: none"> • Sometime lack of know-how to implement them at regional and local government levels might hamper their execution, and that is why their use would be particularly discouraged for this sector, which might requires a complex technical assessment prior funding disbursement • Business owner agreeing to mezzanine financing may be forced to accept restrictions in how they spend their money, which could potentially limit the characteristics of projects looked for by ESCOs • It usually more expensive than traditional or senior debt arrangements, discouraging small companies under capitalised like ESCOs, and might be structured with warrants and option to make sure the repayment of the borrowed amount of money

- Comparing the characteristics of financial products presented above with the needs and market failures / suboptimal investment conditions observed in the EE investment area, the FI could offer:
 - **Loans**, which could alleviate the lack of long term financing registered in the supply side analysis, and provide financing at the best available market conditions, thus contributing to increase the financial sustainability of projects;
 - **Equity for ESCOs**, which is the financial model typically able to leverage the most considerable outside financing and able to share operational risks.
- Guarantees and mezzanine were not considered appropriate for the following reasons:
 - **Guarantees** are not likely to improve significantly access to finance for public entities like municipalities, although they could be a suitable product for the private sector;
 - **Mezzanine** may prove too costly for smaller projects; however, they could be appropriate for larger projects or ESCOs investing in public assets.
- However, it is strongly recommended to establish a clear demarcation between category of projects that will be supported through grants and category of projects that will be supported through FIs in order to avoid any cannibalization of the two initiatives. The following figure, drawing from the recommendation of the FI ex-ante assessment methodology, present the criteria the MA could consider establishing the demarcation.
 - Several parameters could be used for the demarcation. As an example, value of DSCR (Debt Service Coverage Ratio) can be used as a discriminant DSCR below 1: Grant support
 - DSCR in the range 1 -1.25: FI support
 - DSCR above 1.25: Commercial banks support.
- Moreover, grant support should be provided to finance investments showing at last one the following:
 - the financial terms are such that the payback period is longer than the amortisation of the technical investment
 - a return on investment that is not compatible with the project risk (e.g. for EE improvement of buildings IRR below 5%).

5.2 Sustainable Urban and Territorial Development through infrastructure, renewal and regeneration schemes, sustainable urban transport and other urban investments

5.2.1 Analysis of market failures, suboptimal investment situations and investment needs

This section analyses the market failure and suboptimal investment situations in investment needs in the sustainable urban and territorial development sector.

5.2.1.1 Demand side analysis and project pipeline

Demand characteristics

Territorial context

Croatia is divided into two NUTS 2 regions: Continental Croatia and Adriatic Croatia. There are 21 regional self-government units (i.e. counties) at the NUTS 3 level, 14 in Continental Croatia and 7 in Adriatic Croatia. In addition, at the local level there are 556 local administrative units (LAU level 2, i.e. municipalities and towns).

Croatia has a historically developed polycentric structure of urban settlements, although if compared to the European context, it has only a limited number of cities and urban areas with significant economic and social weight. In fact, Croatia ranks amongst the least urbanised countries in Europe, with just 43% of residents living in cities compared to the EU average of 75%. Population density is particularly low in many of the local administrative units situated along the border with Bosnia Herzegovina, in the mountainous regions (most evident in Lika and Gorski kotar), the Dalmatian hinterland and in Western Slavonia.

Croatia has four urban centres with more than 100,000 inhabitants (Zagreb, Osijek, Rijeka and Split), which, together with their surroundings, form urban agglomerations inhabited by about 1.2 million people, ca. 28% of Croatia's total population. Outside these agglomerations, there are three more large urban centres with more than 50,000 inhabitants (Zadar, Slavonski Brod and Pula) as well as a number of smaller cities situated on the Adriatic coast, and in the surrounding hinterlands of Zagreb and Osijek. The location of the largest urban centres is relatively dispersed across the territory of Croatia, meaning that in each geographical region there is a large regional centre. This urban network is supported by smaller urban centres in each part of the country and enables most citizens to have relatively easy access to local labour markets as well as social, cultural and other services (up to a one-hour travel¹³³).

Socio-economic context

While socio-economic differences at NUTS 2 level are negligible, sharp disparities are evident at lower territorial levels (NUTS level 3 and LAU level 2), where dispersion of GDP is stronger compared to other EU Members States (36.7 in 2010, which was the sixth highest number for that year).

Internal regional disparities at NUTS level 3 have been a persistent characteristic of the Croatian territory for a long time.

¹³³ However, there are exceptions such as areas (e.g. war-affected areas) situated alongside the border where the low quality of local roads makes this commuting challenging. Also, traffic connections with the islands have to be considered as an exception.

Such differences are mainly due to differences in the physical and geographical characteristics (in terms of e.g. transportation and locational advantages), which have been exacerbated by the transition period and the war in the 1990s, whose effects are still very evident along the Bosnia Herzegovinian and the Serbian borders (e.g. delayed construction of transportation links and other infrastructure).

As illustrated in the table below, the population in Croatia has not experienced the very high levels of demographic change observed in other Central European Countries. Instead, a net 2% decline in urban population (induced by both negative natural change and out migration) was noted between 2001 and 2011, especially in the East, North Adriatic and Lika regions. Other notable trends concern the population movement towards Central Croatia due to its relatively buoyant economy and towards the coastal regions, especially from inland areas.

Table 51: Urban population change by urban size and region, 2001-2011

	Number	Aggregate Pop. 2011 (no)	Aggregate Change 01-11 (no)	Change 01-11 (%)
Large Cities (100,000+)	4	1,204,791	-21,707	-1.8
Medium Towns (35,000-100,000)	12	605,609	-14,854	-2.4
Small Towns (<35,000)	27	473,871	-11,078	-2.3
Central	4	916,364	14,371	1.6
Northwest	12	348,765	-15,412	-4.2
East	9	316,961	-24,203	-7.1
North Adriatic and Lika	8	258,010	-18,234	-6.6
Central and South Adriatic	10	444,171	-4,161	-0.9

Source: Census 2011 and Sustainable Urban Development Survey

Despite the net population change being relatively modest for most regions (apart from the East, North Adriatic and Lika) at aggregated level, a more dynamic picture emerges in individual towns (e.g. -12.6% in Vukovar and +25.3% in Solin).

Financial capacity

Collectively, the local and regional government units in Croatia have a total yearly budget of about HRK 22 billion (c. EUR 3 billion). This amount represents around 7% of national GDP. As illustrated in the table below, the overall budget of Croatian counties for 2012 was about HRK 3.5 billion (c. EUR 470 million), municipalities HRK 3.4 billion (c. EUR 460 million) and cities and towns HRK 8.6 billion (c. EUR 1.17 billion) – this excludes Zagreb which has a budget of ca. HRK 6.4 billion (c. EUR 826 million). There is a considerable variation across the individual budgets of Croatian cities and counties.

The current annual budgets (according to the reports of General Audit for 2013) of the largest cities are:

- Zagreb – HRK 6.4 billion (EUR 870 million);
- Split – HRK 870 million (around EUR 116 million);
- Rijeka – HRK 850 million (around EUR 110 million);
- Osijek – HRK 430 million (around EUR 57 million).

These four biggest urban centres are followed by Dubrovnik with HRK 394 million (c. EUR 52.5 million), Zadar HRK 377 million (c. EUR 50.3 million), Pula HRK 367 million (c. EUR 50 million), Varaždin HRK 277 million (c. EUR 37 million), Slavonski Brod HRK 194 million (c. EUR 25.8 million), Karlovac HRK 189 million (c. EUR 25.2 million). Interestingly, in 2012 the revenues of the 25 smallest local administrative units

(distributed all over Croatia) were under HRK 1 million (c. EUR 130,000), which clearly limits their urban and territorial development possibilities.

Table 52: Budgets of local and regional units in 2011 and 2012 (values in million HRK and EUR)

Local units	No. of units	Budget 2011		Budget 2012		Share of local entity budget on total budget in 2012 (%)
		HRK	EUR	HRK	EUR	
Zagreb	1	6,320.88	826.26	6,404.79	837.23	29.1
Counties	20	3,506.69	458.39	3,535.59	462.17	16.1
Towns	127	8,613.51	1,125.95	8,659.61	1,131.98	39.4
Municipalities	428	3,450.93	451.10	3,392.30	443.44	15.4
Total	576	21,892.02	2,861.70	21,992.28	2,874.81	100.0

Source: Analytical Study on Sustainable Urban Development

It is estimated that local and regional government (all municipalities, towns and counties) contribute 18% to public sector revenues and around 19% to public expenditures¹³⁴. In terms of public finances and the level of fiscal decentralisation, Croatia is among the most centralised countries in EU28. As for the structure of expenditures, it is estimated that:

- In local governments, half of the expenditure is devoted to financing the functioning of local government units (i.e. expenditures for material costs e.g. utilities, maintenance and salaries);
- In towns, the highest shares of expenditures are for the improvement of housing and community facilities (19.4%), general public services (17.1%) and recreation and culture (16.2%);
- Local units spend most of their capital budget on financing projects connected with housing and community, education (kindergartens and elementary schools), general public services and transport.

Focus on specific sectors of interest for the assignment

Public lighting

Public lighting in Croatia consumes 446.33 GWh of electricity, which is approximately 3% of total final electricity consumption in Croatia (2009 data).

The table below summarises the data on public lighting extracted from the SEAP.

Table 53: Overview of data on public lighting

City	Number of spot lights	Energy improvement measures	Total expenditure for replacing spot lights (EUR)	Energy consumption of public lighting (kWh)
Bjelovar	6,000	2,663 spot lights to be replaced	1,231,171	3,022,872 (2010)
Dugo selo	2,200	1,257 spot lights to be replaced	377,006	1,607,539 (2009)
Karlovac	7,173	n.a.	n.a.	5,104,837 (2009)
Koprivnica	n.a.	In the 2012-2015 period,	78,431	n.a.

¹³⁴ Jurlina Alibegović, Dubravka (2012) Fiskalna decentralizacija u Hrvatskoj: između želja i mogućnosti. Zagreb: Friedrich Ebert Stiftung i Institut za javnu upravu (Fiscal decentralisation in Croatia: between desires and possibilities)

City	Number of spot lights	Energy improvement measures	Total expenditure for replacing spot lights (EUR)	Energy consumption of public lighting (kWh)
		the city has replaced major part of spot lighting. Few ones still planned to be replaced.		
Koprivnica	n.a.	The City plans to introduce regulation of public lighting 2012-2015	52,287	n.a.
Osijek	n.a.	n.a.	1,231,171	9,010,018 (2010)
Pazin	1,447	n.a.	536,000	1,044,294 (2011)
Rijeka	12,842 (24% not efficient and 76% efficient public lighting)	2 measures for public lighting: replacement and installation of new ones	1,250,000	8,322,000 (2008)
Sisak	n.a.	n.a.	156,862	n.a.
Sisak	n.a.	Application of smart management system 2016-2017	65,359	7,537 (2006)
Velika Gorica	2,545	1,750 spot lights to be replaced	455,855	1,928,976 (2008)
Vinkovci	4,577	n.a.	1,231,17	2,922,475 (2011)
Zagreb	105,000	n.a.	n.a.	90,100 kWh and 38,616 m ³ of natural gas (2008)
Total¹³⁵	141,784	5,670 spot lights to be replaced	5,557,259	33,060,648

Source: Sustainable Energy Action Plans (SEAP)

Urban Public transport sector

Public transportation remains currently the predominant form of transport in most large and medium Croatian cities, although in recent years the number of passengers has decreased in all public transportation modes. The number of passenger journeys is around 38 million per year and in 2012 passenger transportation decreased by 20.1% compared to 2011¹³⁶.

The sector is characterised by limited comfortable and reliable transport connections between and within regions, as well as an absence of multi-modal transport options (intermodal terminals are extremely rare). With only few examples of environmentally friendly public transport modes and an obsolete vehicle fleet based on outdated and inefficient technologies, urban transport generates about a quarter of CO₂ emissions from transport¹³⁷.

As to the distribution of public transport in Croatian cities, in general public transport (mainly by bus) is more widely used in Croatia's larger cities and towns - Zagreb, Rijeka, Osijek, Split and their agglomerations, as well as Varaždin, Karlovac, Zadar and Pula. Interestingly, about a third of the cities

¹³⁵ Please consider that totals only include only cells filled in with values.

¹³⁶ OPCC, p. 247.

¹³⁷ Partnership Agreement for Croatia (2014)

responding to the sustainable urban development questionnaire¹³⁸, developed within the Analytical Study on Sustainable Urban Development, reported that there is no public transport, other than taxis and school transport.

Currently Croatia is engaged in a strategic planning effort in the transport sector¹³⁹, which has started with the preparation of the National Transport Strategy. In this context local and regional authorities are also preparing their masterplans, which will provide a more robust basis to define their public transport strategy, and transport operators are also expected to undertake a full review of their operations. Once this strategic planning exercise is completed, it is expected that a more precise quantification of investment needs in the urban transport sector will become available.

Key players of the market

Several players have been identified for sustainable urban and territorial development in Croatia. Please note that a more detailed description is provided in annex 6.

These are:

- Governmental bodies:
 - The Ministry of Construction and Physical Planning.
- Implementing and monitoring bodies and investment institutions:
 - The Environmental Protection Agency (AZO) was founded in 2002 and is an independent public institution established by a decision of the government of the Republic of Croatia to collect, integrate, and process environmental data in order to develop an environmental information system.
 - The Environmental Protection Fund.
- Potential project promoters:
 - Real estate developers
 - Local authorities
 - County authorities
 - Public transport operators
 - Banks and investment vehicles (Austrian financial institutions, Austrian, Israeli and to a lesser extent German investors sometimes in the form of a consortia of high net worth individuals)
 - Insurance companies which are obliged to hold a proportion of their portfolios in property.

Main characteristics of projects

SUD projects can be classified in:

- Demand-driven projects, such as mixed use urban infrastructure including public transport and commercial components (e.g. underground parking facilities, shopping centres in train stations). Such projects are generally characterised by large volume of investments, low and long term profitability of the investment and complexity of development activities and management structures.

¹³⁸ Analytical Study on Sustainable Urban Development

¹³⁹ JASPERS is also assisting the Croatian authorities in this endeavour.

- Opportunistic projects, for example in the case of a public transport fleet renewal (clean vehicles), in which the incentive to invest can be the timely availability of financial resources at acceptable terms for the transport operating company.
- Supply driven projects, where latent demand exists but emerges only when a suitable supply of finance becomes available. An example is energy efficiency in public lighting, which given its low perceived financial profitability is generally associated with grant funding. In this case, financial viability is also linked with the possibility of creating a critical mass for investment. In Croatia, this means that outside major cities, projects owned by several Municipalities need to be aggregated to ensure some profitability to the investment and that the supply of finance on terms compatible with the revenue generation capacity of energy saving investments in public lighting can act as a catalyst for the decision to invest.

Identification of demand in sustainable urban and territorial development

In order to provide an identification of demand, the analysis has drawn upon the guidance provided in the *Ex-ante assessment methodology for financial instruments (Vol. V – urban and territorial development)*. Below the methodological approach used to estimate the demand for urban development projects is provided.

- Volume of **urban mobility** investment identified in the Sustainable Urban Development Survey, as part of the 2014 Analytical Study for Sustainable Urban Development¹⁴⁰;
- Volume of **public lighting** investment identified in the III NEEAP, measure ‘Energy efficient public lighting programme’;
- Volume of **urban mobility and public lighting** investments identified during the workshops organised with cities in Zagreb and Solin. This can be also considered as **an initial project pipeline**.

The Sustainable Urban Development Survey

A preliminary picture of investment needs is given by the Analytical Study of Sustainable Urban Development, during which a workshop was organised by MRDEUF representatives to assess the investment needs of Croatian cities.

Table 54: Estimated costs of priority development investments and value of significant urban development projects managed in the last 5 years in Croatian cities

	Estimated costs of future priority investments (M EUR)	Approx. value of urban transport projects managed by city during last 5 years (M EUR)
Zagreb	2,135.7	n/a
Split	911.5	n/a
Rijeka	127.7	1,000 ¹⁴¹
Osijek	544.0	n/a
Zadar	492.0	n/a
Šibenik	55.2	n/a
Slavonski Brod	136.0	n/a
Kaštela	129.6	n/a
Samobor	15.7	n/a
Vinkovci	55.3	n/a

¹⁴⁰ Ministry of Regional Development and EU Funds (2014) “Analytical study on Sustainable Urban Development”.

¹⁴¹ This value includes the development of the port of Rijeka.

	Estimated costs of future priority investments (M EUR)	Approx. value of urban transport projects managed by city during last 5 years (M EUR)
Karlovac	254.6	3.9
Labin	64.0	2
Virovitica	273.5	n/a
Daruvar	43.0	n/a
Slatina	522.5	20
Solin	23.5	n/a
Zaprešić	42.0	n/a
Vukovar	151.5	4.5
Knin	62.0	n/a
Omiš	20.7	n/a
Rovinj	49.8	n/a
Požega	94.0	2
Nova Gradiška	63.1	n/a
Metković	34.0	n/a
Ploče	92.5	225
Krapina	75.2	n/a
Gospić	13.7	n/a
Opatija	89.4	n/a
Crikvenica	26.9	n/a
Pleternica	61.0	3.5
Novi Marof	106.0	n/a
Ivanec	39.5	n/a
Total	6,805.1	1,260

Source: Sustainable Urban Development Survey

According to the table above, it emerged that cities expressed future priority investment needs¹⁴² totalling over EUR 6.8 billion, divided as follows: large cities¹⁴³ EUR 3.7 billion, medium towns¹⁴⁴ over EUR 1.1 billion and small towns¹⁴⁵ over EUR 1.9 billion. Moreover, in the last 5 years, surveyed Croatian cities **implemented projects in transport infrastructure for ca. EUR 1.26 billion, which could be assumed as an approximation of the potential investment in city-based transport infrastructure** over the 2016-2022 period. However, this amount takes into account the development of Rijeka and Ploče ports, which account for over 95% of the total and cannot be considered representative of investment in urban mobility. Thus, while it can be taken for granted that past investments in urban transport in most of the cities have not been recorded in the survey and are therefore underestimated in the above table, the very large investments in Rijeka and Ploče may be relevant as indicators of recent urban development investment but not for mobility. In practice, however, even assuming that only 5% of the future priority investment of EUR 6.8 billion in Croatian cities pertains to public transport, the volume of investment would be of the order of EUR 340 million which we can consider cautiously as an upper limit on the demand for urban mobility investment.

¹⁴² Please note that these investments include all the sustainable urban mobility spectrum, and not only public lighting and urban transport.

¹⁴³ Larger Croatian cities are: Zagreb, Split, Rijeka and Osijek

¹⁴⁴ Medium Croatian cities are: Zadar, Sibenik, Slavonski Brod, Kaštela, Samobor, Vinkovci, Karlovac

¹⁴⁵ Small Croatian cities are: Labin, Virovitica, Daruvar, Slatina, Solin, Zaprešić, Vukovar, Knin, Omiš, Rovinj, Požega, Nova Gradiška, Metković, Ploče, Krapina, Gospić, Opatija, Crikvenica, Pleternica, Novi Marof, Ivanec

Volume of public lighting investment identified in the III NEEAP – measure ‘Energy efficient public lighting programme’

In order to achieve the EE targets set by the national strategy for 2020, the NEEAP foresees a measure targeting specifically public lighting. According to the NEEAP, in order to achieve by 2016 the target of 100 million kWh of energy savings in the public lighting system (approximately 13% of current consumption), a total investment of ca. **HRK 300 million** (c. EUR 39.22 million) will have to be secured for the 2014-2016 period. Considering that in the 2014-2016 period values in the NEEAP have been calculated assuming interventions on 50% of the public lighting stock and that for the 2017-2020 period the planned interventions are on an additional 25% of that stock, it can be estimated that an additional HRK 150 million¹⁴⁶ (c. 19.96 million) will be needed in the remaining 2017-2020 period.

Thus, it can be estimated resources for ca. **HRK 450 million (EUR 58.82 million) will have to be secured** to achieve the policy objectives and this can be considered as an approximation of the demand of finance for EE interventions in public lighting.

Amount of urban mobility and public lighting investments identified via stakeholders consultation

The list of projects identified in the course of the study via workshops with cities and interviews with public and private stakeholders is reported in the table below.

During the course of the assignment, by means of workshops with cities and interviews with public and private stakeholder, a concrete list of projects has been identified for which financial sources have been partially secured or not secured at all at the time of writing this report. Projects identified were screened against specific criteria, as reported in Chapter 1.4. Results of the screening are provided in the table. The table below illustrates the selected projects that constitute an initial pipeline.

¹⁴⁶ This proxy has been calculated on the basis of information provided by NEEAP. In particular, assuming that HRK 300 million were calculated hypothesising interventions on 50% of public lighting stock, as in the 2017-2020 period the intervention hypothesised by NEEAP amount to 25%, HRK 150 million were calculated.

Table 55: Project pipeline: SUD

City	Project name	Market segment	Project description	Project size (EUR million)	Project readiness (Short/medium/long term)	Qualitative description of economic performance (High, Moderate, Low)	Qualitative description of financial performance (High, Moderate, Low)	Classification by financial and economic performance (A, B, C or D) ¹⁴⁷
Split	EE improvement of public lighting system	Public lighting	n.a.	0.0045	Medium term <ul style="list-style-type: none"> No information available on the status of project documentation However, the project is not complex, it is expected that the development of the project can take up to 6 months Interventions are expected to start late 2015, early 2016 	High <p>Intervention is expected to generate positive impacts for the environment and for the society (e.g. improvement of security).</p>	Moderate to low <ul style="list-style-type: none"> No information on the number of spot lights that would be replaced. Taking into account the volume of investment, profitability is expected to be moderate 	B
Rijeka	The construction of road infrastructure	Urban mobility	The complex would approximately be 56,000 m ² ,	52	Short term <ul style="list-style-type: none"> Project documents 	High <p>Intervention is expected to</p>	Moderate <ul style="list-style-type: none"> High level of investment 	B

¹⁴⁷ For definitions of project classifications, see Chapter 1.4 above.

City	Project name	Market segment	Project description	Project size (EUR million)	Project readiness (Short/medium/long term)	Qualitative description of economic performance (High, Moderate, Low)	Qualitative description of financial performance (High, Moderate, Low)	Classification by financial and economic performance (A, B, C or D) ¹⁴⁷
	and bus station Zapadna Žabica		including a parking garage with 950 parking spaces, bus station for long-distance traffic with 18 platforms, and associated trade, business, office and leisure facilities.		finalised. Licences obtained • Interventions are expected to start late 2015	generate positive impacts for the society (e.g. improvement of transport service, employment).	compered to expected revenues (eg. revenues from car park)	
Kutina	Industrial-logistical zone	Urban development, including urban mobility	Municipality infrastructure	2.49	Medium term • Project document finalised • No information of expected starting date for interventions	High Intervention is expected to generate positive impacts for the society (e.g. competitiveness of enterprises, employment).	Moderate High level of investment compered to possibility of generate revenues	C/B
Kaela	From Kastilac to Rušínac, arrangement of coastal area of City of Kaštela	Urban development, including urban mobility	Furnishing and equipping the coastal belt length of 4 km, the beaches, walking trails, bike paths, and public spaces.	3.5	Medium term • Project has not yet started • Interventions are expected to start in 2017	High Intervention is expected to generate positive impacts for the society (e.g.	Low Profitability can be ensured by the introduction of commercial activities.	C

City	Project name	Market segment	Project description	Project size (EUR million)	Project readiness (Short/medium/long term)	Qualitative description of economic performance (High, Moderate, Low)	Qualitative description of financial performance (High, Moderate, Low)	Classification by financial and economic performance (A, B, C or D) ¹⁴⁷
						improved life conditions, employment).		
Karlovac	The project of introducing advanced control of intersections equipped with intelligent traffic lights in the city	Urban mobility	Upgrade, adjustment and replacement of obsolete signalling devices and equipment; Installation of traffic equipment.	5-35	Short term <ul style="list-style-type: none"> Project has not yet started Interventions are expected to start in 2016 	High Intervention is expected to generate positive impacts for the society (e.g. improved life conditions, improved security).	Low Profitability can be ensured through reduction of maintenance costs	C
Koprivnica-Križevci	Intermodal passenger terminal Koprivnica	Urban mobility	Intermodal passenger terminal provides integration of rail and bus transport by integration of rail and bus station.	5	Medium term <ul style="list-style-type: none"> Preparation of project documents is ongoing No information on expected starting date of interventions 	High Intervention is expected to generate positive impacts for the society (e.g. transport services, employment).	Low Profitability can be ensured by the introduction of commercial activities.	C/B
Dugo Selo	Public	Public	Improve EE of	1	Short term	High	Moderate/ Low	B/C

City	Project name	Market segment	Project description	Project size (EUR million)	Project readiness (Short/medium/long term)	Qualitative description of economic performance (High, Moderate, Low)	Qualitative description of financial performance (High, Moderate, Low)	Classification by financial and economic performance (A, B, C or D) ¹⁴⁷
	lighting	lighting	public lighting system		<ul style="list-style-type: none"> City of Dugo Selo has signed agreement with Zagrebačka County. Master plan is drafted Interventions expected to start in 2014, not yet started 	Intervention is expected to generate positive impacts for the environment and for the society (e.g. improvement of security).	<ul style="list-style-type: none"> No information on the number of spot lights that would be replaced. Profitability can be ensured through reduction energy costs 	
Dugo Selo	n.a.	Urban mobility	Construction of bypass through business zone	1.17	Short term <ul style="list-style-type: none"> Technical documentation finalised Intervention expected to start late 2015 	High Intervention is expected to generate positive impacts for the society (e.g. improved life conditions, improved security).	Low Profitability can be ensured by the introduction of commercial activities.	C/B
Croatian cities	n.a.	Urban mobility	Upgrade of existing bus fleets (1,000 busses)	10	Medium term No information on expected start date of interventions	High Intervention is expected to generate positive	Moderate Profitability can be ensured through reduction of maintenance costs	B

City	Project name	Market segment	Project description	Project size (EUR million)	Project readiness (Short/medium/long term)	Qualitative description of economic performance (High, Moderate, Low)	Qualitative description of financial performance (High, Moderate, Low)	Classification by financial and economic performance (A, B, C or D) ¹⁴⁷
						impacts for the environment and for the society (e.g. improved transport services, improved security).		
Croatian cities	NEEAP	Public lighting	Improve EE of public lighting system	58.82	Various stages of development- long term overall	High Intervention is expected to generate positive impacts for the environment and for the society (e.g. improvement of security).	Moderate/ Low <ul style="list-style-type: none"> No information on the number of spot lights that would be replaced. Profitability can be ensured through reduction energy costs 	B/C
Total value of projects in public lighting				1.005				
Short term				1				
Medium term				0.005				
Long term				58.82 (NEEAP)				
Total value of projects in urban mobility				79.51				

City	Project name	Market segment	Project description	Project size (EUR million)	Project readiness (Short/medium/long term)	Qualitative description of economic performance (High, Moderate, Low)	Qualitative description of financial performance (High, Moderate, Low)	Classification by financial and economic performance (A, B, C or D) ¹⁴⁷
<i>Short term</i>				58.52				
<i>Medium term</i>				20.99				
<i>Long Term</i>				-				
Total				139.34				

The table above, indicates is a project pipeline for an approximate value of ca. EUR 79.51 million in urban mobility (approx. 75% of which expected to be realised in the short term) and EUR 59.82 million in the public lighting sector (practicall all to be realised in the long term).

Given the duration of the programming period, some of the less mature schemes may develop into concrete projects and therefore were not excluded from the pipeline. Moreover, experience has shown that setting up FIs has often helped to accelerate the development of projects.

Demand analysis: Key findings

- Overall, the analysis has found that there is a considerable pipeline of urban transport projects at different maturity levels. For many of the projects, including those already under construction, financial resources to fully cover their cost have not been secured.
- Due to the limited availability of information and to the fact that many projects are still in the early stages of implementation, their financial viability and suitability for support via an FI should be re-assessed at the later stages of implementation.
- The quantification of demand can be summarised as follows:
 - Urban mobility:
 - Based on prudent assumptions on the share dedicated to urban mobility of future priority investments reported by Croatian cities in the Sustainable Urban Development Survey, investment volume could be up to EUR 340 million in the 2016-2022 period;
 - Stakeholder consultations identified a project pipeline of ca. EUR 79.5 million, which, as already remarked, is likely to be a significant underestimate of the effective demand. It is also reasonable to expecte that a more precise pipeline will mature relatively early in the programming period, following the completion of the urban transport masterplans and operations reviews to be undertaken by local authorities and transport operators.
 - Public lighting
 - An investment of EUR 59.8 million would be required to reach the NEEAP public lighting system policy target;
 - EUR 1.0 million worth of public lighting projects were identified in the pipeline.
- The urban development project pipeline can best be understood as a mix of demand driven, supply driven and opportunistic projects :
 - **Demand-driven projects**, where financing needs are driven by the specific mix of elements and an FI can offer the flexibility required to match these needs to the revenue streams and improve the financial performance of projects. Examples include mixed use urban infrastructure combining public transport and commercial components such as underground car parking, or shopping centres in train stations;
 - **Opportunistic projects**, where the primary driver for meeting a long-term investment need, such as replacing a public transport fleet with clearer vehicles, is the timely availability of financial resources at acceptable terms;
 - **Supply driven projects**, whose low financial viability generally requires financing via grant funding, but where the introduction of an FI can complement grants and therefore spur demand for revolving finance that would not emerge in its absence, e.g. public lighting;
- Because opportunistic and supply driven projects are conditional on the availability of suitable revolving finance opportunities, the pipeline for these two types of projects does not usually manifest itself until after the establishment of FIs.

Gap analysis

Having analysed both the demand and supply sides of the sustainable urban development sector, the gap analysis compares the estimated demand for investment in new projects with the amount of financing currently available from public and private sources. This section identifies those areas where available funding is insufficient to cover estimated demand, and thus a gap exists which could potentially be closed using FIs.

In terms of **quantification**, the analysis compares the supply of finance that is expected to be available in Croatia in the observed period against the value of investment required to meet the national policy requirements (**market gap**). As part of the market gap, the study **verifies the existence of a concrete set of projects (initial project pipeline)** that could not find any source of finance in the market, so far (Cfr. Chapters 1.3 and 1.4).

As for the **qualitative aspect**, the analysis assesses whether and to what extent the financial products offered so far are a suitable source of finance to support the SUD initiatives development of initiatives. Moreover, the qualitative part of the analysis identifies other constraints/barriers, if any, that might hinder the development of SUD projects in Croatia.

Sustainable Urban Development: market gap

The table below compares the assessed demand for SUD interventions related to the improvement of the public lighting system and to urban transport, to the estimated available sources of finance, up to 2022.

Table 56: Quantitative results of the gap analysis (values in EUR)

Supply (2016-2022) ⁱ		Demand (2016-2022)	
Commercial banks. Loans to local government	Ca. 105 million*	Share dedicated to urban mobility of future priority investments (Sustainable Urban Development Survey) ¹⁴⁸	Ca. 340 million
HBOR	n.a.**		
EPEEF (transport & public lighting)	Ca. 40 million***	Amount of investment identified in the NEEAP - measure 'Energy efficient public lighting programme'	Ca. 60 million
Total	Ca. 145 million		Ca. 400 million

* Considering the yearly average amount of long term loans to local governments from 2010 till the end of 2014, and assuming that 1/3 of the yearly average amount of long term loans extended to local government are for urban mobility purposes.

**HBOR very recently introduced a subordinated loan model to cater for environmental protection, including EE/RE in industrial processes as well as urban development projects. The loan is subordinated to the commercial loan given for the project and repayment starts after the commercial loan is repaid. The interest rate depends on the project risk profile. As it only started the implications of this model are still unknown

***Data from EPEEF financial plan.

ⁱ The supply quantification may be underestimated as it does not incorporate the new subordinated loans scheme offered by HBOR.

¹⁴⁸ Assumed as a cautious estimate for the demand of investment in urban mobility in the next programming period.

As presented in the table, **according to these estimates it is evident that the amount of estimated available financing would not be available to meet the expected demand** for investment required to meet the national targets.

In the limited timeframe of the study, an **initial pipeline of project** was observed that would require ca. EUR 80.5 million to be realised (75% of which in the short term).

During the course of stakeholder interviews, the study also identified a number of qualitative issues related to the possibility to finance SUD interventions in Croatia, including:

- *Budgetary and financial constraints*
 - Fiscal constraints on public investment limit the incentive for public entities to engage in strategic investment planning, holding back the development of a robust project pipeline;
 - Stability pact constraints limit the borrowing potential for public administrations. In particular:
 - Total annual municipal debt liabilities cannot exceed 3% of the previous fiscal year's total revenue;
 - Total annual debt liabilities of individual municipalities and self-governing regions cannot exceed **20% of revenues** realised in the previous fiscal year¹⁴⁹;
 - Financial products currently available on the market are generally ill-suited to urban development projects with a limited commercial profitability, due to high interest rates, limited loan maturity, and high collateral requirements;
- *Lack of capacity and skills*
 - Many public sector entities lack the capacity to initiate and manage complex projects;
 - Promoters' ability to optimise investments is limited, leading e.g. to over-dimensioned project proposals;
 - Local authorities often do not have an understanding of the market needs and capabilities, leading to a "town hall only" approach to urban development. This undermines the financial viability of otherwise promising development projects;
 - The banking system often lacks experience with public investments, which are often generalised as being unprofitable, managed by unsophisticated promoters and subject to heavy regulations and other administrative burdens;
 - Little experience in the implementation of the PPP approach to urban development.
- *Market segment related challenges*
 - Urban mobility related infrastructure projects normally require a balanced mix of revenue-generating and other activities to ensure financial sustainability. The development of such complex and capital intensive projects requires considerable time and expertise;
 - Public lighting projects need a critical mass (minimum number of lighting spots) to reach financial sustainability. Given the small size of most Croatian cities, finding effective ways to bundle projects to achieve critical mass appears fundamental.

Conclusions of the gap analysis – sustainable urban development

- The expected volume of finance available from market sources is not enough to cover the value of projects in the urban mobility sector, assuming this is maintained at the level observed over the last 5 years.

¹⁴⁹ Pravilnik o postupku zaduživanja te davanja jamstava i suglasnosti jedinica lokalne i područne (regionalne) samouprave (NN, 55/09 i 139/10)

- Banks are generally unwilling to finance urban investment based on the financial performance of the project or the prospects of cost savings (i.e. on a project finance basis), but rely on traditional asset-based financing and the evaluation of client creditworthiness;
- Both the public and the private sector have limited technical and financial expertise in the development of urban projects (especially using PPP models).
- **Market failure** is identified in the lack of suitable financial products to meet the characteristic of projects, even when they show some viability of the business plans: the financial products currently offered by commercial banks are too expensive (ranging between 6% and 8% interest rate), discouraging investments in urban development which are characterised by low/medium financial returns.
- As presented in the table below, the financial products offered so far by commercial banks and HBOR hardly match the needs and characteristics of SUD interventions.

Table 57: Synthesis of the characteristics of the supply of finance and related issues in addressing market needs

	Finance supply characteristics	Identified Issues in addressing market needs
Commercial banks	<ul style="list-style-type: none"> • Some banks are offering “lower than commercial interest rate” to municipalities • Average yearly interests rates offered to private investors are in the range 6%-8%. • Maturity: depending on depending on the project to project basis” • Collateral: in accordance to internal regulation 	<ul style="list-style-type: none"> • No specific product for private investors • Maturity not suitable with the low profitability of investments and with their long payback periods • Limited access to finance due to heavy collaterals • Legal constraints on borrowing capacity of Municipalities
HBOR	<ul style="list-style-type: none"> • Pricing: 4% fixed or more • Maturity: up to 14 years • Grace period: from 1 to 3 years • Collateral: Bills of exchange and debentures and other collateral customary in banking practice, in the risk sharing model with commercial banks 	<ul style="list-style-type: none"> • Pricing not compatible with low sustainability of projects • Maturity not suitable with the low profitability of investments and with their long payback periods Limited access to finance due to heavy collaterals
EPEEF	<ul style="list-style-type: none"> • Only grants (40%, 60%, 80% of eligible costs) 	<ul style="list-style-type: none"> • Issues to find the rest of the resources

It is worth mentioning that:

- During the course of the study an initial pipeline of projects that could not secure the whole amount of resources required to start the interventions was observed (EUR 81 million- excluding NEEAP projects).
- However, the initial project pipeline identified is based on a project portfolio exercise carried out in a limited time horizon, and mainly through interviews with stakeholders and is likely to be an underestimate of the effective gap.
- Available time horizon gave only limited time to develop and interviews a limited number of stakeholders and assess project viability.
- While information was gathered from project promoters, no review of bankability/financial viability of this projects has been carried out.

- The identification of a project pipeline suitable for FI investment happens at three stages, with increasing level of details / concreteness. The exercise developed as part of this assignment represents only the first stage (Cfr. Chapter 1.4)
- As already noted, in many cases project proposals are supply driven, it should be therefore expected that, if an FI is implemented, awareness raised appropriately and paired with an effective TA programme, new projects proposal are likely to arise.
- While the initial quantified market gap could offer to the MA an initial guidance on the amount to contribute to the FI, the FI investment strategy should imply for revision/flexibility mechanism in order to facilitate the candidature of new/different projects, counterbalance projects natural mortality rate, adjust to the supply market possible changes and future evolution.

5.2.2 Value added of the FI

5.2.2.1 Qualitative dimension of the value added

The table below summarizes how the use of FIs can provide significant benefits in the SUD segments identified in the market analysis, and can contribute to address some of the market failures identified in the previous sections.

Table 58: Value added ensured by the use of FIs

Identified market failure	Public sector	Private sector
Legal restrictions on borrowing (e.g. stability pacts) limit investment in urban development projects by public administrations	FI being financed out of ESIF resources, are only partially subject to stability pact limitations, and can therefore increase spending opportunities of municipalities.	
Limited municipal budgets	FIs can attract private investors or different investment schemes (e.g. PPP models)	
Available financial products often ill-suited to investment in urban development projects	FIs can offer financial product ensuring better conditions (see Table 62)	
Limited capacity to initiate and manage complex projects	FIs can be supported by a TA facility to encourage EE investments among final recipients	
Limited capacity for investment optimisation (i.e. not over-investing in over-dimensioned projects)	FIs can provide TA as grants to support investment design and assessment.	
Smaller average city size means many public lighting projects struggle to meet minimum number of lighting spots to be sustainable as investments	FIs can provide TA as grants that can assist final recipients in bundling smaller public lighting projects.	

Furthermore, other aspects to be considered are the typical characteristics of FIs, namely their revolving nature, the leverage creation, the fact that they encourage efficiency among final recipients, etc. These and other aspects are presented in detail in the table below, showing the value added of an FI over grant forms of assistance.

Table 59: The value added of an FI as compared to grants

Benefit	Value added of an FI compared to grants
Leverage creation	<p>FI enables additional support to be channelled to enterprises, public administrations and more generally final recipients, with a potentially greater financial impact than grants, due to the ability to attract additional public and private sector resources, thus multiplying the effects of ESI funds and national/regional contributions (e.g. each euro invested by the OPCC creates a multiplying effect which increases resources available to final recipients). According to published research¹⁵⁰, such leverage effect is even more prominent for small countries like Croatia, traditionally less attractive for international investments.</p> <p>As for the EE sector, this means that, as the investment generated by an FI is higher than those generated by a grant scheme, the quantitative value added of an FI as compared to a grant scheme could be measured in terms of the achievement of:</p> <ul style="list-style-type: none"> • Higher cost and energy saving (introducing EE measures in building means lower energy costs and less consumptions); • Higher environmental impact reduction (much less GHG emissions in atmosphere); • Higher number of jobs created due to the higher number of building renewed; • Higher reduction in the operating costs of industrial machineries; • Higher safety improvements created, namely by investing and therefore improving industrial production projects, so that the number of accidents that occur on the workplace can be reduced.
Revolving nature	<p>The funds are repayable. As these monies are repaid over the course of the project, they become available to finance additional projects. In such a way, the use of FIs can promote the long-term recycling of public funds and they potentially enable the reinvestment of ESI funds beyond the end of the programming period, helping achieve better value for public money.</p>
Encourage efficiency	<p>FIs can encourage efficiency among final recipients through greater financial discipline through the heightened awareness of the need to repay loans (unlike grants). This factor emerges also as an ‘assurance of quality’ of the project. In other words, FIs encourage companies to grow and become more competitive in order to return the investment.</p>
Building capacity	<p>Use of FIs can help build institutional capacity through partnerships between the public and private sectors, can broaden the involvement of financial intermediaries/institutions in implementing EU regional policy and can encourage pooling of expertise and know-how, for example to improve the quality of projects. Additionally, the creation of public-private synergies ultimately results in an alignment of interests between public and private actors: on the one hand, they enable the pursuit of public policy objectives, which characterises public institutions, and on the other hand they bring in the commercial market mechanisms accompanying private investors.</p>
Ensure better technical assessment of projects	<p>The TA assistance to be financed out of an FI could ensure a better technical assessment of projects as to ensure that oversized and/or unsuitable projects are excluded from the support.</p>

Finally, two interesting examples that illustrate the value added of an FI in the urban development sector (and specifically urban mobility) are:

- The refurbishment of the train station of Naples, Italy, financed – with the direct involvement of EIB – by the JESSICA initiative in Campania in the 2007-2013 programming period;
- A study comparing of the effects of financing a hypothetical municipal bus fleet renewal project with an FI or a grant in the context of the JESSICA 2014-2020 Multi-Region Study for Italy (Marche, Emilia-Romagna, Lazio, Veneto)¹⁵¹.

¹⁵⁰ European Parliament (2013) Financial Engineering Instruments in Cohesion Policy.

¹⁵¹ Developed by PwC on behalf of the EIB

The boxes below present some of the main elements of these two examples illustrating the value-added of FIs.

Table 60: The value added of an FI in the urban mobility sector

Item	Description
Final recipient	Grandi Stazioni SpA
Location	Naples, Campania, Italy
Description	<ul style="list-style-type: none"> The project encompasses i) the refurbishment of Garibaldi Square and ii) the construction of an underground mall between the railway station and a nearby metro station in Naples. The aim is twofold: preserving and enhancing the identity of the location; solving the very serious issues regarding traffic and fragmentation of space for pedestrians. Specifically, such urban regeneration will satisfy the needs of citizens and all other users by maximising quality (in terms of cleanliness, safety, ancillary services, etc.), accessibility and comfort; furthermore, it will allow recovering surrounding areas and reorganising the intermodal transport system, integrating different infrastructures.
Product	JESSICA loan of EUR 15 million (part of a funding package including public financing and equity from promoter, totaling EUR 40 million) in support to the realisation of the commercial (i.e. revenue-generating) part of the whole project.
Value Added	<p><u>Non-financial impacts:</u></p> <ul style="list-style-type: none"> Urban and social regeneration; Improvement of the local mobility infrastructure; Increase of legality and safety; Decrease in unemployment; Reinforcement of productive system. Acceleration of works and ancillary works. <p><u>For the Financial Instrument:</u></p> <ul style="list-style-type: none"> Leverage

Table 61: Renewal of public transport fleet (hypothetical)

Item	Description
Final recipient	Public Transport Service Operator
Location	Emilia Romagna, Italy
Description	The project encompasses the replacement of 200 old buses with new ones
Product	JESSICA loan of EUR 6 million (part of a funding package including public financing and equity from promoter, totaling EUR 41.4 million) in support to purchase of the fleet.
Value Added	<p><u>Non-financial impacts:</u></p> <ul style="list-style-type: none"> Improvement of quality of the local transport service Decrease of CO₂ emissions Decrease of noise <p><u>For the Financial Instrument:</u></p> <ul style="list-style-type: none"> Leverage Acceleration in acquisition timing <p><u>For the public sector:</u></p> <ul style="list-style-type: none"> 30% reduction in grant funding requirement Reduction in maintenance costs

Source: JESSICA 2014-2020 Multi-Region Study for Italy (Marche, Emilia-Romagna, Lazio, Veneto)

5.2.2.2 Quantitative dimension of the value added

The table below presents a comparison of interest rates and duration of two existing types of finance available in Croatia and what could be provided by an FI, showing the potential quantitative added value of FIs over more traditional type of financing available in Croatia.

Table 62: Comparison between financing characteristics currently available in Croatia and financing characteristics that could be provided by an FI

	Average maturity			Average Pricing (interest rate)		
	Commercial Banks	HBOR	Financial Instrument	Commercial Banks	HBOR	Financial Instrument
Public sector	Varies according to project	Up to 14 years (up to 5 years grace period)	15/20 with possible additional grace period	Some banks are offering “lower than commercial interest rate“	4% fixed or more	0-2%*
Private sector	Varies according to project	Up to 14 years (up to 5 years grace period)	10/15 with possible additional grace period	Ca. 5%	4% fixed or more	1-yr IBOR ¹⁵² + 1%-2.2% ¹⁵³

Source: PwC elaboration 2015, on the basis of information gathered during the supply side analysis and data provided by the EIB

* Average pricing offered by similar initiatives (e.g. JESSICA).

Please also note that further elaboration on the quantitative dimension of the value added is presented in chapter 6.2, in which a comparison between the investment generated by traditional grant financing and more innovative FIs is drawn.

5.2.3 Estimate of additional public and private resources

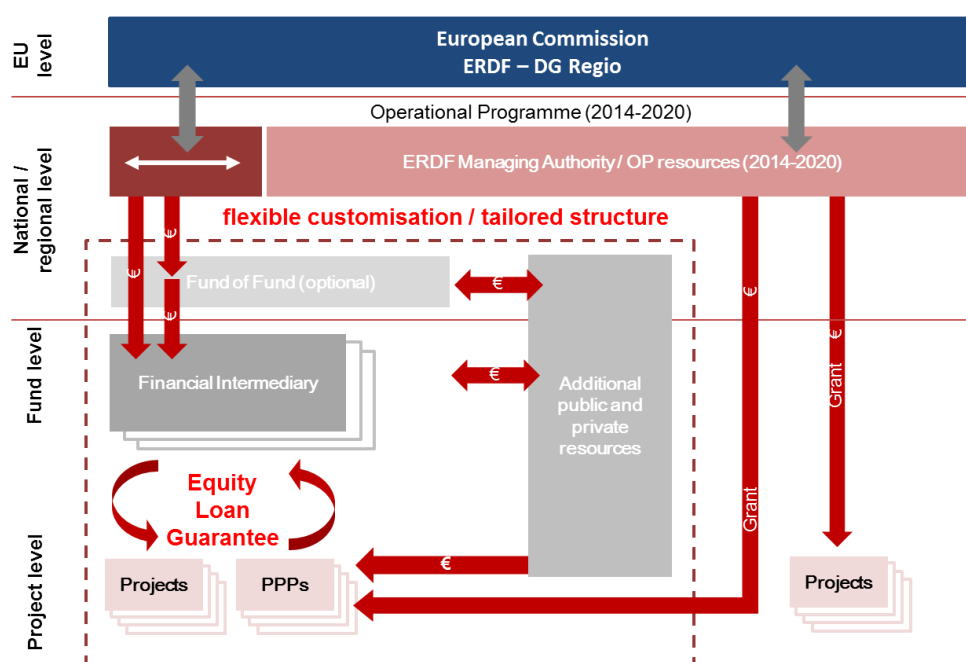
FIs offer the possibility to channel additional investments into the FI leveraging the initial resources provided by the OPCC.

The figure below illustrates the mechanism allowing the creation of leverage.

¹⁵² InterBank Offering Rate. Fixing of interest rate is typically made at signature, plus spread reflecting risk margin.

¹⁵³ Based on Communication from the Commission on the revision of the method for setting the reference and discount rates 2008/C 14/02 ([http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008XC0119\(01\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008XC0119(01)&from=EN)); rating categories: investment grade; collateralization: low.

Figure 24 : Flow of funds and level of additional public and private resources to leverage the FI



Source: PwC elaboration, 2015 on the basis of JESSICA Holding Fund Handbook

The table below illustrates the sources of SUD project financing currently available in Croatia that could constitute additional public and private resources, presenting their characteristics (e.g. loans, guarantees, etc.) and whether they are dedicated to interventions for urban mobility or public lighting.

Table 63: Potential additional public and private resources¹⁵⁴

	Product					Market segment	
	TA as Grant	Inv. Resources as grant	Loans	Guarantee	Equity	Urban mobility	Public lighting
EPEEF		X	X			X	X
EIB			X			X	X
HBOR			X	X		X	X
EBRD ¹⁵⁵	X	X				X	X
Commercial banks			X	X		X	X

Source: PwC elaboration, on the basis of the materials collected in the supply side section

¹⁵⁴ No quantification of data is reported, since details on the allocation of resources by source of financed/products and market segment is not available.

¹⁵⁵ In the framework of the Western Balkans Investment Framework and Western Balkans Sustainable Energy Financing Facility

5.2.3.1 Consistency with other form of support

The analysis show a limited number of financing sources available o support SUD projects. In order to maximise effectiveness of funds available, consistency in their use shall be ensured by:

- a) Creating a clear demarcation between category of projects that will be supported through grants and category of projects that will be supported through FIs could be created in order to avoid any cannibalization of the two initiatives. In paricular, FI should target “Marginally viable projects” that fall under typologies B and C (for definitions of project classifications A-B-C-D, please see section 1.4). Value of DSCR (Debt Service Coverage Ratio) can be used as a discriminant of project viability:

- DSCR below 1: Grant support
- DSCR in the range 1 -1.3: FI support
- DSCR above 1.3: Commercial banks support.

Moreover, grant support should be provided to finance investments showing at last one the following:

- the financial terms are such that the payback period is longer than the amortisation of the technical investment
- a return on investment that is not compatible with the project risk (e.g. for EE improvement of buildings IRR below 5%).

- b) Envisaging a dedicated unit tasked to coordinate all forms of support to SUD interventions. The unit could also take a role of a one-stop-shop for SUD interventions financing vis-à-vis project promoters.

5.2.4 Review of lessons learnt from the past and similar existing Funds

Introduction

Territorial development has been a key concern for the achievement of European cohesion objectives and against this backdrop the EC and the EIB launched the JESSICA TA initiative to support urban development through financial instruments in 2007-2013. However, the development of Financial Engineering Instruments (FEI) targeting urban development in 2007-2013 was modest compared to FEI targeted to enterprises. Through the end of 2013, some EUR 1.53 billion has been allocated from OPs into 56 urban development FEIs, compared with EUR 12.1 billion allocated to 854 SME focused FEIs.

Table 64: OP resources by Member State allocated to urban development-focused Financial Engineering Instruments 2007-2013

Country	Number of HF	Specific funds within the HF
Bulgaria	1	2
Czech Republic	1	0
Greece	1	5
Spain	2	2
Italy	3	4
Lithuania	1	7
Netherlands	1	1
Poland	5	6
Portugal	4	1
United Kingdom	3	5
Total	16	35

Source: Summary of data on the progress made in financing and implementing financial engineering instruments

reported by the managing authorities in accordance with Article 67(2)(j) of Council Regulation (EC) No 1083/2006, 31 September 2014

The 2014 Summary Report on FEIs (based on data to the end of 2013) provides information on the extent of investment under UDFs. As for the type of financial products used, the table below shows that most FIs implemented concerned loans, followed by guarantees and other instruments.

Table 65: Types of FIs in the EU for urban development

Financial products	OP amounts disbursed to the final recipients by the specific funds for urban development (in EUR m)	
	All specific funds	FEIs for urban development
Loans	3,415	133.40
Guarantees	1,439	0.00
Equity / venture capital	1,205	37.48
Other products	620	0.00
Total	6,679	170.88

Source: Summary of data on the progress made in financing and implementing financial engineering instruments reported by the managing authorities in accordance with Article 67(2)(j) of Council Regulation (EC) No 1083/2006, 31 September 2014

A recent study for DG Regio by the European Association for Information on Local Development (AEIDL)¹⁵⁶ examined a small number of UDFs. The study noted in particular the detrimental effects of the recent financial crisis on the operations of these Instruments due to greater unpredictability in the cost of money and the returns available from completed investments. It also sounded a note of caution as to the potential viability of JESSICA-type instruments for financing comprehensive area-based development activity. The study concluded that for such an integrated approach to be successful, the JESSICA-type fund – which can only finance profitable near-market investments – typically needs to be combined with traditional grant funding in urban areas confronted with more severe development challenges. A summary of the AEIDL study findings about JESSICA type funds is set out in the box below.

- JESSICA-type funds are most likely to be of benefit for projects that are near to market viability - these projects can make a return for an Urban Development Fund while still being too risky for the private sector;
- JESSICA-type funds are likely to be used mostly to make investments in individual projects rather than to finance the whole of a comprehensive area-based approach made up of many complementary projects;
- It is likely that the JESSICA-type funds will selectively invest in the more financially viable projects, leaving other key elements of a master plan such as transport, the public realm and social investments to the public authorities;

¹⁵⁶ AEIDL 2013, Urban Development in the EU: 50 projects supported by the ERDF in 2007-2013.
http://ec.europa.eu/regional_policy/sources/docgener/studies/hhpdf/50_projects/urban_dev_erdf50.pdf

- Large and complex developments are likely to require a mixture of grants, loan and equity instruments rather than a single Urban Development Fund;
- JESSICA-type funds can free up grant money in programmes by investing in commercial property.
- There will still need to be grant funding to make more difficult brownfield sites viable.

Selected examples

In order to provide the MA with illustrations on how FIs for urban development have been implemented and key success factors, selected examples are provided.

In particular:

- Example of deployment of FIs in OPs in which the use of FIs was not initially envisaged: Poland;
- Example of a complex fund supporting diversified urban development activities: London;
- Example of urban development fund for urban interventions: Sardinia.

Pomorskie (Poland)

- **Description**
 - In Poland, the UDF in Pomorskie is focused on supporting urban projects in the region's four major cities: Gdańsk, Gdynia, Sopot and Słupsk;
 - The UDF manages EUR 59.96 million in funding from the following sources:
 - ERDF sources: EUR 33.87 million;
 - Public regional sources: EUR 5.98 million;
 - Private sources: EUR 20.11 million.
 - Investments must be included in the ZIPROM integrated development plan for the city, which may support:
 - business environment institutions;
 - urban regeneration and urban functions;
 - public transport systems as well as their integration;
 - more RE and EE.
 - Urban projects must be financially viable, with a **commercial element** to ensure profitability and generate a financial surplus to repay the loan, or they must rely on other sources of income. The project must also have social elements that are important to the local community, such as improving the attractiveness of the area and thus raising the quality of life for local residents;
 - The UDF offered a low-interest rate long-term loan, with terms depending on the type of project and investor. As a general rule, the interest rate is the National Bank of Poland's reference rate, which can be reduced by up to 80% based on the so-called social indicator¹⁵⁷. Projects with the highest contribution on then indicator are offered more favourable interest rates;
 - The loan's final interest rate must not be lower than 0.25% p.a., and loan repayment can be up to 20 years with a the grace period of up to 12 months after project completion;

¹⁵⁷ This indicator assesses the project's impact in four spheres: social, economic, environmental and spatial planning using a cost-benefit analysis.

- The UDF does not finance any kind of ‘soft’ support with the financial instrument. There is, nonetheless, very close cooperation between the final recipient and the fund manager in the preliminary implementation stage.
- **Achievements**
 - As of October 2014, the UDF had signed 19 investment agreements for loans of EUR 41.7 million. Loans paid to final recipients are EUR 25.6 million, about 61% of the allocation, to supported total investments total of approximately EUR 91 million.
- **Lessons learnt (for Croatia)**
 - The MA in Poland decided to incorporate FIs in support of urban development only in 2009, during ROP implementation, requiring an amendment to the programme. The amendment took place in 2010, within the framework of the mid-term review of Poland’s National Strategic Reference Framework 2007-2013 and its OPs. **The amending procedure was relatively short and successfully managed due to the high commitment of the MA**, the European Commission, Poland’s Ministry of Regional Development and EIB personnel;
 - The introduction of a repayable financial instrument increased the financial and socio-economic efficiency of investments for final recipients, especially in the public sector, including a change in attitudes and gain in expertise in the key stakeholders.

London

- **Description**
 - The London Green Fund (LGF) is an example of ERDF supporting the development of green infrastructure to contribute to London’s ambitious carbon reduction targets;
 - The LGF supports three UDFs targeting investment in, respectively, EE in public buildings, waste disposal and greener social housing. The contribution of EUR 60 million ERDF combined with public and private funds brings loan and equity funding for projects ranging from the city’s first plastics recycling plant to the EE upgrading of one of the main London museums;
 - The LGF is a holding fund targeting those projects that are not ‘commercial’ through the provision of the equity or loan capital needed to attract other investors;
 - The LGF was designed to address market imperfections that make certain projects too risky for the private sector, e.g. uncertain market demand, new or emerging technologies, or an unusually long lead time until returns are generated.
- **Achievements**
 - To date, the LGF has invested GBP 99.4 million (EUR 117 million) in 15 projects with a combined project value of GBP 678 million (EUR 800 million). Expected impacts include over 2,000 jobs including construction, 215,000 tonnes per annum CO₂ saving, and 330,000 tonnes per annum avoided landfill waste. The EU leverage effect is 6.77x the ERDF input.
- **Lessons learnt (for Croatia)**
 - A number of factors have contributed to the success of the LGF, not least a robust process for project steering and implementing the necessary investments strategy adjustments; the expertise of the Holding Fund manager; the long term vision, commitment and close cooperation between stakeholders.

Sardinia

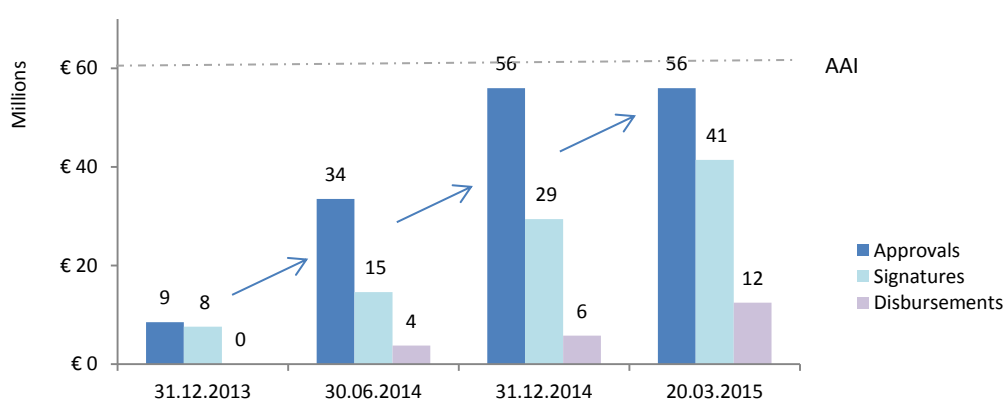
- **Description**

- The JESSICA experience in Sardinia started with the finalisation of the agreement between EIB and Sardinia Region in July 2011.
- The holding fund, created with a contribution of EUR 70 million from ERDF Sardinia OP 2007-2013 resources and still in place, encompasses two Urban Development Funds (UDFs), one targeting specifically urban development with a total budget of EUR 30.5 million;
- The financial products offered by the selected financial intermediary include lending (senior, junior and mezzanine) and equity.

• Achievements

- To date, the UDF has approved ca. EUR 26.1 million (97% of the resources for investment) for 4 projects for a total cost of EUR 91.6 million, creating a **leverage effect of ca. 2.51x¹⁵⁸**. The trends for approvals (i.e. decisions taken by internal credit committees of the 2 funds), signatures (i.e. binding lending agreements) and disbursements (i.e. financial resources transferred to final beneficiaries) are shown in the graph below.

Figure 25 : Trend of approval, signatures and disbursements of the JESSICA initiative in Sardinia



- Projects supported include trolleybus acquisition, construction of a cruise terminal, etc.
- Both financial intermediaries selected for the implementation of the JESSICA initiative are on track to achieve a satisfying performance (as from data below, as of March 2015)

Table 66: Approved projects for one of the UDFs in Sardinia (values on million EUR)

Projects approved	CAPEX	UDF contribution	Signature	Disbursement
Project 1	7.2	6.8	✓	0.3
Project 2	45.1	7.0	✓	4.4
Project 3	0.4	0.3	✓	0.1
Project 4	38.9	12.0	✓	4.0
Total	91.6	26.1	26.1	8.8

¹⁵⁸ Calculated as following: (91.6 million – 26.1 million)/26.1 million.

- **Lessons learnt (for Croatia)**

- The MA employed the assistance of an **experienced fund manager** (the EIB as holding fund manager) and used the financial intermediaries selection process to build a concrete project pipeline (specifically, the call for EoI launched for the selection of the financial intermediaries required each candidate to develop a detailed business plan including the identification of a concrete project pipeline).

5.2.5 Conclusion of building block 1 – market assessment

The analysis performed reveals that several market failures and sub-optimal investment conditions appear to exist in Croatia in the sectors considered.

- SUD projects can be classified, according to their specific characteristics in:
 - Demand-driven projects, where the need for revolving finance is driven by the specific mix of components and an FI can offer the flexibility required to adapt the funding to the revenue streams and improve the financial performance of projects;
 - Opportunistic projects, in which the driver for investment is the timely availability of financial resources at acceptable terms;
 - Supply driven projects, where the availability of additional funding provided by a newly established FI generates demand for revolving finance not otherwise in existence.
- The analysis performed reveals that market failures and sub-optimal investment conditions do exist in Croatia's urban development sector and that there is a significant potential demand for funding that remains unexpressed because financial products offered by market operators are unsuitable and expensive. Therefore, in the investment areas examined, there is room for the establishment of FIs, which would provide significant value added. The project portfolio of an FI would include a mix of the three categories of projects mentioned above (i.e. demand driven, opportunistic and supply driven);
- The analysis has also found that there exists a potential pipeline of projects in these investment areas that could not find suitable sources of finance in the market;
- The identification of a project pipeline suitable for FI investment happens at three stages, with increasing level of details / concreteness. The exercise developed as part of this assignment represents only the first stage (Cfr. Chapter 1.4).
- While the initial quantified market gap could offer to the MA an initial guidance on the amount to contribute to the FI, the FI investment strategy should imply for revision/flexibility mechanism in order to facilitate the candidature of new/different projects, counterbalance projects natural mortality rate, adjust to the supply market possible changes and future evolution.
- The analysis indicates that there is substantial potential to employ SF in the SUD investment area, particularly if SUD is understood to include wider urban development and regeneration investment. Nevertheless, in the investment areas considered as a priority by the MA, particularly urban transport, the revenue generation mechanisms currently in place to remunerate a potential lender or investor are limited; furthermore it has to be taken into account that SUD is only partially covered through the OP and, with respect to public transport, currently the project pipeline appears to be very limited. Thus, apart from public lighting, which is proposed to be included in EE (SO 4c4 - Improvement of the efficiency of the public lighting system), the present ex-ante analysis does not appear to provide sufficient evidence to justify the immediate introduction of financial instruments in SUD. Consequently, it is felt that at this stage SUD projects in public transport should be supported through grant funding where appropriate, before the suitability of financial

instruments could be confirmed and instruments designed in a way to be attractive to final recipients. The proposed financial products, as well as budgetary allocations between the instruments, could be examined at a later stage in the course of OPCC implementation. At that time, further analysis could be carried out to determine if the introduction of financial instruments is warranted, revising the current ex-ante assessment if necessary. In this context, it is important to note that JASPERS is currently cooperating with the Croatian Ministry of Transport in the development and concrete application of a robust methodology to support the production of local/region transportation plans, which will include a systematic assessment of needs of the transport system and the related investment requirements. Once these plans are produced, they are expected to provide a stronger basis to determine - possibly also in cooperation with JASPERS (and the Ministry of Transport itself) - the best way to employ revolving instruments of the type proposed in the present study to achieve the local and urban transportation objectives under the OPCC.

- The typical financial products that the MA could consider to deploy by means of FI are **loans, guarantees, equity and mezzanine**. In order to identify the most suitable financial products for SUD interventions, the following table presents for each financial product, the main advantages and disadvantages.

Table 67: Advantages and disadvantages of financial products in the field of SUD

Product	Advantages	Weaknesses
Loan	<ul style="list-style-type: none"> • Easy to roll out (limited management costs and fees) making it preferable for public administration (especially small ones) that might not have the necessary skills to handle more complex financial schemes (e.g. mezzanine) • Except for variable rate loans, principal and interest obligations are known amounts which can be forecasted and planned for, easing the budgeting for public administrations or companies • Interest on debt can be deducted on the company's tax return lowering the actual cost of the loan • Largely flexible to adapt to different typologies of SUD interventions • One-year IBOR could be swapped to fixed rate with limited cost for the beneficiary • Margin component is fixed and not depending on the tenure • No structuring or appraisal fees charged to the beneficiary 	<ul style="list-style-type: none"> • Lower expected leverage than other products (e.g. guarantees) • Limited access for low capitalised companies • Impact on Stability Pact • Impact on overall financial structure
Guarantee	<ul style="list-style-type: none"> • Reduce the risk for banks and enables them to lend greater amounts which is particularly beneficial for private investors/ risky projects • Given the higher leverage achievable, it has potential to stimulate financing of larger amount of SUD interventions in the country • Improves banks' risk-bearing capacity thus reducing collateral needs • For the beneficiary, theoretical potential reduction of final pricing 	<ul style="list-style-type: none"> • It provides only a risk reserve for the lender and does not provide liquidity • The cost of funding tends to be higher compared to simple loan (as the borrower has to pay the guarantee fee plus the interest rate of the loan) • Longer time required to structure the operation • Administrative costs, reporting obligations • Sometime lack of know-how to implement them at regional and local government levels might hamper their execution
Equity	<ul style="list-style-type: none"> • Enhance access to finance for under-capitalised companies or NewCo (such as PPP and SPV) • As it does not require debt payment, the cash flow generated by the equity investor can be used to further grow the company or to diversify into other areas • The company can benefit from investor's management expertise • Leverage effect improves overall financial structure thus facilitating access to additional financing 	<ul style="list-style-type: none"> • If the business growth, the company has to share a portion of the earnings with the equity investor making over time, the distribution of profits to other owners exceeding what the enterprise would have repaid on a loan • Difficult to establish benchmarks for market remunerations; • Governance (entrepreneurs tend to avoid any dilution of control and sharing of executive decision-making) • Need for specialised intermediary to structure an equity investment, which is not only more complex but also more expensive and longer • Possible conflict of interest

Product	Advantages	Weaknesses
Mezzanine or quasi equity	<ul style="list-style-type: none"> • No expensive collateral requirement • It increases the amount of debt available while relinquishing little or no equity ownership • Flexible terms on repayment as they relate to amortisation, coupon rates and length of the loan • Mezzanine investors can provide valuable strategic assistance (e.g. subordinated debt investors often bring fresh insights to businesses because they are financially sophisticated) • When done at SPV Project level, it alleviates riskiness of projects facilitating leverage / additional financing 	<ul style="list-style-type: none"> • Arranging can be a lengthy process • Possible lack of know-how at regional and local government levels might hamper implementation, and that is why their use is not recommended for this sector, which might require a complex technical assessment prior to disbursement • It usually more expensive than traditional or senior debt arrangements

- Comparing the characteristics of financial products presented above with the needs and market failures/suboptimal investment conditions observed in the investment area, the FI could offer:
 - Loans, which could alleviate the lack of long term financing registered in the supply side analysis, and provide financing at the best available market conditions, thus contributing to increase the financial sustainability of projects.
 - Equity and quasi-equity, which is the financial model typically able to leverage the most considerable outside financing and able to share operational risks.
- However, it is strongly recommended to establish a clear demarcation between projects types that will be supported through grants and those supported through FIs, in order to avoid overlapping and cannibalization.
- Several parameters can be used to identify a demarcation. As an example, value of DSCR (Debt Service Coverage Ratio) can be used as a discriminant:
 - DSCR below 1: Grant support
 - DSCR in the range 1 -1.3: FI support
 - DSCR above 1.3: Commercial banks support
- Moreover, grant should be provided to finance investments showing at last one the following:
 - Financial terms are such that the payback period is longer than the amortisation of the technical investment (even for potentially valuable investment opportunities)
 - a return on investment that is not compatible with the project risk (e.g. for SUD intervention IRR below 8%-10%, for improvement of public lighting system IRR below 5%).

5.3 Private-sector investment in RDI in support of an innovative and competitive business and research environment

5.3.1 Analysis of market failures, suboptimal investment situations and investment needs

This section analyses the market failure and suboptimal investment situations in the RDI sector.

Description of the market

Overview – the Croatian business sector and RDI

At country level, Croatia is considered a moderate performer in terms of innovation compared to many of its EU peers. Croatian enterprises are also less likely than many of their EU counterparts to adopt innovative business practices, undermining their competitiveness and that of the economy at large¹⁵⁹. Indeed, **the overall investment in RDI is significantly below the EU average of 2.02% of GDP**, below the national target of 1.4% of GDP, and well short of the target of 3% of GDP set out in the Europe 2020 strategy. Business expenditure in RDI is also well below EU's Lisbon target of 2% of GDP.

Since 2012, business expenditure in RDI has been increasing. According to the interviewees, the declining trend in RDI registered before 2012 was mainly due to the ongoing economic crisis in Croatia and elsewhere in Europe, particularly over 2008-2009, and to the industry-specific shift from in-house RDI in certain industries, such as pharmaceuticals.

The table below illustrates the Business Expenditure Research and Development (BERD) data in Croatia, compared to the EU28 average.

Table 68: Business enterprise RDI expenditure (values in EUR per capita)

	2008	2009	2010	2011	2012	2013
Croatia	36.5	30.9	27.0	27.1	26.6	32.7
EU28	249.8	242.3	250.6	269.1	278.8	-

Source: Eurostat, 2015

Despite the relatively recent uptick in BERD, **the largest share of total spending on RDI in Croatia still comes from the public sector**. In fact, the value of the BERD currently makes up just 42.8% of the total national (public and private) expenditure on R&D, well below the EU average of 54.9% in 2012.¹⁶⁰ This is an issue for the private sector economy, as unlike the BERD, **the bulk of Croatian public investment in RDI has not historically been focused directly on stimulating innovative corporate RDI (i.e. projects)**. This is illustrated by the fact that in 2011 nearly three-quarters (73%) of public RDI investment consisted of resources allocated to researchers' salaries in public science and research institutions, while only 5.7% was allocated directly to research for market-oriented projects, and 1.4% was channelled to technology projects.

¹⁵⁹ S3 Strategy 2014; OECD Reviews of Innovation Policy 2014.

¹⁶⁰ in 2013 BERD represented only 42.8% of total national (public and private) expenditures for R&D – well below the EU average of 54.9% in 2012.

RDI business investment is further undermined by the **lack of effective collaboration between enterprises and R&D centres**. Croatia was ranked below many of its EU peers on university/industry collaboration in RDI by the World Economic Forum's Global Competitiveness Report 2013-2014 (76th place out of 148 countries). Furthermore, according to the OECD (2014), industry and universities in Croatia collaborate only half as frequently as the EU average.

As a result, it is clear that there is substantial room for growth in business investment in RDI. Furthermore, the results of desk research and interviews indicate that **there is a tangible level of demand from Croatian businesses for financing RDI, if access to finance and other suboptimal investment situations could be addressed**.

Business expenditure on RDI – key features

This section will outline the key features of business RDI expenditure, a key indicator for assessing the funding available in the market for RDI investment¹⁶¹

- Compared to other EU countries, Croatia underperforms with respect to creating innovative enterprises.
- The OECD Investment Compact (2012) survey of over 300 Croatian firms established that **supply-side barriers (lack of access to finance and qualified human resources) were the most important obstacles to RDI investment in Croatia**, outweighing concerns on the demand side¹⁶².
- The findings of this survey have been reinforced by the results of the stakeholder interviews and workshops carried out for this study (see identification of demand by market segment below), where access to finance issues (including in particular grants) and lack of suitable products for SMEs have been cited as key issues creating supply bottlenecks for RDI activities of enterprises in Croatia.
- The OECD survey also found that over 50% of respondents used own funds for innovation expenditure, 30% used commercial bank loans, 15% received financial support from the national government and less than 5% of respondents obtained financing through co-financing with other firms or EU funds¹⁶³. However, stakeholder interviews indicated that the bulk of **commercial loans were given primarily to a small group of larger corporates**. Those loans may have been part of larger facilities for other outlays, and not only related to RDI.
- Business expenditure on RDI, while low, has been incentivised to a certain degree by the public sector through a combination of grant and loan programmes (e.g. RAZUM, POC, IRCRO EUREKA) and the generous tax incentives made possible under the 2012 Act on Investment Promotion and Development of Investment Climate¹⁶⁴. The RDI tax incentives are significantly bigger than the direct resource transfers via grants and other financing (see table below).

¹⁶¹ DG REGIO (2012), Evaluation of Innovation Activities: Guidance on methods and practices.

¹⁶² OECD Reviews of Innovation Policy: Croatia 2013

¹⁶³ In Slovenia and Czech Republic around 15-16% of firms surveyed obtained EU funding.

¹⁶⁴ These can lead to reductions of 50/75/100% on the corporate profit tax rate depending on the size of investment i.e. EUR 1/3/5 million. Eligible costs include: personnel, equipment and property, costs for obtaining technical know-how and licensing patents, consultancy and operating costs.

Table 69: State aid for RDI in the period 2009-2013 (values in million EUR)

RDI	2009	2010	2011	2012	2013
Grants	4.3	7.1	3.9	0.4	2.9
Tax incentives	14.6	14.4	13	13.5	13.4
Total	19	21.4	16.9	13.9	16.2
Share (%) in total state aid	1.61	1.68	1.39	1.19	1.45
Share (%) of GDP	0.04	0.05	0.04	0.03	0.04

Source: Croatian Competition Agency (2013) Annual Report on state aid for 2012 and Ministry of Finance Annual Report on state aid for 2013

- Even though small firms are the most numerous beneficiaries of RDI tax incentives, large corporates received the majority of RDI tax incentives in absolute value¹⁶⁵ (much the same as it was for commercial loans, mentioned above). Based on the desk research and the S3 strategy, it appears that **the tax incentives are structured in a way that (inadvertently) penalises small firms and start-ups which do not operate as established or profitable businesses**¹⁶⁶.
- In terms of **use of funds**, Croatian businesses look for RDI investment for several reasons across all company-size categories¹⁶⁷: **developing new products/processes/services** (82% respondents) and **changes or improvements to products/processes/services** (74.4% respondents).
- RDI investment **segmentation**:
 - Financial amounts of RDI tax incentives disbursed per sector: a high concentration on a narrow¹⁶⁸ range of industries (i.e. pharmaceutical, biotechnology and telecommunications).¹⁶⁹
 - The number of companies which benefitted from RDI tax incentives per sector: a high proportion of applicants belong to other business activities (20.6%)¹⁷⁰, computer and related services (11.1%) and wholesale trade (9.2%).¹⁷¹
 - RDI is highly concentrated: over 90% of tax incentives for companies in the greater Zagreb region over 2008-2012.

¹⁶⁵ It should be noted however that even though in 2009, 27 companies received 90% of the total amount of RDI tax incentives, financial benefits from the RDI tax incentives expressed in net profit amounted to 14.6% of large enterprises, 30.5% for medium enterprises, and 57.4% for small enterprises.

¹⁶⁶ It should, however, not be deemed that RDI tax incentives favour large enterprises by design. The difference of the average tax burden between micro, SMEs and large corporates was more pronounced when looking at the average tax burden after all tax reliefs. This means that the difference in tax burden was to a greater extent brought by tax reliefs designed for areas of special concern and investment incentives, rather than by RDI tax incentives.

¹⁶⁷ Deloitte (2014), 2014 Croatia Corporate R&D Report, <<http://www2.deloitte.com/content/dam/Deloitte/hu/Documents/tax/HU-CE-RD-Croatia-2014.pdf>>

¹⁶⁸ In terms of financial amounts.

¹⁶⁹ Together amount to over 80% of all RDI business expenditure in the country.

¹⁷⁰ Other business activities refer to small firms, mainly business consultants and law firms with a good understanding of tax and other legislation and with fewer difficulties in applying for RDI tax incentives.

¹⁷¹ Except of motor vehicles and motorcycles

Key players on the market

Six main categories of key players have been identified in the RDI sector in Croatia:

- **Governmental bodies** in charge of steering and programming innovation policy in Croatia:
 - The Ministry of Science, Education and Sport (MSES) - under the Law on RDI¹⁷², responsible for the management and administration of public RDI and in charge of the biggest share of public RDI expenditure.
 - The Ministry of Economy, (MoE) - responsible for several programmes aimed at increasing business-industry linkages with RDI.
- **Councils and foundations** promoting RDI:
 - National Croatian Science Foundation (CSF);
 - National Council for Science, Higher Education and Technology Development (NCSHETD);
 - National Competitiveness Council (NCC);
 - National Council for the Information Society (NCIS).
- **Agencies and state administration bodies** promoting RDI:
 - Agency for Science and Higher Education (ASHE);
 - Croatian Agency for SMEs, Innovation and Investments (HAMAG-BICRO);
 - State intellectual Property Office (SIPO);
 - Agency for Mobility and EU programmes (AMPEU);
 - Agency for Vocational Education and Training and Adult Education (AVETAE).
- **Research organisations**, research institutes, universities, etc.
- **SMEs**.
- **Large corporates**, e.g. Ericsson Nikola Tesla, PLIVA, Atlantic Group, INA, Koncar Institute.

Main characteristics of projects

Innovative enterprises seek to exploit innovation commercially by introducing new products or services, creating or entering new markets, or applying new, more efficient methods of production or organization.

The commercialization of novel ideas faces several hurdles. They mark distinct development stages through which an innovative idea germinates into a commercially successful enterprise:

- 1) Exploration of the market potential, technical feasibility and economic viability of the business idea.
- 2) Product development; establishment of formal organization.
- 3) Establishment of operations; market introduction.
- 4) Organizational and market share expansion.

In the first two stages (examined by this study), there is considerable technical, market and economic uncertainty that makes it difficult to determine the idea's potential and the feasibility of turning it into a successful enterprise. Accordingly, for ideas undergoing these stages it is hard to present a "rational" business case to potential finance providers. This in turn makes it difficult

¹⁷² Act on the Structure and Scope of Ministries and State Administration Organisations - - Official Gazette 150/11, 22/12, 39/13, 125/13, 148/13

to obtain resources from traditional financial intermediaries, such as banks. Once an emerging enterprise reaches the market stage, there is much less doubt about its potential and its appeal to financial intermediaries increases.

Identification of demand in private-sector investment in RDI

When considering the potential unmet demand from Croatian businesses for financing RDI investment, it is important to distinguish between different investment conditions faced by SMEs and larger corporates. Hence, the demand-side analyses for SMEs and larger corporates have been separated where necessary to provide more detailed insights into the difficulties faced by both market segments and what, if any, financing gap may exist in each of the two.

Table 70: Croatian business expenditure on RDI by size category (MEUR)

	2008		2009		2010		2011		2012	
	BERD	%	BERD	%	BERD	%	BERD	%	BERD	%
<i>micro</i>	0.46	0.2%	1.68	1.1%	0.66	0.4%	1.58	1.0%	0.76	0.5%
<i>small</i>	5.53	2.9%	10.19	6.6%	7.60	5.1%	7.81	5.2%	7.63	5.0%
<i>medium</i>	69.94	37.1%	53.58	34.8%	54.04	36.6%	54.88	36.5%	51.13	33.8%
<i>large</i>	112.56	59.7%	88.43	57.5%	85.55	57.9%	86.22	57.3%	91.86	60.7%
Total	188.49	100.0%	153.88	100.0%	147.19	100.0%	150.49	100.0%	151.38	100.0%

Source: S3 Strategy/Croatian Bureau of Statistics

Market segment: Croatian SMEs and RDI

As shown in the table above, in 2012 Croatia's SMEs recorded RDI business expenditure worth EUR 59.5 million, or approximately 40% of the total business RDI expenditure. This fits with the larger trend in which a small number of large corporates account for a major share of the Croatian economy. Thus, while SMEs account for over 99.7% of firms, they contribute 68.3% of employment and 54.8% of value added.

Yet, despite accounting for more than half of all employment and value-added, SMEs make less than half of all RDI investment. The reasons for this imbalance seem to be that, while SMEs often experience significant **difficulties in accessing finance**, these **challenges may be even greater for RDI-driven entities and innovative companies**, since they tend to have **higher risk profiles**, both in terms of the industry in which they operate and their business models, compared to less innovative firms (cf. EC's *Ex-ante assessment methodology for financial instruments*, Vol II - RDI). The value of RDI-driven entities and innovative companies is often harder for banks to assess, as they rely more on intangible assets (e.g. intellectual property) than physical property, which are rarely accepted as collateral. These difficulties have also been compounded by the current economic downturn.

The result of this RDI underinvestment by Croatia's smaller, predominately local, firms is a dearth of innovation. Croatia is ranked 19th among its EU peers for innovation among small enterprises (10-49 employees) and 21st for medium enterprises (50-249 employees). Croatia's medium-sized enterprises record near zero RDI intensity¹⁷³. This "missing middle" in terms of RDI investment

¹⁷³ RDI intensity is defined by the EC as the ratio of a firm's expenditure on research and development to the firm's sale.

contributes to the lack of dynamism among many local firms. It also weakens Croatia's export competitiveness¹⁷⁴.

The Community Innovation Survey (Eurostat 2013) reveals that 39% of small Croatian enterprises, and 53% of the medium sized, identify themselves as having some innovation work. Based on the 2013 statistics, this could mean about 4,030 small enterprises and 990 medium enterprises with RDI potential. For pure technological innovation, which may be more closely correlated with larger investment for which an enterprise would need external financing, these figures fall to 8%, or approximately 830 small enterprises, and 14%, or approximately 260 medium enterprises, respectively. This picture of potential demand is supported by the Croatia Corporate RDI report, which surveyed 39 Croatian firms¹⁷⁵ in 2014. It found that over 70% of respondents intended to increase business RDI expenditure in the next 1-2 years compared to the 2013 baseline.

In summary, the analysis of the RDI financing demand among Croatian SMEs leads to the conclusion that **although some level of demand for further financing does exist, it is currently undermined by supply-side bottlenecks primarily related to accessing the finance market.**

Finally, while a tangible pipeline of RDI investment projects from the SMEs interviewed for this study was not available, the expected amount of finance needed per project/entity could be obtained by using a proxy, as explained below (cf. *Ex-ante assessment methodology for RDI*).

Market segment: Croatian larger corporates and RDI

As described before, **RDI business investment is largely concentrated amongst large firms** (> 250 employees). Further features of this market segment include:

- As shown in section 5.1.1.2, while Croatia's large corporates comprise less than 1% of total registered enterprises, in 2012 they accounted for over 60% of total business expenditure on RDI or EUR 91.86 million. Moreover, according to the data from the Community Innovation Survey (Eurostat 2013), ca. 73% of large enterprises identify themselves as having some innovation activity. Given the current number of large enterprises in 2013 (i.e. 388), this could mean approximately 283¹⁷⁶ of them having the potential to develop RDI projects. For pure technological innovation, which may be more closely correlated with larger investments for which an enterprise would need to seek external financing, this number falls to 13% (or approximately 51 large enterprises¹⁷⁷).
- The RDI concentration of activities in large enterprises is further highlighted in the S3 Strategy which notes that 88% of all RDI staff were employed by large companies.

¹⁷⁴ These findings were reinforced by the 2014 SME Access to Finance Survey¹⁷⁴. It found that only 6% of Croatian SMEs actively invested in RDI.

¹⁷⁵ This sample included some large corporates.

¹⁷⁶ This value has been obtained by multiplying the number of large enterprises (388) by the percentage of them identifying themselves as having some innovation activity (73%).

¹⁷⁷ This value has been obtained by multiplying the number of large enterprises (388) by the percentage that carry out pure technological innovation (13%).

- The larger corporates also tend to have more formalised links and synergies with R&D centres, a total of 14 private scientific institutes operate in Croatia, of which four are corporate research institutes with direct links to large firms¹⁷⁸.

¹⁷⁸ These include: Ericsson Nikola Tesla, INA (oil and gas), Končar – Electrotechnical Institute (engineering) and Galapagos (pharmaceuticals).

- According to the World Bank Enterprise Survey (2005-2009), **mature firms** (16+ years), a category which includes virtually all large corporates, are responsible for almost all RDI business investment in Croatia. This contrasts with the neighbouring Slovenia where both young (1-5 years) and medium-aged (6-15) enterprises were active in RDI¹⁷⁹.

While the larger players in the RDI business sector have more capacity to apply for available public and private RDI support, they also experience problems with access to finance. Several interviewees described finance providers as highly risk-averse, potentially limiting the size of RDI investments. This risk aversion is viewed as particularly limiting for investments in opening new markets in the commercialisation phase, due in part to their substantial magnitude (possibly as high as EUR 10 million). Stakeholders also mentioned private research institutions which had functioned as “internal” research centres for large corporates, and which had been gradually reducing and ceasing their research teams and projects¹⁸⁰. This is seen as part of a broader trend of moving away from R&D.

However, stakeholder interviews with key large corporates involved in RDI suggested that supply-side issues in access to finance that affect SMEs are not of the same magnitude for large corporates. Rather, relatively low levels of RDI investment of large corporates, compared to other Member States, could be attributed to demand-side issues caused by the economic crisis. Several multinationals have scaled back their operations in Croatia. Sectorial structural changes are also linked to this, as in the pharmaceutical sector, which had been a leading RDI investor in Croatia. With a global trend towards less in-house RDI done by large corporates, major RDI actors in Croatia, such as Pliva, have also downsized their RDI.

Due to issues of commercial sensitivity, ongoing financing negotiations between corporates and commercial banks, and the challenges associated with separating investment in RDI from other expenditures, it is impossible to have a tangible project pipeline at this stage. However, the table below provides a snapshot of several projects, in various states of preparation, currently being considered by Croatia’s large corporates, and for which they could potentially seek funding in the current programming period.

Table 71: Overview of identified projects¹⁸¹

Enterprises	Sector	Project description	Project size (EUR million)	Project status
KONČAR Group	Electrical/energy	Investment for a new testing laboratory to expand operations	C. 100 million	Feasibility analysis
INETEC	Robotics/nuclear energy	Investment with a partner organisation in Split to develop new product (nano UV probe)	C. 1.12	n.a.
Atlantic Group	Food processing	General RDI investment/support for marketing activities for new-	n.a.	n.a.

¹⁷⁹ This might be a consequence of Slovenia entering the EU in 2004 and consequently having at disposal of EU fund much before Croatia.

¹⁸⁰ Goldberg et al., 2011

¹⁸¹ Please note that these potential projects are commercially sensitive and should not be quoted/reproduced outside this Assignment.

Enterprises	Sector	Project description	Project size (EUR million)	Project status
		to-the-market innovation		
Total			C. 102	

Source: PwC elaboration 2015

Quantification of demand

In order to provide an indicative estimation of potential demand, the *Ex-ante assessment methodology for financial instruments (Vol. II - RDI)* suggests that qualitative and quantitative proxies may need to be used. Therefore instead of calculating the expected number of projects/entities in need of financing, proxy figures from DG Enterprise¹⁸² and the OECD¹⁸³ are used for the expected number of entities reporting to be active in RDI investments, and the expected average amount invested per entity (percentage of turnover invested in RDI per year). The assumptions and calculations are outlined below.

According to DG Enterprise, based on the latest available figures in 2013, there were 145,904 SMEs in Croatia, representing 99.7% of all enterprises, and 388 large enterprises, representing the remaining 0.3%. The SMEs can be further broken down into 144,182 micro and small enterprises (1-49 employees) and 1,722 medium enterprises (50-249 employees).

According to the aforementioned OECD study, approximately 8% of small enterprises¹⁸⁴, 14% of medium enterprises and 13% of large corporates are involved in technological innovation¹⁸⁵. It should be noted that these percentages do not count organizational and marketing innovation which would substantially increase the count, but may be difficult to separate from non-RDI expenditure and, therefore, distort the estimate¹⁸⁶. Using the two sets of figures, the estimated share of SMEs who could need financing for RDI activities is:

- Small: Approximately 827 enterprises;
- Medium: Approximately 262 enterprises;
- Large enterprises: 51 enterprises.

The next step suggested by the *ex-ante assessment methodology* is to use a proxy for the expected average amount needed per project/entity. To compute the potential amount of expenditure per entity, it is possible to estimate the amount that SMEs allocate to RDI as a function of their turnover. This variable is often used as an indicator in evaluating potential need for public intervention for business RDI support. In the Croatia Corporate RDI report, a majority of respondents (who were at least aware of their RDI expenditure) indicated that they spend between 1-3% of the annual turnover on RDI. This will serve as the basis for the estimate. Secondly, the average turnover figures for Croatian SMEs can be considered. In 2012, they were

¹⁸² EC (2014) SBA Fact Sheet

¹⁸³ OECD Reviews of innovation Policy, Croatia, p. 156. Available at: <http://www.oecd.org/sti/inno/oecd-reviews-of-innovation-policy-croatia-2013-9789264204362-en.htm>.

¹⁸⁴ Due to difficulties in collection, there is no data on the breakdown of RDI expenditure among micro-level enterprises.

¹⁸⁵ Importantly this includes both in-house RDI activities and the purchasing of RDI services – coherent with the priorities of the OPCC.

¹⁸⁶ This assumption could be revisited however given the S3's position that Croatia should base its policy on a broad concept of innovation, to include – in addition to RDI – marketing, organisational, and service innovation.

EUR 2.52 million for the small enterprises, EUR 7.82 million for the medium, and EUR 96.63 million for the large ones.

Then the product of the entities that expect to be involved in RDI and their expected average amount of RDI expenditure can be derived to obtain an approximation of the potential demand for funding for RDI-driven projects in the near future¹⁸⁷. For the purposes of a sensitivity analysis, both a low (1% turnover), mid-range (2% turnover) and high (3% turnover) figures for the amount invested per entity have been used:

- For the **low range** (1% of turnover)
 - 827 small enterprises x EUR 25,270 = EUR 20.89 million
 - 262 medium enterprises x EUR 78,184 = EUR 20.49 million
 - 51 large enterprises x EUR 966,272 = EUR 49.28 million
 - Total: EUR 90.62 million**
- For the **mid-range** (2% of turnover)
 - 827 small enterprises x EUR 50,540 = EUR 41.80 million
 - 262 medium enterprises x EUR 136,37 = EUR 40.97 million
 - 51 large enterprises x EUR 1,932,543 = EUR 98.56 million
 - Total: EUR 181.33 million**
- For the **high range** (3% of turnover)
 - 827 small enterprises x EUR 75,810 = EUR 62.67 million
 - 262 medium enterprises x EUR 234,552 = EUR 61.47 million
 - 51 large enterprises x EUR 2,898,816 = EUR 147.84 million
 - Total: EUR 271.99 million**

This provides an estimated potential demand for financing in the range of EUR 90.62 million – 271.99 million for the RDI sector per year, with a mid-point of EUR 181.33 million.

These estimates are consistent with the S3 strategy, which states that in 2013, the BERD in Croatia was ca. 0.34% of GDP, equal to ca. EUR 150 million¹⁸⁸ (not far from the mid-range scenario calculated above). It should be mentioned, however, that Croatia is planning to meet the target set in the European Semester and, consequently, to increase the total public and private investment in RDI (BERD, HERD & GOVERD) to 1.4% of GDP by 2020. BERD, HERD & GOVERD currently represents 0.75% of GDP. **Thus, the high-range scenario of EUR 271.99 million can be considered as the 2020 investment target in the BERD sector.**

Key findings of the demand analysis

- RDI business investment is mainly concentrated among larger, more mature firms (large enterprises account for over 60% of total business expenditure on RDI).
- The relatively low levels of RDI investment among Croatia's large corporates compared to other Member States is associated with demand side issues arising from the on-going

¹⁸⁷ The near future" is meant to be up to the next three years from the time of the analysis, while the high-range amount considered the 2020 investment target.

¹⁸⁸ Overall, RDI expenditure in 2013 was 0,75% of GDP, of which 0,41% (EUR 180.5 million) came from public expenditure (HERD and GOVERD) and 0,34% (ca. EUR 149.6 Million) from business enterprise expenditure on RDI (BERD).

effects of the crisis which has seen several multinationals scale back operations in Croatia and also certain sectorial structural changes.

- Some level of demand for further financing does exist in SMEs but it is currently being undermined by supply-side bottlenecks primarily related to access to finance market weaknesses.
- Quantification of the demand:
 - Low range (1% of turnover) RDI annual business expenditure: ca. EUR 91 million;
 - Mid-range (2% of turnover) RDI annual business expenditure: ca. EUR 181 million;
 - High range (3% of turnover) RDI annual business expenditure: ca. EUR 272 million.

Gap analysis

The gap analysis compares the available supply of finance in Croatia with the identified demand for investment, taking into account both **quantitative** and **qualitative** aspects. In terms of **quantification**, the analysis compares the supply of finance that is expected to be available in Croatia in the observed period with the expected value of investment. A negative difference suggests a **financing gap** between the estimated supply and potential demand.

As for the **qualitative aspect**, the analysis assesses whether and to what extent the financial products offered so far are a suitable source of finance to support the development of private RDI initiatives. Moreover, the qualitative part of the analysis identifies other constraints/barriers that might hinder development of RDI projects in Croatia.

The table below summarises the expected demand for RDI as well as the expected available sources of finance, up to 2022.

Table 72: Quantitative results of the gap analysis

Supply (2016-2022)		Demand (2016-2022)	
HAMAG-BICRO	C. EUR 34 million*	Low RDI/turnover scenario (1%)	C. EUR 634 million
		Mid-range RDI/turnover scenario (2%)	C. EUR 1.30 billion
ZABA (EIF)	C. EUR 7 million*	Higher RDI/turnover scenario (3%)	C. EUR 1.90 billion
SIIF	C. EUR 11.2 million*		
Commercial banks	C. EUR 116 million**		
HBOR	n.a.		
Total	C. EUR 0.17 billion		C. 1.30 billion

Source: PwC calculation 2015

* Current available supply of finance as shown on website pages and as confirmed in the interviews with relevant representatives.

** Current supply trend of loans product offered by the commercial banking system to the private sector for RDI projects.

The estimates given in the table above suggest that the amount of estimated supply would not be sufficient to meet the potential demand.

The financial needs of innovative enterprises vary according to their feasibility, product development costs, and the length of their market development and entry processes. There are several early critical milestones in this process, for which sufficient financing and technical assistance is crucial: product RDI, product conception and prototype development, market definition and testing, initial production, shipping and marketing. Based on these milestones and financing needs, several financing stages can be distinguished, each characterized by its specific amount and use of financial resources.

- a) The seed stage covers the initial research and development of a commercial idea or business concept, focused on determining its technical feasibility, market potential and economic viability.
- b) The start-up stage covers the development of a product prototype; initial market research and market-reach activities, and the establishment of a formal business organization.
- c) The early-growth stage pertains to small-scale commercialization and growth as well as to the development of the pillars for the scalability of the business.
- d) The expansion stage covers the substantial growth in the scale and market impact of the business.

In this context, Croatia's S3 Strategy describes access to finance issues affecting Croatian companies in the early stages of development (e.g. start-up phase) and provides several estimates of the venture capital financing gap:

- European Investment Fund (EIF) - investable demand for venture capital funds to be around **EUR 25 million** per year for the 2012-2016 period;
- Croatian Private Equity and Venture Capital Association (CVCA) - investable demand of at least **EUR 16 million** for venture capital investment per year;
- Croatian technology transfer offices (TTOs) - investable demand of **EUR 20 million** for venture capital investment per year;
- Croatian Business Angel Network (CRANE) – investable demand of **EUR 2 million** per year.

As indicated by interviewees, several qualitative factors have a relevant impact on the availability of financing for RDI projects:

- The **lack of financial knowledge**, the lack of experience with financial institutions (often leading to discouragement to seek finance) and especially lack of collateral.
- The **high-risk aversion among finance providers**, potentially limiting the size of envisaged RDI investments.
- The **value of RTI-driven entities and innovative companies is often hard for banks to assess** due to the fact that they are often more reliant on intangible assets rather than physical property which is rarely accepted as collateral. These difficulties have also been compounded by the current economic downturn.
- **Incomplete range of financial products and services**, exacerbated by immature venture capital and private equity markets. Moreover, because of the undeveloped capital market, the main sources of funding for companies are banks, whose products often feature relatively high interest rates and collateral requirements.
- **Rigid regulatory and legal framework**: Croatia ranks 89 out of 189 countries in the “ease of doing business index”. The number of procedures to start a business is the biggest in its peer

group (i.e. EU-5: Estonia, Latvia, Lithuania, Poland and Slovenia). Registering a property usually takes a considerable amount of time and is quite costly.

- **Lack of adequate connections between research institutions and the private sector**, which is evident by the poor performance registered in the number of public-private co-publications per million of population (27.4 versus an average of 52.8 for the EU). Also, the percentage of innovative SMEs collaborating with each other is below EU standards (9.3 versus an average of 11.7 respectively).
- **Lack of expertise in the RDI commercial sector**, as research in Croatia is predominantly the remit of public institutions while businesses are more focused on development activities.
- **Poor macroeconomic conditions**, since the on-going effects of the economic crisis in Croatia, including a decline in commercial lending, have impacted access to finance, particularly for SMEs.
- **Inefficiency in turning RDI investments into patentable results**: patenting is low in Croatia compared with other Member States with similar income levels.

Although there is a **market failure** created by the lack of suitable financial products for early stage RDI projects/enterprises, no project pipeline has been identified due to the limited time horizon of the study. In this context, it is important to note that projects are supply-driven in many cases. It should, therefore, be expected that if an FI is implemented and awareness appropriately raised and paired with an effective TA, new project leads could arise. This has been proven when projects were presented after calls for financial support had been issued in Croatia in the past – this view was also shared by multiple interviewees.

5.3.2 Value added of the FI

5.3.2.1 Qualitative dimension of value added

The use of FIs provides significant benefits in all the sectors identified in the market analysis, as given in the table below.

Table 73: Value added ensured by the use of FIs

Identified market failure	Value added of an FI
Incomplete range of financial products and services (particularly early stage finance due to immature venture capital and private equity markets)	FIs can provide a broad range of financial products (e.g. equity, mezzanine, etc.) that can meet the various needs of stakeholders in the RDI sector
Financial products currently available on the market are expensive (high interest rate, limited maturity of loans, high collateral requirements, etc.)	FIs can offer financial product ensuring better conditions (see Table 76 below)
Information asymmetries – lenders have insufficient information on some bankable proposals and tend to extend financing on the basis of the company's profile rather than on the project potential	FIs provide TA (as grants) that can support financial intermediary in carrying out due diligence of projects, allowing them to have a better understanding of them, and eventually to extend lending also on the basis of project potential, and not only on the company's profile.
Rigid regulatory and legal framework dissuading innovative enterprises (e.g. difficulties for companies to comply with the terms and conditions)	FIs do not require long and complex tendering procedures as grants do, and once they are set-up, they can immediately provide financial support to companies.

Identified market failure	Value added of an FI
Lack of adequate linkages between research institutions and the private sector	FIs provide TA (as grants) that can create the necessary links between awareness raising campaigns, also acting as a bundler of projects that could be later supported by FIs.

The table below compares the FIs value added vis-à-vis grants.

Table 74: The value added of an FI as compared to grants

Benefit	Value added of an FI compared to grants
Leverage creation	<p>FI enables additional support to be channelled to enterprises, public administrations and more generally final recipients, with a potentially greater financial impact than grants, due to the ability to attract additional public and private sector resources, thus multiplying the effects of ESI funds and national/regional contributions (e.g. each euro invested by the OPCC creates a multiplying effect which increases resources available to final recipients). According to published research¹⁸⁹, such leverage effect is even more prominent for small countries like Croatia traditionally less attractive for international investments.</p> <p>As for the RDI sector, this means that, as the investment generated by an FI are higher than those generated by a grant scheme, the quantitative value added of an FI as compared to a grant scheme could be measured in the achievement of:</p> <ul style="list-style-type: none"> • Greater competitiveness and exports for enterprises involved in RDI activities (higher exports are also linked to productivity gains which should lead to wage increases); • Higher economic growth, as an instrument that increases business RDI investment in Croatia, leading to a greater overall national investment, is likely to raise GDP levels¹⁹⁰; • Higher number of jobs created to conduct and support RDI, and in expanding and newly-formed firms.
Revolving mechanism	<p>The funds are repayable. As these monies are repaid over the course of the project, they become available to finance additional projects. In such a way, the use of FIs can promote the long-term recycling of public funds and they potentially enable the reinvestment of ESI funds beyond the end of the programming period, helping achieve better value for public money.</p>
Encourage efficiency	<p>FIs can encourage efficiency among final recipients through greater financial discipline through the heightened awareness of the need to repay loans (unlike grants). This factor emerges also as an 'assurance of quality' of the project. In other words, FIs encourage companies to grow and become more competitive in order to return the investment.</p>
Build capacity	<p>Use of FIs can help build institutional capacity through partnerships between the public and private sectors, can broaden the involvement of financial intermediaries/institutions in implementing EU regional policy and can encourage pooling of expertise and know-how, for example to improve the quality of projects. Additionally, the creation of public-private synergies ultimately results in an alignment of interests between public and private actors: on the one hand, they enable the pursuit of public policy objectives, which characterises public institutions, and on the other hand they bring in the commercial market mechanisms accompanying private investors.</p>
Ensure better technical assessment of projects	<p>The TA assistance to be financed out of an FI could ensure a better technical assessment of projects as to ensure that oversized and/or unsuitable projects are excluded from the support.</p>

¹⁸⁹ European Parliament (2013) Financial Engineering Instruments in Cohesion Policy.

¹⁹⁰ World Bank study cited in the S3 Strategy - which compares the impact of five Lisbon Agenda targets on GDP and exports in Croatia and other EU countries - shows that increasing aggregate RDI to 3 percent of GDP (with 2 percent coming from the private sector, the Lisbon target for RDI) would raise GDP by 5.8 percent and exports by 13 percent above their baseline by 2025

Benefit	Value added of an FI compared to grants
Create confidence in the market	The use of FIs may encourage risk adverse investors and financial institutions to engage in projects and markets they might deem too risky in the absence of public intervention. This is particularly important for smaller and newer firms, and those operating in high-risk sectors like high-tech and ICT, which frequently struggle with access to traditional forms of finance.

An example of the value added of FIs in the RDI sector: the construction of a biotechnologies and biomedicine research centre in Palermo, Italy, outlined in the table below.

Table 75: The value added of an FI in the RDI sector

Item	Description
Beneficiary	RiMED
Location	Carini (Palermo), Sicily, Italy
Description	The project covers construction of a research centre for biotechnologies and biomedicine for developing new medicines, vaccines and medical devices, and implementing new approaches to regeneration medicine and therapies for mental and behavioural illnesses.
Product	JESSICA loan of EUR 40.0 million (part of a financing package, including equity from promoter, totaling EUR 210.0 million).
Value Added	<ul style="list-style-type: none"> The centre will incentivise the development and spread of scientific knowledge, with positive effects on Sicilian and Southern Italian economies. It will employ ca. 600 people, with the potential to create another 500+ jobs in connected business activities. The project will also promote urban regeneration in the area.

5.3.2.2 Quantitative dimension of value added

The table below gives a comparison of duration and pricing between the current type of finance available in Croatia and the type of finance that could be provided by FIs, showing a potential quantitative added value of FIs over more traditional types of financing.

Table 76: Comparison between financing characteristics currently available in Croatia and financing characteristics that could be provided by an FI

	Average maturity			Average pricing		
	Commercial banks	HBOR	Financial Instrument	Commercial banks	HBOR	Financial Instrument
Public sector	Project by project basis	Up to 14 yrs.; incl. 1 – 3 yrs. grace period	10/15 yrs. + grace period	4% - 7%	2% fixed or more	0-2%*
Private sector	Project by project basis	Up to 14 yrs.; incl. 1 – 3 yrs.	5/10 yrs. + grace period	4% - 7%	2% fixed or more	1-yr IBOR ¹⁹¹ + 1%-2.2% ¹⁹²

¹⁹¹ Interbank Offered Rate. Fixing of interest rate is typically made at signature, plus spread reflecting risk margin.

¹⁹² Based on Communication from the Commission on the revision of the method for setting the reference and discount rates 2008/C 14/02 ([http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008XC0119\(01\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008XC0119(01)&from=EN)); rating categories: investment grade; collateralization: low.

		grace period				
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Source: PwC elaboration 2015, on the basis of information gathered during the supply side analysis and data provided by the EIB

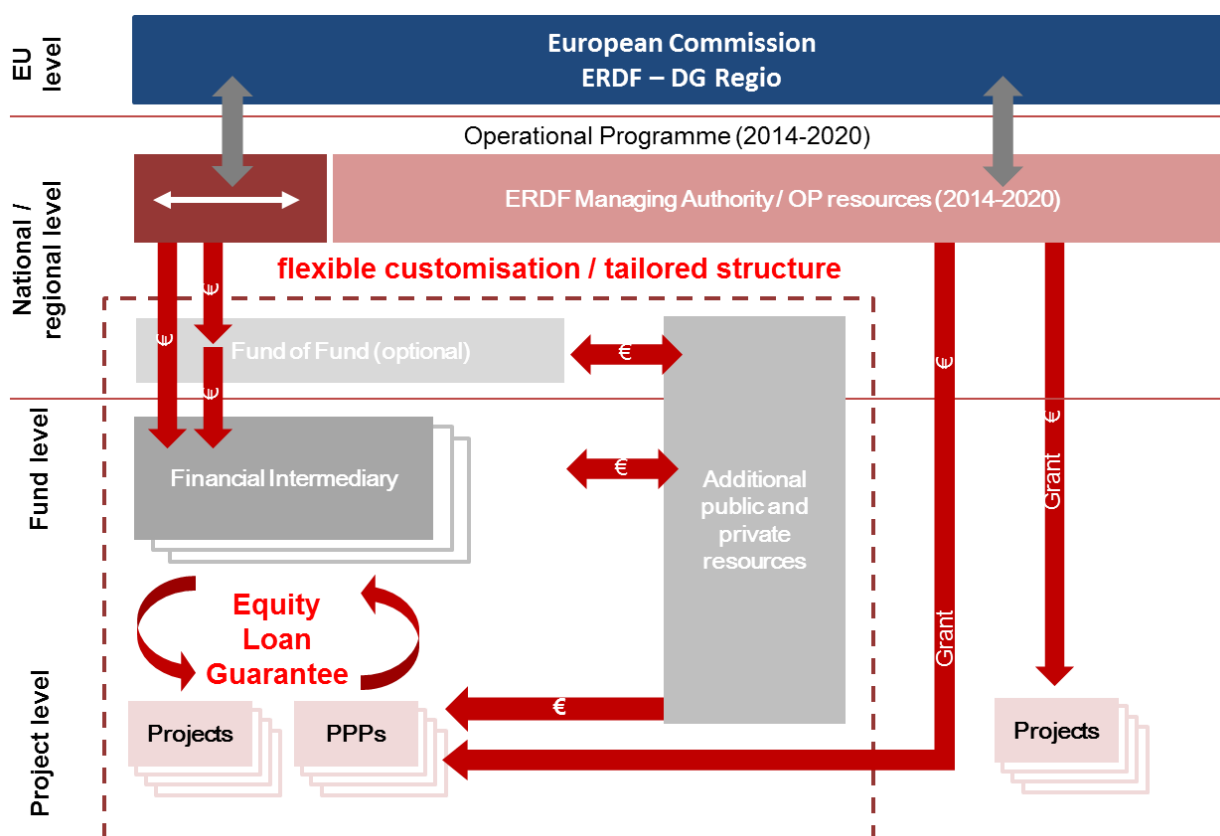
* Average pricing offered by similar initiatives (e.g. JESSICA).

Please also note that further discussion of the **quantitative dimension of value added** is presented in chapter 6.2, which compares the investment generated by traditional grant financing and more innovative FIs.

5.3.3 Estimate of additional public and private resources

A financial instrument offers the possibility of channelling additional investments into FIs to create leverage on the initial resources provided by the OPCC, as illustrated in the figure below.

Figure 26 : Flow of funds and level of additional public and private resources leveraged by an FI



Source: PwC elaboration, 2015 on the basis of JESSICA Holding Fund Handbook

The table below shows the sources of RDI financing that could constitute additional public and private resources, compiled from the supply-side analysis.

Table 77: Potential additional public and private resources to consider¹⁹³

Source	Product					
	TA as Grant	Inv. Resources as grant	Loans	Guarantee	Equity	Mezzanine
Commercial banks			x			
HAMAG-BICRO		x		x		x
HBOR			x			
ZABA (EIF)			x			
HORIZON 2020		x				
COSME		X				
InnovFin (EIB)*			x	x	x	x
Guarantee Fund and Competitiveness and Innovation (EIB & HBOR)				x		
World bank (Science and Technology 2 project)			x			
SIIF		x				
CRANE					x	
Economic cooperation fund (FGS)					x	
Science and Innovation Investment Fund	x	x				

Source: PwC elaboration, on the basis of the materials collected in the supply side section

* See an example of a tailored RDI product ("CFIR") in section 6.1.5.3

The implementation of FIs promoting RDI business spending would seem to comply with the Croatian S3 Strategy, as it calls for the introduction of FIs to stimulate innovation, support bankable RDI projects, and increase the impact of private funding – particularly for the SME market segment.

5.3.3.1 Consistency with other form of intervention

Alternative sources of finance seem to be available for RDI projects in Croatia. Consequently, in order to maximise the effect of the several financing opportunities available, the Croatian policy makers need to ensure coordination among financial sources, for instance through the creation of a coordination unit that could act as a one-stop-shop for project promoters.

¹⁹³ No quantification of data is reported, since details on the allocation of resources by source of financed/products and market segment is not available.

Should an FI be implemented to support RDI, there is no need to create a demarcation line with grants for projects in the start-up and early growth stages of development, since the two components are fully complementary. Indeed, as an example, the support of FI could be provided:

- To support the projects/companies balance-sheet requirements to qualify for bank credit and, consequently, to get grant funding for the remaining part of the investment.
- To support projects that show higher financial performance, and which could have access to bank credit with FI's support only, if grants were no longer available.

5.3.4 Review of lessons learnt from the past and from similar existing funds

Examples

The examples below illustrate how FIs were implemented in the past in Croatia and elsewhere, and why they were successful.

BICRO's RAZUM Programme (2007-2012)

- **Description**
 - The RAZUM programme is a conditional loan programme implemented by Croatia's Innovation Agency (BICRO), before its merger with HAMAG, between 2007-2012 to support the SMEs investments in RDI;
 - The RAZUM programme is a soft loan mechanism designed to encourage the private sector to spend more on RDI and reduce the risk that firms often face in the innovation process (early pre-commercial stage). The initiative supports private-sector investments in RDI and new technology through conditional loans and provides initial funding of newly established knowledge based companies and funding for research and development of new products/services in existing companies.
- **Achievements**
 - According to the S3 Strategy and Radas et. al (2011), the RAZUM programme has enabled beneficiary companies to increase their capacity for conducting innovation and RDI, and to extend the knowledge and capabilities of the staff by hiring highly educated professionals, in most cases permanently. In addition, new product development processes were reported as being positively affected in the majority of cases, suggesting better innovation capability. Most companies that received RAZUM support also stated that work on the project for which they received assistance also generated additional ideas for innovations;
 - When programme beneficiaries were interviewed regarding what would have happened had they not received the RAZUM support, 6 companies (30%) reported that they would have abandoned the project entirely. The majority (86%) of the remaining firms would have relied on their own resources, while some of them would have tried to obtain financing from banks and venture capital funds. Three firms would have attempted to identify sources of funding through strategic partnerships and some other RDI subsidies.
- **Lessons learnt for Croatia**

- An important lesson to be learnt from this small-scale instrument is that there is indeed tangible demand for support by Croatian SMEs for RDI-focused instruments to address access to finance challenges;
- It is also important to recognise that in the absence of RAZUM money, most companies would have proceeded with the project but on a smaller budget, resulting in extended project durations, reduced project scope, and less additional employment of RDI staff.

Hungarian New Széchenyi¹⁹⁴

- **Description**

- The Hungarian New Széchenyi (CMCG) is a combination of micro-credit and grants which provided micro financing opportunities to micro enterprises who had limited access to financial resources.
- In Hungary, only 54% of Hungarian SMEs relied on banks for financing (versus 79% in EU15) as relatively high transaction costs prevented the domestic banking system from handling the small credit requirements of micro enterprises.
- The Managing Authority allocated EUR 202 million of ERDF (85%) and national (15%) funds into the FI, which financed up to 45% of a project's costs through a grant, up to 45% through a loan, while the SMEs finance at least 10% through their own contribution. Final recipients could receive support of up to EUR 66,000, including grants up to EUR 33,000. The interest rate of the financial products was around 7%, which was below the average interest rate of 8 to 10%.

- **Achievements**

- The MA implemented the FI through a holding fund spreading resources across over 140 financial intermediaries (micro-financing institutions, local enterprise development foundations, and saving cooperatives). External consultants helped applicants submit their projects to financial intermediaries for funding. The TA included advisory services on business plans, information about other financial products or filling out documents.
- As long as the instrument was available, it helped 9,389 final recipients' projects bridge the gap in market finance.

- **Lessons learnt for Croatia**

- Success factors include: the one-stop-shop approach for recipients under which the financial intermediary was the only portal through which recipients applied and received the financial products; the holding fund structure, which dealt with a large number of financial intermediaries allowing a deeper penetration in the market.
- Challenges include: the regulatory framework was complex and the application requirements could be broadly interpreted, creating uncertainty for applicants. Also the loan/grant combination increased the paperwork and legal burden at all levels.

Broader lessons learnt

The following lessons learnt are derived from experience at EU-level through instruments such as the Risk-Sharing Instrument (RSI) and JEREMIE managed by the EIF, and also programmes implemented at national and regional levels across the Member States.

¹⁹⁴ The information provided in this paragraph has been drawn from "FI Compass – Combined Micro Credit and grant scheme.

Close collaboration with potential financial intermediaries

An FI will be more successful if during its design phase its main features are tested with potential financial intermediaries well before the launch of the call for expressions of interest. The main features include e.g. the FIs sector objectives and a precise definition of the targeted innovative SMEs. Understanding how financial intermediaries operate and react to changing market conditions in the targeted sectors, their risk appetites and any sector-specific “rules”, have proven to be key in designing better-targeted instruments and fostering smoother collaboration with financial intermediaries.

Need for awareness-raising

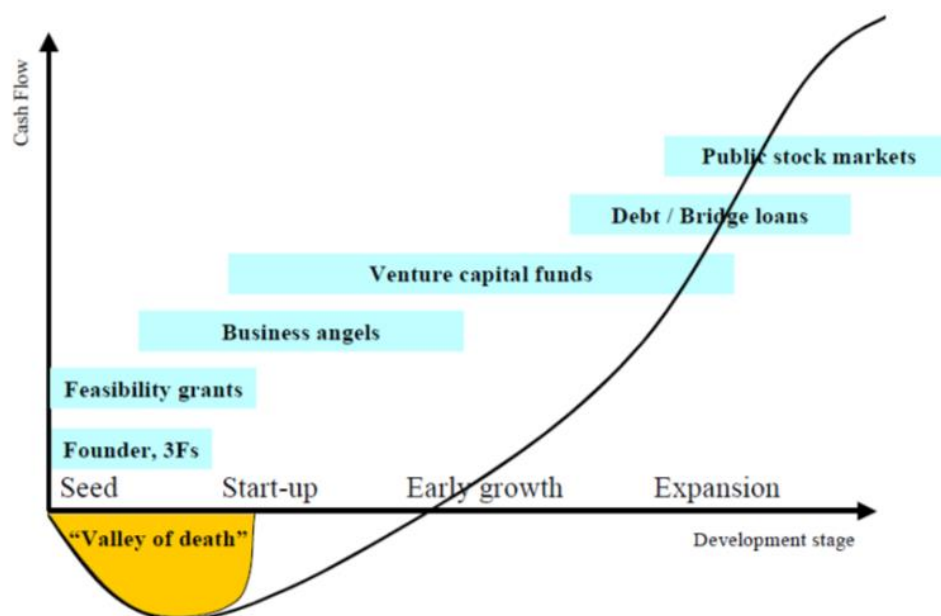
As with the implementation of any new FI, it is essential that the envisaged FI for RDI support is accompanied by significant awareness-raising – both for potential final recipients and financial intermediaries. However, experience shows that this is even more important for FIs targeting RDI and SMEs due to the smaller size and a heterogeneous nature of the targets. Early efforts to raise awareness have proven to be important in ensuring that the relevant intermediaries are in place before the FI becomes operational, and that the take-up of products happens in the early phases of the programming period.

To achieve this, the FI implementer should allocate sufficient resources to ensure a coherent, proactive and joint marketing strategy with financial intermediaries to better target the final recipients.

5.3.5 Conclusion of building block 1 – Market assessment

- The figure below provides a representation of the financing patterns of a typical innovative enterprise across its development stages, and maps various sources of finance according to the stages at which they are available or most suitable. The financing follows a distinct “J-curve” pattern over time, with an initial drop at the seed stage (the “Valley of Death”, VoD), related to the financial resources spent on the proof of the business concept.
- For enterprises requiring significant RDI or product development effort, the VoD can be much deeper and longer. If the business emerges from the VoD and becomes established, the cash flow turns positive and the business gradually generates market momentum and moves to the early-growth and expansion stages. In these stages the financial resources needed by the business are significantly larger, but because of the more tangible nature of its performance potential, these resources may be obtained from more traditional financial intermediaries.

Figure 27: RDI project development stages and typical sources of finance



Source: UNECE- Policy Options and Instruments for Financing Innovation

- The analyses performed for this study reveal that a **market failure** exists, resulting in lack of suitable financial products for early stage RDI projects/enterprises (start-up phase, early growth). However, a tangible pipeline of projects in the RDI sector has not yet been identified, although demand is strongly driven by supply and, therefore, creation of a fund of funds in the RDI sector remains a possibility.
- The uncertainty associated with feasibility studies, the intangible nature of innovative enterprises' assets, the volatility of their cash flows, and the lack of sufficient operating history, all make innovative enterprises unsuitable for debt financing. While founders may draw personal loans, such loans, if used to fund seed-stage activities from which there are no payoffs in the short-term, could quickly deplete the founders' personal assets.
- Given the negative cash flow and high risk of failure at their early stages of development, innovative enterprises ideally need such forms of financing that do not require guaranteed repayment.
- For prospective investors, there is need to adopt a portfolio approach when investing, which requires a suitably large number of opportunities. This approach results in a number of investments that are made with the expectation that a few of them will generate very large returns, thus offsetting the losses in other investments. While this is too risky for most finance providers, especially in Croatia where the limited size of the market hinders the ability to build a sufficiently diversified portfolio, an FI can tolerate such an excessive risk.
- The study indicates that the scope to employ FIs in the RDI investment area exists, albeit for what is currently a niche market which can only address a part of the investment gap, with a focus on a limited range of sophisticated beneficiaries and likely to take a certain time to deliver effective results. Because of this, RDI projects would undoubtedly benefit from a robust dose of grant support, where appropriate and whilst the use of FIs consolidates

enough to allow stakeholders (e.g. financial intermediaries, final recipients) to progress on their learning curve.

- Well-designed debt and equity FIs in TO1 should provide broad support for research and innovation. They should help improve the capacities of enterprises driven by R&D, as well as innovation at all stages of development and throughout the different stages of the research and innovation cycle. Financial instruments for RDI enterprises should be primarily implemented bottom-up and tailored to their needs and specific objectives.
- While the analysis recognises that currently FIs could only partially address the investment gap, and should be in any event used in conjunction with grants, delayed implementation may increase the risk that learning-by-doing effects – which over 2007-2013 proved to be of utmost importance in the experience of financial instruments in new areas of application – are not timely triggered. Thus, even if a decision were to be made not to implement immediately FIs in the RSI investment area on a full-scale basis, it is suggested that adequate attention should be paid to the development of the proposed FIs, as well as to the budgetary allocations between the instruments, relatively early in the course of OPCC implementation, possibly through a piloting phase (with a Call for Expression of Interest to raise attention throughout the market and a tranching mechanism to disburse funds in subsequent stages) which could allow to capture learning effects and activate supply-side impacts to stimulate demand from potential beneficiaries while mitigating risks of a failure in the initiative. In addition it has to be noted that Croatia is new to FIs so it is reasonable to expect that, even if it were decided to implement them in the short term through a pilot process, the actual results expected by the FIs will be achieved only over a certain time frame because of the natural need of the above-mentioned learning-by-doing for all the involved actors (stakeholders, financial intermediaries, beneficiaries, etc.) in respect to operational, legal and procedural aspects, beside the time required to set up the immediate procedural, procurement and legal framework for implementation.
- Thus, as described in the figure above, if the MA intends to proceed with FIs, the following products could be offered:
 - Equity and quasi-equity, which is the financial model typically able to leverage the most considerable external financing, able to share operational risks, and to bring relevant know-how into the company. Quasi-equity includes mezzanine financing (e.g. subordinated debt), which could complement the range of financial products currently offered in Croatia.
 - Long/Medium-term senior loans that are very rarely offered in this sector by commercial banks in Croatia.
- Should an FI be implemented, there is no need to create a demarcation line with grants, since the two components are fully complementary. Indeed, the support of FI could be provided:
 - To support the projects/companies balance-sheet requirements to qualify for bank credit and, consequently, to get grant funding for the remaining part of the investment.
 - To support projects that show higher financial performance, and which could have access to bank credit with FI's support only, if grants were no longer available.

5.4 Enhance access to ICT, encouraging private-sector investment into the “last-mile” for broadband services

This section provides high level guidance and an analysis of the use of FIs to enhance access to information and communication technologies, with emphasis on encouraging private-sector investment in the delivery of the “last-mile” for broadband services.

Croatia significantly lags behind the EU average penetration level of broadband connections, Next-Generation Access (NGA) network coverage, and Next Generation Network (NGN) coverage. As such, improving NGN and NGA coverage in the relevant areas is an important national policy objective. In particular, Croatia aims at developing the backhaul NGN infrastructure in white and grey NGN areas, and at developing NGA networks in the white¹⁹⁵ NGA areas. This section examines whether FIs could be used to increase the overall level of investment in this area, particularly since the majority of private-sector plans to invest in the access network appear to be limited by insufficient return on investment.

5.4.1 Analysis of market failures, suboptimal investment situations and investment needs

The Information and Communication Technologies (ICT) sector is generally recognized as an important driver of sustainable economic development. It is a key element in creating products and services with high added value, consistent with the achievement of the Europe 2020¹⁹⁶ strategy objectives. The Digital Agenda for Europe (DAE)¹⁹⁷, one of the seven strategic initiatives under the umbrella Europe 2020 strategy, lays out how better to exploit the potential of ICT to foster innovation, economic growth and progress.

The DAE concludes that ubiquitous access to broadband networks is a prerequisite for the transition to knowledge-based economy. It sets the following two objectives for broadband access availability over 2011-2020:

- DAE1 - universal broadband coverage with internet speeds above 30 Mbps (fast access);
- DAE2 - 50% or more households with internet speeds above 100 Mbps (ultra-fast access).

The OPCC allocates funding under TO2 IP 2a to the upgrading of the existing broadband speeds, increasing the number of backhaul NGN connection points in the target areas, and of households taking up broadband subscriptions, thus directly contributing to the fulfilment of the DAE targets for high-speed broadband coverage by 2020.

As stated in the OPCC, in order to reach 100% national NGA broadband coverage, and close the existing and foreseen coverage gap in unprofitable areas by 2020, investments of up to EUR 1.286 million are needed in the NGN and NGA networks.

¹⁹⁵ According to the EU Guidelines for the application of State aid rules in relation to the rapid deployment of broadband networks, (2013/C 25/01): “White NGA areas” are those areas where NGA networks do not exist at present, and where they are not likely to be built within 3 years. “Grey NGA areas” are those where only one NGA network is in place, or is being deployed in the coming 3 years, and there are no plans for any operator to deploy a NGA network in the coming 3 years. “Black NGA areas” are those where at least two NGA networks of different operators exist or will be deployed in the coming 3 years.

¹⁹⁶ <http://ec.europa.eu/europe2020/>

¹⁹⁷ <http://ec.europa.eu/digital-agenda/>

In addition, according to the National Framework Programme for the Development of Broadband Infrastructure in Areas Lacking Sufficient Commercial Interest for Investments (ONP), it is estimated that EUR 712.2 million will be invested in the NGA over 2014-2020 through all the projects implemented under the Framework Programme. The objective of this is to meet the national strategic targets and the DAE targets of universal broadband coverage with fast access, with 50% of households using ultra-fast access. From the estimated EUR 712.2 million of investment funds, it is expected that an average of 58% of the funds will be provided by the operators who will participate as partners in projects implemented under the Framework Programme, and the remaining 42% will be covered by public support.

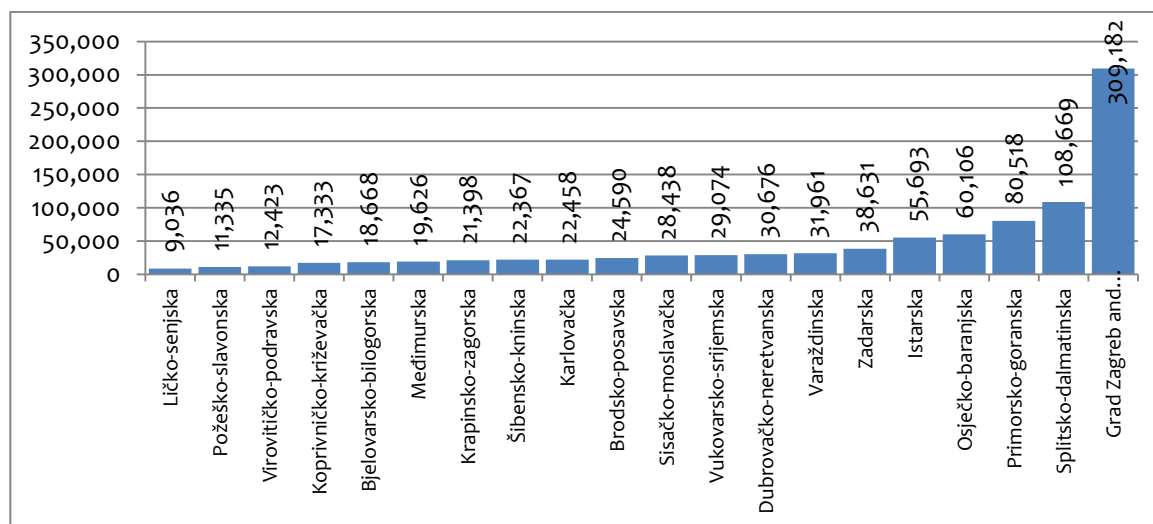
Demand side analysis

Demand characteristics

In Croatia, the ICT sector represented 4.2% of the 2013 GDP¹⁹⁸. Basic broadband coverage is already quite extensive, covering 98.1% of households as of mid-2013. However, the **NGA network coverage** remains underdeveloped at just **33% in 2013**, putting Croatia far behind the EU's average NGA coverage of 62% in the same year.

Moreover, it should be noted that the existing broadband connections fall short of the standard of fast access set by the DAE targets. Most of the connection speeds vary between 2 and 30 Mbit/s, with less than 1% above 30 Mbit/s¹⁹⁹. The density of broadband connections is unevenly distributed, as shown in the figure below.

Figure 28 : Number of fixed broadband connections by county (4Q 2014)



Source: HAKOM 2015

¹⁹⁸ OPCC

¹⁹⁹ <http://bbzone.hakom.hr/en-US/SirokopojasniPristup#sthash.OmHOiDiA.dpbs>

It should also be noted, as stated in the National Programme for Broadband Backhaul Infrastructure (NP-BBI), that the two leading network operators (HT and VIPnet) offer retail broadband packages with speeds above 30 Mbit/s, but at a substantial price premium. HT's fees for Fiber to the Home (FTTH) with speeds of 40-100 Mbit/s are approximately 2 times higher than for the basic ADSL package of 4 Mbit/s. VIPnet charges 2.9 to 3.7 times more for cable access with speeds of 42-120 Mbit/s than for access with the basic speed of 10 Mbit/s. In comparison, the EU average fast and ultrafast package prices were just 19% higher than the price of a package with basic connection speeds²⁰⁰.

In rural areas, less than 0.01% of households were covered by NGA services at the end of 2013, compared with an EU average of 18.1%²⁰¹. This discrepancy in broadband distribution means that a significant number of households, public administration sites, educational and healthcare institutions, and SMEs are unable to access the high-speed broadband and use advanced IT services, hindering a uniform regional development in Croatia.

Identification of demand for ICT/Broadband-last mile

Croatia intends to implement the targets of the Europe 2020 Strategy and "Digital agenda for Europe". The ONP states that in order to reach 100% of national NGA broadband coverage and close the existing and foreseen coverage gap **in unprofitable areas by 2020, investments of up to EUR 712.2 million are needed. At least 58% of this amount is planned to be covered by private operators, while the remaining share of 42% by public support. Support from the ERDF fund is envisaged to help extend the national NGA network coverage by at least 20%.**

The main objective of the Strategy for Broadband Development in the Republic of Croatia for 2012-2015, and of the new Strategy for 2016-2020, is to support the development of the nation-wide infrastructure for high-speed broadband Internet access (at least 30 Mbit/s) and services that require high access speed. This objective promotes the Digital Society and universal access to broadband services in Croatia.

Key players in the market

Several key players have been identified in this market segment. Each of them is listed below, while a more detailed explanation included in Annex 4.

- Government bodies:
 - Ministry of Maritime Affairs, Transport and Infrastructure (MMTI)
 - Ministry of Regional Development and EU Funds (MRDEUF)
- Public companies and regulatory institutions:
 - "OViV - Transmitters and Communications Ltd."
 - Croatian Regulatory Authority for Network Industries (HAKOM).
- Telecom operators:
 - Hrvatski Telekom d.d. (HT)
 - VIPnet d.o.o
 - Metronet Telecommunications d.d.

²⁰⁰ NP-BBI

²⁰¹ According to the Broadband coverage in Europe Study 2013.

5.4.2 Key findings of the demand analysis

From the interviews with relevant stakeholders MMTI, MRDEUF, HT, VIPnet, Metronet, HAKOM, OiV, the following has been found out:

- The HT is very proactive with HAKOM, MRDEUF and local authorities in discussing opportunities to further the goals of the ONP and NN-BBI.
- The HT said in an interview for this study that they were ready to make investments as proposed in the OPCC, provided that tenders were transparent and the HT could use their current infrastructure. The HT is ready to build the FTTH and vectorised SDL networks on the previous conditions. According to HT's calculations, on average the ratio of public to private investments in the white areas should be 70% to 30%.
- **According to the HT, there is potential to use FIs (equity)** in the ICT sector, but only if it is possible for projects to include both white and grey areas to enhance viability. The ideal project size, according to the HT, would be around 25,000 households.
- FIs for broadband build-out would likely have to contain a substantial grant element, with a more modest private contribution to ensure commercial returns to private investor(s). The exact make-up of such a contribution would depend on the individual project investment models and State-aid rules.
- The other two operators (VIPnet and Metronet) have indicated that they are interested in private contributions, as stated in principle in the OPCC, and that they would need FIs for their own contributions (i.e. loans, guarantees) instead of their own financing.

NGA coverage: Insights on market failures and suboptimal investment situations

- One of the factors that inhibit investment in broadband penetration and wider broadband Internet access and services is insufficient and uneven deployment of modern next generation network (NGN) broadband infrastructure.
- The country's typology (rural and suburban areas with lower population density) and numerous islands, makes the task of connecting properties to Next Generation Access (NGA) much more challenging.
- NGA broadband Internet access is not affordable for all households, even if they already have physical access to the network. Low uptake rates further depress the financial returns to investments in the broadband build-out.
- The dominance of the technology underlying the existing copper network (DSL) is another barrier to significant progress in improving broadband availability and access speed. Also, only a small percentage of cable networks have been upgraded to the DOCSIS 3.0 technology, typically one of key components in the NGA coverage.
- Insufficient administrative capacity and lack of knowledge of LRGUs in implementation of this kind of projects is another barrier to the development of projects at the local level.
- There is a lack of alignment between broadband development strategies, plans at the local and regional level with National Strategy and National Programmes.
- Croatia lacks appropriate physical planning preconditions required for development of NGA broadband infrastructure.
- The limited availability of electronic communications services and content in the Croatian language that require access to broadband further dampens demand.

Gap analysis

The analysis of the difference between the estimated supply and the potential demand uses the most representative information available in the market, gathered through a wide range of interviews with stakeholders, a review of the existing literature, and desktop research. The analysis provides an educated estimate of the financing gap for NGA development in Croatia at the time of writing this report (cf. *Ex-ante assessment methodology for financial instruments*).

Due to the low return on investment in projects carried out in this sector, no project pipeline has been identified, although potential demand has been identified for the next generation of broadband services.

NGA coverage: Quantitative aspects of the market gap

As stated in the ONP private operators are expected independently to build NGA networks in Croatia in the areas that cover less than 30% of the population, and the investments required for the implementation of projects in areas lacking commercial interest are about EUR 712.2 million, for approximately 1 million Croatian households. The ONP foresees that investments in NGA networks in such areas shall be partly co-funded from public sources to make the projects investable. As already stated above, the part covered by the public should, according to the ONP, amount to 42% of the total investments foreseen for these areas (i.e. 42% of EUR 712.2 million). This means that in order to achieve 100% coverage of the Croatian population as foreseen in the DAE, according to the ONP there is a gap of public sources of EUR 712.2 million \times 42% = EUR 299.1 million. Again, based on the ONP, if the public financing in the amount of EUR 299.1 million would be secured, private operators should be willing to invest the remaining EUR 413.1 million in such projects.

On the other hand, according to calculations we received in the interview with Croatian Telecom, the public financing part should in average amount to at least 70% to make the projects investable for this private operator. For the mentioned 1 million households in areas lacking commercial interest for investment, Croatian Telecom foresees however a necessary investment of EUR 1 billion (in average EUR 1,000 per household). This means that the gap from public sources according to Croatian Telecom would amount to 1 billion EUR \times 70% = EUR 700 million. The difference in calculations between the ONP and Croatian Telecom derives from different equipment planned to be used in the ONP and in Croatian Telecom' assumptions. ONP foresees usage of less expensive equipment, in which case also the investment share of private operators according to the ONP should be higher.

Table 78: Quantitative results of the gap analysis (values in million EUR)

Supply (2015-2020)		Demand (2015-2020)	
Operators:	Private contribution from operators for approx. 1,000,000 households in areas lacking commercial interest.	NGA coverage of approx. 1,000,000 households in areas lacking commercial interest.	
	EUR 300-413.1 million	EUR 712.2 million- EUR 1 billion	Total gap EUR 299.1 – 700 million

Source: PwC calculation according to ONP and Croatian Telecom data

The estimates given in the table above suggest that the available financing would not be sufficient to meet the demand implied by Croatia's national policy objectives. As shown in the table, the financial contribution from private operators should be equal to about 58% (EUR 413.1 million) of the total investment cost (EUR 712.2 million) according to the ONP, and to 30% (EUR 300 million) of total investment cost (EUR 1 billion) according to the Croatian Telecom. Therefore, the estimated **financing gap to be provided from the public sector in order to realise the projects from the Digital Agenda for Europe in Croatia is from EUR 299.1 million to EUR 700 million.**

Conclusion

A high level analysis of the use of FIs to support private sector investment in the delivery of “last-mile” broadband services has been offered here. As the relevant ex-ante conditionality document, i.e. the Framework Programme (ONP), is still in the pre-notification process at the EC, and since the investment models have not been revealed by the operators, **this study is not able to define potential FIs which could help the private sector** increase their investment to achieve the DAE objectives. **Therefore, apart from estimating the financing gap and indicating that an equity FI could be useful (as reported by the HR in an interview), the findings of this study with regard to the ICT sector suggest that it is premature at this point in time to offer further guidance and analysis prescribed by Art.37 (2) of the CPR.**

6 Building block 2: Delivery and management of FI under priority investment areas

6.1 Proposed Investment strategy and implementation arrangements

The analysis carried out in building block 1 identified the potential for FIs to be set up in order to fill (at least partially) identified financing gaps and address the related market failures in each of the selected priority investment areas. However, as reported in Chapter 5.4, it was concluded that **it would be premature at this stage to implement an FI in the ICT priority investment area.**

It is important to emphasise that the proposed investment strategy (PIS) offered here is indeed a proposed one and, therefore, not meant to be restrictive. The proposed OPCC allocations to FIs/grants suggested here are considered to be most suitable based on the analysis of the study, but are not binding on the MA, and do not prevent the MA from directing OPCC resources towards other FIs/grants, or indeed from applying alternative solutions.

6.1.1 Market analysis - summary of key findings

The main market failures, and potential financing gaps identified in the previous chapters, are summarised in the following paragraphs in order to create a clear linkage with the proposed investment strategy.

6.1.1.1 Energy Efficiency and the use of renewable energies

- The building sector is a major energy consumer in Croatia, with residential housing, public and commercial buildings accounting for 43% of final energy consumption in 2012. Inefficient energy production processes are a second major factor.
- The analysis demonstrated growing demand for financing of EE/RE projects in both public and private buildings in Croatia. The existing building stock's age and relative energy inefficiency, coupled with the continental climate in large parts of the country, provide a strong base of demand.
- Due to the average age and maintenance conditions of public assets, minor EE/RE interventions, such as replacing windows or lighting systems, are deemed insufficient to the challenge. Most of the buildings require deep, capital intensive renovations characterised by low and delayed return rates.
- The characteristics of the financial products currently offered in the market are ill-suited to the needs and characteristics of EE in buildings (pricing not compatible with affordability, maturity not suitable with the low profitability of investments, limited access to finance due to heavy collaterals). The investment conditions of instruments offered by EPEEF have been found to be incompatible with the needs of the market as well.
- Moreover, due to limited focus on EE interventions, commercial banks tend to consider them to be high-risk initiatives, and are not willing to provide finance on a project based approach. This limits the ability of the ESCO market to develop, and of Municipalities and private owners to finance their projects.
- Not surprisingly, the majority of the EE in housing projects realised so far have been financed via grants or via the own funds of private owners and of ESCOs. However, investments undertaken by ESCOs are limited to small scale, soft interventions (mainly on private assets) as their lean

capitalisation reduces both access to finance and availability of own funds, impacting on the size of affordable investments.

- As far as EE/RE interventions on industrial production processes are concerned, the combination of the low profitability of the interventions, the low attractiveness for bank loans and the limited own resources of enterprises available for such an aim contribute to limit the willingness of companies to adopt EE improvement measures on their productions processes. Stakeholders interviewed highlighted the potential of unexpressed demand in this sector that would become a tangible pipeline only once suitable financial resources are available.
- There is a financial gap in the market, both for improving EE performance of buildings and industrial processes created by the lack of financial products to support those projects.
- An initial pipeline of identified project would require EUR 300 million investments (when including the programme of revitalisation and energy retrofitting of the city district Donji grad).
- Comparing the characteristics of financial products with the needs and market failures/suboptimal investment conditions observed in the EE investment area, FIs could offer:
 - **Loans**, which could alleviate the lack of long-term financing established in the supply-side analysis, and provide financing at the best available market conditions, thus contributing to increasing the financial sustainability of projects;
 - **Equity for ESCOs**, which could improve their financing ratings, thus attracting commercial bank financing and allowing for larger scale investments.
- The study has identified a number of non-financing issues that are hindering the development of EE in housing projects. To limit some of them (i.e. the limited capabilities of the public and private sectors to develop, assess, verify and implement EE projects), FIs could provide grant support to financial intermediaries and project promoters in the form of technical assistance (e.g. to carry out energy audits, develop sustainable projects, and assess feasibility of projects).
- The proposed financial instruments for the EE/RE sector, with the budgetary allocations between private commercial buildings, improvements of industrial production processes and public lighting systems, can contribute significantly to cover the market gap identified for each of the three above-mentioned sub-sectors.
- In particular, as detailed in the study, based on the current status of both the supply-side and the demand-side for investments in the EE/RE sector, the opportunity to launch FIs could well address the need for long-term financing provided with a more risk taking approach in terms of economic sector, nature of beneficiaries and project risks. This initiative would fill a need since, based on the key findings of the report, the Croatian banking system, although bearing an overall appreciable liquidity level, is seen as reluctant in providing financing for projects with long-term return and relatively moderate profitability, as those typical of the EE/RE sector, where investments are already very low and which many possible promoters (e.g. corporates) consider just as ancillary to their core activities.
- However, the study also highlighted very significant room (and actual need) for the implementation of other actions and policies, specifically grants, in parallel with FIs. This view is justified by the following elements:
 - From a quantitative angle, while the investment targets set by NEEAP for the period 2014 – 2020 amount to approx. EUR 1.65 bn (without including industrial buildings), based on the study, FIs are expected to cover needs for approx. EUR 0.28 bn (including 2x leverage). As a result, an additional supply of financial resources for EUR 1.37 bn would be required to cover the total demand. Furthermore, as the demarcation analysis suggested:

- FIs will be targeted at a limited number of private and public project promoters expected to be able to take on a revolving FI, and capable of preparing and implementing a sustainable investment project. The majority of potential promoters are affected either by debt-capacity constraints (e.g. in the case of hospitals and other public sector promoters) or by technical-capacity constraints (preparation of projects);
- Certain projects present limited revenue-generating capacity (e.g. because of small scale) and so could not be realistically supported by FIs, which are revolving in nature.
- In addition, it has to be noted that Croatia is new to FIs, so it is reasonable to expect that, even if implemented immediately, as suggested in the study, the actual results expected by the FIs would be actually achieved over a certain time frame. This is due to the natural need of “learning by doing” for all the involved actors (stakeholders, financial intermediaries, beneficiaries, etc.) in respect to operational, legal and procedural aspects, apart from the time required to set up the immediate procedural, procurement and legal framework for implementation. It is, therefore, recommended that, in order to facilitate the achievement of the general objectives set out in the OPCC, and of the specific objectives arising from the various national programmes (e.g. NEEAP), the MA consider to pair FIs with the more consolidated grants programme, in particular targeting those categories of beneficiaries and projects which cannot be reached through FIs.
- Given the current circumstances, FIs are not considered a priority for EE interventions in private residential buildings, including multi-apartment buildings and family houses. Consequently, the implementation of such projects by using grant schemes might be necessary before the potential for use of financial instruments could be confirmed. The level of grants support required might differ across projects in the EE sector (depending on the type of buildings), and will need to be established by the MA in the course of OPCC implementation.

6.1.1.2 Sustainable Urban and Territorial Development through infrastructure, renewal and regeneration schemes, sustainable urban transport and other urban investments

- Municipalities face binding limits on borrowing under current laws and regulations (“3%, 20% limits”). As a consequence of this, while lending to the public sector has increased, lending to local governments has remained at a relatively low level.
- Average interest rates from 2008 to 2014 for long-term financing (currency clause) ranged between 6% and 8%, which can be prohibitively high for promoters of low/medium IRR projects, such as SUD projects, ultimately preventing investment in urban development projects with a limited commercial profitability.
- There is limited capacity to initiate and manage complex projects by public sector players;
- A prudent and conservative attitude of the banking system towards projects often perceived as unprofitable, promoted by unsophisticated promoters and subject to heavy regulations and other administrative burdens.
- Urban mobility-related infrastructure projects normally require a balanced mix of revenue-generating and other activities to ensure financial sustainability. The development of such complex capital intensive projects (e.g. including parking lots and commercial floor space) require considerable time and expertise.
- The analysis indicates that there is substantial potential to employ SF in the SUD investment area, particularly if SUD is understood to include wider urban development and regeneration investment. Nevertheless, in the investment areas considered as a priority by the MA, particularly urban transport, the revenue generation mechanisms currently in place to remunerate a potential lender

or investor are limited; furthermore it has to be taken into account that SUD is only partially covered through the OP and, with respect to public transport, currently the project pipeline appears to be very limited. Thus, apart from public lighting, which is proposed to be included in EE (SO 4c4 - Improvement of the efficiency of the public lighting system), the present ex-ante analysis does not appear to provide sufficient evidence to justify the immediate introduction of financial instruments in SUD. Consequently, it is felt that at this stage SUD projects in public transport should be supported through grant funding where appropriate, before the suitability of financial instruments could be confirmed and instruments designed in a way to be attractive to final recipients. The proposed financial products, as well as budgetary allocations between the instruments, could be examined at a later stage in the course of OPCC implementation. At that time, further analysis could be carried out to determine if the introduction of financial instruments is warranted, revising the current ex-ante assessment if necessary. In this context, it is important to note that JASPERS is currently cooperating with the Croatian Ministry of Transport in the development and concrete application of a robust methodology to support the production of local/region transportation plans, which will include a systematic assessment of needs of the transport system and the related investment requirements. Once these plans are produced, they are expected to provide a stronger basis to determine - possibly also in cooperation with JASPERS (and the Ministry of Transport itself) - the best way to employ revolving instruments of the type proposed in the present study to achieve the local and urban transportation objectives under the OPCC.

6.1.1.3 Private-sector investment into RDI in support of an innovative and competitive business and research environment

- The high risk aversion among finance providers operating in Croatia limits the size of envisaged RDI investments.
- The **value of RTDI-driven entities and innovative companies is often hard for banks to assess** due to the fact that they are often more reliant on intangible assets than physical property, and is rarely accepted as collateral for loans.
- **An incomplete range of financial products and services**, exacerbated by an immature venture capital and private equity markets. Given the undeveloped capital market, the main sources of funding for companies in Croatia are banks whose products are expensive (high interest rate and high collateral requirements).
- **Lack of expertise in the RDI commercial sector**, as research in Croatia is predominantly the remit of public research institutions while businesses are more focused on development activities.
- The study indicates that **the scope to employ FIs in the RDI investment area exists**, albeit for what is currently a niche market, which can only address a part of the investment gap, with a focus on a limited range of sophisticated beneficiaries and likely to take a certain time to deliver effective results. Because of this, **RDI projects would undoubtedly benefit from a robust dose of grant support, where appropriate** and whilst the use of FIs consolidates enough to allow stakeholders (e.g. financial intermediaries, final recipients) to progress on their learning curve.
- **Well-designed debt and equity FIs in TO1 should provide broad support for research and innovation.** They should help improve the capacities of enterprises driven by R&D, as well as innovation at all stages of development and throughout the different stages of the research and

innovation cycle. Financial instruments for RDI enterprises should be primarily implemented bottom-up and tailored to their needs and specific objectives.

- While the analysis recognises that currently FIs could only partially address the investment gap, and should be in any event used in conjunction with grants, **delayed implementation may increase the risk that learning-by-doing effects** – which over 2007-2013 proved to be of utmost importance in the experience of financial instruments in new areas of application – **are not timely triggered**. Thus, even if a decision were to be made not to implement immediately FIs in the RSI investment area, it is suggested that **adequate attention should be paid to the development of the proposed FIs**, as well as to the budgetary allocations between the instruments, relatively early in the course of OPCC implementation, possibly through a piloting phase (with a Call for Expression of Interest to raise attention throughout the market and a tranching mechanism to disburse funds in subsequent stages) which could allow to capture learning effects and activate supply-side impacts to stimulate demand from potential beneficiaries while mitigating risks of a failure in the initiative. In addition it has to be noted that Croatia is new to FIs so it is reasonable to expect that, even if it were decided to implement them in the short term through a pilot process, the actual results expected by the FIs will be achieved only over a certain time frame because of the natural need of the above-mentioned learning-by-doing for all the involved actors (stakeholders, financial intermediaries, beneficiaries, etc.) in respect to operational, legal and procedural aspects, beside the time required to set up the immediate procedural, procurement and legal framework for implementation.

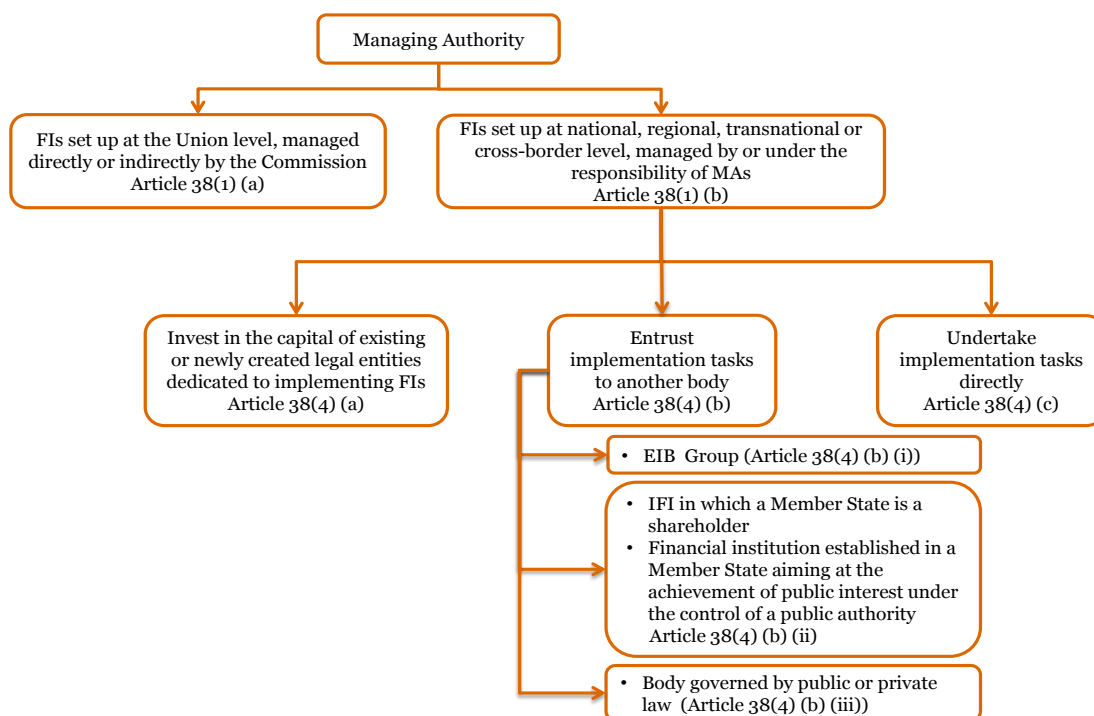
6.1.2 Proposed implementation arrangement for the FI

6.1.2.1 Options for implementation arrangements

A comprehensive overview of the implementation options for the setting up of a financial instrument, as provided in the general ex-ante methodology²⁰², is shown in the figure below.

Figure 29 Implementation options for the setting up of an FI

²⁰² “Ex-ante assessment methodology for financial instruments in the 2014-2020 programming period. General methodology covering all thematic objectives. Volume I”, European Commission, European Investment Bank, PriceWaterhouseCoopers, April 2014.



Source: European Commission, EIB, PwC, 2014.

Financial instruments could be set up at national level (Article 38 (1)(b)) and managed by or under the responsibility of the MA. There are three options that the MA could choose under Article 38(4),:

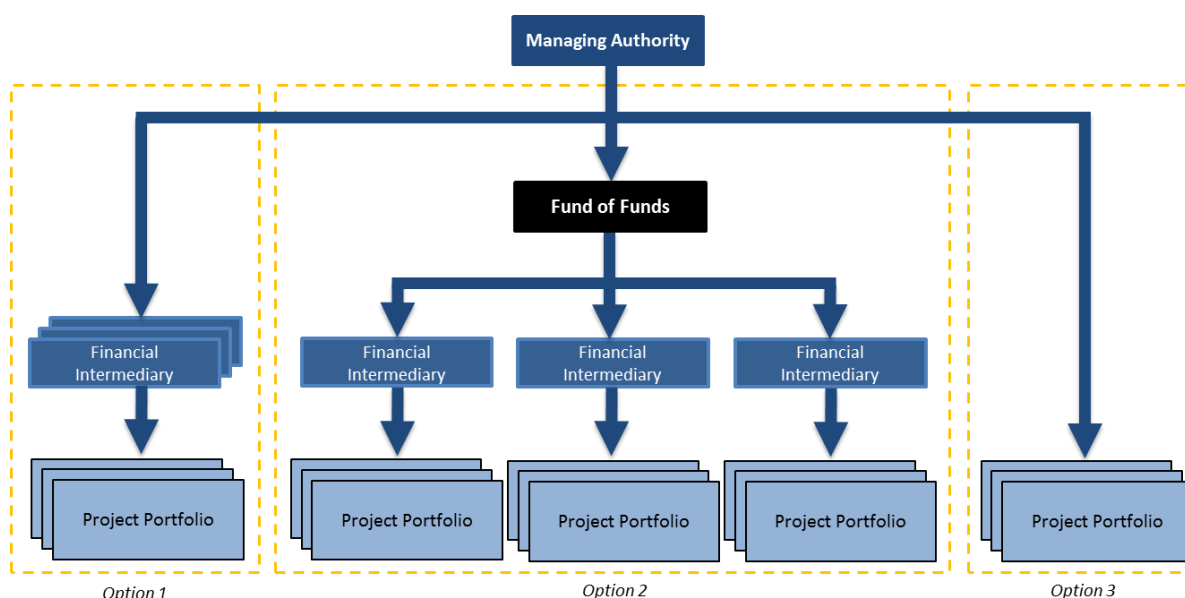
- a) Invest in the capital of existing or newly created legal entities, including those financed from other ESI Funds, dedicated to implementing FIs consistent with the objectives of the respective ESI Funds, which will undertake implementation tasks.
- b) Entrust implementation tasks to:
 - i. The EIB.
 - ii. International financial institutions in which a Member State is a shareholder, or financial institutions established in a Member State, aiming at the achievement of public interest under the control of a public authority.
 - iii. A body governed by public or private law.
- c) Undertake implementation tasks directly for FIs consisting solely of loans or guarantees.

Under options (a) and (b), the MA could also choose the governance structure of the proposed FIs from either a “two-stage” fund of funds structure or a “one-stage” FI with direct contracting of financial intermediaries. Therefore, the implementing option available for a MA are:

1. An FI implemented through one or more financial intermediaries.
2. An FI implemented through a fund of funds structure.
3. Direct implementation of aFI by the MA.

These governance options are presented in the figure below.

Figure 30 : The different possible governance structures for FIs



Each of the following options has several advantages and disadvantages as presented below.

Option 1: Structuring a Financial Instrument without a Fund of Funds

In the case where a single FI is established, a simple financial structure may be the most suitable strategy. Under this scenario the MA would directly feed investment into the selected financial intermediary or intermediaries which would then transfer this into the different eligible projects under this section. The MA would have greater responsibilities and liabilities for the implementation of the FI (e.g. ensuring the selection of the financial intermediary or financial monitoring).

The table below illustrates the main advantages and disadvantages for such a structure.

Table 79: Advantages and disadvantages of a governance structure without using a Fund of Funds

Advantages	Weaknesses
<ul style="list-style-type: none"> When the financial intermediary is an already existing entity, then implementation and operation can be achieved rapidly. MA has direct interaction with the financial intermediary over the implementation conditions. 	<ul style="list-style-type: none"> If multiple FIs are implemented in this form, there may be limited synergy and a loss of strategic vision between them. Multiple FIs in this form could result in a lack of flexibility, and a fragmented monitoring and reporting process. Day by day management activities to be undertaken at MA level.

Option 2: Structuring a Financial Instrument with a Fund of Funds

The second possible option is structuring several FIs together under a Fund of Funds. Based on past experience, this is the **recommended option when dealing with FIs covering several investment areas**. Through the appointment of a body implementing the Fund of Funds, the MA is provided with a robust structure which is well-equipped and used to manage funds and investments according to recognised standards of independence and professional management. The Fund of Funds option also provides greater flexibility for the MA, as it allows funds to be allocated and re-allocated to different sub-funds, based on demand (e.g. EE/RE, urban development, SMEs) and under one governance structure. Under

this structure, the MA first negotiates a funding agreement with the body implementing the Fund of Fund and then the body implementing the Fund of Fund negotiates one or more agreements with financial intermediaries. As noted above, the CPR states that there are several ways to manage such a fund including entrusting management to the EIB or another similar organisation.

The table below illustrates the main advantages and disadvantages of such a structure.

Table 80: Advantages and disadvantages of a governance structure using a Fund of Funds

Advantages	Weaknesses
<ul style="list-style-type: none"> • Delegation of day by day tasks • Possibility for direct appointment of the EIB or national banks to streamline set up (in other cases national public procurement procedure to be followed). • Fund of Funds governance structure facilitates better coordination of multiple funds to prevent overlaps/gaps among investment priorities under OP. • Fund of Funds manager has a good strategic overview of the different fund instruments as a collective, allow for greater flexibility in case of transferring of resources among axis, as well as the consolidation of reporting. • Separate funds offer, by virtue of law, a full segregation between the assets of each -fund, which means that each fund is only responsible for its own liabilities and obligations. 	<ul style="list-style-type: none"> • MA does not have sole control of the implementation of instruments • Terms and conditions for the management of the fund need to be negotiated.

Option 3: MA providing FI support directly to final beneficiaries

The third option provided by Article 38 (4)(c) of the CPR is that the MA undertakes implementation tasks related to the FI directly themselves, rather than using a financial intermediary or a Fund of Funds structure. **However, this option is only available if the envisaged FI consists only of loans or guarantees.** One advantage is that management fees are not chargeable due to the absence of a fund manager/financial intermediary, although some fees may be required, if the MA is expected to provide TA services. This option would give the MA a bigger role, more responsibility, but also more liability (e.g. monitoring and reporting), which could prove burdensome for an MA with less experience and/or in-house capacity.

The table below illustrates the main advantages and disadvantages for such a structure.

Table 81: Advantages and disadvantages of direct funding from the MA

Advantages	Weaknesses
<ul style="list-style-type: none"> • Possibility to draw non-grant finance from ESIF without setting up a dedicated FI structure. • May lead to quicker establishment and operation of funding activities provided the MA possesses the necessary capacity. • Greater direct control on operations. • No management fees to be paid, unless safor TA services 	<ul style="list-style-type: none"> • If MA does not possess the necessary capacity and expertise, the establishment and operation of the FI could be problematic. • Limited synergies with other FIs set up in the same MS. • Greater audit risks for the MA (also in regard to ineligible expenses). •

6.1.2.2 Proposed implementation arrangement

Taking into consideration the conclusions of the analysis, it is believed that the optimal delivery structure for the implementation of FIs supported by the OPCC 2014-2020 by the Croatian MA would be through the creation of a “Fund of Funds (FoF) implementing entity”, which would coordinate and implement the establishment of three Funds of Funds (FoF) for each priority investment area: EE, SUD and RDI. No FIs have been recommended for ICT.

Proposed implementation structure

The overall objectives of the MA to implement FIs in these three priority investment areas are:

- To take advantage of the revolving mechanism of FIs. The use of FIs enables the MA to create a financial tool to recycle the financial resources slated for the supported projects, creating an independent source of funding that will be additional to other resources which could be available in future programming periods.
- To use ERDF resources for leveraging additional public and private funding for eligible investments, including private capital and/or public resources from regional and national sources.
- To promote long-term development and build the capacity of local and regional administrations to develop and implement projects that would be financially self-sustainable with long-term economic, social and environmental benefits but, without FIs, would likely be not pursued

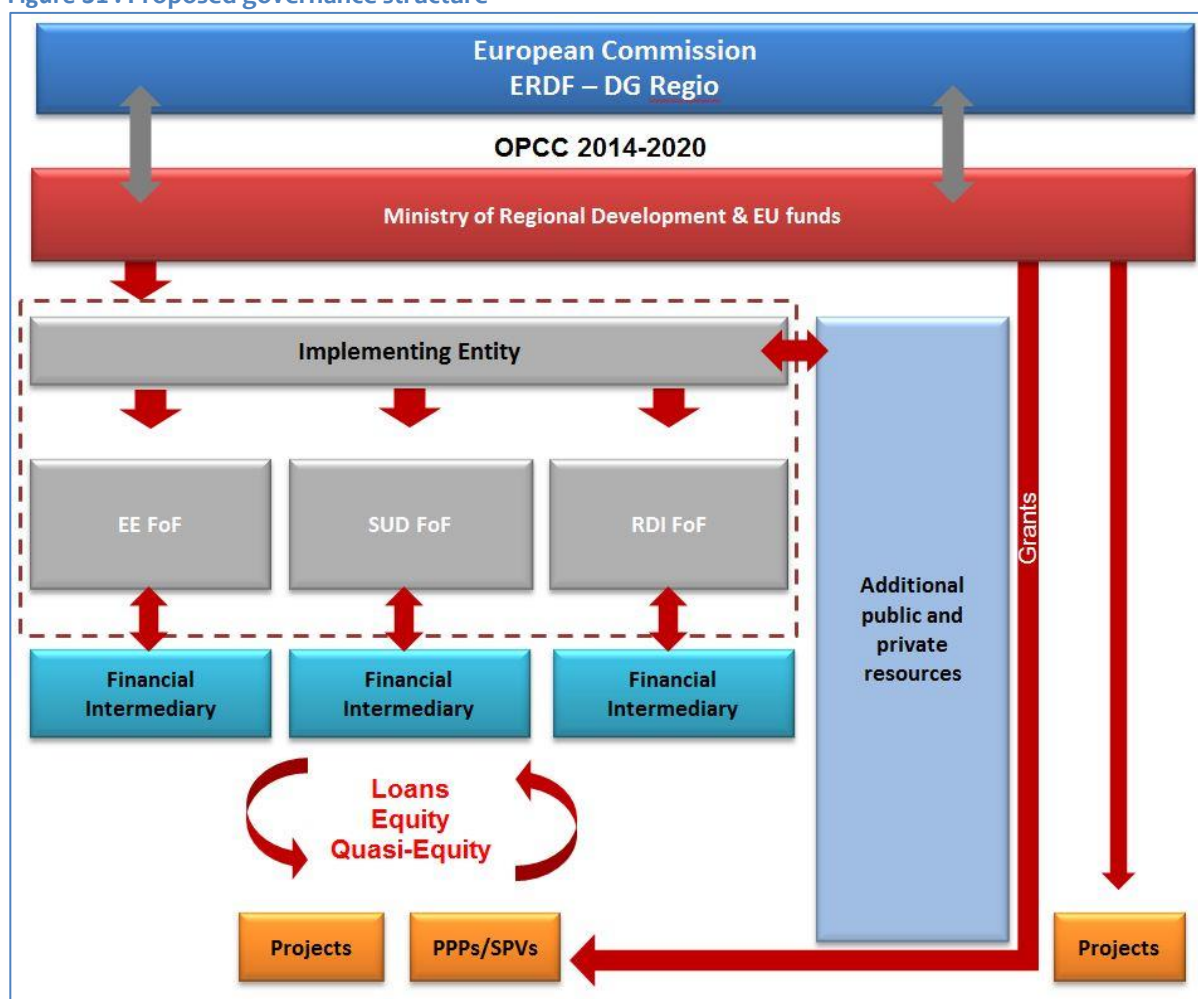
A **double-layer structure** is proposed for the implementation of FIs in Croatia:

1. An **FoF Implementing Entity**: it is proposed that the responsibility of coordinating and implementing the establishment of the dedicated sector-specific FoFs is given to an “FoF implementing entity”. Its function would be to host the tasks related to the establishment and joint operation of the three sector-specific FoFs within a single organisational framework. This should allow the MA to delegate complex and specialised tasks related to FIs, and achieve economies of scale in coordinating and monitoring FoF operations, while maintaining a unitary strategic approach. The precise legal nature of the Implementing Entity should be determined with a view to minimising transaction and setting-up costs.
2. **Three dedicated Funds of Funds**: each of the three FoFs would be the direct recipient of ESI funds, responsible for selecting and signing operational agreements with financial intermediaries, and monitoring and controlling FIs implementation. Each FoF is related to a single TO in order to simplify monitoring and reporting of expenses, and to facilitate re-balancing of resources among specific objectives. The three funds could be established as a separate block of finance with dedicated bank accounts on the balance sheet of the Implementing Entity.
 - a. EE FoF: to support EE in public and private commercial buildings, industrial production processes, and public lighting.
 - b. SUD FoF: to develop and improve environmentally-friendly (including low-noise) and low-carbon transport systems, including multimodal links to promote sustainable regional and local mobility.
 - c. RDI FoF: to promote investment in RDI, develop links and synergies between enterprises, R&D centres, and the academia.

Governance of the proposed implementation structure (key roles and responsibilities)

- **Managing Authority:** responsible for the management of resources under the OPCC. Active MA participation in the implementation process is required to ensure that an FoF deploys the FIs in a way that is consistent with the OPCC objectives and performance criteria. In particular, the MA and the intermediate bodies (e.g. ministries) would take direct responsibility for the operations of the Implementing Entity and of each FoF through the Investment Committee.
- **Investment Committee:** the supervisory body in charge of FoF management, consisting of representatives of the MA, intermediate bodies (e.g. ministries in charge for the three priority areas) as well as co-investors (if applicable). A single Investment Committee could supervise the operation of the Implementing Entity and each sector-specific FoF. A Strategic Committee could also be set up to supervise the investment strategy implementation, and to separate policy supervision from credit decisions.
- **FoF manager:** delegated by the Implementing Entity to carry out an FoF investment strategy, specifically:
 - Run calls for expression of interest to select financial intermediaries.
 - Review business plans submitted by financial intermediaries.
 - Negotiate operational agreements with financial intermediaries.
 - Monitor and control operations according to the terms and conditions of the operational agreement.
 - Report to the Investment Committee on the progress of operations.
 - Provide treasury management of the funds.
- **Financial Intermediaries:** selected by the FoF manager. Responsible for implementing investment strategies in the priority areas by investing in projects and channelling investments to final recipients. Additional financing provided by the financial intermediaries would provide FIs leverage and helps to align incentives of the intermediaries with the MA. Financial intermediaries ensure that the financed projects meet the eligibility criteria and are socio-economically and technically viable. In view of that, the financial intermediary must analyse the associated risks, the financing structure and the income foreseen for the parties involved in the Projects in order to establish the conditions required for the participation of the fund in the financing of these projects.

Figure 31 : Proposed governance structure



Source: EIB, 2015

The MA has three options **of managing a Fund of Funds to choose from**: using an existing entity, a newly-created entity, or direct MA management. The following elements of the Croatian context suggest that the Croatian FoF structure could be **managed by an existing entity** with significant experience in FIs at national or international level, and with proven managerial and financial capacity. Key points to consider in this context include:

- The complexity of FI management.
- MA's limited first-hand FIs experience.
- The need to coordinate several line ministries (Intermediate Bodies).
- Limited experience and competences of the key market players (both at project-promoter and Financial Intermediaries levels) to design, assess, implement and finance projects in the three areas concerned.

Some of the key issues involved in the selection of Financial Intermediaries are discussed in detail in Section 6.1.3 below.

6.1.2.3 Possibility of combining FIs and other forms of support (including TA)

The CPR describes two types of “combination of support from a financial instrument with other support”:

1. Single operation²⁰³:

- Financial instruments and other forms of support (including technical assistance, interest rate subsidies, and guarantee fee subsidies) may be combined under Article 37(7) CPR in a single financial instrument operation²⁰⁴.
- In this case, a financial instrument and other forms of support are part of the same operation, co-financed by an ESI Fund under a priority axis (or measure in EAFRD) of an ESIF programme.

2. Separate operations:

- Support from a financial instrument may be combined at the level of final recipient under Article 37(8) CPR with support from another ESI Funds priority or programme or another EU financed instrument;
- In this case, the other form of assistance does not constitute part of the financial instrument operation. The combination of the financial instrument and of other forms of support coming from another priority, programme or instrument takes place within two separate operations, each having distinct eligible expenditure.

Under the single operation route (combination type 1. above), the conditions that need to be fulfilled are:

- The other forms of support (including technical assistance, interest rate subsidies, and guarantee fee subsidies) must be directly related to the financial instrument;
- The financial instrument and the other forms of support (including technical assistance, interest rate subsidies, and guarantee fee subsidies) must target the same final recipients;
- The applicable state aid rules must be respected;
- Separate records must be maintained for each form of support;
- The need for other forms of support (including technical assistance, interest rate subsidies and guarantee fee subsidies) to be combined within the financial instrument operation and the estimate of the ESIF programme contribution for such form of support must be covered by the ex-ante assessment (Article 37(2)(a)(e)CPR);
- Insofar as Article 37(9) CPR allows for the support provided through a financial instrument and another instrument to cover the same expenditure item, the sum of all forms of support combined must not exceed the total amount of the expenditure item concerned;
- In accordance with Article 37(9) CPR, other forms of support must not be used to reimburse support received from financial instruments;
- In accordance with Article 37(9) CPR, financial instruments must not be used to pre-finance other forms of support.

Under the separate operation route (combination type 2. above), the conditions that need to be fulfilled are:

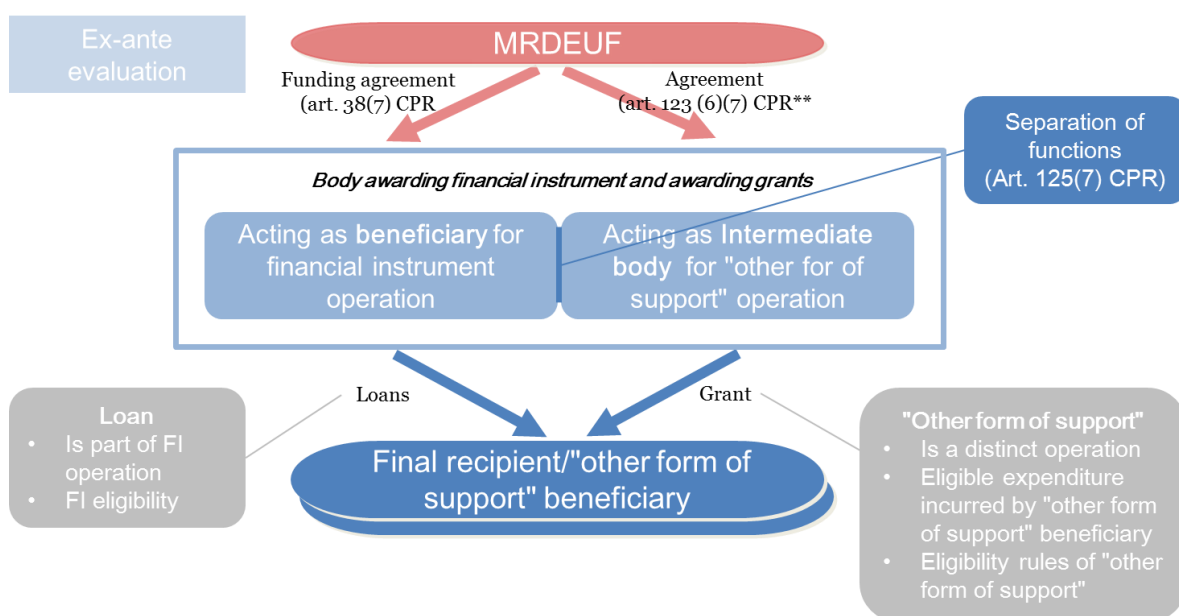
²⁰³ A project, contract, action or group of projects selected by the managing authorities of the programmes concerned, or under their responsibility, that contributes to the objectives of a priority or priorities; in the context of financial instruments, an operation is constituted by the financial contributions from a programme to financial instruments and the subsequent financial support provided by those financial instruments. In the case of financial instruments organised through a fund of funds, an operation is constituted by the contribution to the fund of funds, subsequent contributions to financial intermediaries and subsequent investments in final recipients.

²⁰⁴ An operation is constituted by the financial contribution from a programme to the financial instrument and the subsequent financial support provided by this financial instrument to final recipients.

- The ESIF financial instrument support to final recipient is part of an operation with eligible expenditure distinct from the other sources of assistance;
- State aid rules are respected, in particular on cumulation of aid;
- Separate records are maintained for each source of assistance. In the case of ESI Funds this means that separate records and supporting documents for the audit trail should be maintained for the financial instrument operation (down to the level of final recipient) and for the other operation;
- Insofar as Article 37(9) allows for the support provided through a financial instrument and another form of support to cover the same expenditure item, the sum of all forms of support combined must not exceed the total amount of the expenditure item concerned;
- Other forms of support must not be used to reimburse support received from the financial instrument;
- The financial instrument must not be used to pre-finance the other form of support.

The following figure illustrates the scheme presented above:

Figure 32 - Provision of support and FI within two separate operations by the same body



Source: PwC Elaboration, on the basis of guidance note by the EC on FI

As it will be illustrated in the next paragraphs, such a possibility will be particularly relevant to the operation on EE, where the financial performance expected from projects may limit the impact of FIs, but the combination with grants can make the investment financially sustainable.

The table below presents the main advantages, disadvantages and (when possible) mitigation strategies of the combination of investment resources as grants and FIs (option 2).

Table 82: Advantages and disadvantages as well as mitigates of combining investment resources as grants and FIs

Advantages	Disadvantages	Mitigating Factors
<ul style="list-style-type: none"> • Possibility to improve the financial viability of 	<ul style="list-style-type: none"> • Longer time required to set up the instrument; 	<ul style="list-style-type: none"> • Selection of an expert fund manager;

Advantages	Disadvantages	Mitigating Factors
<ul style="list-style-type: none"> deep renovation projects; Stimulate final recipients to achieve higher energy savings (if they are linked to the percentage of obtainable grant). 	<ul style="list-style-type: none"> Need for coordination/alignment with structure providing investment resources as grants, which could create red tape in both the setting-up and subsequent management of the instrument; Potential higher management costs due to the higher fee to be paid to the financial intermediary who has additional duties to be carried out (e.g. more onerous verification of the project bankability, additional separate reporting required); Beneficiaries could potentially be discouraged by more time-intensive tendering procedure. 	<ul style="list-style-type: none"> Implementation of a governance structure that could coordinate the two funding mechanisms (FI and grants) aligning practices and developing similar documentations; The selection/appointment of a capable financial intermediary able to handle the different reporting requirements; The development of common and standardised procedures for the selection of interventions for FI and grants.

6.1.3 Selection of a financial intermediary

According to the regulatory framework, the selection of the financial intermediary should normally be carried out using a public procurement procedure. In this case, the selection of financial intermediaries consists of two steps:

- a. An awareness-raising campaign among financial sector stakeholders, such as commercial banks, investment banks, VC, private equity funds, in order to present the key elements of the investment strategy in terms of the products to be offered and the kind of partnership that the FoF is looking to establish with them. This phase is important both for generating interest among potential financial sector tenderers, but also because it will allow the MA and the FoF manager to better understand the actors, capabilities and constraints of the market. We can consider this phase a preliminary market analysis.
- b. Following this phase, the FoF manager will be responsible for publishing a “Call for Expression of Interest” to select the financial intermediaries for the investment management, an example of which is given in Annex 13. Key elements of the selection process are outlined below:
 - I. A call for expression of interest should be open to the largest number of applicants possible, including commercial banks, investment banks, VC and equity funds with a minimum rating of BBB/Baa2 provided by acknowledged Rating Services (e.g. Standard & Poor's, Moody's Investors Service Inc. or Fitch Ratings Ltd);
 - II. For the expression of interest, financial intermediaries should be required to present a business plan, laying out how the intermediaries intend to operationalise the elements of the investment strategy, the terms and conditions of the products they intend to offer, the magnitude of their own financial contribution, and their relevant experience and background knowledge to demonstrate their ability to manage the received funds and select and invest in projects;
 - III. The provisional financial forecasts and the operations budget of the FI, which should be submitted according to a model defined by the MA (or the FoF manager) and on the evidence of a concrete project pipeline already identified and aligned with the eligibility criteria set in the investment strategy;

- IV. The selection process and methodology for the identification and assessment of projects; an initial project pipeline which they have identified on the ground;
- V. Other elements, such as management, administration and accounting procedures; details of the relevant management fees; governance structure of the FI including internal control and risk-management procedures.

6.1.4 Summary of the proposed structure

Based on the considerations made in the previous sections, the recommended option for delivery is the suggested double-layered structure with three dedicated FoFs for each priority investment area: EE, SUD and RDI²⁰⁵.

The overall objectives of the MA to implement FI in these three investment areas are:

- To take advantage of the revolving nature of FIs.;
- To leverage on ERDF resources by attracting additional public and private funding to worthwhile investments;
- To promote the long-term development and the capacity to develop and implement projects among local and regional administrations and the private sector partners.

The main characteristic of the funds is presented in the table below:

- Column 1: priority investment area in which a dedicated fund is envisaged;
- Column 2: the target area, namely the specific market segment for which the FI provides support;
- Column 3: the specific objectives envisaged in the OPCC relevant for the related priority investment area;
- Column 4: the funding allocations for each specific objective according to the OPCC;
- Column 5: the quantified value of demand;
- Column 6: the proposed contribution amounts to the FI, both at the OPCC and financial intermediary level;
- Column 7: the financial products envisaged for each fund.

²⁰⁵ Indications on the governance structure are explained in greater detail in chapter 6.2.

Table 83: Composition of the proposed FoF by investment area

FOF	Target investment area	Specific objective (SO)	Current OP allocation per SO (EUR)	Quantification of demand in the 2016-2022 period		Proposed envelope		Products
				Policy level (EUR)	Concrete pipeline (EUR)	OPCC contribution (EUR)	Financial intermediary contribution (EUR)	
EE and RE in buildings, industrial production processes and public lighting	Public residential and non-residential buildings	4c1	211.81 million	505 million	85 million	50-100 million	50-100 million	<ul style="list-style-type: none">• MT/LT Soft loans• Equity for ESCOs• Grant in the form of TA
	Private (commercial) buildings	4b2	40 million	1.08 billion	46.5 million			<ul style="list-style-type: none">• MT/LT Soft loans• Equity for ESCOs• Grant in the form of TA
	Improvement of industrial production processes	4b1	60 million	700 million ²⁰⁶	10.2 million			<ul style="list-style-type: none">• MT/LT Soft loans• Equity for ESCOs• Grant in the form of TA
	Public lighting system	4c4	20 million	58.8 million	1.05 million			<ul style="list-style-type: none">• MT/LT Soft loans• Equity for ESCOs• Grant in the form of TA
Total (a)	-		331.81 million	2.36 billion	142.8 million	100-200 million		-
Sustainable Urban and Territorial Development	Urban public transport	7ii2	170 million	340 million ²⁰⁷	80.5 million	50-100 million	50-100 million	<ul style="list-style-type: none">• MT/LT Soft loans• Equity for PPPs/SVPs• Grant in the form of TA
Total (b)	-		170 million	340 million	80.5 million	100-200 million		-

²⁰⁶ Please consider that this estimate includes all improvement in industrial production processes and not only referring to energy efficiency.

²⁰⁷ Please note this is an indicative estimate and should not be considered a value at policy level.

FOF	Target investment area	Specific objective (SO)	Current OP allocation per SO (EUR)	Quantification of demand in the 2016-2022 period		Proposed envelope		Products
				Policy level (EUR)	Concrete pipeline (EUR)	OPCC contribution (EUR)	Financial intermediary contribution (EUR)	
Research Development and Innovation	Private-sector investment into RDI	1b1 and 1b2	330.47 million	0.63 – 1.90 billion	102 million	30-50 million	30-50 million	<ul style="list-style-type: none"> • MT-LT soft senior loans • Mezzanine financing • Equity • Grant in the form of TA
Total (c)	-		330.47 million	0.63 – 1.90 billion	102 million	EUR 60-100 million		-
Total (a+b+c)	-		832.28 million	3.31-4.59 billion	325.3 million	EUR 260 – 500 million		-

Details of the investment strategy for the three priority investment areas are described in the following paragraphs, including:

- The proposed structure with details of the fund operation (number of financial intermediaries involved, etc);
- Geographical coverage;
- Financial products;
- Final recipients: it is important to note here that with regard to the specification of beneficiaries, target groups and final recipients, the MA should take special care to ensure compatibility with the use of FIs within the OPCC. More specifically, the “beneficiaries” in the meaning of the CPR are the bodies implementing the FI (e.g. financial intermediaries), whilst the final recipients are legal or natural persons receiving financial support from a financial instrument.
- Eligible projects with details of the project typology to be supported by the FI;
- Eligibility criteria for projects;
- Potential envelope with details of the fund’s budget and an explanation thereof.

6.1.5 *Proposed investment strategy*

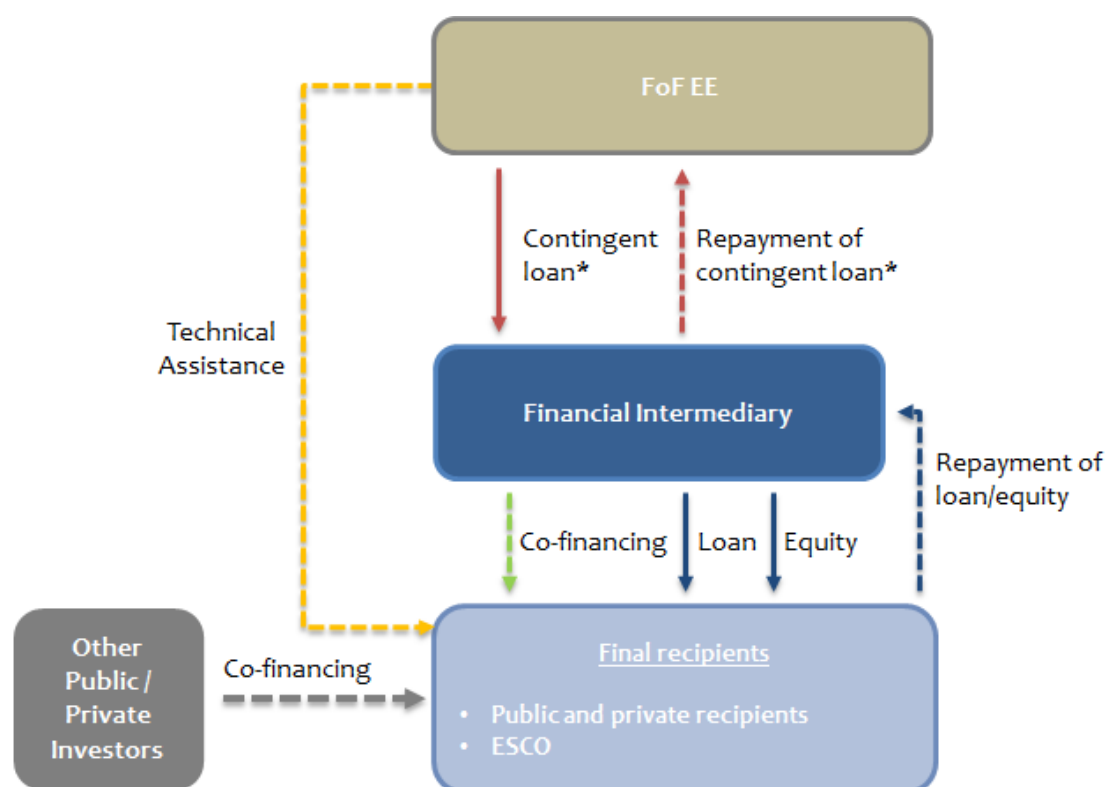
6.1.5.1 *Energy Efficiency and the use of renewable energies*

Proposed structure

The fund’s purpose is to invest in improving EE of public and private commercial buildings and of public lighting.

For descriptive purposes, the figure below illustrates the proposed structuring of an FI for EE/RE and the proposed financial products.

Figure 33 : Proposed structuring and financial products of the FI for EE/RE



* Contingent loan represents the OP resources invested in FIs and for which repayment is expected

Source: PwC elaboration, 2015. Please refer to chapter 6.1.2.2 for the description of the roles of the different bodies involved in the proposed structuring of the FI.

Geographic coverage

Given that no major regional difference has been revealed with regard to the scale of the issues of access to finance, any such envisaged FI should be **set up at national level** to achieve the necessary critical mass.

Proposed Financial Product

The interventions to be deployed by the FI include both financial products and TA.

As for the financial product²⁰⁸, these are:

- Long term soft²⁰⁹ loans for private and public entities as well as for ESCOs;
- Equity for ESCOs.

The table below presents the key features of financial products to be offered in Croatia under the EE fund.

²⁰⁸ Please note that, as not emerged during the market analysis, no preferential remuneration is envisaged for co-investors.

²⁰⁹ Soft loans are loans provided at the best possible market conditions provided that state aid rules are respected.

Table 84: Key characteristics of financial products

Financial product	Pricing	Maturity	Advantages	Final recipient
LT soft loans	0-2% (average pricing offered in similar initiatives)	Up to 10-15 years, with possible grace period during the investment phase	<ul style="list-style-type: none"> Alleviate the lack of long term financing registered in the supply side analysis; Provide financing at the best available market conditions (can arrive to 0% interest rate); Unlock spending by public administration which is now under borrowing restrictions²¹⁰ 	<ul style="list-style-type: none"> Public bodies / institutions / bodies (owner of public buildings/public assets).
LT soft loans	Lowest possible market values (e.g. 3%)	Up to 5-10 years, with possible grace period during the investment phase	<ul style="list-style-type: none"> Alleviate the lack of long term financing registered in the supply side analysis; Provide financing at the best available market conditions: yearly interest rate reduced by 2%-3% on average; Reduce collateral requirements 	<ul style="list-style-type: none"> Enterprises (SMEs, large Enterprise, ESCOs).
Equity	FI's target return on equity could be expected to be lower than the one sought by market investors ²¹¹ .	Exit strategy to be set on case by case rule.	<ul style="list-style-type: none"> Increase the capitalisation of ESCOs facilitating their access to credit; Provide a financial product which is not currently available in Croatia for ESCOs; Boost the confidence levels of potential equity investors (experience in other countries has shown that equity investments in SMEs (ESCOs included) through public assistance schemes tend to attract private investors, especially in those countries where raising capital remains a challenge) 	<ul style="list-style-type: none"> ESCOs

Final recipients

Eligible final recipients should include:

- Public bodies and institutions, i.e. the owners of public buildings and public assets;
- Regional and local authorities, including public service companies;
- Enterprises (including SMEs, larger enterprises and ESCOs).

²¹⁰ As laid down in the relevant legislation, the expenditure of resources from OPs (including the sums to be allocated through FI and with the exception of co-financing originating from State) are not subject to the Stability Pact. Therefore, such financial product could potentially bring liquidity to municipalities, including those subject to the stability pact, which generally limits the borrowing from municipalities.

²¹¹ Basing on existing examples, expected profits for this kind of investment from the market are around 10-20%, while the FI could accept around 5% IRR provided that state aid rules are respected.

For potential private sector recipients, the primary industries to be targeted include: iron and steel, non-ferrous metal, chemical, glass, pottery and building material, ore-extraction, textile, leather and clothing, paper and printing, engineering and other metal and other industries **excluding food, drink and tobacco industry**.

Eligible projects

Eligible projects include: **EE/RE in public and private (commercial) buildings, improvements of EE in public lighting systems**, and EE/RE projects in **industrial production process**. In this regard, potential projects would have to comply with the eligibility criteria under **OPCC SO 4b1, 4b2, 4c1 and 4c4**, supporting the following:

Building sector

- Investments for the **renovation of existing buildings** for which improving EE is their main aim.
- Investments in **new buildings** to achieve an EE standard of class A or B; funds can finance the additional cost in relation to the minimum standards (i.e. class C).

Public lighting systems

- Measures to improve efficiency of public lighting systems, i.e. replacement of the current lights with more efficient ones, including a wider introduction of the LED technology.

Industrial production processes

- Investments to introduce EE **measures in industrial production processes**
 - Development of infrastructure for RES in manufacturing industries and the service sector (tourism and trade), including a switch from conventional to alternative (RES) energy;
 - “Soft measures”- introduction of systematic energy management, performance of energy audits, control of analyses of energy consumption, preparation of plans for more efficient management of energy, institutional and organisational assessment and proposal for optimising business processes in terms of energy savings;
 - Infrastructure investments such as smart metering and physical refurbishment of objects that will contribute to achieving EE targets, improvement of the currently used technologies, implementation of pilot projects.

Eligibility criteria

Projects to be eligible should:

- Be compliant with investment strategy;
- Have received a validation from the MA of being compliant within the criteria specified within the OPCC;
- Offer an acceptable return of investment in line with market standards following the contribution of FI;
- Have not already been completed;
- Respect feed-in policy regulations. Specifically, according to the OPCC there cannot be a duplication of feed-in tariffs and ESIF support: *“When it comes to the RES production that can be applied for feed-in tariff it is important to note that beneficiary will not be allowed to apply for feed-in tariff (for the produced RE) and ESIF support in parallel, i.e. if it applies for the ESIF under this OP it will not be granted feed in tariff and vice- versa”*.

Potential envelope

The NEEAP sets ambitious targets for energy efficiency improvement for both buildings and public lighting. As identified in the gap analysis, the demand for EE financing (estimated at ca. EUR 2.38 billion²¹²) far exceeds the supply of financing in this sector, considering both the overall budget to be made available by the OPCC for this specific intervention, and the estimated supply of financing made available by banks and specialised funds (e.g. EPEEF) over the 2014-2020 programming period.

Findings from interviews and desk research reveal a potential pipeline of projects worth a total value of ca. **EUR 143 million**. The **value of the project pipeline identified** is conservative to the extent that it was calculated during a 6-month scoping period and that although some of the identified project promoters may lose interest in an FI or find the required financing in the period leading to the establishment of a FI, it can be assumed that just as many if not more projects looking for financing will emerge in the meantime.

Stakeholders reported the demand to be supply-driven, thus it could be expected that more projects would be developed once suitable financing products are available, despite the availability of finance being not the only element that was reported as hindering the development and realisation of projects.

Against this backdrop, a **conservative contribution from the OPCC to the EE/RE fund is recommended, of ca. EUR 50-100 million of ERDF funds**. Such amount can be **coupled with an additional contribution from the financial intermediary** of EUR 50-100 million, arriving at a **total envelope of EUR 100-200 million for the EE fund**.

Analysis of risks and proposed mitigation measures

The risks connected with the allocation of OPCC resources in the FI for investing in EE/RE intervention are analysed in terms Strength, Weaknesses, Threats and Opportunities of the envisaged investment strategy. Relevant mitigation measures are proposed.

²¹² Please consider that this estimate includes all type of improvement in industrial production processes and not only those referring to energy efficiency.

Table 85 SWOT analysis- Energy Efficiency and renewable energy in buildings, industrial processes and public lighting

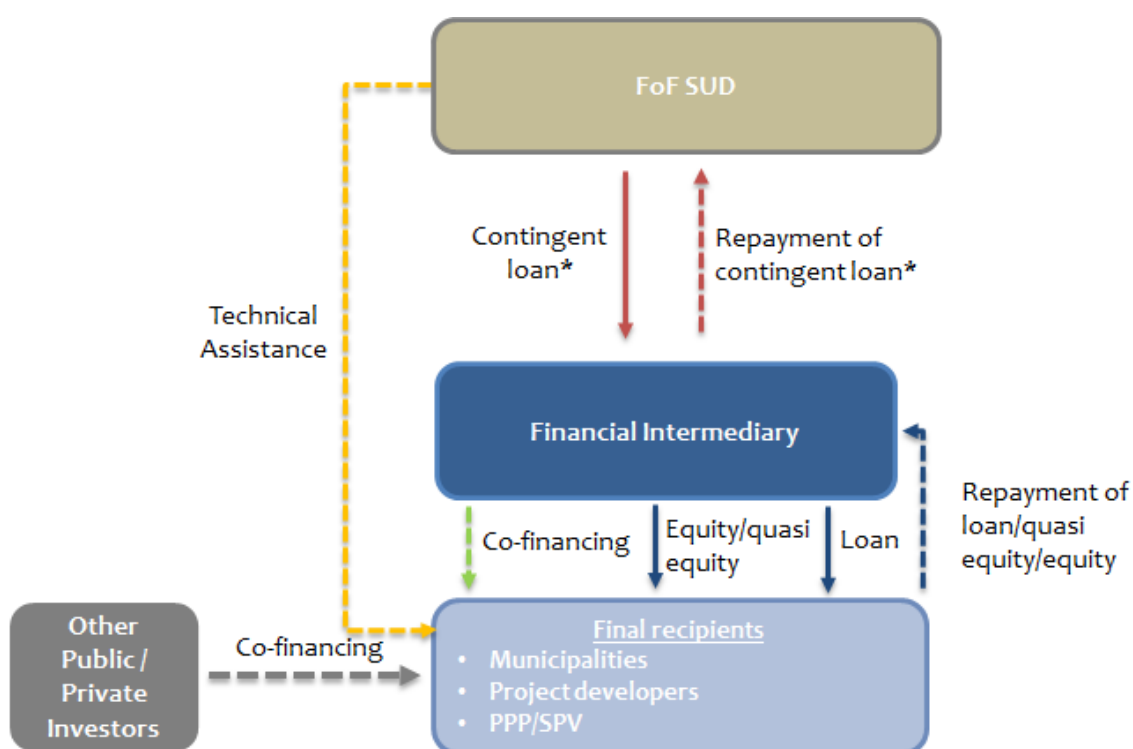
Strengths	Opportunities
<ul style="list-style-type: none"> • Relatively consolidated structure (i.e. FoF) proven to be successful in the past; • Allows for a mobilisation of funding from commercial banks and eventual specialised funds (e.g. EPEEF), potentially using currently existing implementation structure and networks; • The LT term nature of financial products offered allows for the repayment of investment by means of cash saving due to the energy savings occurred; • The equity product offered, might capitalise ESCO companies allowing them for an easier access to financing; 	<ul style="list-style-type: none"> • Given the current high liquidity of Croatian banks, there might be an high interest from them to participate in the programme; • As the lending offered by FIs is not subject to stability pact limitation which currently limits the borrowing potential of municipalities (“3%, 20% limits”), FIs could trigger additional investment in EE in the public sector; • Increased business of EE equipment and technology providers; • Increased interest and activities from ESCO companies which are now blocked by an asset based culture of financing adopted by banks; • The favourable pricing conditions offered by FIs might relaunch investment in enterprises currently affected by the economic crisis.
Weaknesses	Threats
<ul style="list-style-type: none"> • Bankability of identified project pipeline has not been assessed • The project pipeline is expected to be developed once the FI is established and products are available in the market. However, limited focus has been detected both at the level of financial intermediaries and public and private project promoters to develop, assess and implement EE/RE projects 	<ul style="list-style-type: none"> • Given the novelty of the instrument, banks might be (at least initially) reluctant to participate in the programme; • Potentially competition between the FI and the OPCC grant financing, unless closely monitored and coordinated by responsible bodies and unless clear demarcation between grant type of projects and FI type is provided; • The low experience of the MA in FIs might hamper a smooth programme implementation.
Mitigation measures	Mitigation measures
<ul style="list-style-type: none"> • TA provided by means of grants from the FI might support project preparation which is now one of the key constraints hampering project development • Criteria set in the selection of financial intermediary will force major players in the market to join forces to propose the best professionals as team members. 	<ul style="list-style-type: none"> • Create a clear demarcation among different financing sources as suggested in chapter 5.2.5. • Potentially, FI could play the role of a one stop shop for beneficiaries, rationalising the current available finding options. • The FoF structure is proposed to limit impacts of the low experience of the MA. • An experienced FoF manager will stimulate the interest of financial intermediaries toward the initiative, as happened in the 2007-2013 programming period in most of the European countries.

6.1.5.2 Sustainable Urban and Territorial Development through infrastructure, renewal and regeneration schemes, sustainable urban transport and other urban investments (SUD fund)

Proposed structure

This fund would be dedicated to finance initiatives in the SUD sector, and specifically in the sectors of urban mobility. The figure below illustrates the proposed structuring of an FI for SUD sector.

Table 86: Proposed structuring and financial products of the FI for SUD



* Contingent loan represents the OP resources invested in FIs and for which repayment is expected

Source: PwC elaboration, 2015. Please refer to section 6.1.2.2 for the description of the roles of the different bodies involved in the proposed structuring of the FI.

Selection of financial intermediary

Financial intermediaries could include public-private promotional banks, or commercial banks with or without branches specialised in local financing. In the EoI, specific requirements related to the distribution capacity of the intermediaries should be considered. As already illustrated, financial institutions participating in the selection process should be required to demonstrate relevant experience and background for managing the received funds, selecting and investing in projects.

A maximum of two financial intermediaries could be selected. The awareness campaign and market check process should help to clarify which the optimal approach to this issue.

Geographic coverage

Given that no major regional difference has been revealed with regard to the scale of the issues of access to finance, any such envisaged FI should be **set up at national level** to achieve the necessary critical mass.

However, as in this sector the Croatian authorities intends to adopt the ITI approach, complementarity between them and the FI shall be ensured. In particular, it could be envisaged that projects that cities want to finance through ITI, could not benefit from the FI.

Proposed financial products

The financial products envisaged under this fund include²¹³:

- *LT soft loans to municipalities*, designed to finance:
 - The development phase of projects (i.e. set-up, capital investment and installation costs). Investments in the urban development can be quite complex due to their high price tag and very long project life.
- *Equity and quasi-equity* for Public Private Partnerships (PPP) and Special Purpose Vehicle (SPV). The PPP procurement model is typically able to leverage considerable outside financing for urban development projects. Tranches of equity can be exchanged directly with the promoter or an SPV (*equity product*), or convertible loans (*quasi equity product*) can be offered to the SPV.

The table below presents the key features of financial products to be offered in Croatia under the EE fund.

Table 87: Key characteristics of financial products

Financial product	Pricing	Maturity	Why there are suited	Final recipient
LT soft loans	0-2% (average pricing offered by JESSICA in similar initiatives)	Longer maturity (up to 15 years) with possible additional grace period	<ul style="list-style-type: none"> • Alleviate the lack of long term financing registered in the supply side analysis; • Provide financing at the best available market conditions, in a market characterised by relatively high interest rates and heavy collateral requirements; • Unlock spending by public administration which is now under borrowing restrictions²¹⁴; • Reduce some of the uncertainty associated with investment projects during the construction phase, which can be quite complex due to their high price tag and very long project life. 	<ul style="list-style-type: none"> • Regional and local authorities, public service companies; • Local authorities or companies established by local authorities which manage and organize public transport services; • Consortiums of public transport managers; • Consortiums of local (transport) authorities;
LT soft loans	Lowest possible market values (e.g.	Longer maturity (up to 5-10 years)	<ul style="list-style-type: none"> • Alleviate the lack of long term financing registered in the supply side analysis; • Provide financing at the best available market conditions, in a market 	<ul style="list-style-type: none"> • Project developers.

²¹³ Please note that, as not emerged during the market analysis, no preferential remuneration is envisaged for co-investors.

²¹⁴ As laid down in the relevant legislation, the expenditure of resources from OPs (including the sums to be allocated through FI and with the exception of co-financing originating from State) are not subject to the Stability Pact. Therefore, such financial product could potentially bring liquidity to municipalities, including those subject to the stability pact, which generally limits the borrowing from municipalities.

	3%)	with possible additional grace period	characterised by relatively high interest rates and heavy collateral requirements.	
Equity	It is reasonable to assume that the FI's target return on equity will be lower than the one sought by market investors ²¹⁵ .	n.a	<ul style="list-style-type: none"> • Increase the capitalisation of SPVs facilitating their access to credit; • Boost the confidence levels of potential equity investors (experience in other countries has shown that equity investments in SMEs (ESCOs included) through public assistance schemes tend to attract private investors, especially in those countries where raising capital remains a challenge) • FIs can help to augment the investment process by coordinating investment strategies, connecting international investors, and taking on some of the risk during the construction phase 	<ul style="list-style-type: none"> • Project developers

Final recipients

- Regional and local authorities, public service companies;
- Local authorities or companies established by local authorities which manage and organize public transport services;
- Consortia of public transport managers;
- Consortia of local (transport) authorities;
- Project developers.

Final recipients can participate both individually (e.g. single beneficiary), in the form of a PPP (e.g. municipalities and real estate developers) or via an SPV.

Eligible projects

Eligible projects in **urban public transport** would have to comply with the eligibility criteria under **OPCC SO7ii2**, which foresees the following type of actions to be supported:

Urban public transport

- Development of infrastructure for public transport companies dedicated to implementing energy efficient solutions. Infrastructure investments will be primarily focused on public transport and low/zero emission modes, and will be accompanied by complementary mobility management policies and interventions, together with appropriate ITS installations.
- Development of park & ride infrastructure and systems;
- Purchase and modernization of passenger rolling stock (trams, eco-buses, light rail) with low CO₂ emissions for public transport operators;
- Introduction of bicycle sharing system;

²¹⁵ Basing on existing examples, expected profits for this kind of investment from the market are around 10-20%, while the FI could accept around 5% IRR provided that state aid rules are respected.

- Pilot introduction of electric car filling stations and other related small scale infrastructure;
- Introduction of other clean mobility solutions and innovative technologies if identified by Sustainable Urban Mobility Plans.

Eligibility criteria

To be eligible, projects:

- Should be compliant with the investment strategy;
- Should receive a validation from the AM and be compliant with the criteria specified by the OPCC
- Should offer an acceptable return of investment in line with market standards following the contribution of FI;
- Should not be already completed.

Potential envelope

Given the initial pipeline of identified projects with a total value of ca. EUR 80 million, and that a prudent estimate of investment needs in urban mobility could reach EUR 340 million, an envelope of EUR 100-200 million could be envisaged. This envelope would be made by a CF contribution (OPCC resources) of ca. EUR 50-100 million and an additional contribution from a financial intermediary of EUR 50-100 million.

The financial instrument could create a **leverage effect** at fund level of potentially 2x and could couple with the remaining budget available for the OPCC, covering a considerable part of the identified demand for finance.

Analysis of risks and proposed mitigation measures

The risks connected with the allocation of OPCC resources in the FI for investing in SUD are analysed in terms of Strength, Weaknesses, Opportunities and Threats (SWOT) of the proposed investment strategy. Relevant mitigation measures are proposed.

Table 88: SWOT Sustainable Urban and Territorial Development through infrastructure, renewal and regeneration schemes, sustainable urban transport and other urban investments

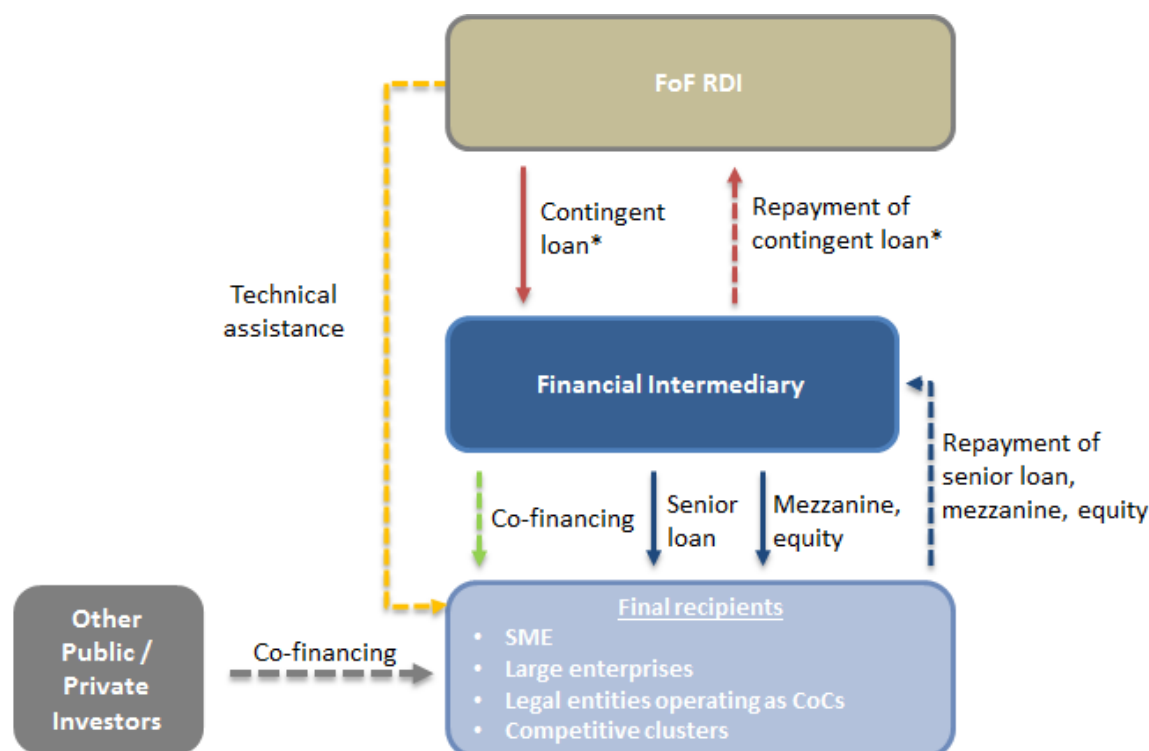
Strengths	Opportunities
<ul style="list-style-type: none"> • Relatively consolidated structure (i.e. FoF) which proven to be successful in the past; • Allows for a mobilisation of funding from national banks (e.g. HBOR) or other commercial banks potentially using currently existing implementation structures and networks; • The equity product offered, might capitalise real estate developers allowing them for an easier access to finance and might facilitate the setting up of SVP for investments in SUD; • Potentially, it could play as a one stop shop for beneficiaries, rationalising the current available finding options, ultimately simplifying administrative procedures for beneficiaries. 	<ul style="list-style-type: none"> • Given the high liquidity of Croatian banks at the present time, there might be an high interest from them to participate in the programme; • As the lending offered by FIs is not subject to stability pact limitation which currently limits the borrowing potential of municipalities (“3%, 20% limits”), FIs could trigger additional investment by cities bringing higher benefit for SUD projects; • Increased business of companies providing equipment for public transport operators, and of construction companies now tremendously affected by the economic crisis; • Increased interest and activities from ESCO companies (EE in public lighting) which are not blocked by an asset based culture of financing adopted by banks; • The favourable pricing conditions offered by FIs might relaunch investment in enterprises currently affected by the economic crisis; • The TA provided by means of grants from the FI might support project preparation which is now one of the key constraints hampering project development.
Weaknesses	Threats
<ul style="list-style-type: none"> • Shortage of capacity at Local Authorities levels on integrated planning and project financing • Limited planning capacity in identifying key priorities • Need for accelerating project appraisal just to the investment decision 	<ul style="list-style-type: none"> • Given the novelty of the instrument, banks might be low interested or feared in participating in the programme; • Public lighting projects need a critical mass (minimum number of lighting spots) to reach financial sustainability, which might be difficult to reach given the small size of most Croatian cities; • Potentially competition between the FI and the OPCC grant financing, unless closely monitored and coordinated by responsible bodies and unless clear demarcation between grant type of projects and FI type is provided; • Urban mobility related infrastructure (e.g. parking lots) require a balanced mixed of revenue generating activities in the project which needs firm and sometimes difficult coordination by the MA; • Unless supported by an experience fund manager, the low experience of the MA in FIs might hamper a smooth programme implementation.
Mitigation measures	Mitigation measures
<ul style="list-style-type: none"> • TA to local authorities will accelerate the project appraisal and will support LA for the investment financing and monitoring. 	<ul style="list-style-type: none"> • TA in supporting FI could be envisage but a most effective approach it will be also to encourage partnership among financial intermediaries in order to share the risk and achieve a better client proximity

6.1.5.3 Private-sector investment into RDI in support of an innovative and competitive business and research environment (RDI fund)

Proposed structure

This fund would be dedicated to finance future investment programmes linked to research and innovation, offering financial resources for producing or developing products, processes and/or services that are innovative and where there is a risk of technological or industrial failures. The figure below illustrates the proposed structuring of an FI for RDI sector.

Table 89: Proposed structuring and financial products of the FI for RDI



* Contingent loan represents the OP resources invested in FIs and for which repayment is expected +

Source: PwC elaboration, 2015. Please refer to chapter 6.1.2.2 for the description of the roles of the different bodies involved in the proposed structuring of the FI.

Selection of financial intermediary

Given the structure of this fund, the selection of at least two financial intermediaries is suggested, depending on which products are offered. If both loans and equity/quasi-equity approach are to be considered, it could be advantageous to consider bank-type intermediaries for the loan component and use an additional EoI to bring in national and regional VC or Equity Funds.

Geographic coverage

Given that no major regional difference has been revealed with regard to the scale of the issues of access to finance, any such envisaged FI should be **set up at national level** to achieve the necessary critical mass.

Proposed Financial products

According to the ex-ante assessment for SMEs (latest version available), under TO3 resources, an FI providing loans and guarantee products will be established. Consequently, the RDI fund envisaged under TO1 will provide "non-traditional financial products" that could complement the financial products offered to SMEs and large corporates as well. This appears to be coherent with Croatian S3 Strategy which states that Croatia needs to increase, gradually and substantively, direct support to business investments in RDI by introducing different type of support in the RDI sector.

Therefore the financial products envisaged in this priority investment area are²¹⁶:

- *Medium and Long-term senior loans.* Senior loans take priority over other unsecured or otherwise more junior debt owned by the issuer. FI loans can be offered at low interest rates, maturity that can be adapted to project needs, and extended grace periods;
- *Mezzanine financing*, hybrid forms of financing most often bridging debt and equity, including:
 - Subordinated loans: unsecured loans with a lower ranking than senior debt in case of default;
 - Participating loans: standard loans which do not offer fixed returns; their remuneration is linked to the business' results (i.e. they *participate* in the profits) without affecting the ownership structure.
- *Equity products:* different forms of capital investment which represent the financial model typically used to leverage the most external funding and share operational risks.

It may also be worth considering the possibility of blending loans with an equity (or quasi-equity) instrument, with the goal of tailoring financing (at commercially attractive terms) to the unique capital requirements and research risk of the individual company or project to be financed. Note that, given the typical complexity of RDI, a fund manager might require the assistance of an independent RDI advisor.

Final recipients

As the fund would target private sector investments into RDI, the main beneficiaries are primarily privately-owned enterprises, such as:

- SMEs;
- Large enterprises;
- Groups of enterprises, including innovation clusters and consortiums;
- Partner research and knowledge dissemination organisations;
- Legal entities operating as Centre of Competence²¹⁷;
- Competitive clusters identified in the S3 strategy.

Support for **commercialisation of in-house RDI** in large enterprises is not envisaged under any of the actions included in the OPCC. There are, however, other phases (i.e. prototype and demonstration phase) which are not excluded. As for SMEs, support for the commercialization phase is provided through Priority axis 3 (not in the scope of this assignment).

Eligible counterparties should be required to comply with at least one of the following criteria:

²¹⁶ Please note that, as not emerged during the market analysis, no preferential remuneration is envisaged for co-investors.

²¹⁷ Centre of Competence, specialised and self-sustainable industry led entities, especially designed to offer support to SMEs that lack in-house capacities for RDI.

- The company is a fast growing enterprise, as measured by employment or turnover²¹⁸;
- The company has a significant innovation potential and/or be a “research and innovation driven enterprise”²¹⁹.

Eligible projects

Eligible **RDI projects** must be compliant with the eligibility criteria under **OPCC SO 1b1 and 1b2**, including:

- *Support for private sector RDI projects*, i.e. industrial research, experimental development and feasibility studies, and fundamental research where it represents a necessary component of an RDI project leading to introducing new products, services, processes. The results of the projects will be new to the firm or new to the market or significantly changed goods, technologies, processes or services which will enable modernisation and/or diversification of enterprises.
- *National projects for competitiveness cluster initiatives support*, identification and analysis of Croatian position in global value chains, identification of future progressive niches, assistance in export strategies for new market niches, identification of market gaps and areas for attracting targeted FDI and branding of emerging industry niches and preparation of training modules and concept for National Cluster Academy.
- *National project for development of Innovation Network for Industry (INI) and creation of Thematic Innovation Platforms*, developing long-term research and innovation agendas and roadmaps which will be in line with the S3, to be supported by both private and public RDI funding.
- *Support to development of centres of competence (CoC)*²²⁰, implementation of joint RDI projects, in line with the Croatian S3, led by the demand from the industry. CoC main focus will be the industrial research and experimental development, especially for SMEs, and for collaborative projects between large enterprises and SMEs, providing high added-value to business sector in supporting their efforts that innovative ideas can be turned into processes, goods and services that consequently will contribute to creation of growth and jobs. Envisaged are investments in construction and equipment of the CoCs, as well as covering the costs of projects implemented within the Centres.

Eligibility criteria

To be eligible, projects:

- Should be compliant with the investment strategy;
- Should receive a validation from the AM and compliant within the criteria specified within the OPCC;
- Should offer an acceptable return of investment in line with market standards following the contribution of FI;
- Should be compliant with the S3;
- Should not be already completed.

²¹⁸ Measureable in average annualised growth, which should be greater than a fix percentage (to be defined) a year

²¹⁹ Measurable in different ways: e.g. its certified accountant(s) have highlighted RDI expenses/investment in the latest financial statements in an amount at least equal to a fix percentage (to be defined) of its annual turnover; it has been formally awarded grants, loans or guarantees from European RDI support schemes (e.g. Horizon 2020 or FP7) etc. over the last month; it has been awarded an innovation prize over the last (to be defined) year; etc.

²²⁰ It is envisaged that several CoCs will be established on the basis of the sound development strategies prepared together by the business community, science sector, the regional authorities as well as the framework partnership agreement signed by the stakeholders.

Table 90: An example: Croatia's FI for RDI ("CFIR") ²²¹**Croatia's FI for RDI ("CFIR")**

Below is an initial draft of the key aspects and terms of a financial product which could be developed and tailored to support RDI in Croatia. It provides an example of what could be a bespoke solution for some of the specific needs of the Croatian business sector.

What is Croatia's FI for RDI?

Croatia's FI for RDI (CFIR) facilitates provision of **between EUR [.]m and EUR [.]m in long-term senior, subordinated or mezzanine loans** to innovative businesses to support their growth and investments in research and innovation.

CFIR builds on the success of the Risk-Sharing Finance Facility developed under the Seventh EU Framework for research and technological development (FP7), which financed 114 R&I projects of EUR 11.3bn and provided loan guarantees for another EUR 1.4bn over 2007-2013.

CFIR Indicative Term Sheet

Instrument	Term loans
Purpose	To finance future investment programmes linked to research and innovation.
Loan size	Min EUR [.]m – max EUR [.]m
Tenor	Usually up to [.]-[.] years
Structure	Senior, subordinated or mezzanine ²²²
Covenants & security	Decided on a case-by-case basis
Pricing	Reflects the promotional nature of the FIs as established by the European Commission
Jurisdiction	Croatian Law
Timeframe	Between 2-4 months (TBC)
Application & inquiries	Directly with the UDF(s)

What are the benefits for you?

CFIR:

- offers longer tenors, beneficial pricing (compared to alternative sources of finance)
- offers flexible growth capital with no or limited dilution for the shareholders
- provides a quality stamp and positive signalling effect
- is not offered in combination with other banking services such as FX, swaps etc. (no competition with the company's house banks)
- pursues a long-term lending strategy and does not sell its exposure to third parties

Pre-screening and eligibility checklist (to be adapted to the characteristics of the Croatian economy)**Eligibility Criteria**

The recipient company intends to use the CFIR to invest in producing or developing products, processes and/or services that are innovative and where there is a risk of technological or industrial failure as evidenced by the business plan. Eligible counterparty should comply with at

²²¹ Croatia FI for RDI, is targeted to smaller companies in consideration of the idea that these represent the backbone of the Croatian economy, are likely to have a higher growth potential (possibly in contrast to bigger and more established companies) and can develop meaningful RDI-focused initiatives without large scale multi-million investment budgets (unlikely to be funded on a single-project basis by a FI). Having said that, product design is an initial draft that can be refined based on specific needs which could arise going forward.

²²² Subordinated: debt obligation whose holder is ranked (i.e. gets reimbursed after) below secured and general creditors. Mezzanine: unsecured, typically higher-yielding debt obligation (by means of higher interest rate and, possibly, equity-type features such as warrants) whose holder is subordinated to secured and general creditors but ranks above equity providers.

least one the following criteria:

- a. The company is a “fast-growing enterprise”, as measured by employment or turnover:
 - i. The company must demonstrate an average annualised growth in turnover greater than [.]% a year, over a [.] -year period, or
 - ii. The company must demonstrate an average annualised growth in full-time employees of at least [.]% a year, over a [.] year period (and with [.] or more employees at the beginning of the observation period); or
- b. The company should have a significant innovation potential and/or be a “Research and Innovation (“R&I”)-driven enterprise”, satisfying at least one of the following criteria:
 - i. i. Its certified accountant(s) have highlighted R&I expenses/investment in the latest financial statements in an amount at least equal to [.]% of its annual turnover;
 - ii. iii. It has been formally awarded grants, loans or guarantees from European R&I support schemes (e.g. Horizon 2020 or FP7) or through their funding instruments (e.g. Joint Technology Initiatives, "Eurostars") or through a national or regional research or innovation support schemes over the last [.] months;
 - iii. iv. It has been awarded an innovation prize over the last [.] months;
 - iv. v. It has registered at least one patent in the last [.] months;
 - v. vi. It has received an investment from a private-equity fund or from a business angel who is a member of a business angels network, or a private equity fund or a business angel is a shareholder of the company at the time of its application for an EIB loan;
 - vi. vii. It has its registered address in a science, technology or innovation park, a technology cluster, or a technology incubator, in each case with operations related to R&I; or
 - vii. viii. It has benefited from tax credits or tax exemptions related to R&I investment over the last [.] months.

Eligible counterparties should comply with each of the following eligibility criteria:

1. Eligible counterparties should be micro, small or medium-sized enterprises as defined in the Commission Recommendation 2003/361/EC (OJ L124, 20.05.2003, p. 36), as amended, restated, supplemented and/or substituted from time to time, or Mid-caps (defined as enterprises with fewer than 3,000 employees full-time equivalent);
2. The counterparty should not be a “firm in difficulty” within the meaning of Article 2.1 of the Community guidelines on state aid for rescuing and restructuring firms in difficulty (OJ C 244, 1.10.2004, p. 2.), as amended, restated, supplemented and/or substituted from time to time (prolonged OJ C 296, 2.10.2012, p.3);
3. The counterparty should not have a substantial focus on one or more restricted or excluded sectors (whose determination will be made by the Bank in its discretion based, without limitation, on the proportionate importance of such a sector on revenues, turnover or the client base of the relevant counterparty);
4. The counterparty should be established and/or operating in Croatia.

Excluded Operations:

1. Production (or construction) of, distribution (or processing) of, and trade in weapons and arms, ammunition, military or police equipment or infrastructures, and equipment or infrastructure which result in limiting people’s individual rights and freedom (i.e. prisons, detention centres of any form) or in violation of human rights;
2. Production (or construction) of, distribution (or processing) of, and trade in gambling and related equipment;
3. Production (or construction) of, distribution (or processing) of, and trade in tobacco products;

4. Operations involving live animals for experimental and scientific purposes if compliance with the "Council of Europe's Convention for the Protection of Vertebrate Animals used for Experimental and other Scientific Purposes" cannot be guaranteed;
5. Operations which give rise to environmental impacts that are not largely mitigated and/or compensated;
6. Operations considered ethically or morally controversial or which are forbidden by the national law, e.g. research on human cloning;
7. Pure real estate development;
8. Pure financial operations, e.g. purchasing or trading in financial instruments.

The eligibility and exclusion criteria should be met at the time of CFIR approval at the latest.

Potential envelope

As mentioned in the gap analysis, it is not currently possible to provide a tangible project pipeline for the investment priority related to promoting RDI business investment due to the supply-side market failures (access to finance) that suppress demand. However, the report provided quantitative and qualitative evidence that a nationwide funding gap for RDI-intensive enterprises does exist.

Against this background, this study recommends **an envelope contribution of EUR 60-100 million for the RDI fund**. The envelope, made by an ERDF contribution (OPCC resources) of ca. EUR 30-50 million and an additional contribution of a financial intermediary of EUR 30-50 million, would bridge a considerable amount of the gap identified in chapter 5.3.1.

The recommended envelope is the result of a prudent policy approach, as the FI in the RDI sector could be launched as a piloting initiative. This allocation is only indicative, and can be re-modulated in case the performances of the fund are satisfactory.

In any case, the proposed financial instruments could create a **leverage effect** at fund level of potentially 2x. Coupled with the remaining budget available for the OPCC, the FI could cover a considerable part of the estimated financial gap. Should the introduction of the FI catalyse more pipeline development, this contribution should be reconsidered.

Analysis of risks and proposed mitigation measures

The risks connected with the allocation of OPCC resources in the FI for investing in RDI interventions are analysed in terms Strengths, Weaknesses, Opportunities and Threats (SWOT) of the proposed investment strategy. Relevant mitigation measures are proposed.

Table 91 Private-sector investment into RDI in support of an innovative and competitive business and research environment

Strengths	Opportunities
<ul style="list-style-type: none"> Allows for a mobilisation of funding from other actors (e.g. HAMAG-BICRO) potentially using currently existing implementation structures and networks; The equity product offered, might capitalise 	<ul style="list-style-type: none"> Given the high liquidity of Croatian banks at the present time, there might be an high interest from them to participate in the programme; The favourable pricing conditions offered by FIs might relaunch investment in enterprises currently affected

start-up or undercapitalise enterprises facilitating their access to finance and bringing important expertise inside the company; <ul style="list-style-type: none"> • Potentially, it could play as a one stop shop for beneficiaries, rationalising the current available finding options, ultimately simplifying administrative procedures for beneficiaries. 	by the economic crisis; <ul style="list-style-type: none"> • The TA provided by means of grants from the FI might support project preparation which is now one of the key constraints hampering project development.
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Weaknesses	Threats
<ul style="list-style-type: none"> • Limited size of the market mostly oriented to small need on start up • High risk investment particularly also for the difficult in pricing the risk in an emerging small market. 	<ul style="list-style-type: none"> • Innovative structure (FIs were rarely used in the past for financing RDI) which might create rigidity at the start of programme implementation; • Given the novelty of the instrument, banks might be low interested or feared in participating in the programme; • Potentially competition between the FI and the OPCC grant financing, unless closely monitored and coordinated by responsible bodies and unless clear demarcation between grant type of projects and FI type is provided; • Unless supported by an experience fund manager, the low experience of the MA in FIs might hamper a smooth programme implementation.
Mitigation measures	Mitigation measures
<ul style="list-style-type: none"> • TA for accelerating corporate and start up RDI investment funds raising will help to identify investment opportunities and define consolidate investment plan 	<ul style="list-style-type: none"> • Adopt a portfolio strategy to cover corporate investments and star up high risk investments • Oriented the selection of intermediaries to professional VC Equity structure

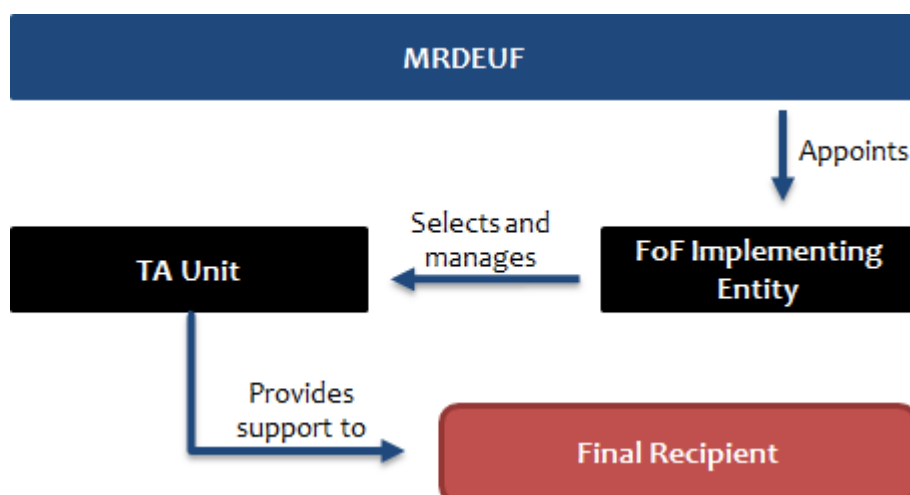
6.1.6 Technical Assistance

The present study has identified limits to the capabilities of both private and public sector in developing, assessing, and implementing EE/RE and SUD projects. This is a factor of both budget constraints and limited experience in developing projects with repayable finance. Past experience shows that providing technical assistance to FI-financed projects boosts the development of project pipelines.

In line with the possibility envisaged by the CPR, it is strongly recommended that Technical Assistance is provided by the EE and SUD funds, both for the benefit of financial intermediaries and final recipients. Without prejudice to the possibility of delivering TA to financial intermediaries, it is recommended to focus TA's provision on final recipients, as this can be delivered through an FI and is likely to be more effective in facilitating the establishment of a project pipeline.

The figure below illustrates how TA could be given.

Figure 34 : The proposed TA model



The FoF implementing entity, appointed by the MA, selects and manages a TA unit, which then provides support to final recipients.

In mobilizing this instrument, some guidelines need to be followed:

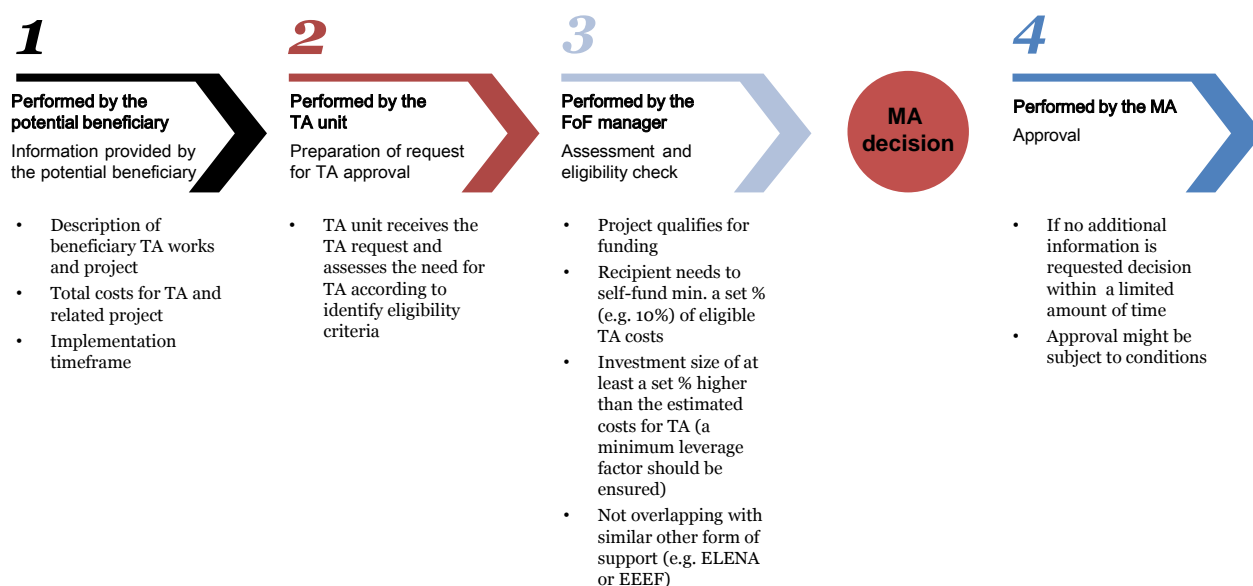
- The TA should be financed by means of grants out of a dedicated line within the FI at FoF level. Two specific TA units need to be established: one for EE/RE FoF, and one for the SUD FoF, in order to comply with CPR regulation.
- TA will generate investment projects with a minimum leverage factor (to be determined) between TA's grants and project investment.
- Grants will cover up to a certain percentage (to be determined) of eligible costs for project preparation.
- Only projects which are to be funded by the FI can receive TA grants.

TA will support final recipients with specific focus on:

- Conceptual development and structuring of a project
- Preparation of tendering procedures and contractual arrangements (when relevant)
- Assistance with project preparation (e.g. aggregation of projects to create a critical mass, energy audits, cost-benefit analysis, financial analysis and structuring)
- Assistance in ensuring conformity with EU policies.

The figure below shows the main steps in the selection process for a project to benefit from TA.

Figure 35 : TA selection steps



When selecting investments in TA, the TA unit screens projects under several criteria, including:

- The EU added-value in assisting the given initiative;
- Their potential bankability, as a preliminary verification of initiative success and project long-term financial sustainability;
- The absence of supports by other TA facilities on the same project;
- The geographical balance, as defined by the Fund Strategy.

6.1.7 Aid and state aid implications

State aid may be considered as the use of state (public) resources, e.g. tax income, to provide assistance to one or more companies/institutions in preference to others. There is strict legislation in place to regulate this area and ensure that competition in the internal market is not distorted by government intervention. Article 107, paragraph 1 of the Treaty on the Functioning of the European Union (TFEU) along with including the principle of incompatibility of state aid, admits exceptions and narrow down the notion of state aid.

More specifically, according to Art. 107(1) of the TFEU, the following four conditions shall be fulfilled to consider an intervention state aid:

- Granted by a member state or through state resources;
- Conferring an economic advantage to undertakings;
- Be selective, i.e given to certain undertakings or for the production of certain goods;
- Have the potential to distort competition and affect trade.

If the four abovementioned criteria are cumulatively met (at any level – fund managers, private investors, project companies), the intervention constitutes state aid.

Given the legislation in this area, it is important to take into account the implications of state aid when dealing with FIs. The legislative framework stipulates that EU funding that is centrally managed (i.e. by

the Commission or Executive Agencies of the EU) is exempted from state aid rules until such funding is in the direct financial management of MS' public authorities.

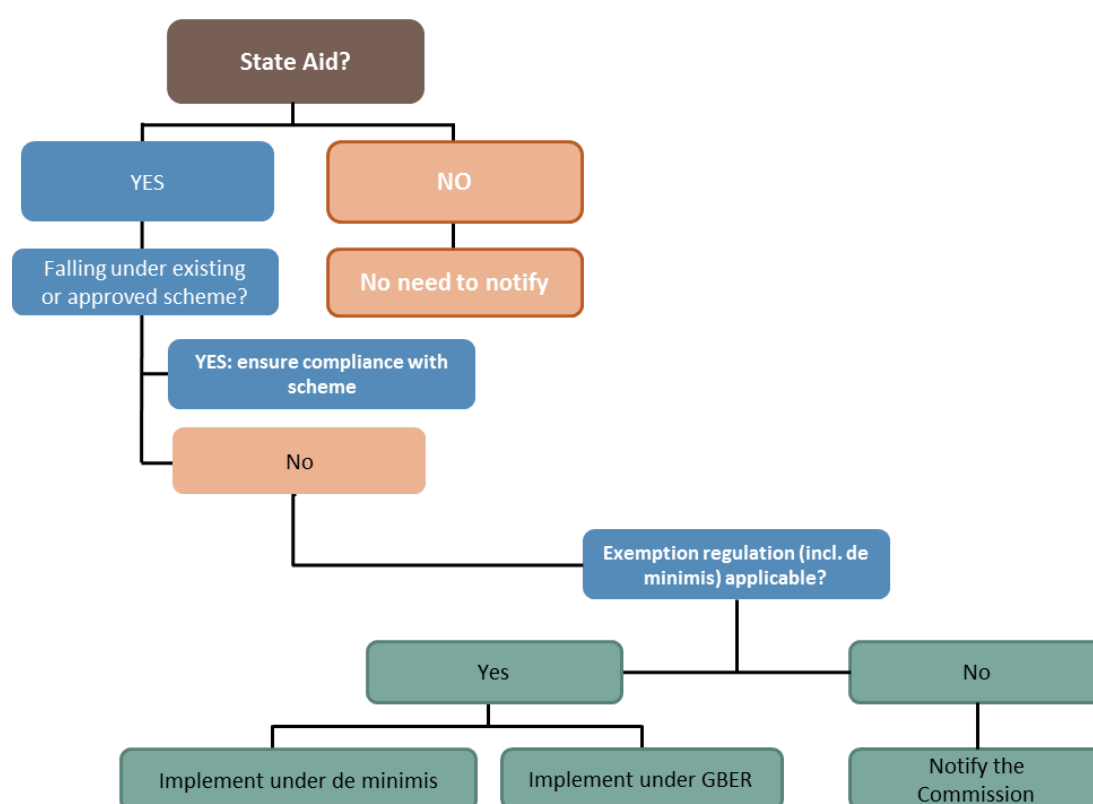
There is a close relationship between the key elements of the state aid assessment and the requirements for the undertaking of ex-ante assessments, as specified in Article 37 of the CPR. Article 37 does not deal exclusively with the implications of state aid but also to the outlined allowances for government intervention within specified limits.

State aid measures can only be implemented after **approval by the EC**. The Commission's Directorate-General for Competition, 'DG COMP', is in charge of state aid matters. In addition to this, the Commission has the power to **recover illegal state aid**. It is also necessary to keep in mind that a programme that does not follow the state aid rules could face financial penalties or be forced to close²²³.

If assistance is considered state aid, or is likely to take such a form, the assistance should ideally be redesigned so that it does not, so as to avoid extensive regulation and disbursement delays. However, if providing state aid classification cannot be avoided, it is much easier and faster to grant state aids exempted from notification rather than to ask for individual approval (notification) which could take several months.

The figure below illustrates the steps that a MA should undertake to ensure compliance of the aid with state aid regulation.

Figure 36 : State aid compliance



²²³ Provisions of European, Structural and Investment funds require ex ante assessment for both financial instrument and state aid rules

Source: PwC elaboration, 2015 on the basis of the JESSICA Holding Fund Handbook

Against this background, where state aid is present, member states should choose a compatibility system:

- Approved EU mechanisms for state aid, namely the exemption from the notification requirement under Art. 108(3) TFEU (based on the general block exemption regulation, including de minimis);
- Approval by the Commission following notification.

Approved EU mechanisms for state aid:

- *De minimis regulation*
 - Small amount of state aid (EUR 200,000, or EUR 100,000 in freight road transport, over a 3-year period) which can be given to a single undertaking and that does not require EC approval²²⁴;
- *The General Block Exemption Regulation (GBER)*²²⁵
 - Specific categories of state aid compatible with the Treaty if they fulfil certain conditions, i.e. a range of pre-approved state aid areas that do not require individual approval from the EC in advance;

Approval by the Commission following notification – if a MS plans to grant or alter aid, the formal notification procedure must be followed.

Moreover, due to the funding architecture of FI (the involvement of HF/UDF) some principles from the Risk Capital Guidelines (RCG) are applied. **Risk Finance Guidelines (RFG)**²²⁶ set out the framework under which the EC can provide aid to support access to finance by SMEs and companies with a medium capitalisation level (“midcaps”). The guidelines focus on the conditions under which a risk capital measure can be accepted. Based on the new criteria stated in the RFG, the Commission will assess **Risk Finance state aid measures**. Moreover, the Risk Finance Guidelines stipulate that where there is a mixture of public and private funding, the parties will be considered on a *pari passu* (equal) basis only where both actors share the full range of costs and benefits equally, and a significant investment undertaking exists that incentivises successful outcomes. In addition to this, a clear separation must exist between any private sector actors and final beneficiaries that will be the ultimate recipients of funding.

In cases where account managers are unaware of whether state aid provisions need to be made, they may request review and further clarification from the EC in this area, which can provide a final decision. The primary focus for investigation in this case will be on the existence of a *selective economic advantage*. In any case a fund is considered to be a vehicle to transfer finance and is generally not regarded as a state aid recipient. Moreover, there is normally no state aid to HF/UDF managers if the remuneration for management services is market-conform. If state aid to fund managers (HF/UDF level) or private investors at UDF level cannot be excluded, in principle, such aid could be fund compatible, provided it is necessary and proportionate.

²²⁴ Please note that de minimis aid cannot be used for export activities (except trade fairs), agriculture and fisheries or aid favouring domestic over imported products;

²²⁵ Commission Regulation no. 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty

²²⁶ RFG are available at: http://ec.europa.eu/competition/state_aid/modernisation/index_en.html#risk_finance

Table 92 below presents the key features stated in the guidelines with regard to the several financial products feasible under an FI.

Table 92: Key information of the RFG

Financial product	Condition to be met
Loan	<ul style="list-style-type: none"> • A loan which is granted on market terms does not contain state aid • A loan is exempt from state aid rules when the interest rate is the market rate or an appropriate reference rate (sum of a base rate and a risk margin) • <i>A loan is considered as state aid when the interest rate is lower than the market rate</i>
Guarantees	<p>The guarantee is not considered state aid if²²⁷:</p> <ul style="list-style-type: none"> • The borrower is not in financial difficulty • The extent of the guarantee can be properly measured when it is granted • The guarantee does not cover more than 80% of the outstanding loan or other financial obligation • A market-oriented price is paid for the guarantee <p>The guarantee is considered state aid if:</p> <ul style="list-style-type: none"> • De minimis regulations make an explicit reference to guarantees. It is possible to provide de minimis aid if the gross grant equivalent has been calculated on the basis of safe-harbour premiums.
Equity	<p>To establish whether an equity instrument may conflict with state aid Regulation, the EC has envisaged the market economy operator test²²⁸. According to that test, economic transactions which are carried out by public bodies or undertakings in line with normal market conditions and do not give rise to an advantage to their counterpart do not constitute state aid.</p>

6.1.7.1 Identified specific aid and state aid implications in Croatia

This section presents the potential state aid implications for each priority investment area considered. In particular, the criteria to be fulfilled in order to consider investment aid compatible with the internal market, exempting them from the notification requirements of Art. 180(3) of TFEU.

Energy Efficiency and the use of renewable energies in (i) buildings - private and public, residential and non-residential; (ii) the improvement of industrial production processes

Art. 38 and 39 of the GBER lays down the criteria to be fulfilled in order to consider investment aid for EE measures (art. 38) and for EE projects in buildings (art. 39) compatible with the internal market, exempting them from the notification requirements of Art. 108(3) of TFEU.

Important criteria to be considered in EE intervention in **industrial productions processes**:

- Aid shall not be granted where improvements are undertaken to ensure that undertakings comply with Union standards already adopted, even if they are not yet in force (clause 2, Art. 38);
- Eligible costs shall be the extra investment costs necessary to achieve the higher level of EE (clause 3, art. 38);
- The loan intensity shall not exceed 30% of the eligible costs, though modalities to increase the percentage (up to 50%) are envisaged (clauses 4, 5 and 6, art. 38).

Important criteria to be considered in the **EE projects in buildings**:

²²⁷ [http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52008XC0620\(02\)](http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52008XC0620(02))

²²⁸ Communication (2014) 34 /2

- Eligible costs shall be the overall costs of the EE projects (clause 3, art. 39);
- The total investment in EE projects in buildings (i.e. nominal amount of the loan) shall not exceed EUR 10 million per project at the level of the final beneficiary (clause 5, art. 39) – project pipelines indicated in this document will be reviewed accordingly (in any case, projects reported therein are not necessarily finalised yet in terms of required financing for the specific EE/RE interventions);
- The EE aid shall leverage additional investment from private sources for a minimum of 30% of the total financing provided to an EE project. When the aid is provided by an EE fund, the leverage of private investment can be done at the level of the EE fund and/or at the level of EE projects, so as to achieve an aggregate minimum 30% of the total financing provided to an EE project (clause 7, art. 39);
- Financial intermediaries shall be managed on a commercial basis and shall ensure profit driven financing decisions (clause 9, art. 39).

Sustainable Urban and Territorial Development through infrastructure, renewal and regeneration schemes, sustainable urban transport and other urban investments

Art. 16 of the GBER lays down the criteria to be fulfilled in order to consider regional urban development aid compatible with the internal market, exempting them from the notification requirements of Art. 108(3) of TFEU.

Important criteria to be considered are:

- Urban development projects shall (clause 2):
 - Be implemented via urban development funds in assisted areas (as defined in the Regional Aid map for Croatia);
 - Be co-financed by ESI funds;
 - Support the implementation of an "integrated sustainable urban development strategy".
- The total investment in an urban development project (i.e. nominal amount of the loan) under any urban development aid measure shall not exceed EUR 20 million (clause 3);
- The urban development aid shall leverage additional investment from private investors at the level of the urban development funds or the urban development projects, so as to achieve an aggregate amount reaching 30% of the total financing provided to an urban development project (clause 6);
- Urban development funds shall be managed on a commercial basis and shall ensure profit-driven financing decisions (clause 9).

Against this background, two are the options available for the MA to consider regional urban development aid compatible with the internal market:

1. In case the MA intends to envisage integrated sustainable urban development strategy, then the provisions of art. 16 apply
2. In case the MA DOES NOT intend to envisage integrated sustainable urban development strategy, to be compliant with state aid Rules, *pari passu* rules apply.

Private-sector investment into RDI in support of an innovative and competitive business and research environment

Art. 25 of the GBER lays down the criteria to be fulfilled in order to consider aid for research and development projects compatible with the internal market, exempting them from the notification requirements of Art. 108(3) of TFEU.

Important criteria to be considered are:

- The aid intensity for each beneficiary shall not exceed (clause 4, art. 25):
 - 100% of the eligible costs for fundamental research (i.e. no direct commercial application or use in view);
 - 50% of the eligible costs for industrial research (i.e. acquisition of new knowledge and skills for developing new products, processes or services);
 - 25% of the eligible costs for experimental development (i.e. use of existing scientific, technological, business and other knowledge and skills with the aim of developing new or improved products, processes or services);
 - 50% of the eligible costs for feasibility studies.
- In some cases, aid intensities for industrial research and experimental development and feasibility studies might increase (clauses 6 and 7, art. 25).

6.2 Expected results

The following sections estimate results achievable by FIs as compared with grants. The analysis contributes to depict the possible scenarios resulting from different level of OPCC contribution and leverage and, overall, **demonstrates the advantages stemming from the use of an FI over a grant.**

Assumptions

Allocation of disbursed amounts by market segment

The amounts considered within the financial envelope of the fund for the calculation of the achievable results have been defined proportionally to the amount envisaged in the OPCC:

- given a financial envelope of a certain amount of resources, the sub-amount of it disbursed to each of the market segment (e.g. public buildings, commercial, public lighting, etc.) has been calculated in a proportionate manner on the basis of the resources allocated in the OPCC to each market segment²²⁹.
- This means that only a part of the resources available to the OPCC are allocated to the FI, leaving the remaining part available for supporting by means of grants projects or used at a later stage to increase availability of funds for FIs assuming a satisfying performance will have been achieved

Expected Leverage

EE/RE and SUD

FI the potentially achievable leverage has been calculated considering both the leverage at the financial intermediary and at the final recipient level. More in detail, at the **financial intermediary level**, two assumptions were drawn, namely:

- That the financial intermediary contributes equally to the amount of resources provided by the OPCC (i.e. EUR 100 million from the OPCC, and EUR 100 million from the financial intermediary - leverage 2x);
- That the financial intermediary contributes 30% of the amount of resources provided by the OPCC (i.e. EUR 100 million from the OPCC, and EUR 30 million from the financial intermediary – leverage 1.3x).

As for the calculation of the **leverage at the final recipient level**, on the basis of historical data of FIs similar to the ones designed in this study (i.e. Slovakia and Sardinia)²³⁰, it is assumed that the envelope available at the fund level (e.g. EUR 200 or 130 million for EE fund), is disbursed by:

- 90% in the form of loans, that according to market benchmarks in similar peer countries, may trigger leverage at the final recipient level between 1.2 and 2x;
- 10% in the form of equity, that according to market benchmarks in similar peer countries, may trigger leverage at the final recipient level between 2 and 3x.

This means that, to the results achievable at the financial intermediary level assuming leverage at 1.3 and 2x, the results achievable with the resources triggerable at final recipient level shall be added.

²²⁹ For further details on the approach used for all the calculation included in the following paragraphs, please refer to Annex 11.

²³⁰ The average benchmarks are higher. Conservative values have been used to take into account the possible effects of limited experiences with similar instruments gained at Country level (e.g. time required for implementating the FI, for awareness raising, for pipeline set-up, lower attractiveness of additional private resources, etc..)

The following table presents the final leverage considered at the final recipient level given the assumption presented above.

Table 93: Leverage at final recipient level for EE/RE and SUD FI

Financial product	%	Leverage 1	Leverage 2	Average leverage	Ultimate weighed leverage
Loan	90	1.2	2	1.6	1.69 ²³¹
Equity	10	2	3	2.5	

Source: PwC 2015 own elaboration

RDI FI

The analysis has been carried out assuming that OPCC financial resources are disbursed achieving an overall leverage (both at fund level and at final recipient one) of 1.5x and 2.5x²³².

Please note that the details for all the calculation made to achieve the results reported in the following sections are presented in Annex 12.

Expected results

Energy Efficiency and renewable energy in buildings, industrial processes and public lighting

As stated in the investment strategy, four market segments have been identified for the EE fund, all of them encompassing the introduction of EE interventions. These market segments are:

- Public residential and non-residential buildings (SO4c1), for which the OPCC allocates EUR 211.81 million;
- Private commercial buildings (SO4b2), for which the OPCC allocated EUR 40 million;
- Public lighting system (SO4c4), for which the OPCC allocates EUR 20 million;
- Industrial production process (SO4b1), for which the OPCC allocates EUR 60 million.

For the latter, due to the absence of market benchmarks and to the variety of interventions supportable under the OPCC, it was not possible to estimate the expected results of the FI. Accordingly, the following section will estimate the expected results only for the first three mentioned market segments– which, however, does not mean that the fourth market segment will not receive an allocation of funds.

In light of the above, the analysis has been carried out assuming that financial resources available in the EE fund total envelope are distributed proportionally to the resources allocated in the OPCC – totalling EUR 331.81m. The proportional allocation for each of the three relevant market segments would then be:

- Public residential and non-residential buildings (SO4c1): EUR 211.81 / EUR 311.81 = ca. 64%;
- Private commercial buildings (SO4b2): EUR 40.00 / EUR 311.81 = ca. 12%;
- Public lighting system (SO4c4): EUR 20.00 / EUR 311.81 = ca. 6%.

²³¹ This value has been calculated as a weighed average of the value presented in the table, namely: $(90 \times 1.6 + 10 \times 2.5) / (10 + 90)$

²³² On the basis of historical data of FIs similar to the ones designed in this study (i.e. Slovakia and Slovenia).

Accordingly, it is assumed that:

- Given a leverage effect of 2x (i.e. equal contribution from the OPCC and the financial intermediary, therefore totalling EUR 200m), and taking into consideration the leverage at the final recipient level of 1.69x, resources for:
 - EUR 216.32 million in total at the level of final recipient²³³ (i.e. ca. 128 million at the level of the financial intermediary²³⁴), will be invested for EE interventions in public residential and non-residential buildings;
 - EUR 40.56 million in total at the level of final recipient (i.e. ca. 24 million at the level of the financial intermediary), will be invested for EE interventions in private commercial buildings;
 - EUR 20.28 million in total at the level of final recipient (i.e. ca. 12 million at the level of the financial intermediary), will be invested for EE interventions in public lighting.
- Given a leverage effect of 1.3x (i.e. financial intermediary contributing 30% of the OPCC resources, therefore totalling EUR 100m), and taking into consideration the leverage at the final recipient level of 1.69x, resources for:
 - EUR 140.61 million in total at the level of final recipient (i.e. ca. 83.2 million at the level of the financial intermediary) will be invested in EE interventions in Public residential and non-residential and commercial buildings;
 - EUR 26.36 million in total at the level of final recipient (i.e. ca. 15.6 million at the level of the financial intermediary) will be invested in EE interventions in private commercial buildings;
 - EUR 13.18 million in total at the level of final recipient (i.e. ca. 7.8 million at the level of the financial intermediary) will be invested in EE interventions in public lighting.

Public residential and non-residential and commercial buildings

The analysis is based on the following data set, the same used for the quantification of demand in chapter 5.1.1:

- A unit retrofitting cost of 1,300 HKR/m² (about 169.93 EUR/m²) has been considered for calculating how many square metres can be retrofitted by investing the total envelope;
- It has been roughly calculated the ratio between coastal and continental building stock, since different energy savings values are reported for the two areas;
- The proportion between public and private sector investment has been hypothesised based on the share of funds assigned to each sector in the OPCC;
- All the other data about floor composition (public and commercial) correspond to the information reported in Chapter 5 as well as values of unit energy saving for each type of building.

The expected results calculated on the basis of these assumptions for the two possible scenarios are reported in the following table.

²³³ This value has been calculated by multiplying the resources at financial intermediary level by 1.69x, which is the estimated leverage at the level of the final recipient.

²³⁴ This value has been calculated by multiplying the considered total envelope for EE/RE interventions (i.e. EUR 200m) by the proportional allocation of the same envelope to the specific ket segment (reflecting OPCC's) i.e. 64%.

Table 94: Expected results using an FI with leverage of 2x and 1.3x

Leverage	Composition of the building stock		Amount of investments envisaged (EUR) ²³⁵	Potentially retrofittable m ²	Continental		Coastal		Total
	Type	m ²			m ²	Year energy savings kWh	m ²	Year energy savings kWh	Year energy savings kWh
2x	Commercial	16%	216,320,000	241,862	162,048	33,420,740.56	79,815	8,075,640	41,496,381
	Public	84%	40,560,000	1,269,778	850,751	132,087,599	419,027	32,068,106	164,155,705
	Total	100%	256,880,000	1,511,640	1,012,799	165,508,339	498,841	40,143,746	205,652,086
1,3x	Commercial	16%	140,608,000	157,211	105,331	21,723,481.37	51,879	5,249,166	26,972,647
	Public	84%	26,364,000	825,355	552,988	85,856,939	272,367	20,844,269	106,701,208
	Total	100%	166,972,000	982,566	658,319	107,580,421	324,247	26,093,435	133,673.856

²³⁵ Hypothesised OPCC contribution is equal to €76,000,000 in both scenarios.

Thus, the achievable results range between **ca. 133.67 million kWh/year** and **ca. 200.65 million kWh/year** (**26.97 – 41.50 million in the commercial sector** and **106.70 – 164.16 million in the public sector**) in terms of energy savings.

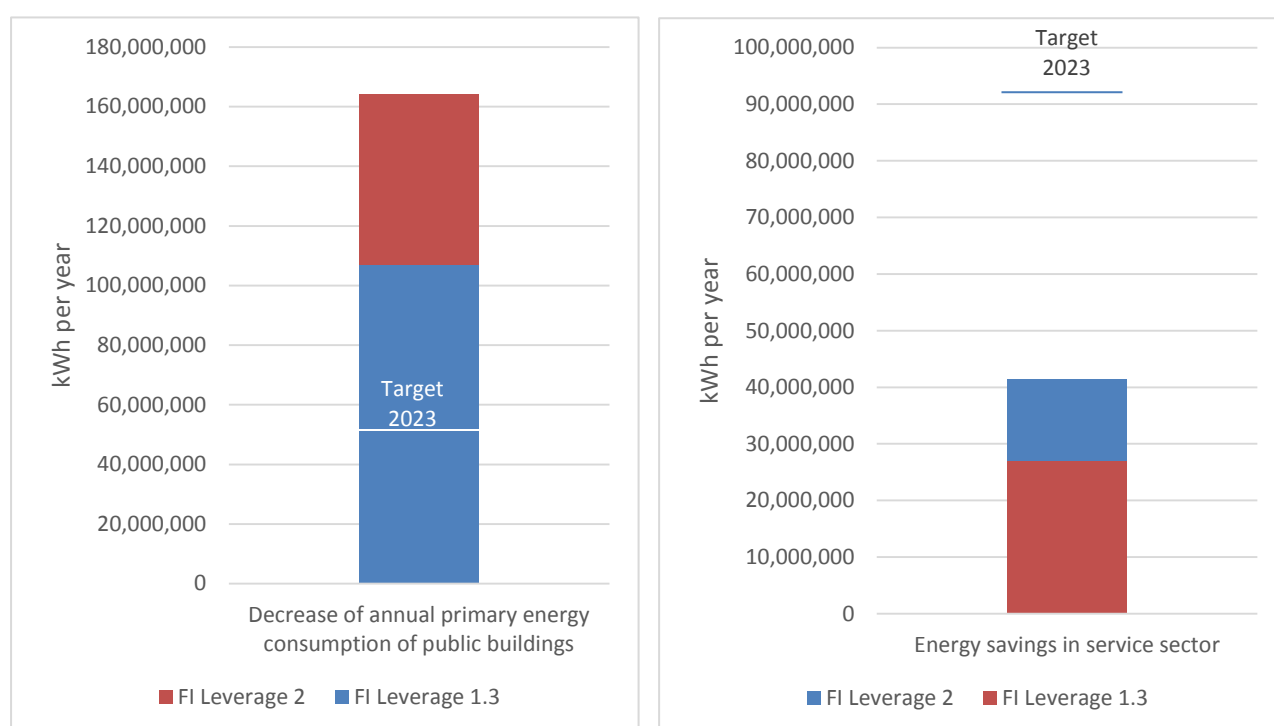
These achievable results can also be compared to the relevant indicators set out in the OPCC, namely:

- The output indicator (for public buildings) “CO₂: decrease of annual primary energy consumption of public buildings”, which has a 2023 target value of 55.10 million Kwh per year.
- The result indicator (for commercial buildings) “4b22 Energy savings in service sector”, which has a 2023 target value of ca. 91.67 million Kwh.

As shown in the following figure, taking into account the assumption presented above, while a FI with a leverage effect of 2x, contributes to the achievement of almost 298% of the decrease of primary energy consumption of **public buildings** targeted for 2023, an FI with a 1.3x leverage effect arrives up to 194%.

As for **commercial building**, an FI with a leverage effect of 2x, contributes to the achievement of almost 45% of the energy savings in service sector (commercial included) targeted for 2023, an FI with a 1.3x leverage effect arrives up to 29%²³⁶.

Figure 37 : Contribution of an FI to the achievement of target 2023 as for decrease of primary energy consumption



The leverage represents a key factor especially when comparing the expected results obtainable by an FI and by grants. As shown in the table below, with the same level of OPCC contribution, the use of an FI, which implies a multiplier effect, increases, up to double, the results that can be achieved.

Table 95: Energy savings achievable in public (residential and non-residential) and commercial buildings -

²³⁶ Please note that the results achieved are linked to the resources planned for investments (calculated proportionally to the resources allocated in the OPCC) and other results could be achieved whether a different amount of resources for investment is planned.

Comparison of results using grant or FIs (values in kWh per year)²³⁷

	Grant	Financial instrument	
		Leverage 2x	Leverage 1.3x
OPCC contribution: EUR 76 million	102,826,043 ²³⁸	205,652,086	133,673,856

Public lighting

The achievable results in terms of energy savings have been calculated as the reduction in energy consumption achievable by replacing existing light bulbs with more efficient and less energy-consuming LED lamps.

As for the characteristics of public lighting and the size of the intervention, the calculation is based on the following assumptions:

- The average cost for replacing each lamps equals to EUR 300²³⁹;
- The average consumption of existing light bulbs is 0.15 Kwh²⁴⁰;
- The achievable savings are calculated considering that the public lighting stays on 10 hours per day on average;
- The total annual electricity consumption for public lighting amounts to 450GWh, as reported in the Third NEEAP (2009 values).

Table 96: Expected results for decrease of electricity consumption for public lighting

Total envelope (EUR)	Unit cost for replacement (EUR)	Street lights potentially replaceable	Kind of lamp	Unit energy consumption (kWh)	Annual energy saving after replacement	Total annual energy saving
20,280,000 (leverage 2x)	300	67,600	Mercury - vapor lamp, Sodium-vapor lamp, metal-halide lamp	0.15	77%	6.2%
			LED	0.035	-	-
13,182,000 (leverage 1.3x)	300	43,940	Mercury - vapor lamp, Sodium-vapor lamp, metal-halide lamp	0.15	77%	4.0%
			LED	0.035	-	-

The achievable results can also be translated into the relevant indicators set out in the OPCC, namely the output indicator “4c42: Decrease of electricity consumption for public lighting”.

²³⁷ Additional explanation on the calculation are in annex 12.

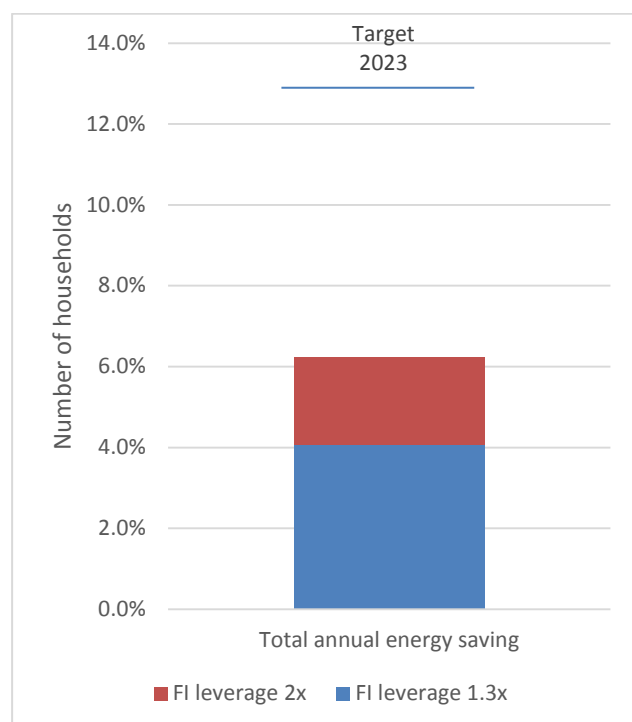
²³⁸ The results achievable with grants include the leverage at financial recipient level of 1.69x.

²³⁹ According to information provided by Croatian energy efficiency expert.

²⁴⁰ According to information provided by Croatian energy efficiency expert.

As shown in the following figure, an FI with leverage of 2x contributes to the achievement of almost 47.8% of the decrease of electricity consumption targeted for 2023 while an FI with leverage of 1.3x contributes for 31.1%.

Table 97: Contribution of an FI to the achievement of target 2023 as for decrease of electricity consumption for public lighting



The leverage represents a key factor especially when comparing the expected results obtainable by an FI and by grants. As stated in the table below, with the same level of contribution, the use of an FI, which implies a multiplier effect, increases, up to double, the results that can be achieved.

Table 98: Comparison of energy saving achievable using grant or FI

	Grant	Financial instrument (leverage 2x)	Financial instrument (leverage 1.3x)
OPCC contribution: EUR 6 million	3.1%	6.2%	4.0%

Sustainable Urban and Territorial Development through infrastructure, renewal and regeneration schemes, sustainable urban transport and other urban investments

The expected results achievable for this specific priority investment area have been calculated for the following OPCC's output indicators:

- 7cb18: New passenger rolling stock;
- 7cb21: Electric vehicle filling stations.

The calculation has been carried out considering leverage of 1.69x at the final recipient level²⁴¹ and two hypotheses for the leverage at the financial intermediary level:

- That the financial intermediary contributes equally to the amount of resources provided by the OPCC (e.g. EUR 100 million from the OPCC, and EUR 100 million from the financial intermediary - leverage 2x);
- That the financial intermediary contributes 30% of the amount of resources provided by the OPCC (e.g. EUR 100 million from the OPCC, and EUR 30 million from the financial intermediary – leverage 1.3x).

The calculation carried out shows that a total envelope is more than sufficient to achieve the target set for the indicators identified in both the scenarios hypothesised.

Table 99: Necessary investment to achieve targets set for 2023 as for sustainable transport indicators

Indicators	Target for 2023	Type	Unit cost (EUR)	No	Total cost (EUR)	Percentage on total envelope – leverage 1.3x (EUR)	Percentage on total envelope – leverage 1.5x (EUR)
New passenger rolling stock	50	Eco-buses	180,000 - 200,000	25 ²⁴²	4,500,000 - 5,500,000	1%-2%	2%-3%
		Tramway	2,200,000 - 2,700,000 ²⁴³	25	55,000,000 - 67,500,000	16%-20%	25-31%
Electric vehicle filling stations	4		50,000 - 100,000 ²⁴⁴	4	200,000 - 400,000	0.06-0.12%	0.09-0.18%
Total					59,700,000 – 73,400,000	29.9-36.7%	27.2%-33.4%

As shown in the table, in case of a 1.3x leverage effect, investing about 29% of the total envelope ensures the achievement of the targets set for 2023. Whereas in case of a 1.5x leverage effect, it is necessary to invest 25% of the total envelope to achieve the 2023 targets. However, these values do not consider maintenance and operating costs, thus the final cost could reveal higher.

Worth mentioning is that the indicators identified track only a part of the possible interventions that can be carried out within this specific objective that also includes expensive interventions, such as the development of for instance park & ride infrastructure and systems or bus stations, which can be financed with the remaining funds.

Comparing the expected results obtainable by an FI and by grants, it results using that grants ensures the achievement of 2023 targets as well.

²⁴¹ Calculated in the previous paragraphs of this section.

²⁴² It has been hypothesised that the same number of eco-buses and tramway is bought.

²⁴³ Unit cost for a 32 metre tramway, as reported in LRT ROLLING STOCK - Benchmark and Market Screening for Tramway Rolling Stock - Technical Note realized by

²⁴⁴ Unit cost for curbside and surface stations, as reported by the Rocky Mountain Institute on its website <http://www.rmi.org/>

However, as stated in the table below, with the same level of contribution (i.e. e. OPCC's contribution of EUR 100 million), the use of an FI, which implies a multiplier effect, increases, up to double, the total amount of resources available. Therefore, using FI ensures that a greater share of resources is available to be invested for other interventions included within the specific objective.

Table 100: Comparison between grants and FIs

	Grant	Financial instrument (leverage 1.3x)	Financial instrument (leverage 1.5x)
Total envelope ²⁴⁵ (EUR)	169 million ²⁴⁶	338 million	219.7 million
Percentage of envelope to be invested to reach 2023 targets	35.3%-43.4%	17.7%-21.7%	27.2%-33.4%
Percentage of envelope available for other investments	56.6%-64.7%	78.3%-82.3%	66.6%-72.8%

Private-sector investment into RDI in support of an innovative and competitive business and research environment

The analysis has been carried out assuming that OPCC financial resources are disbursed achieving an overall leverage (both at fund level and at final recipient one) of 1.5x and 2.5x²⁴⁷.

Accordingly, for a financial envelope of EUR 50 million from the OPCC:

- an overall leverage of 1.5x leads to EUR 75 million of investments;
- an overall leverage of 2.5x leads to EUR 125 million of investments.

The expected results have been calculated for the following result and output indicators:

- Result indicator:
 - 1b2.1 – Business expenditure on research and development.
- Output indicators:
 - CO24 – Research, Innovation: Number of new researchers in supported entities;
 - CO27 – Research, innovation: Private investment matching public support in innovation or R&D projects;
 - CO01 –Productive investment: Number of enterprises receiving support;
 - 1b11 – Number of R&D projects supported.

As for the result indicator “1b2.1 – Business expenditure on research and development”, the expected results equals to the investments envisaged for the two type of leverage affects assumed. Accordingly:

- With an overall leverage of 1.5x, the “business expenditure on research and development” equals to EUR 75 million (42% of the target²⁴⁸);
- With an overall leverage of 2.5x, the “business expenditure on research and development” equals to EUR 125 million (75% of the target).

²⁴⁵ Considering a leverage effect of 1.69x at the final recipient level.

²⁴⁶ Similarly to FIs, grants are assumed to trigger a 1.69 leverage effect at the final recipient level.

²⁴⁷ Benchmarks from Slovakia and Slovenia.

²⁴⁸ According to the OPCC, the target value at 2023 of the result indicator “1b2.1 – Business expenditure on research and development” is EUR 180 million.

As for the output indicator “CO24 – Research, Innovation: Number of new researchers (in Full Time Equivalent) in supported entities”, according to the Statistical Report Research and Development²⁴⁹, in 2013 in Croatia, a gross domestic expenditure in R&D of HRK 2.69 billion (EUR 351.37 million) ensured the employment of 15,245 persons in the field of R&D, of which 10,075 researchers; and the hiring of 660 Full Time Equivalent (FTE), of which 393 researchers.

Accordingly, it could be assumed that by investing:

- EUR 75 million (leverage 1.5x), overall 141 FTE could be created, of which 84 researchers²⁵⁰;
- EUR 125 million (leverage 2.5x), overall 235 FTE could be created, of which 140 researchers.

As for the output indicator “CO27 Research, innovation: Private investment matching public support in innovation or R&D projects”, it could be supposed that, given a public contribution from the OPCC as envisaged of EUR 50 million:

- With an overall leverage of 1.5x, the “private investment matching public support in innovation or R&D projects” equals to EUR 25 million²⁵¹ (12% of the target value)²⁵²;
- With an overall leverage of 2.5x, the “private investment matching public support in innovation or R&D projects” equals to EUR 75 million²⁵³ (36% of the target value).

As for the output indicator “1b11 – Number of R&D projects supported”, according to the OECD Reviews of Innovation Croatia²⁵⁴, the average innovation expenditure per innovating company equals to EUR 200,000.

Accordingly:

- With an overall leverage of 1.5x, the “number of R&D projects supported” equals to 375²⁵⁵ (25% of the target value)²⁵⁶;
- With an overall leverage of 2.5x, the “number of R&D projects supported” equals to 625 (42% of the target value).

As for the output indicator “CO01 number of enterprises receiving support”, similar values or smaller as those that have just been calculated for the output indicator “1b11 – Number of R&D projects supported” can be hypothesized.

The table below provide a recap of the results obtainable with FIs and compare them with grants.

Table 101: Comparison of expected results between grants and financial instruments

²⁴⁹ Croatian Bureau of Statistics (2015) Statistical Reports – Research and Development, 2013

²⁵⁰ Please refer to Annex 12 for the details on the calculation.

²⁵¹ EUR 219.70 million minus EUR 100 million

²⁵² According to the OPCC, the target value at 2023 of the result indicator “private investment matching public support in innovation or R&D projects” is EUR 210 million.

²⁵³ EUR 338 million minus EUR 100 million

²⁵⁴ OECD (2013) OECD Reviews of Innovation Croatia

²⁵⁵ Please refer to Annex 12 for the details on the calculation.

²⁵⁶ According to the OPCC, the target value at 2023 of the result indicator Number of R&D projects supported is 600 enterprises.

Indicator	Target value	Grants ²⁵⁷	Financial instrument 1.5x	Financial instrument 2.5x
1b2.1 – Business expenditure on research and development	180 MEUR	50 MEUR ²⁵⁸	75 MEUR	125 MEUR
CO24 – Research, Innovation: Number of new researchers in supported entities	30 FTE	55	84	140
CO27 – Research, innovation: Private investment matching public support in innovation or R&D projects	210 MEUR	n.a.	25 MEUR	75 MEUR
1b11 – Number of R&D projects supported	600 R&D projects	250	375	625
CO01 – Productive investment: Number of enterprises receiving support	400 enterprises	<250	<375	<625

Source: PwC elaboration, 2015

6.3 Action plan for the implementation of Financial Instruments

This section presents a preliminary overview of some of the necessary steps that will be required to implement an instrument (s) for Croatia under the OPCC.

Following the completion of the ex-ante assessment, the following processes must be followed to set-up an FI:

- Fine tuning of Investment strategy
- Selection of FoF manager and Funding Agreement negotiation
- Creation of separate accounts within a financial institution;
- Definition of treasury management rules;
- Set-up of the governing bodies of the FI
- Transfer of ESIF resources from the MA.
- Launch of the Call for Expression of interests for the selection of Financial Intermediaries
- Selection of financial intermediary and award (further detailed in the next section);
- Negotiation of operational agreements;
- Signature of operational agreements with financial intermediaries.

²⁵⁷ The value for grants has been obtained in the same manner as described in annex 12, using a financial envelope of EUR 100 million.

²⁵⁸ These are the OPCC resources envisaged in the model.

6.4 Monitoring, reporting and evaluation system of the FI

6.4.1 Monitoring and reporting

The new legal basis (i.e. CPR) for monitoring and reporting of FIs has three main objectives:

- To enhance the transparency regarding the implementation of FIs;
- To allow the EC to better assess the overall performance of FIs;
- To regularly provide the MS, Commission services, European Parliament (EP), Council, European Court of Auditors and public with the data on the progress made in financing and implementing the FIs.

According to Annex IV to the CPR (Article 1(d) and Article 2(d)) provisions for monitoring of the implementation of investments and of deal flows including reporting by the FI to the financial intermediary and/or the MA, are the compulsory parts of each funding agreement and strategic document. The monitoring provisions should also be compliant and help MAs to meet their reporting requirements defined in Article 46 of the CPR.

Article 46 “Report on implementation of financial instruments” of the CPR also sets out the requirements for the MA when reporting on operations comprising FIs to the Commission. The required information should be included in the specific report on FIs to be annexed to the annual report on implementation of programmes.

To ensure that all categories of the information required under Article 46 of the CPR are reported in a consistent and comparable way and can, where necessary be consolidated and aggregated, the MA could use a standard model for the reporting included in the relevant Implementing Act. The standard reporting model contains already some indications of the format of the information required, but detailed technical characteristics of the requested information (as for example: input method, format and length of each field and links to the other information already available, like priority axes/measures, indicators) will be further developed in the Commission electronic reporting system (SFC2014) and explained in the specific guidance.

Having said that, there are two basic elements that are necessary to consider regarding the Proposed Monitoring system. These are the indicators that must be used to monitor FI performance and inform investment strategy updates as well as in the funding agreements:

- Result and output Indicators defined by the OPCC to monitor the progress of the FIs;
- Standard financial indicators to assess the performance of the funds.

As far as the reporting is concerned, it could be done:

- **On a monthly basis** for key data such as total amounts disbursed, number of loans approved/signed/dispensed, total number of urban projects supported, total number of touristic projects approved, number of housing renovated under EE programmes.
- **On a quarterly basis** for more fine-tuned information such as split between different types of projects under each investment priority, the volume of savings for energy consumption, number of approved projects by region.

If some of the defined indicators are not at the expected level of achievement in relation to the periodicity stated, the MA might consider to either revising the funding agreement, launch another call for proposal to select other financial intermediaries and/or modify the products' offer.

The following sections presents selected results and output indicators to monitor the progress of the FI in the three areas (indicators come form those identified by the MA in the OPCC- paragraph 6.4.2, o, 6.4.4) as well as standard financial indicators to monitor the overall performance of the funds (paragraph o). Indicators may need to be revised during the implementation of each FI, depending on elements of each FI needing to be assessed.

6.4.2 Energy Efficiency and the use of renewable energies

Investment Priority	Specific objective	Type of indicator	ID*	Indicator Name	Source	Unit of measurement	Target value
4b	Increasing energy efficiency and use of RES in manufacturing industries	Result	4b11	Renewable energy in gross final energy consumption in the manufacturing industries	Ministry of Economy	1000 toe	56.00
4b	Increasing energy efficiency and use of RES in manufacturing industries	Result	4b12	Energy savings in manufacturing industries	Ministry of Economy	PJ	1.91
4b	Increasing energy efficiency and use of RES in private service sector (tourism and trade)	Result	4b21	Renewable energy in gross final energy consumption in the service sector	Ministry of Economy	1000 toe	11.33
4b	Increasing energy efficiency and use of RES in private service sector (tourism and trade)	Result	4b22	Energy savings in service sector	Ministry of	PJ	0.63
4b	n.a.	Output	CO01	Productive investment: Number of enterprises receiving support	Ministry of Economy	Enterprises	50.00
4c	Reduction of energy consumption of the public sector buildings	Result	4c11	Average annual heating/cooling energy demand in retrofitted public buildings	SMIV (Sustav za monitoring i verifikaciju ušteda); NEEAP reports	kWh/m2	250.00
4c	Improvement of the efficiency of the public lighting system	Results	4c41	Energy saving in the public lighting	Ministry of Economy	PJ	0.90
4c	n.a.	Output	CO32	Energy efficiency: Decrease of annual	MIS	kWh/yea	55,100,0

Investment Priority	Specific objective	Type of indicator	ID*	Indicator Name	Source	Unit of measurement	Target value
				primary energy consumption of public buildings		r	00
4c	n.a.	Output	4c42	Decrease of Electricity consumption for public lighting	Ministry of economy and Energy efficiency fund	% per year	6.00

* As specified in the OPCC.

6.4.3 Sustainable Urban and Territorial Development through infrastructure, renewal and regeneration schemes, sustainable urban transport and other urban investments (SUD fund)

Investment Priority	Specific objective	Type of indicator	ID*	Indicator Name	Source	Unit of measurement	Target value
7ii	To increase the number of transported passengers in urban public transport	Result	7cb12	Passengers in urban transport (by buses and trams)	Croatian Bureau of Statistics	number/year	390,432,000
7ii	n.a.	Output	7cb18	New passenger rolling stock	Project implementation reports	number	50.00
7ii	n.a.	Output	7cb21	Electric vehicle filling stations	Project implementation reports	number	4.00

* As specified in the OPCC.

6.4.4 Private-sector investment into RDI in support of an innovative and competitive business and research environment (RDI fund)

Investment Priority	Specific objective	Type of indicator	ID*	Indicator Name	Source	Unit of measurement	Target value
1b	Increased development of new products and services resulted from R&D activities	Result	1b1.1	Increase of patent applications, trademarks and industrial design in Croatia	SIPO	Number of applications	2,700
1b	Increased development of new products and services resulted from R&D activities	Result	1b1.2	Sales of new-to –market and new- to firm innovation as % of turnover	EUROSTAT -IUS	Percentage	14.40
1b	RDI activities of business sector increased through creation of favourable innovation environment	Result	1b2.1	Business expenditure on research and development	EUROSTAT	MEUR	180.00
1b	n.a.	Output	CO0 1	Productive investment: Number of enterprises receiving support	Project implementation reports	Enterprises	400
1b	n.a.	Output	CO0 4	Productive investment: Number of enterprises receiving nonfinancial support	Project implementation reports	Enterprises	100
1b	n.a.	Output	CO2 4	Research, innovation: Number of new researchers in supported entities	Project implementation reports	Full time equivalents	30
1b	n.a.	Output	CO2 6	Research, Innovation: Number of enterprises cooperating with research institutions	Project implementation reports	Enterprises	100
1b	n.a.	Output	CO2 7	Research, Innovation: Private investment matching public support in innovation or R&D projects	Project implementation reports	EUR	210,000,000
1b	n.a.	Output	CO2 8	Research, Innovation: Number of enterprises supported to introduce new to the market products	Project implementation reports	Enterprises	100
1b	n.a.	Output	CO2 9	Research, Innovation: Number of enterprises supported to introduce new to the firm products	Project implementation	Enterprises	400

Investment Priority	Specific objective	Type of indicator	ID*	Indicator Name	Source	Unit of measurement	Target value
					reports		
1b	n.a.	Output	1b11	Number of R&D projects supported	Project implementation reports	Number	600

* As specified in the OPCC.

6.4.1 Performance indicators at fund level

Type of indicator	Indicator Name	Source	Unit of measurement	Target value	Indicator value achieved since the start of implementation
Output	Volume of Financial product financed by 1 euro of public funds	Fund monitoring reports	Ratio	According to expected co-financing at financial intermediary level	Output
Output	Total amount in millions of euro of additional leveraged resources mobilized at the level of financial instrument and final recipients	Fund monitoring reports	MEUR	According to expected results of specific Funds (Cfr. Chapter 6.2)	Output
Output	Credit loss (Volume of defaulted loss)/ Volume of total loans	Fund monitoring reports	%	According to agreement with selected Financial Intermediary	Output
Output	Absorption rate	Fund monitoring reports	%	100%	Output
Output	Management costs	Financial intermediary/ FoF manager	% on volume of total loans & guarantees outstanding	According to agreement with selected Financial Intermediary/FoF manager	Output

6.4.2 Evaluation

The CPR represents a radical change for operational programmes. It emphasises programme objectives, the logic of intervention to achieve the expected results and the evaluation of effectiveness and impacts. Furthermore, it requires from Managing Authorities and the Commission annual reporting on outputs and results, including findings of evaluations where available. For 2014—2020, the CPR requires Managing Authorities to carry out evaluations which assess the effects of the ESIF programmes.

Evaluations should serve to improve the effectiveness and efficiency of programmes as well as to assess their effects. They are meant to increase knowledge of what works and what does not in order for decision makers to make timely decisions to support the implementation of programmes and to draw conclusions for policy making.

Mid-term evaluation

A mid-term evaluation of the Programme shall be carried out by July 1 2017 to measure, on a qualitative and quantitative basis:

- Progress made in meeting the Programme's objectives;
- The social environment within the Union and any major changes introduced by Union legislation;
- Whether the resources of the Programme have been used efficiently and to assess its Union added value.

The results of that mid-term evaluation shall be presented to the relevant EU-level institutions, and will incorporate all countries within the Union, where the Programme is active. This will require the input and facilitation of local MA, and will represent the first deeper review of the progress of the Programme. On the basis of the composed report, necessary changes here may be identified and implemented on EU-level as well as on local level by the MA.

End-period evaluation (2020)

By 31 December 2022, the Commission shall evaluate ex-post the impact and Union added value of the Programme and shall forward a report containing that evaluation to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. The overall success of the Programme as well as the business case for extending its use beyond 2012 including the employment of FIs currently in place will be assessed at this stage.

6.5 Provisions for the update and review of the ex-ante assessment

Market conditions and investment trends may evolve before and during the implementation phase of the FI. As a result, Article 37 (2) (g) CPR requires that the ex-ante assessment includes provisions for its revision and update, in case the MA considers that the conclusions of the ex-ante assessment do no longer represent the actual market conditions.

More in details, the main drivers to which the MA should pay particular attention to that may trigger an update are:

- **Poor accuracy of the proposed targets compared to observed results;**
- **Inadequate volume of the support scheme compared to observed demand** (e.g. a situation where the volume is too low to meet observed demand);
- **Miscalculation of the risk taken by the FI:** A situation may occur where the risk profile of the FI is significantly higher than expected, leading the FI to incur significant losses and thereby compromising its revolving nature;
- **Changes in the political settings,** (i.e. in case the MRDEUF decide to deploy ESIF resources by means of FI also for those IPs for which the use of FIs is not envisaged yet²⁵⁹);
- **Improvement of the Croatian economic conditions;**
- **Market failures are addressed and there is no need for intervention.**

Moreover, given the background of this study, an update of the ex-ante assessment may be required following the results of the call for expression of interest to possibly be launched by the MA aimed at identifying suitable projects to be supported by means of FIs. In particular, the project identified in the analysis of market failure section may be refined following the outcome of the aforementioned call for expression of interest.

Also, the need for update and review of the assessment could be signalled through:

- Regular reporting/monitoring of the FI (at least annually);
- Through ad hoc or planned evaluations (e.g. ongoing evaluations).

It is important to mention that following the conclusion of the updated ex-ante assessment, the MA should take action, if necessary, to improve the strategic fit of the FIs. This procedure is both initiated and performed at the discretion of the MA alone.

²⁵⁹ Especially for the SUD case.

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In addition to the aforementioned documents, within the report, the relevant Regulation both at European level and Croatian one, has been consulted. To name few examples:

- Commission Regulation no. 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles
- Guidance note of the European Commission on Art. 41 of the CPR - EGESIF_15_006-00
- Common Provision Regulation
- Implementing act on ERDF
- Treaty on the Functioning of the European Union
- Commission Regulation (EC) No 800/2008 of 6 August 2008 declaring certain categories of aid compatible with the common market in application of Articles 87 and 88 of the Treaty (General block exemption Regulation)
- State Aid documentation

Stakeholders consultation

Moreover, along with the aforementioned documents, the following stakeholders have been consulted both by means of vis-à-vis meeting but also during workshops.

Organisation	Name	Surname	Role
Agrokor	Ljerka	Puljić	VP
Altpro	Zvonimir	Viduka	owner/CEO
APN	Slavko	Čukelj	Director
Atlantic Group	Zoran	Stankovic	CFO
Center for Monitoring Business Activities in the Energy Sector and Investments	Ivan	Šerić	Advisor
City of Bjelovar	Morana	Muller	Senior Associate for the implementation of the Programmes of European

			Union and International Cooperation Coordinator for EU projects
City of Dugo Selo	Zvezdana	Budor Klarić	Department of economy
City of Karlovac	Daniel	Juričić	Advisor for European funds
City of Kaštela	Mili	Novak	Assistant Major
City of Kaštela	Marijana	Mišerda Bajić	Advisor for EU funds
City of Koprivnica	Maja	Balaško	Senior Expert Associate for European Affairs
City of Koprivnica	Ivan	Šimić	Director at Regional Energy Agency North
City of Kutina	Josipa	Kos	RA Mrav
City of Nova Gradiška	Tomislav	Sigurnjak	Department for asset management
City of Osijek	Kornelija	Mlinarić	Head of EU department
City of Osijek	David	Krmpotić	Head of financial department
City of Osijek	Sibila	Jović	Department for EU projects and economy
City of Osijek	Srećko	Kukić	Deputy Head of Department
City of Pazin	Maja	Stranić Grah	Head of economy, finance and budget department
City of Petrinja	Joso	Grahovac	Department for economy, agriculture and rural development
City of Požega	Marko	Šostar	Head of the Department for European integration
City of Rijeka	Tajana	Jukić Nežnanović	Department for Property Management
City of Rijeka	Ante	Mađerić	Financial advisor
City of Rijeka	Vojko	Obersnel	Major
City of Šibenik	Matija	Bumbak	Head of the Department of economy, entrepreneurship and development
City of Sinj	Jelena	Kekez Poljak	Department of European integration
City of Sinj	Ivana	Pavić	Adviser
City of Sisak	Željko	Mateković	Investment associate
City of Solin	Radojka	Bučan	Department for public relations
City of Solin	Anamrija	Roso	Solin incubator
City of Solin	Zvonimir	Grubišić	Director of Solin incubator
City of Split	Vedrana	Vrdoljak	Head of Department for budget and reporting
City of Split	Ana	Jerkunica	Senior consultant for international EU funds

City of Velika Gorica	Ivan	Čobanov	Department for EU funds
City of Vinkovci	Suzana	Čutura	Project manager
City of Vinkovci	Mirta	Štrk	Director
City of Zadar	Tina	Marin	Department for EU funds
City of Zagreb	Sanja	Malnar- Neralić	Head of Department for energy
City of Zagreb	Ines	Franov Beoković	Head of Office for project implementation
City of Zagreb	Jelena	Marković	Assistant to Head of Office for EU programmes and projects
Croatian Chamber of Economy	Krešimir	Štih	Business Secretary
Elma Kurtalj d.o.o.	Nino	Kurtalj	Director
EPEEF - Environmental Protection and Energy Efficiency Fund - Croatia	Vesna	Bukarica	Head of department
EPEEF - Environmental Protection and Energy Efficiency Fund Croatia	Vesna	Bukarica	Head of department
Ericsson Nikola Tesla	Gordana	Kovačević	CEO
Erste&Steiermärkische bank	Boris	Centner	Board member
Faculty of Electrical Engineering	Mario	Vražić	Vice-dean
Faculty of Medicine Rijeka-Center for Proteomics	Stipan	Jonjić	Project Coordinator for Croatia
Faculty of medicine-Zagreb	Darko	Bošnjak	Secretary
Faculty of medicine-Zagreb	Smiljka	Vikić-Topić	Research and Technology Transfer Office Centre for Translational and Clinical Research
Faculty of pharmacy and biochemistry	Jerka	Dumić	Full Professor
FINA	Zlatko	Mičetić	Member of the Management Board
Genera	Marko	Smetiško	CEO
GGE	Nejc	Frumen	Director of development
GSKG	Joško	Jakelić	Director
HAKOM	Mislav	Habel	Engineer
HAKOM	Josipa	Šajnović	Engineer
HAMAG BICRO	Darko	Liović	CEO
HBOR	Vladimir	Kristijan	CEO
HEP ESCO	Vlasta	Zanki	Director
HPB	Mladen	Mrvelj	Board Member
HT	Milan	Meden	Director of Department

			EU BB Program Development and Deployment Department
Institute for nuclear technology	Sergio	Galošić	CEO
Institute for nuclear technology	Zrinka	Čorak	Business Development Manager
Institute for nuclear technology	Iva	Grković	CFO
Institut Hrvoje Požar	Marko	Karan	Department for Energy Management and Organisation
Institut Hrvoje Požar	Matija	Vajdić	Department for Renewable Energy Sources and Energy Efficiency
Intea d.d.	Davor	Rotter	Director
Jadran Galenski	Ivo	Usmiani	CEO
Končar Electrical Industry Inc	Darinko	Bago	CEO
Metronet	Sanjin	Katinić	CMO
Metronet	Zdenko	Vrdoljak	CTO
Metronet	Dennis	Rukavina	CFO
Ministry of Construction and Physical Planning	Ines	Androić -Brajčić	Assistant Minister
Ministry of Economy	Danijela	Ćenan	Head of department
Ministry of Economy	Tomislav	Radoš	Assistant Minister
Ministry of Health	Marijan	Cesarik	Deputy Minister
Ministry of Maritime Affairs, Transport and Infrastructure	Dan	Simonić	Assistant Minister
Ministry of Maritime Affairs, Transport and Infrastructure	Luko	Vuletić	Assistant Minister
Ministry of Science, Education and Sport	Vedran	Mornar	Ministar
Novamina d.o.o.	Ernest	Vlačić	Director
OiV	Tonko	Obuljen	Engineer
OiV	Darko	Bratković	Strategy and Development Division
PROSPERUS - INVEST	Tomislav	Tičić	Board Member
Quaestus Private Equity	Željko	Lukač	Board Member
Raiffeisenbank Austria	Mario	Žižek	Board member
REGEA	Julije	Domac	Director
Rimac automobili	Mate	Rimac	Owner/CEO
Ruđer Bošković	Dražen	Vikić- Topić	Scientist
Ruđer Bošković	Tome	Antičić	Chairman
Siemens Hrvatska	Mladen	Fogec	CEO

Societe Generale – Splitska Banka	Zvonimir	Akrap	Board member
Telefon d.o.o. (VES d.o.o.)	Boris	Belamarić	Owner
University of Rijeka	Pero	Lučin	Rector
VIPnet	Nevenka	Crneka- Čudina	Special Projects Principal
Zagreb fair	Marina	Pavković	Director
Zagrebacka banka	Marko	Remenar	Board member

Annex 1: Croatian economic context

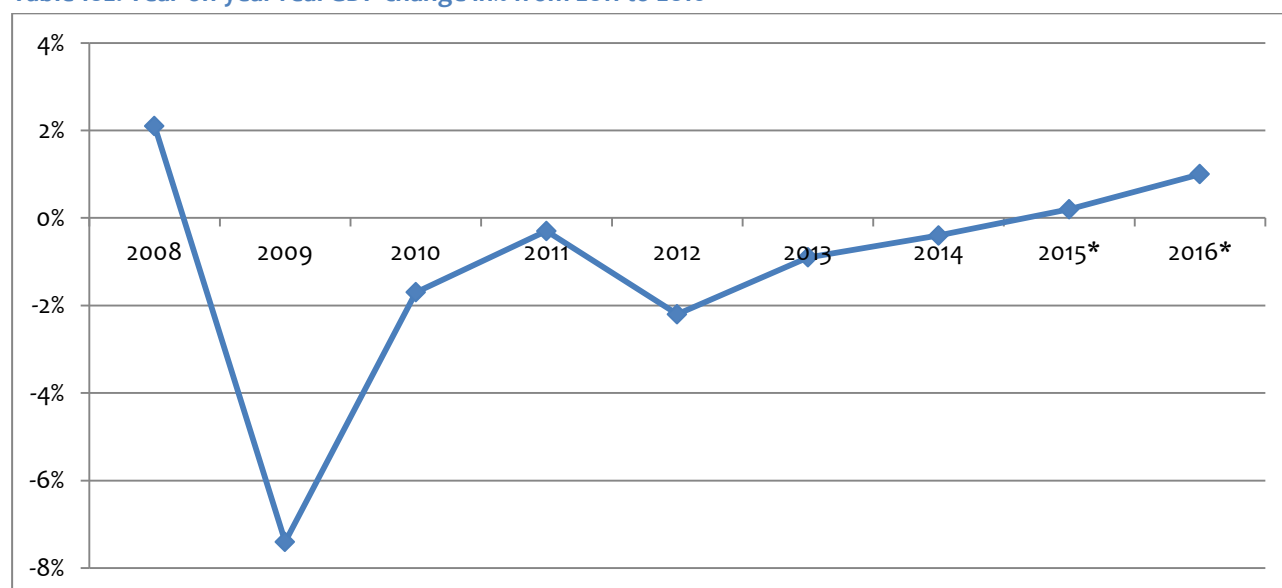
This section of the study contains an **overview of the economic context** in Croatia. The Croatian economic context has an impact on the individual performance of each and every actor involved in the investment areas we are considering. As recommended in each volume of the *Ex-ante assessment methodology for financial instruments*, gathering data on macroeconomic indicators such as GDP growth, unemployment, etc. is an essential first step before determining the existence of market failures and suboptimal investment situations.

The review of selected indicators point out that Croatia has not been immune to the current financial crisis and deleveraging in the banking sector, which has resulted in a contraction of new investments made in the country, to the detriment of competitiveness and employment. Indeed, Croatia has been in **recession** since 2009 and due to it, Croatian GDP per capita would barely exceed 2006 levels in 2016, representing a lost decade of growth. However, according to the recent forecast by the European Commission²⁶⁰ it is expected that the recession will end in 2015 as described below.

Gross domestic product

Real GDP change from 2011 to 2014 along with the forecast for 2015 and 2016 are illustrated in Table 102.

Table 102: Year-on-year real GDP change in% from 2011 to 2016



Source: Based on data from Croatian Bureau of Statistics and European Economic Forecast, Winter 2015

* Estimate

After the real GDP declined by 0.9% in 2013 and by 0.4% in 2014²⁶¹, for 2015 the European Commission forecasts that Croatian recession will end with a weak growth by 0.2%, which is set to be achieved exclusively from net exports. Standard and Poor's²⁶² also anticipates that the recession will end in the

²⁶⁰ European Economic Forecast, Winter 2015. Available at: http://ec.europa.eu/economy_finance/eu/forecasts/2015_winter/hr_en.pdf

²⁶¹ According to the Croatian Bureau of Statistics

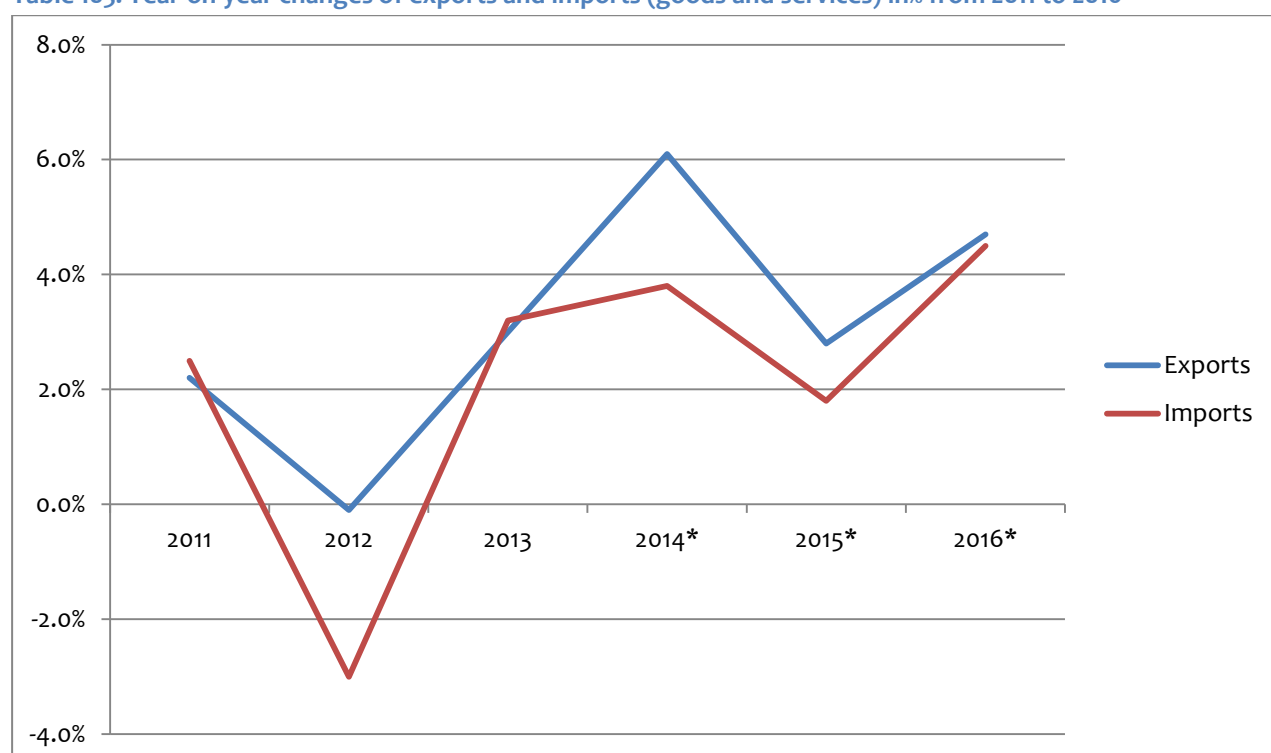
²⁶² Source of information is based on Standard & Poor's analysis of Croatia from 2015/01/23

second half of 2015, leaving real GDP growth at 0% for the end of the year. Standard and Poor's expects a gradual rise of GDP after 2015 with GDP growth equal to 1% in 2016 and 1.8% in 2018. However, UniCredit research²⁶³ paints a more negative outlook, predicting that the recession in Croatia will continue in 2015 with the decline of the real GDP by -0.2%. Their forecast is based on the following assumptions:

- Investments will not recover in 2015 because there is no evidence of public investment growth, while private investments will probably remain on hold;
- Weak external demand, due to weaker-than-expected Eurozone growth.

As mentioned above, the European Commission expects that the feeble growth set to be achieved in 2015 is foreseen to come exclusively from net exports. Table 103 shows changes and projected changes of Croatia's exports and imports for the period from 2011 to 2016.

Table 103: Year-on-year changes of exports and imports (goods and services) in% from 2011 to 2016



Source: European Economic Forecast, Winter 2015

*Estimate

In 2013, exports of goods and services amounted to 141.8 billion HRK (18.5 billion EUR or 42.9% of GDP), while imports of goods and services amounted to 140.2 billion HRK (18.3 billion EUR or 42.5% of GDP). After the strong performance in 2014 where exports increased by 6.1%, partly reflecting large one-off effects related to Croatia's accession to the EU, the restoration of trade links with former partners from the CEFTA and the recovery of the neighbouring Slovenian economy, exports of goods and services are

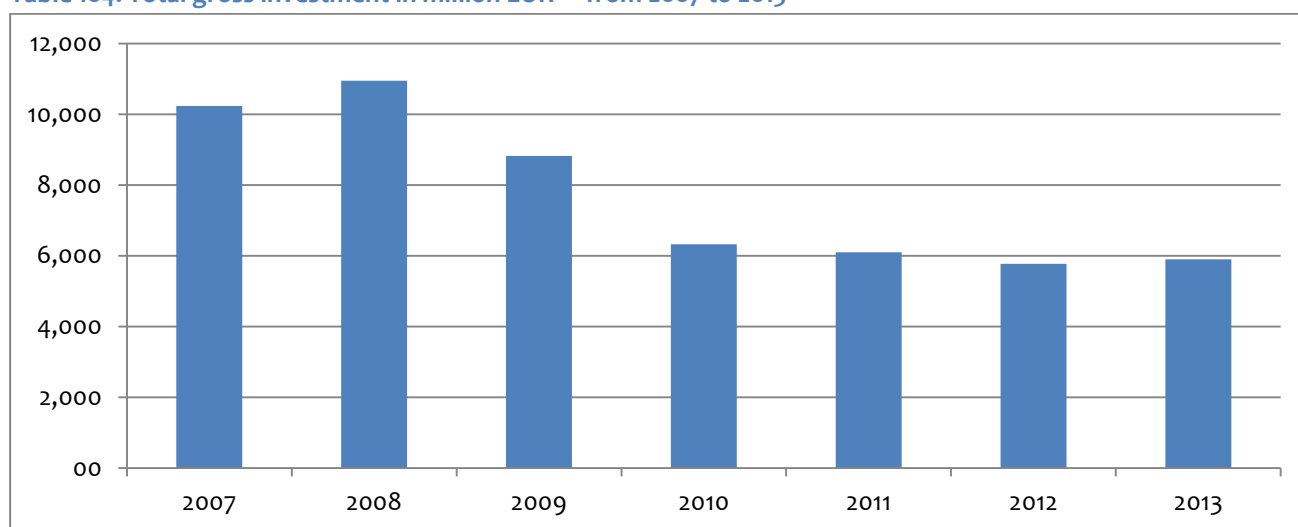
available on the following link: <http://www.standardandpoors.com/prot/ratings/articles/en/us/?articleType=HTML&assetID=1245380097484>

²⁶³ UniCredit Research; Available on the following link: <http://www.zaba.hr/home/wps/wcm/connect/ac86afab-faaa-43bo-b51f-cd6868fb231f/Q1.ashx.pdf?MOD=AJPERES&CACHEID=ac86afab-faaa-43bo-b51f-cd6868fb231f>

set to increase at a more moderate rate of 2.8%. At the same time, imports are forecast to increase by 1.8%.

One of the key issues that contributed to the continuing recession is the decline of investments. The following figure illustrates this declining trend in total gross investments in Croatia for the period of 2007-2013. Investment in 2013 was overall over a third lower than during the 2008 peak and is expected to stagnate in 2014. In the overall structure of GDP, the share of total investments is therefore also decreasing: in 2008 the share of investments amounted to 22% of GDP, while in 2013 the share amounted to about 13.5%.

Table 104: Total gross investment in million EUR²⁶⁴ from 2007 to 2013



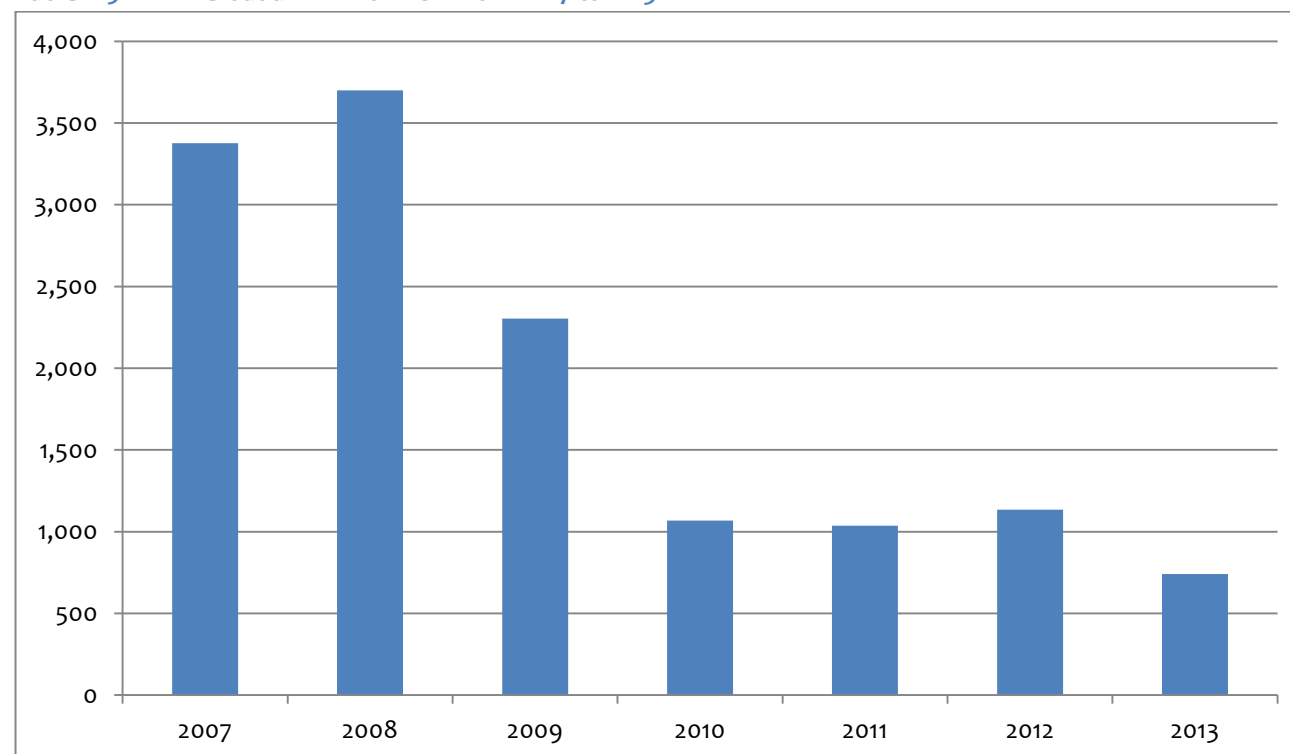
Source: Croatian Chamber of Economy, selected economic indicators of Croatian economy

One of the main reasons for the total investment drop is the lack of FDI since 2008. As shown in the figure below, **in 2013 FDI was 5 times lower than at the end of 2008**, mainly due to lack of structural reforms and due to ongoing economic crisis (e.g. lower profitability of foreign-owned domestic enterprises and banks)²⁶⁵. On the other hand, there is a number of highly valuable projects in Croatia that require investments such as projects in tourism sector, infrastructure projects, energy sector projects, etc.²⁶⁶.

²⁶⁴ Based on exchange rate HRK/EUR 7.65

²⁶⁵ Croatian National Bank; Annual report 2013; Available at: <http://www.hnb.hr/publikac/godisnje/2013/e-god-2013.pdf>

²⁶⁶ A detailed list of the projects can be found on the following link: <http://www.aik-invest.hr/wp-content/uploads/2013/12/Investment-Opportunities-Catalogue-December-2013.pdf>

Table 105: FDI in Croatia in million EUR from 2007 to 2013

Source: Croatian Chamber of Economy selected economic indicators of Croatian economy

Employment

Along with the decline of investments, one of the main drivers of Croatia's GDP contraction has been the decline in personal consumption resulting from households' deleveraging and high unemployment rates. The unemployment rate in Croatia increased from approximately 10% in 2007 to around 17.3% in 2013²⁶⁷, while youth unemployment increased from 20.3% in 2007 to 50% in 2013 (although in 2014 it decreased slightly to 45%²⁶⁸). According to the data of the

²⁶⁷ European Economic Forecast, Winter 2015

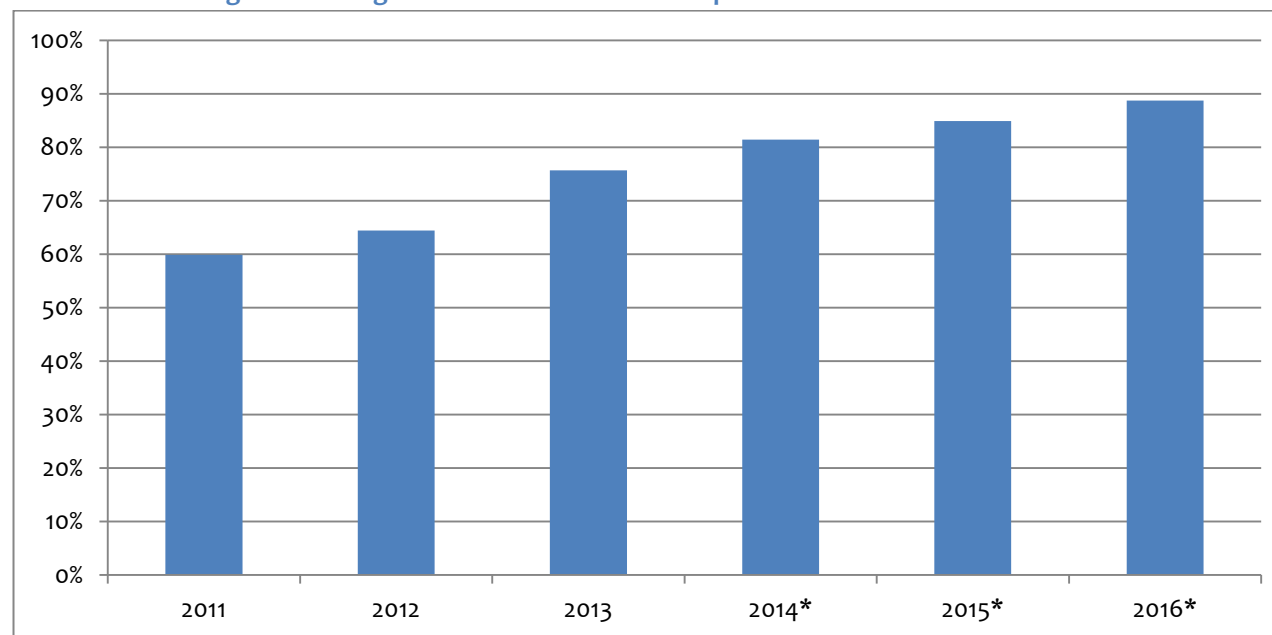
²⁶⁸ Eurostat; Available at: <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tipslm80&plugin=1>

European Commission the general unemployment rate in 2014 also decreased slightly to around 17% and it is forecasted that it will further decrease to 16.8% in 2015. However, the aforementioned decline of registered unemployment is not followed with an increase of employment, meaning that the decline in unemployment is driven by people leaving registered unemployment/ (discouraged job seekers leaving the Croatian job market either permanently or temporarily, including emigration). This means that the recent small decline in the unemployment is unlikely to have generated any additional spending/investment capacity in the economy.

Public debt

A further major issue for Croatia's economy is the increasing general government²⁶⁹ gross debt which is placing added pressure on funding conditions for the Croatian public sector, as well as on the Country's risk premium. Changes and projections of general government debt for the period 2011-2016 are illustrated in [Table 106](#).

²⁶⁹ General government consists of: Central government, Local government and Social security funds

Table 106: General government gross debt as% of GDP for the period 2011-2016

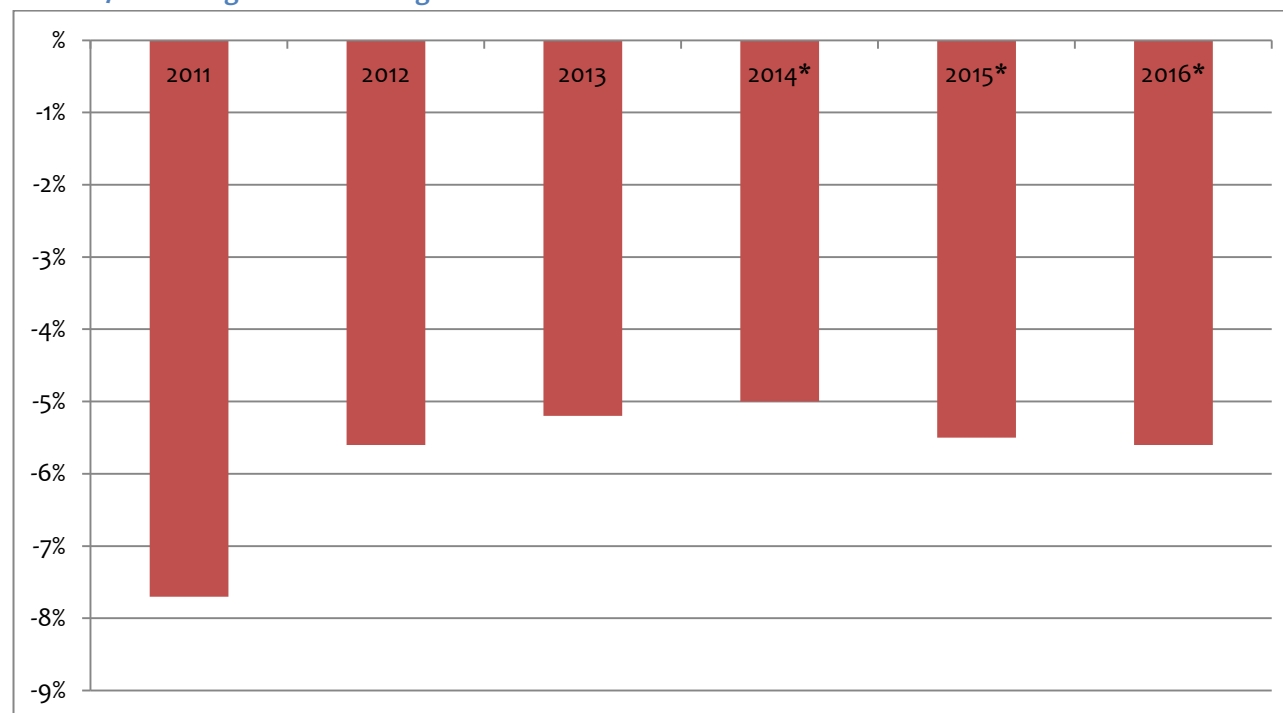
Source: European Economic Forecast, Winter 2015

*Estimate

According to the EC general government gross debt in 2014 amounted to 81.4% of GDP and is expected to peak in 2016 at 88.7% of GDP. Public debt reached 261 billion HRK (34.12 billion EUR) in ESA 2010²⁷⁰ terms at end-October 2014. This increasing ratio of general government debt to GDP is mainly as result of the achieved budget deficit, continued GDP decline and a pre-financing operations planned at the end of the year. The budget deficit development is outlined in the following Figure.

²⁷⁰ European system of national and regional accounts in the European Union (referred to as "ESA 2010"), enforceable (by Regulation (EU) No 549/2013) from 1st of September 2014 onward, replacing the previous ESA95.

Table 107: General government budget deficit as% of GDP from 2011 to 2016



Source: Source: European Economic Forecast, Winter 2015

According to the EC, the general government deficit in 2014 is expected to stand at 5.0% of GDP. Expenditure appears to have evolved mostly in line with the authorities' plans, but some additional outlays from flood-related reconstruction costs materialised in the second half of 2014. In 2015, changes to the personal income tax (i.e. cities remaining without some revenues from personal income tax²⁷¹ due to changes in the personal income tax law) are expected²⁷² to push the budget deficit up to 5.5% of GDP²⁷³, as potential offsetting measures are still largely unknown. In 2016, the deficit is forecast to remain at around the same level, in spite of the moderate pick-up in growth expected. The structural deficit²⁷⁴ is expected to have reached 3.5% of GDP in 2014, and to

²⁷¹ European Economic Forecast, Winter 2015

²⁷² European Economic Forecast, Winter 2015

²⁷³ European Economic Forecast, Winter 2015

deteriorate in 2015 and 2016, by about 1 and 0.5 pp. of GDP respectively. Such economic conditions will not allow Croatia to meet the GDP 3% deficit target set for 2016. According to Standard & Poor's, the target will be met only in 2018.

Also, according to Standard & Poor's²⁷⁵, the net external liability position is relatively high – meaning Croatia will continue to depend on external financing to service its high external debt. The general government has increased external leveraging over 2012-2014, with general government external debt reaching an estimated 29.8% of GDP at end-2015, up from 9.5% in 2008. Foreign currency debt is 68% of government debt, making the government's position more challenging.

Exchange rate

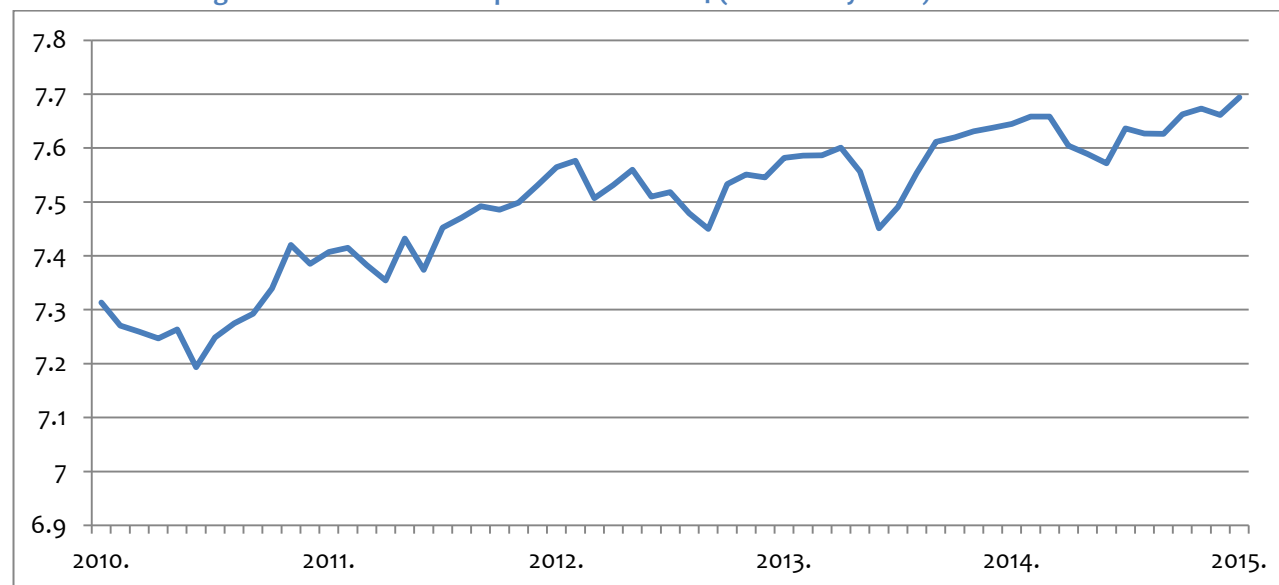
The Croatian National Bank (CNB) is committed to implement the exchange rate regime of managed floating where the exchange rate of the domestic currency is not fixed against another foreign currency or basket of currencies, but is mostly determined by the foreign exchange. The HRK-EUR exchange rate development is illustrated in the Figure below.

²⁷⁴ The actual budget deficit net of the cyclical component, one-offs and other temporary measures

²⁷⁵ Source of information is based on Standard & Poor's analysis of Croatia from 2015/01/23

available on the following link: <http://www.standardandpoors.com/prot/ratings/articles/en/us/?articleType=HTML&assetID=1245380097484>

Table 108: Exchange rate HRK-EUR for the period of 2010-2014 (on monthly basis)



Source: Croatian National Bank 2015

According to Standard & Poor's, the aforementioned HRK-EUR managed floating limits monetary policy flexibility as does the highly euroised economy (more than 70% of loans and more than 60% of deposits are denominated in or linked to foreign currency, predominantly in EUR).

Credit rating

Based on the condition of Croatian economy Standard & Poor's, Fitch and Moody's decreased Croatia's rating in 2014 and 2013. Croatia's current credit rating along with ratings of the selected countries is shown in the following table below.

Table 109: Credit rating for long term borrowing in foreign currency for selected countries

Country	Fitch ratings	Moody's	Standard & Poor's
Estonia	A+	A1	AA-
Latvia	A-	A3	A-
Lithuania	A-	Baa1	A-
Hungary	BB+	Ba1	BB
Poland	A-	A2	A-
Slovakia	A+	A2	A
Slovenia	BBB+	Baa3	A-
Bulgaria	BBB-	Baa2	BB+
Romania	BBB-	Baa3	BBB-
Macedonia	BB+	-	BB-
Montenegro	-	Ba3	B+
Serbia	B+	B1	BB-
Croatia	BB	Ba1	BB

Source: Croatian National Bank 2015

According to Moody's Investor Service, Croatia's sovereign rating is Ba1, reflecting the continued slow pace of Croatia's recovery from several years of recession, which strongly impacted on its government finances. This slow recovery process has been exacerbated by competitiveness challenges and

deleveraging. Standard & Poor's believes that external balances will remain stable and they expect fiscal consolidation to be helped by a favourable interest-rate environment and future policy rigour under the European Commission's excessive deficit procedure. Therefore Standard and Poor's are affirming their 'BB' long-term and 'B' short-term ratings on Croatia with the stable outlook which reflects their view of balanced risks to the rating--the medium-term EU-initiated investment program on the one hand, and a stagnant reform environment on the other.

In conclusion, the credibility of the recovery for the Croatian economy will be determined by the success of the structural and fiscal reforms that the country will have to implement in the near future. On the one hand, the current short and long term debt ratings are constrained by the net general government debt and the absence of structural and fiscal reforms that are continuing to drag down economic growth and cast doubts over the long-term sustainability of Croatia's public finances. On the other hand, Croatia's debt ratings are supported by the medium-term opportunities that are stemming from Croatia's recent EU accession in terms of addressing key growth areas, improving competitiveness, accessing external funding, and meeting productivity challenges.

Annex 2: Economic outlook of Croatia for the period 2010-2017

Subject Descriptor	Units	Scale	2010	2011	2012	2013	2014	2015	2016	2017
Gross domestic product, constant prices	National currency	Billions	272.904	272.263	266.297	263.867	261.707	263.016	266.698	272.405
Gross domestic product, constant prices	Percent change		-2.272	-0.235	-2.191	-0.913	-0.819	0.500	1.400	2.140
Gross domestic product, current prices	National currency	Billions	323.806	328.737	327.022	326.850	322.476	326.681	335.560	349.596
Gross domestic product, current prices	U.S. dollars	Billions	58.954	61.550	55.983	57.371	58.325	59.911	62.089	65.558
Gross domestic product, deflator	Index		118.652	120.742	122.803	123.869	123.220	124.206	125.820	128.337
Gross domestic product per capita, constant prices	National currency	Units	63,613.986	63,597.991	62,204.391	61,636.767	61,132.252	61,437.914	62,298.044	63,631.222
Gross domestic product per capita, current prices	National currency	Units	75,479.254	76,789.769	76,389.161	76,348.984	75,327.161	76,309.427	78,383.670	81,662.302
Gross domestic product per capita, current prices	U.S. dollars	Units	13,742.097	14,377.584	13,077.008	13,401.419	13,624.261	13,994.662	14,503.317	15,313.704
Gross domestic product based on purchasing-power-parity (PPP) valuation of country GDP	Current international dollar	Billions	84.912	86.461	86.085	86.570	87.300	89.357	92.315	96.228
Gross domestic product based on purchasing-power-parity (PPP) per capita GDP	Current international dollar	Units	19,792.981	20,196.488	20,108.602	20,221.995	20,392.476	20,873.014	21,563.970	22,478.007

Subject Descriptor	Units	Scale	2010	2011	2012	2013	2014	2015	2016	2017
Gross domestic product based on purchasing-power-parity (PPP) share of world total	Percent		0.097	0.093	0.088	0.085	0.082	0.079	0.077	0.076
Implied PPP conversion rate	National currency per current international dollar		3.813	3.802	3.799	3.776	3.694	3.656	3.635	3.633
Total investment	Percent of GDP		21.900	21.471	20.492	20.427	19.124	19.424	19.620	20.564
Gross national savings	Percent of GDP		20.774	20.591	20.360	21.310	21.302	21.640	21.383	21.102
Inflation, average consumer prices	Index		99.999	102.261	105.765	108.083	107.727	107.920	109.029	110.665
Inflation, average consumer prices	Percent change		1.047	2.262	3.427	2.192	-0.330	0.179	1.027	1.500
Inflation, end of period consumer prices	Index		100.520	102.580	107.380	107.700	107.575	108.009	109.432	111.173
Inflation, end of period consumer prices	Percent change		1.916	2.049	4.679	0.298	-0.116	0.404	1.318	1.591
Volume of imports of goods and services	Percent change		-3.074	1.879	-2.407	-0.821	-0.596	1.700	4.988	6.362
Volume of Imports of goods	Percent change		-17.427	-5.011	2.198	0.195	-0.279	0.006	5.141	6.506
Volume of exports of goods and services	Percent change		5.538	1.645	0.278	3.808	1.584	4.375	4.909	4.974
Volume of exports of goods	Percent change		8.600	0.928	-2.788	2.404	2.715	0.663	4.865	6.488
Unemployment rate	Percent of total labour force		12.099	13.584	16.062	16.622	16.788	17.124	16.782	15.271

Subject Descriptor	Units	Scale	2010	2011	2012	2013	2014	2015	2016	2017
Population	Persons	Millions	4.290	4.281	4.281	4.281	4.281	4.281	4.281	4.281
General government revenue	National currency	Billions	123.709	123.025	126.132	124.416	129.332	132.900	135.857	141.825
General government revenue	Percent of GDP		38.205	37.423	38.570	38.065	40.106	40.682	40.486	40.568
General government total expenditure	National currency	Billions	138.334	137.988	136.987	142.300	144.377	142.364	144.869	151.257
General government total expenditure	Percent of GDP		42.721	41.975	41.889	43.537	44.771	43.579	43.172	43.266
General government net lending/borrowing	National currency	Billions	-14.625	-14.964	-10.855	-17.884	-15.045	-9.463	-9.013	-9.432
General government net lending/borrowing	Percent of GDP		-4.517	-4.552	-3.319	-5.472	-4.666	-2.897	-2.686	-2.698
General government structural balance	National currency	Billions	-11.162	-12.761	-6.897	-14.627	-10.908	-8.434	-6.138	-7.644
General government structural balance	Percent of potential GDP		-3.359	-3.818	-2.043	-4.362	-3.301	-2.522	-1.790	-2.157
General government primary net lending/borrowing	National currency	Billions	-8.339	-7.681	-2.230	-7.853	-3.971	2.408	3.509	3.960

Source: International Monetary Fund, World Economic Outlook Database, October 2014²⁷⁶

²⁷⁶ Available on the following link:

http://www.imf.org/external/pubs/ft/weo/2014/02/weodata/weorept.aspx?sy=2007&ey=2019&scsm=1&ssd=1&sort=country&ds=.&br=1&c=960&s=NGDP_R%2CNGDP_RPCH%2CNGDP%2CNGDPD%2CNGDP_D%2CNGDPRP%2CNGDPPC%2CNGDPDPC%2CPPPGDP%2CPPPPC%2CPPPSH%2CPPPEX%2CNID_NGDP%2CNGSD_NGDP%2CPCPI%2CPCPICH%2CPCPIE%2CPCPIEPCH%2CTM_RPCH%2CTMG_RPCH%2CTX_RPCH%2CTXG_RPCH%2CLUR%2CLP%

Annex 3: Supply of financial products from other public support initiatives (IFIs)

Source of funding	Beneficiary	Programme	Aim	Available funds EUR from the IFI	Financial intermediary	Investment area (when specifically targeted)			
						UD	EE/RE	RDI	ICT
EIB	Croatia	SB LOAN FOR SMES & PRIORITY LENDING	Financing of small and medium-scale projects through MLT loans. Objective is to make available access to long-term funds at affordable interest rates to sectors of economy with least availability of financing – small and medium enterprise, local authorities.	40 million	Societe Generale Splitska Banka d.d.				
EIB	Croatia	ESB LOAN FOR SMES AND OTHER PRIORITIES III	Financing of small/medium projects carried out by SMEs, and possibly midcaps, as well as other public and private promoters of eligible investments.	50 million	ERSTE & STEIERMAERKISCHE BANK DD				
EIB	Croatia	HBOR LOAN FOR SMES	Contribution to implementing projects in the areas of industry services, tourism and other priority sectors.	250 million	HBOR				
EIB	Croatia	RC LOAN FOR SMES II	Loan for SMEs with a Mid-cap tranche for financing SME and medium sized companies projects, infrastructure projects promoted by local authorities and investments of limited scale in the fields of knowledge economy, energy, environmental protection, health and education.	50 million	RAIFFEISEN LEASING DOO RAIFFEISENBANK AUSTRIA DD			x	
EIB	Croatia	HBOR LOAN FOR SMES AND MID-CAP IV	Financing projects promoted by small and medium-sized enterprises (SMEs), mid-cap companies and municipalities in Croatia. EIB funds will support undertakings in the areas of industry and services, including tourism, and small and medium-scale infrastructure schemes promoted by local authorities. The loan also co-finances projects in the knowledge and technology-intensive sectors and additional priorities such as energy and environmental protection.	500 million	HBOR		x	x	

[2CGGR%2CGGR_NGDP%2CGGX%2CGGX_NGDP%2CGGXCNL%2CGGXCNL_NGDP%2CGGSB%2CGGSB_NPGDP%2CGGXONLB%2CGGXONLB_NGDP%2CGGXWDG%2CGGXWDG_NGDP%2CNGDP_FY%2CBCA%2CBCA_NGDPD&grp=0&a=&pr.x=18&pr.y=14#download](#)

Source of funding	Beneficiary	Programme	Aim	Available funds EUR from the IFI	Financial intermediary	Investment area (when specifically targeted)			
						UD	EE/RE	RDI	ICT
EIB	Croatia	GREEN FOR GROWTH FUND II	Increase of EIB investment in the Green for Growth Fund, targeting EE and smaller RE investments in the South-Eastern Europe and Eastern Neighbourhood regions	2.5 million	GREEN FOR GROWTH FUND		x		
EBRD	Croatia	Zagrebacka banka SME Credit line (Unicredit Group)	Multi-Purpose credit line to Zagrebacka banka for the financing of small and medium-sized investments promoted by mid-caps, SMEs and local authorities, as well as of larger investments promoted by mid-caps and SMEs in eligible sectors in Croatia.	50 million	Zagrebacka banka				
EBRD	Croatia	PBZ SME Credit Line	Increase the provision of funding available to be channelled to the SME sector and will therefore contribute to maintaining access of private companies to financing required for production, trade and services	50 million	Privredna Banka Zagreb				
EBRD	Croatia	Erste Bank Croatia-Senior LOAN MSME Financing	Enhancing access to financing for micro, SME and corporate clients	40 million	Erste & Steiermärkische Bank				
EBRD	Croatia	Zagrebacka banka SME Credit line	Enhancing access to financing for SME and corporate clients	40 million	Zagrebacka banka				
EBRD	Croatia	Unicredit Leasing Croatia - SME Credit Line	Increase the access to long-term lease financing by local SME and help support the recovery of the Croatian leasing market; improve transparency and reporting standards of the participating company to the regulator	30 million	Zagrebacka banka				
EBRD	Rijeka	Rijeka District Heating	Improved operating performance; Introduction of an adequate and transparent tariff formula; Exploring the potential for further privatisation	10 million			x		
EBRD	Sisak	Sisak Urban Transport	Introduction of green bus technology based on hybrid and/or CNG units; Development of Sustainable Urban Mobility Planning; Introduction of a Financial and Operational Performance Improvement Programme; Development of an adequate Public Service Contract; Exploring potential for increased private sector	56 million		x			

Source of funding	Beneficiary	Programme	Aim	Available funds EUR from the IFI	Financial intermediary	Investment area (when specifically targeted)			
						UD	EE/RE	RDI	ICT
			participation for the operation and maintenance of the central bus terminal						
EBRD	Croatia	Raiffeisen Factoring - Credit Line	Enhancing the factoring market in Croatia, which can be a source of liquidity for SMEs	20 million	Raiffeisen FACTORING				
EBRD	Croatia	Port of Sibenik Infrastructure Rehabilitation Project	Frameworks for markets/ Institution building; Transfer of skills; Private ownership/ new private provision of goods and services; Demonstration effect	12 million			x		
EBRD	Croatia	Corridor Completion Project Vc	Support the development of Corridor Vc as an integrated regional corridor by ensuring the physical continuity of the corridor on Croatian territory and connecting it to the Croatian motorway network	60.7 million		x			
EBRD	Croatia	Croatia: Infrastructure Modernisation HZ	The demonstration of successful restructuring, as the Project supports the implementation of a labour restructuring programme, as part of on-going rail sector reform; The demonstration of energy savings through implementation of an EE programme; The improvement of corporate governance through preparation of a rolling five year Business Plan; Encouraging effective and autonomous management through the renewal of the multi-annual railway infrastructure management contract; and; Promoting network access by reviewing the track access charging methodology	40 million		x			
EBRD	Croatia	Croatia Control ATM Modernisation Project	Support the institutional strengthening in Croatia of both the ANS provider and ANS regulator, with the bigger emphasis on the latter, in terms of the introduction of necessary policies and work practices in line with SES II requirements	47 million					

Source of funding	Beneficiary	Programme	Aim	Available funds EUR from the IFI	Financial intermediary	Investment area (when specifically targeted)			
						UD	EE/RE	RDI	ICT
EBRD	Croatia	Trans-European Corridor X Railway Rehabilitation	Support regional development and connectivity as this European corridor connects the Western Balkan countries and its upgrading will facilitate significantly improved transport links within the country	120 million		x			
EBRD	Croatia	Port of Split Infrastructure Rehabilitation Project	Strengthening the management framework at the level of local port authorities; Environmental Management; New private provision of goods and services	18.8 million		x			
IFC	Dubrovnik	Rudine WPP	Financing a greenfield wind power plant (“Rudine WPP”) totalling 34.2 MW in Dubrovnik-Neretva County in Croatia	22.32 million			x		
IFC	Splitsko-Dalmatinska region,	Jelinak	Finance a greenfield wind power plant (“Jelinak WPP”) totalling 30 MW in the northwest of Splitsko-Dalmatinska region, 5 km from the coastline	20.38 million			x		
IFC	Zagreb	Zagreb Airport	Support an expansion of capacity at Zagreb Airport (“ZAG”) by (i) building and operating a new passenger terminal and related infrastructure at Zagreb Airport	57.32 million		x			
IFC	Sisak	Danieli Croatia	Revitalize and upgrade newly acquired the Group steel making plant in Sisak, Croatia, to produce high grade semi-finished products for special steel	53.33 million					
IFC	Croatia	SocGenCroatia_AGRI	Loan to Societe Generale Splitska d.d. Split, Croatia (“the SGSB” or the “Bank”) for on-lending to small and medium enterprises (“SMEs”) and to companies operating within Agri-sector	53.33 million					
IFC	Šibenik	Šibenik WPP	Financing a greenfield wind power plant totalling 43.7 MW near the City of Šibenik in Croatia	21.68 million			x		
IFC	Croatia	C.I.O.S. Group	Increase recycling in the region, improve the situation of marginalised workers who collect scrap metal, and reduce Co2 emissions, supporting efforts to address climate change.	20 million			x		
IFC	Croatia	Atlantic Group	Support the development of agribusiness and cooperation in a region (including Croatia) that is still	50 million					

Source of funding	Beneficiary	Programme	Aim	Available funds EUR from the IFI	Financial intermediary	Investment area (when specifically targeted)			
						UD	EE/RE	RDI	ICT
			recovering from the crisis						
World Bank	Croatia	AF-TRADE & TRANSPORT INTEGRATION ²⁷⁷	To develop trade along Corridor Vc by improving the capacity, efficiency and quality of services on the southern end of Corridor Vc with particular focus on the port of Ploce and on coordination aspects among all corridor participants.	54.17 million ²⁷⁸	International Bank For Reconstruction And Development	x			
World Bank	Croatia	Second Science & Technology Project	To support Croatia to absorb European Union (EU) funds in the research and innovation sector by capacitating selected public sector organizations and stimulating the demand for those funds from the business and scientific communities	22.47 million ²⁷⁹				x	
World Bank	Rijeka	Rijeka Gateway II	The Second Rijeka Gateway Project for Croatia development objective is to develop the capacity, financial performance, and quality of services in the port of Rijeka to meet growing traffic demand, through public-private partnerships, while facilitating urban renewal by enabling the relocation of port activities.	100.35 million	International Bank For Reconstruction And Development	x			
HAMAG-BICRO	Croatia	Proof of Concept	To finance ideas, concepts, prototypes and intellectual property protection	4.65 million				x	
HAMAG-BICRO	Croatia	IRCRO	To increase collaboration in RDI between domestic SMEs and RDI organisations	1.84 million				x	
HAMAG-BICRO	Croatia	EUREKA	To increase RDI collaboration with partners from other EUREKA participating countries	1.26 million				x	
HAMAG-BICRO	Croatia	Razum	To ensure financing for product development and realization, and to eliminate developmental risks.	7.44 million				x	

Source: EIB, EBRD, World Bank and IFC websites

²⁷⁷ <http://www.worldbank.org/projects/P118260/af-trade-transport-integration?lang=en>

²⁷⁸ As of 29/12/2014, www.xe.com

²⁷⁹ As of 15/1/2015, www.xe.com

Annex 4: Key players of each priority investment area

Ministries

- The Ministry of Construction and Physical Planning (MCPPE): performs administrative and other tasks related to construction, physical planning and housing, and participates in the development and implementation of programmes from ESI funds and other forms of international assistance in these fields. Moreover, the MCPPE is the overall responsible (intermediate body level 1) for the implementation of government policies for promotion of EE and RES investments in terms of EU funds related to housing stock and public sector buildings. Therefore, overall, MCPPE is in charge of EE in buildings.
- Ministry of Regional Development and EU Funds: is in charge of the implementation of policy for balanced regional development, whose aim is to transform less developed regions in the Republic of Croatia and reduce regional development imbalances at national level. The MRDEUF is responsible for creating conditions and carrying out the activities aimed at planning, implementing and evaluating development programmes designed to develop the local self-government units, encouraging the development of cross-border, transnational and interregional cooperation, as well as for preparing the strategic and operational documentation (and projects) for the deployment of EU funds and all other international sources of funds supporting regional development initiatives. Moreover, the MRDEUF is the Managing Authority for the OPCC, the OP that sets out national priorities for deploying EU funds in relation to EE and RE investments.
- Ministry of Economy (MoE) is in charge of the development of the economy. The administrative and other tasks carried out by it comprises: the development and improvement of competitiveness of the Croatian economy using instruments and economic policy measures; industrial policy and policy on both innovation and the use of new technologies; managing a guarantee fund for the promotion of industry; tasks referring to implementation and use of intellectual and industrial property rights and promotion of creativity in industry and trade in order to develop competitiveness of the Croatian economy; energy policy of the Republic of Croatia; mining; strategy to facilitate and promote investment and exports. The Ministry is the author of the NEEAP (i.e. EE Master Plan for Croatia), and actively participates in the promotion of measures related to the Thermal Energy Market Act and monitor its implementation. Moreover, MoE is the overall responsible (intermediate body level 1) for the implementation of governments policies for promotion of EE and RE investments in terms of EU funds in related to commercial non-residential buildings and industrial production processes.
- The Ministry of Maritime Affairs, Transport and Infrastructure performs administrative and other tasks related to: internal and international maritime transport, nautical, road, rail, air and postal transport; system traffic cable cars, funiculars and ski lifts and traffic on inland waterways, planning, development and implementation of strategic documents and transport infrastructure projects; protection of sea from pollution from ships; sea ports, maritime property and delimitation of maritime property, marine insurance and maritime agencies; ports on inland waterways; inland freight-transport centres; airports; inspection activities within its jurisdiction; electronic communication (telecommunications and radio communications) and post, information society and postal services; preparation of draft laws and other regulations in the field of electronic communications and postal services, proposing strategies, studies, guidelines and program development of electronic communications and postal services in the Republic of Croatia; proposing measures and plans for the development and improvement in the field of electronic

communications, information society and national information infrastructure and postal services, proposing projects and programs of development of information and communication technology (ICT) and services of the information society, cooperation in planning, harmonization and implementation of development activities for national information infrastructure, preparation of proposals for measures and plans to encourage the development and improvement of the situation on the market of ICT services, applications and products and the ICT infrastructure, providing technical support in the screening and assessment of compliance of legislation with the EU acquis. The Ministry of Maritime Affairs, Transport and Infrastructure is both the intermediate body level 1 and 2 in charge of implementation of ESI funds related to supporting the development of NGN and NGA infrastructure.

EPEEF²⁸⁰

It is the **Project Implementation Unit** responsible for the energy renovation support programmes for single family homes, for multi-apartment buildings, and for commercial buildings and also for programme on waste management. It also handles energy audits and information campaigns of the EE project.

EPEEF has a total of seven employees (with technical background) that are full time designated to EE in buildings programmes (“sustainable building” segment of EE department of EPEEF). Composition of sustainable building full – time engaged EE team members is as follows:

- Four designated for oversight of implementation of energy renovation programme for residential buildings:
 - Two for multi-apartment buildings
 - Two for single family homes
- Two designated for oversight of implementation of energy renovation programme for public sector buildings
- One designated for oversight of implementation of energy renovation programme for non-residential (commercial) buildings

The team is managed by two people and has at its disposal the expertise of four experts dealing with RES who support the core team with regards to RES technologies in the programmes (primarily the single family homes renovation programme). In terms of competences and capacity, designated staff is well teamed-up having, and bringing in, necessary experience with EE measures.

Croatian Chamber of Commerce

The Croatian Chamber of Commerce is a non-profit independent professional and business organisation supporting all business entities in Croatia to increase their competitiveness and build up their market position. Based on a compulsory membership, the organisation employs approximately 500 employees and covers all 22 national counties. It also covers all business sectors except the food processing industry, wood processing industry and technological research, development and innovation.

Local and Regional Self-Government Units

²⁸⁰ Please note that a more detailed description of the fund and its programmes has already been presented beforehand in the report.

LRSU are Croatian municipalities, cities and counties, assisting EPEEF in the implementation of programmes, by handling the local level issue of calls for proposals for applications for support under the EPEEF programmes. They also disburse EPEEF funds locally, monitor implementation and report to the fund on implemented measures and ensure additional co-financing in the programme related to multi-apartment buildings. More in detail, LRSUs role is to publish call for proposals for final beneficiaries and based on predefined eligibility and selection criteria, approve single projects and report to EPEEF who, after verification of submitted documentation, makes grant payments to final beneficiaries or directly to contractors. Moreover, LRSUs have the role of promoting the programme at local level. LRSUs is also one of the beneficiaries – together with other central government bodies - of a joint HBOR/EIB loan programme for EE projects (EE Finance Facility).

Agency for Transactions and Mediation in Immovable Properties

The APN is, together with EPEEF, one of the key institutions for the implementation of the programmes for energy renovation in public buildings.

APN is also the Project Implementation Unit for the energy renovation support programme for public buildings under EPEEF. The APN carries out procurement procedures, signs the EPC and monitors project implementation. The APN is also the counterpart for the EPEEF co-financing agreement.

It is also in charge of the management and development of the EMIS/ISGE, a database in which every public building in Croatia is obliged to enter data on energy consumption. Based on the data entered into the system consumption and savings (comparing the data prior to renovation), APL develop statistics and monitors energy consumption.

In its role, APN as Project Implementation Unit has a total of eight full time employees which work on the implementation of the Programme. All of the staff working on the implementation of the Programme are engineers (different fields) with considerable experience with EE projects (they have previous work experience with EE projects gained through work in/with UNDP (Project “Removing Barriers to Energy Efficiency in Croatia”) and CEI. Seven employees are in dealing with EMIS. According to the interviewees almost all public buildings have been already entered into the mentioned system. It is planned that data on energy consumption for all public buildings will be sent directly by the energy providers and not by the users of the buildings as so far.

Centre for Monitoring Business Activities in the Energy Sector and Investments

CEI is the National coordinating and implementing authority for EE established by the Croatian government with the objectives of seeking solutions for improving the financial effectiveness of companies fully or partially public owned operating in the energy sector. It employs 17 employees. The key fields in which CEI operates consist of:

- **Investment sector** (Monitoring public investments, expert support and participation in drafting the investment programs);
- **PPP sector** (Developing new public private partnerships for development, renovation and reconstruction of public buildings);
- **Energy sector** (Preparing capital energy projects and supporting RES, preparing business analysis and development plans of companies in the energy sector in Republic of Croatia).

The main activities carried out by the centre comprise:

- **Planning:** development of National Action Plans for EE;

- **Coordinating:** liaison of activities amongst all institutions involved in the implementation of EE policy;
- **Measuring:** systematic monitoring of the implementation of the SMIV - System for monitoring, measurement and verification of energy savings;
- **Reporting:** to Ministries, Government and the European Commission on the results;
- **Cooperation:** with national and international institutions, in particular the EU institutions;
- **Promotion:** for EE at the national level, informing the general public about the plans, realized measures and their effects.

Within the monitoring activities carried out, CEI has also developed a database including information on the number of bidders and budget allocation for each call for tenders published by EPEEF and other publicly owned fund. According to the centre, despite six bids being submitted on average, and despite the consortium being officially awarded, the some contracts (e.g. for police stations and energy refurbishments) were not signed for a period of 5-6 months. The average investment was between HRK 2.5 and 4 million. The reason for the delays was that the responsible ministers had to verify a second time the contracts, which were in the tender documentation.

ESCO Companies

An ESCO is a commercial or non-profit business providing a broad range of energy solutions including designs and implementation of energy savings projects, retrofitting, energy conservation, energy infrastructure outsourcing, power generation and energy supply, and risk management.

Recently, ESCO companies have focused more on innovative financing methods, undertaking actions to improve EE, removing the risk of the intervention from the user/owner and relieving the final user from any organisational effort and investment. The economic savings obtained are shared between the ESCO and the final customer with different types of trade agreement.

In Croatia, the market may be characterised as being in its early stage of development. The only large sized dedicated ESCO is HEP-ESCO, a company owned by the state utility company HEP which has implemented projects in industry, energy supply, buildings and public lighting sectors in contract sizes normally up to 10 million HRK and 5-10 years duration. The type of energy service contracts are typically with fixed payments and performance guarantees are not used. Moreover, there is only one major private ESCO company, Rudan d.o.o followed by a handful of companies (Sense, Eltek Petrol and GGE) that are active in the market but which are however small start-ups or subsidiaries of foreign companies with limited market involvement at the present time.

HEP-ESCO managed from 2003 more than 50 energy efficiency projects in the areas of public lighting, district heating, building cogeneration on biomass, industry and energy supply systems for a total investment of 12,3 million EUR. With the current capacity both in financial and personnel terms, this ESCO company can manage a loan (in a form of an overdraft) of approximately 70 million HRK per year.

ESCO in the public sector

According to the EIB JASPERS study, the majority of bidders for the ESCO projects in the public buildings have been construction companies. These companies have limited insight into energy services and limited access to financing for ESCO projects. In their view, the interest of dedicated ESCOs in the public buildings programme has been limited due to contract periods that are too lengthy (10-14 years), regulatory uncertainty in public sector that prevents ESCO companies to start business in the sector and

to the fact that the programme focus on general integrated energy renovation rather than on their accustomed single service and due to uncertainty about VAT treatment. Moreover, the lack of a contractual framework is exacerbated by a risk sharing mechanism that transfers too much risk to the Energy Service Providers (ESPs) in view of the market players.

Recently a private-owned ESCO company has signed the contract for the refurbishment of the **Split Hospital**, for a total value of 113 million HRK, of which 40% from EPEEF, and the remaining share commercial loan.

ESCO in the private sector

Despite the market size being small, most ESCO projects have been implemented in the private sector. Projects are mostly of the single measure type with relatively short contract duration and a relatively high degree of commercial viability. Worth mentioning is that finding from interviews reveal that, due to legal uncertainty, the only public-owned ESCO in Croatia has only been working so far with the private sector.

Public utilities and solution providers

Public utilities and solution providers are organisations that maintain the infrastructure for a public service (e.g. gas, electricity, water and sewage). The two main players under this category are **Plinarco**, a fully state owned company providing natural gas transmission system in Croatia and **HEP d.d.**, a national power company engaged in electricity production, transmission and distribution of gas.

Regional energy agencies

Through their activities, energy agencies on the territory of the Republic of Croatia not only encourage public administration offices to meet their EE requirements, but they also encourage them to go further and improve the lives of citizens by implementing various EE and RES measures. Through their projects, the agencies allocated essential funds to cities and counties for improving the EE of their facilities, either through educational measures or with specific reconstructions. Five agencies and their most important activities implemented in the period from 2011 to the end of 2014 are specified below.

- **REA Kvarner**, the Regional Energy Agency Kvarner was established in 2009. The aim of its establishment was to set up a single organisational and institutional framework for a more rational use of existent energy resources, and to promote energy production from RE and alternative sources in the Primorje-Gorski Kotar County. The agency's establishment and activities in the first three years of operation were financed with funding from EU funds, within the framework of the CIP – Intelligent Energy Europe Programme;
- **REGEA**, the North-west Croatia Regional Energy Agency was established by the joint application of the Krapina-Zagorje County, Zagreb County, Karlovac County, and the City of Zagreb to a tender for the Intelligent Energy Europe programme. With the support of the European Commission, the Agency started its operations in April 2008.
- **REA North**, the Regional Energy Agency North was established as a public, independent and non-profit institution whose activities are based on energy planning, conducting energy audits of public and private sector buildings, providing advisory services on energy and energy technologies to the business sector and the public, and promotional and marketing activities.

- **MENEA**, the Međimurje Energy Agency - MENEA was established in 2008 under the EU project 'Creation of energy agencies in Lleida (ES), Međimurje (HR) and Montpellier (FR)', financed from the Intelligent Energy Europe (IEE) programme. The project idea was developed at the encouragement from the Međimurje County and the Regional Development Agency Međimurje (REDEA). In addition to the IEE funds, the financial backing for the start of activities was provided by the Međimurje County, the towns of Čakovec and Prelog, and the companies HEP-ESCO, INA and Končar.
- **IRENA** - Istrian Regional Energy Agency Ltd. Labin, was founded in 2009. According to the program Intelligent Energy Europe (IEE), IRENA was established as an independent non-profit organization, providing advisory services to the public in form of information, help in raising awareness, training, etc., to local decision makers on energy issues in the public and private sectors, households and citizens.

Asset owners

Asset owners include landlords of single family homes, residential buildings/building units, commercial buildings and public ones (e.g. municipalities, regional authorities, ministries).

To name an example, **Atlantic group**, an important food company in the region, with production plants spread over Western European Countries, has already engaged an ESCO company for EE interventions in its buildings.

Another example is the **City of Zagreb**, the capital of the Republic of Croatia with a population of approximately 800,000 inhabitants. It became a signatory of the Covenant of Mayors in 2008 and has adopted the Sustainable Energy Action Plan (SEAP) in 2010, a key document for the implementation of EE, RES and environmentally friendly fuels projects at the town level. City Office for Energy, Environment and Sustainable Development is the body responsible for energy policy in the city. The city has already experience with funds set up at national/international level (e.g. Open Regional Fund for South East Europe, GIZ GmbH) and has also took part in Zagee, the Intelligent Energy Europe Project which supports the realization of energy savings through the implementation of economically justified, energy efficient technologies and measures on assets whose the City of Zagreb is owner.

FINA was included in the HIO (House in Order) - a programme for systematic energy management, and aimed at contributing to the conservation of nature and environment, reduced greenhouse gas emissions and encourage energy efficiency. FINA has several buildings in property and it plans to refurbish four of them in 2015 (in Zagreb, Rijeka, Vukovar and Gospić) and further three (Zagreb, Bjelovar, Kutina) later on.

Other asset owners include:

- Pliva;
- Belupo;
- Atlantic group, ATGR replaces their machinery when necessary, which contributes also to EE of their production facilities;
- The Saponia chemical factory is the largest factory located in the Osijek area. It is a major producer of detergents, soap and cosmetics. It is the largest exporter in the city area;

- Genera;
- Agrokor²⁸¹;

Building managers of Multi-apartment Buildings

Building managers are Croatian companies in the form of either a legal or natural person authorized to carry out building management services. The manager acts as administrator and strictly on behalf of owners. This stakeholder group is vital for the implementation of all measures related to multi-apartment buildings because they act as the contracting party in receiving the subsidy on behalf of co-owners.

The **City Housing and Municipal Services Company (GSKG)** (Gradsko stambeno-komunalno gospodarstvo) is a public company established in December 1990 with experience in property management and maintenance of buildings. It is the major buildings manager in Croatia with a portfolio of more than 10,000 buildings, equal to more than 9 million m² (of which 85% only in Zagreb). GSKG finance its activities mainly from buildings reserve equalling to approx. 3 HRK per m² and a management fee. As for maintenance interventions, GSKG used loans issued by Zagrebačka banka at favourable market conditions (4.7% of interest rate loans with maturity from 5-10 years). GSKG has relatively small experience with EU funds, having mainly used them for assistance with difficult application procedures.

OiV- Odašiljači i Veze

“OiV - Transmitters and Communications Ltd.” is a state owned company that operates in the broadcasting and telecommunication industries providing services, network solutions and infrastructure behind television or radio, as well as fixed and mobile telecommunications. Through its work Transmitters and Communications Ltd. is obliged to carry out functions and perform duties partly regulated by laws. OiV offers the following services:

- **Playout Services-** for content owners to launch TV channels
- **Interactive TV Wholesale Services-** for operators to serve Cable, DSL, FTTH, Internet and mobile customers with fully featured linear and non-linear services
- **Terrestrial Broadcast Services-** they provide transmission for all national and most regional Croatian TV and radio broadcasters using analogue and digital (DVB-T, DAB and DRM) transmissions
- **Satellite Services-** includes turnaround, scrambling and transmission for almost every satellite over Europe
- **Capacity Services-** on fibre and microwave networks OiV can enable connection to virtually any point in Croatia and to major centres around the world
- **Wireless Access-** Complete wireless network solutions including sites, backhaul and professional services

²⁸¹ For which projects in the food and beverage sector should be excluded as not eligible for EU financing as stated in the OPCC.

Croatian Regulatory Authority for Network Industries (HAKOM)

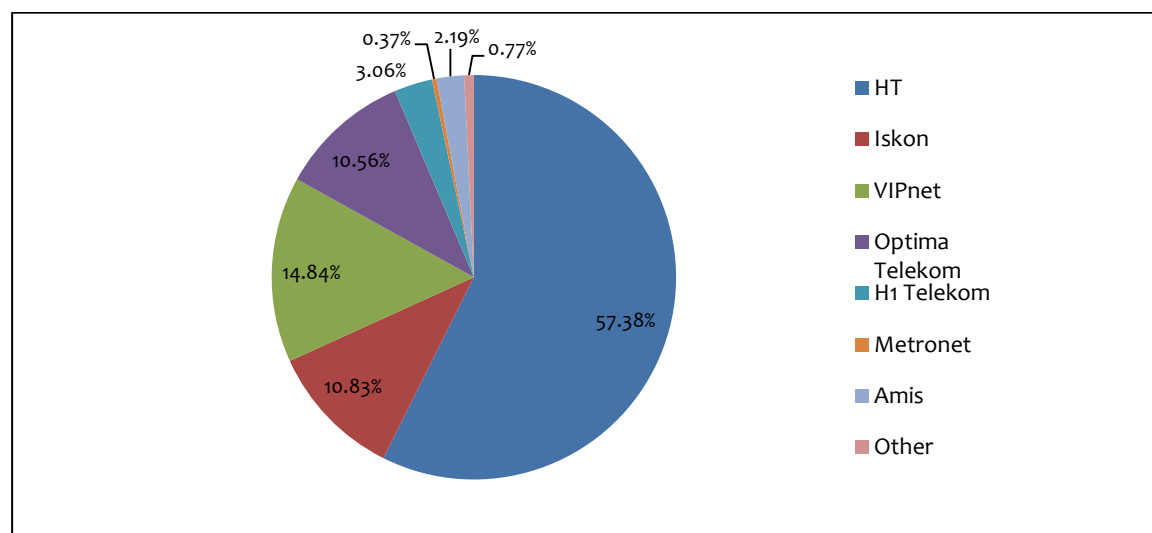
Croatian Regulatory Authority for Network Industries (HAKOM), its scope and competence is prescribed by the Electronic Communications Act that entered into force on 1st July 2008 and a special law regulating the field of postal services.

HAKOM is an independent, autonomous and non-profit legal entity. The work of HAKOM is public. The founders of HAKOM are Croatian Parliament and the Government of the Republic of Croatia. HAKOM is governed by the Council consisting of five members.

HAKOM's main role is to promote regulation of the electronic communications market, promote regulation of the postal services market, support growth of investments and innovations in the electronic communications market, support growth of investments and innovations in the postal services market, provide efficient use of limited resources, accelerate the growth of broadband products and services, provide affordable offers of communications and postal services, improve protection and informing of users, build an efficient, comprehensive information system, define and implement efficient processes and to acquire multi-disciplinary competencies in market regulation.

With regard to the other (operators) key players of the market, it should be noted that the fixed broadband market is dominated by the incumbent operator, Hrvatski Telekom (HT). The operators and their respective market shares based on the number of fixed broadband connections are shown in the Figure below.

Table 110: Distribution of fixed broadband connections per operator at the end of 2013



Source: HAKOM- Annual Activity Report 2013

Hrvatski Telekom

Hrvatski Telekom (HT) is the leading provider of telecommunication services in Croatia, serving more than 1.2 million fixed line customers, 2.3 million mobile subscribers and around 630,000 broadband connections through its Residential and Business divisions.

Hrvatski Telekom d. d. is a joint stock company in the majority ownership of Deutsche Telekom HT has a dominant market share especially in fixed and broadband markets and it is showing a trend of consolidation . In 2006, HT bought Iskon Internet, which was at the time the largest internet service

provider. This concentration was not subject to EU competition rules since Croatia at the time was not a Member State.

In 2013, three alternative operators, Optima Telekom, (currently owned by ZABA and HT) Metronet Telecommunications and H1 Telekom (currently owned by HPB) were undergoing pre-bankruptcy proceedings, with HT as one of their largest creditor.

VIPnet d.o.o

Vipnet was the first private mobile operator in Croatia. At the time when Vipnet entered the market, the penetration rate of mobile telephony in Croatia represented just 4.6%, while it reached 117.5% by the end of 2011. By entering the Croatian telecommunications market, Vipnet introduced competition into mobile telephony. Vipnet is a part of the Telekom Austria Group; Mobilkom Austria.

In August 2011, Vipnet acquired B.net, the largest Croatian cable operator that offers fixed telephony, broadband Internet access and television services. Therefore, VIPnet is currently offering bundled products (broadband, TV, fixed and mobile telephony services) over the cable infrastructure and over HT's network. In 2013, VIPnet bought 3 more local cable companies: Kabelska televizija Šibenik, Optika kabel infrastruktura and Istarska kabelska.

Metronet Telecommunications d.d.

Metronet Telecommunications Ltd. was established in May 2005 in Zagreb with the aim of meeting the complex communication needs of the Croatian economy. Metronet's communication solutions are primarily designated for corporate customers who require a wide range of voice, data and video services in their operations. A majority of Metronet Telecommunications shares (c.a. 21%) is owned by Quaestus Private Equity d.o.o. /Quaestus Private Equity Kapital.

Regarding the investments in NGA networks, HT has built a FTTH network in parts of largest cities (Zagreb, Split, Rijeka and Osijek), which contributes to population access to NGA up to a maximum of 20% at the national level. On the same area the leading cable operator B.net (part of the second largest national operator Vipnet) partly upgraded its network to DOCSIS 3.0 standard. Furthermore, the operator Amis Telekom built or plans to build the FTTH network in the most densely populated parts of Zagreb, and the construction of FTTH networks in the same parts of Zagreb is planned by the city utility company Zagreb Holding (Zagreb Digital City). It is noticeable that most of current investments and the announced investments are concentrated in areas of major Croatian cities. HT also announced a plan to upgrade the existing pair access infrastructure with VDSL technology.

According to ONP it is predicted that operators will independently built NGA networks in areas of Croatia covering a maximum of 30% of the population (bigger cities).

Annex 5: Additional projects in the SUD priority investment area identified during the study

City	Project name	Market segment	Project description	Project size (EUR million)	Project status	Initial investment (year)	Note
Zagreb	Faculty of Pharmacy and Biochemistry	Urban development	Faculty of Pharmacy and Biochemistry is planning to relocate into a new location	20	Project is still into a design phase	n.a.	n.a.
Zagreb	Sava Riverfront	Urban development in general	Major spa development and update of Zagreb Fair	n.a.	n.a.	n.a.	n.a.
Zagreb	Badel Block	Urban development in general	Redevelopment of Badel block	n.a.	n.a.	n.a.	n.a.
Zagreb	Paromlin	Cultural heritage	Regeneration of industrial heritage site of Paromlin	n.a.	n.a.	n.a.	n.a.
Zagreb	SEECCEL	Urban development in general	Europe Centre for Entrepreneurial Learning) and Gredelj Creative Cluster	n.a.	n.a.	n.a.	n.a.
Zagreb	Borongaj	Urban development in general	Development of a new university campus on brownfield site, to include technology transfer Bio Centre in Borongaj	n.a.	n.a.	n.a.	n.a.
Zadar	n.a.	Urban development	Development of a new university campus	91	n.a.	n.a.	n.a.
Zadar	n.a.	Urban development	Construction of economic zone Crno - to include a technology park.	51	n.a.	n.a.	n.a.
Vukovar	n.a.	Urban development	Rehabilitation and sustainable development of competitive business	50	n.a.	n.a.	n.a.
Vitrovica	n.a.	Waste and water treatment	Utility (water supply, electricity, sewage) and transport infrastructure	130	n.a.	n.a.	n.a.
Vinkovci	2 visitors centres ("Croatian Home)	Cultural heritage	n.a.	5-24	n.a.	2014	n.a.
Velika	Entrepreneurship	Urban	n.a.	4-59	Documentation in	n.a.	n.a.

City	Project name	Market segment	Project description	Project size (EUR million)	Project status	Initial investment (year)	Note
Gorica	incubator	development			progress (in MRDEUF pipeline)		
Velika Gorica	Stari grad Lukavec (castle)	Cultural heritage	Development of a future museum and multimedia	2.62	Documentation ready	n.a.	n.a.
Velika Gorica	n.a.	Cultural heritage	Museum building to be reconverted into a visitors centre and tourist office	n.a.	n.a.	n.a.	n.a.
Split	Concert hall Prokurative	Cultural heritage	Refurbishment of the Prokurative concert hall	1.48	Documentation ready (construction permit)	n.a.	n.a.
Split	Mletačka kula (tower)	Cultural heritage	Internal refurbishment of the tower	n.a.	n.a.	n.a.	n.a.
Split	Illumination	Public lighting	n.a.	0.045	n.a.	2015/2016	n.a.
Split	Sewage from the antics	Cultural heritage	n.a.	0.065	n.a.	n.a.	n.a.
Split	Šetnica na Dioklecijanovoj palači	Cultural heritage	n.a.	n.a.	n.a.	n.a.	Legal property issues
Split	Karepovac waste canter sanation	Waste treatment	Sanitation of Karepovac waste canter	10	n.a.	– in progress (with EPEEF)	n.a.
Split	Former military site at Dračevac	Brownfield regeneration	n.a.	n.a.	n.a.	n.a.	The urban authority has neither the powers nor the instruments to compulsorily acquire sites
Slavonski Broad	n.a.	Cultural heritage	Revitalisation of the Brod fortress	100	n.a.	n.a.	n.a.
Slatina	n.a.	Urban	Development of the geo-thermal energy plant	299	n.a.	n.a.	n.a.

City	Project name	Market segment	Project description	Project size (EUR million)	Project status	Initial investment (year)	Note
		development	and paper factory				
Slatina	n.a.	Urban development	Agriculture entrepreneurship incubator and food logistics/distribution centre	50	n.a.	n.a.	n.a.
Slatina	n.a.	Urban development	Development of co-generation power plants on forest biomass & silage maize	60	n.a.	n.a.	n.a.
Šibenik	Revitalization of the fort sv. Ivan	Cultural heritage	Revitalization of the fort sv. Ivan	10	Started (project development, land development, licences)	n.a.	n.a.
Rijeka	Rijeka harbour	Urban development	Deindustrialisation of the traditional waterfront along with the development of Local rail and road links. Moreover, the project includes the 17 Ha 'Rijeka Gateway' development for commerce and tourism.	n.a.	n.a.	n.a.	n.a.
Rijeka	The project of upgrading the drainage system agglomeration of Rijeka with the construction of a new wastewater treatment	Waste treatment	Construction of the missing parts of public drainage.	150	Started	2016	5 years
Rijeka	Dom mladih (Youth home)	Cultural heritage	EE interventions in Dom mladih	10	Main design project ready, but will be re-designed	n.a.	n.a.

City	Project name	Market segment	Project description	Project size (EUR million)	Project status	Initial investment (year)	Note
Osijek	n.a.	Urban development	Distribution centre for fruit and vegetables with refrigeration facilities at the inland waterway port.	n.a.	n.a.	n.a.	Further plans for Osijek to develop as a logistics centre are linked to the foreseen airport expansion and future improvements in rail connections.
Kutina	Industrial-logistical zone	Urban development	Communal infrastructure,	2.49	documentation ready	n.a.	0-10% IRR
Kaštela	Recycling yard	Waste treatment	Construction and refurbishment of the recycling yard on area of approximately 2400 m2.	150	Not started	2016	1 year duration
Kaštela	Heritage in the service of tourism, Kaštilac-interpretation garden Kaštela	Cultural heritage	Renovation and revitalization of the entire location of Kaštilac a protected urban area which consists of a village on a cliff, 40 meters from the coast. The project is to renew and strengthen the foundations of buildings in public ownership, and to devise attractive tourist facilities	4	Not started	2017	n.a.
Kaštela	From Kastilac to Rušinac, arrangement of coastal area of City of Kaštela	Cultural heritage	Furnishing and equipping the coastal belt length of 4 km, the beaches, walking trails, bike paths, and public spaces.	3.5	Not started	2017	n.a.
Kaštela	Agglomeration Kaštela Trogir	Waste and water treatment	A large infrastructure project includes the construction of water and sewage networks in the area between Split and Trogir.	130	Started but not finalized (the project is to be developed and implemented in phases- the first	2017	n.a.

City	Project name	Market segment	Project description	Project size (EUR million)	Project status	Initial investment (year)	Note
					phase- project documentation-started)		
Kaštela	Re-construction of The coastal strip Kaštel Stari -	Cultural heritage	Project aims at reconstruction of coastal strip and shape it into a small sport port	0.240	Not started	2015	n.a.
Kaštela	Opatička house, Kaštilac - revitalization	Cultural heritage	The project aims to renovate and revitalize the protected monument, the house within the protected urban ensemble sites Kaštilac and arrange the museum.	197,000	Started but yet finalised	2014	n.a.
Bjelovar	The construction of the indoor swimming pool with decorated external surface at the location of sports and recreation centre "Mladost" in Bjelovar	Urban development	The goal of the City of Bjelovar is the construction of indoor pools, round up the whole planned area of sports and recreation complex that includes outdoor swimming pool, tennis courts, sunbathing and other additional facilities	6.26	Started - feasibility and CBA available	2016	n.a.
Dugo Selo	Project of reconstruction of public building former health centre into museum	Cultural heritage	Project aims at transformation of that building into a museum or multifunctional space	0.655	Project development	2015	there is some legal (property) issues
Dugo Selo	Public lighting	Urban development	The project will be implemented through Zagrebačka County	1	City of Dugo Selo has signed agreement with Zagrebačka County. Master plan is drafted	2014	n.a.
Dugo Selo	n.a.	Urban development	Demolition of old and construction of new building (public and commercial purposes	4.18	n.a.	2018	n.a.

City	Project name	Market segment	Project description	Project size (EUR million)	Project status	Initial investment (year)	Note
Dugo Selo	n.a.	Waste treatment	Set up of waste collection system (2 recycling yards, 15 green islands)	1.45	n.a.	2015	n.a.
Total value of projects in the cultural heritage				334.8			
Total value of projects in public lighting				0,045			
Total value of projects in the brownfield regeneration				n.a.			
Total value of projects in urban development in general				639.52			
Total value of projects in waste and water treatment				571.45			
Total				1,545.82			

Annex 6: Demand side analysis by market segment

EE/RE investment area

	Market Segments				
	EE Refurbishment of Single Family Homes	EE Refurbishment of Private Multi-apartment Buildings	EE Refurbishment of Private Commercial Buildings	EE Refurbishment of Public Buildings	EE Improvements to Industrial Processes
	Official source	Assumptions developed drawing primarily on the III NEEAP 2013-2016	Assumptions developed drawing primarily on the III NEEAP 2013-2016	Assumptions developed drawing primarily on the III NEEAP 2013-2016	Assumptions developed drawing primarily on the III NEEAP 2013-2016
	Total number of projects	14,000 homes in Croatia	NEEAP policy objective is to implement refurbishment projects equal to 35,000,000 m2 (2014-2020 period)	NEEAP policy objective is to implement refurbishment projects equal to 3,360,000 m2 (2014-2020 period)	NEEAP policy objective is to implement refurbishment projects equal to 1,520,000 m2 (2014-2020 period) according to III NEEAP and ca. 4,320 buildings identified in the SEAPs.
	Total project cost (EUR)	190 million (2014-2020 period)	480 million (2014-2020 period)	410 million (2014-2020 period)	505 - million (2014-2020 period)
Envisaged Demand from Official Sources*	Estimate% of mature projects	n.a.	n.a.	n.a.	n.a.

		Market Segments				
		EE Refurbishment of Single Family Homes	EE Refurbishment of Private Multi-apartment Buildings	EE Refurbishment of Private Commercial Buildings	EE Refurbishment of Public Buildings	EE Improvements to Industrial Processes
	Estimate% at interim development stage	n.a.	n.a.	n.a.	n.a.	n.a.
	Estimate% at early stage	n.a.	n.a.	n.a.	n.a.	n.a.
Observed Demand	Number of projects	n.a.	n.a.	ca. 8	ca. 100 (please note that only within Zagee, 87 buildings have been identified)	ca. 40 (number of projects which was not awarded in the 2013 EPEEF call)
	Overall project cost (€)	n.a.	n.a.	41.5 million	82 million	10.20 million (estimation based on the value of the awarded projects in the 2013 EPEEF call)
	Eligible project cost (€)	To be determined at project preparation stage	To be determined at project preparation stage	To be determined at project preparation stage	To be determined at project preparation stage	To be determined at project preparation stage

	Market Segments				
	EE Refurbishment of Single Family Homes	EE Refurbishment of Private Multi-apartment Buildings	EE Refurbishment of Private Commercial Buildings	EE Refurbishment of Public Buildings	EE Improvements to Industrial Processes
Number of mature projects	Full information on project maturity not available at this stage	Full information on project maturity not available at this stage	4 buildings, all hotel typology	6 (without including the buildings identified in the Zagee project)	Full information on project maturity not available at this stage
Eligible project cost (mature projects) (€)	To be determined at project preparation stage	To be determined at project preparation stage	To be determined at project preparation stage	To be determined at project preparation stage	To be determined at project preparation stage
Related OPCC investment priorities	4c - Supporting energy efficiency, smart energy management and renewable energy use in public infrastructure, including in public buildings, and in the housing sector	4c - Supporting energy efficiency, smart energy management and renewable energy use in public infrastructure, including in public buildings, and in the housing sector	4c - Supporting energy efficiency, smart energy management and renewable energy use in public infrastructure, including in public buildings, and in the housing sector	4c - Supporting energy efficiency, smart energy management and renewable energy use in public infrastructure, including in public buildings, and in the housing sector	4b - Promoting energy efficiency and renewable energy use in enterprises
Resources needed per investment priority	No deployment of FI envisaged at this stage for this market segment	No deployment of FI envisaged at this stage for this market segment	The potential financial envelope, as detailed in the investment strategy, envisages EUR 100-200 million.		
Observed hurdle to	<ul style="list-style-type: none"> Administrative burdens and "slow, strict and 	<ul style="list-style-type: none"> In case of renovation of apartment buildings, 	<ul style="list-style-type: none"> Low cost of energy in Croatia disincentives 	<ul style="list-style-type: none"> Limited participation of the private sector 	<ul style="list-style-type: none"> EE/RES interventions are

	Market Segments				
	EE Refurbishment of Single Family Homes	EE Refurbishment of Private Multi-apartment Buildings	EE Refurbishment of Private Commercial Buildings	EE Refurbishment of Public Buildings	EE Improvements to Industrial Processes
access finance	complex" procedures to obtain financing (from e.g. EPEEF and HBOR, as mentioned in some interviews).	commercial banks require joint responsibility of all owners of the apartments to the repayment of the loan. <ul style="list-style-type: none"> • Refurbishing apartment buildings is problematic because of the difficulties to identify the borrower (the building as such is not a legal entity); • Projects aimed at refurbishing multi-apartment buildings need to be approved by at least 50% + 1 landlords; 	intervention of EE. <ul style="list-style-type: none"> • Lack of technical skills to estimate energy savings and to plan EE/RE interventions resulting in a lack of interest in energy saving interventions. 	in the investments make it difficult to cover the co-financing required for both EU funds and national funds like e.g. EPEEF; <ul style="list-style-type: none"> • The low cost of energy in Croatia disincentives intervention of EE; • General lack of energy efficiency financing experience within commercial financial institutions and high perceived end-user credit risk; • Uncertain and unstable regulations, especially regarding public procurement procedures and tender criteria; • Recent changes to the Income Tax Act, which reduced the budget of municipalities hampering the possibility to introduce EE 	not the core priority in budgeting for companies.

	Market Segments				
	EE Refurbishment of Single Family Homes	EE Refurbishment of Private Multi-apartment Buildings	EE Refurbishment of Private Commercial Buildings	EE Refurbishment of Public Buildings	EE Improvements to Industrial Processes
				measures.	
Observed need for TA	Likely need for a combination of grant financing for TA e.g. EE audit, energy performance certificates, and building design documents	Likely need for a combination of grant financing for TA e.g. EE audit, energy performance certificates, and building design documents	Likely need for a combination of grant financing for TA e.g. EE audit, energy performance certificates, and building design documents	Likely need for a combination of grant financing for TA e.g. EE audit, energy performance certificates, and building design documents	Likely need for a combination of grant financing for TA e.g. EE audit, energy performance certificates, and building design documents

*These figures are drawn on the basis of assumptions taken from the NEEAP. However, please note that for the sake of sensitivity analysis the report also develops scenarios modelling for if 100-50-25% of building stock in Croatia would be subject to EE/RES interventions.

** As explained in the report, due the lack of concrete pipeline for EE in industrial production processes, for the purpose of providing an estimation of the potential gap, we have focused on financing needs for EE in electric motor drives for which there is some level of historical observable demand in Croatia. We therefore use the level of observed demand from the “Introduction of efficient electric motor drives” measure within the NEEAP in 2013 as a proxy for the number of projects that would potentially be seeking financing for EE in industrial production processes on an annual basis, and then project this figure forward across 2014-2020 period. It should therefore be recognised that this estimation is related only to a specific market sub-segment and cannot therefore be considered representative of all the possible interventions related to EE in industrial production processes.

Sustainable urban and territorial development

		Market segment	
		Urban mobility	Public lighting
Envisaged Demand from Official Sources	Official source	Sustainable urban development survey	Assumptions developed drawing primarily on the III NEEAP 2013-2016
	Total number of projects	n.a.	n.a.
	Total project cost (EUR)	1.26 billion	58.82 million
	Estimate% of mature projects	n.a.	n.a.
	Estimate% at interim development stage	n.a.	n.a.
	Estimate% at early stage	n.a.	n.a.
Observed Demand	Number of projects	4	2
	Overall project cost (€)	c. 75 million	1.05
	Eligible project cost (€)	Not available	Not available
	Number of mature projects	c. 2	2

	Market segment	
	Urban mobility	Public lighting
Eligible project cost (mature projects) (€)	Not available	Not available
Related OPCC investment priorities	7ii - Developing and improving environmentally-friendly (including low-noise) and low-carbon transport systems, including inland waterways and maritime transport, ports, multimodal links and airport infrastructure, in order to promote sustainable regional and local mobility	4c - Supporting energy efficiency, smart energy management and renewable energy use in public infrastructure, including in public buildings, and in the housing sector
Resources needed per investment priority	The potential financial envelope, as detailed in the investment strategy, envisages EUR 100-200 million.	
Observed hurdle to access finance	<ul style="list-style-type: none"> • Stability pact constraints limit the borrowing potential for public administrations; • Financial products currently available on the market are generally expensive; • Limited understanding by the local authorities of concrete market needs and opportunities; • Urban mobility related infrastructure projects normally require a balanced mix of revenue-generating and other activities to ensure financial sustainability. The development of such complex capital intensive projects (e.g. including parking lots and commercial floorspace) require considerable time and expertise; 	<ul style="list-style-type: none"> • Stability pact constraints limit the borrowing potential for public administrations; • Financial products currently available on the market are generally expensive; • Limited understanding by the local authorities of concrete market needs and opportunities; • Public lighting projects need a critical mass (minimum number of lighting spots) to reach financial sustainability - given the small size of most Croatian cities, finding effective ways to bundle projects to achieve critical mass appears essential.

	Market segment	
	Urban mobility	Public lighting
Observed need for TA	Likely need for a combination of grant financing for TA e.g. project preparation and financial management, project appraisal, site assessment	Likely need for a combination of grant financing for TA e.g. project preparation and financial management, project appraisal, site assessment
* This category contains Sustainable and Territorial urban development projects that were not readily classifiable under the other segmented project typologies. They include upgrades to educational facilities, neighbourhood planning etc.		

RDI

		Market Segments	
		SMEs	Large corporates
Envisaged Demand from Official Sources	Official source	Assumptions developed drawing primarily on Croatia S3 Strategy 2014 and OECD Reviews of Innovation Policy 2014.	Assumptions developed drawing primarily on Croatia S3 Strategy 2014 and OECD Reviews of Innovation Policy 2014.
	Total number of entities potentially in need of financing for RDI*	1.089	51
	Expected amount of RDI financing needs per year (EUR)	41.38 - 124.14 million	49.28 – 147.84
	Estimate% of mature projects	Not possible to estimate due to lack of pipeline	n.a.
	Estimate% at interim development stage	Not possible to estimate due to lack of pipeline	n.a.
	Estimate% at early stage	Not possible to estimate due to lack of pipeline	n.a.
Observed Demand	Number of projects	Not possible to estimate due to lack of pipeline	4
	Overall project cost (€)	Not possible to estimate due to lack of pipeline	101.2 million EUR
	Eligible project cost (€)	Not possible to estimate due to lack of pipeline	TBD
	Number of mature projects	Not possible to estimate due to lack of pipeline	Currently subject to feasibility studies

	Market Segments	
	SMEs	Large corporates
Eligible project cost (mature projects) (€)	Not possible to estimate due to lack of pipeline	n.a.
Related OPCC investment priorities	1b - Promoting business investment in R&I, developing links and synergies between enterprises, research and development centres	1b - Promoting business investment in R&I, developing links and synergies between enterprises, research and development centres
Resources needed per investment priority	The potential financial envelope, as detailed in the investment strategy, envisages EUR 30-60 million.	
Observed hurdle to access finance	<ul style="list-style-type: none"> Information asymmetries; Rigid regulatory and legal framework dissuading innovative SMEs Poor macroeconomic conditions Incomplete range of financial products and services 	High risk aversion among finance providers in Croatia, limiting the size of envisaged RDI investments. This risk aversion is viewed as particularly limiting for demand when investing in opening new markets in the commercialisation phase as these are large investments (possibly as high as EUR 10 million).
Observed need for TA	Likely need for a combination of grant financing for TA covering development of business plans, project applications, etc.	Likely need for a combination of grant financing for TA covering development of business plans, project applications, etc.

* As explained in the report, due to the lack of a defined pipeline we have used the expected number of entities in need of financing for RDI as a proxy variable. This approach is in-line with the guidance provided in the EC's Ex-ante assessment methodology for financial instruments focused on RDI. Number of entities is therefore calculated based on the percentage of Croatian enterprises observed as active in RDI investment as per OECD (2012)

Annex 7: List of public buildings which could potentially subject of EE interventions identified by the Zagee project.

TYPE OF BUILDING	NAME
Elementary schools (15)	Brezovica PRO Hrvatski Leskovac DV Hrvatski Leskovac
	Bukovac
	Dobriše Cesarića
	Frana Krste Frankopana
	Julija Klovića
	Jure Kaštelana
	Lovre pl.Matačića
	Lučko
	Marina Držića
	Mladost
	Nikola Tesla
	Elementary music school Zlatka Grgoševića
	Silvija Strahimira Kranjčevića
	Ivana Mažuranića
	Dragutina Domjanića
Kindergartens (36)	Bajka
	Botinec
	Bukovac (Trnac 67)
	Bukovac (Bukovačka cesta 221)
	Cvrčak
	Duga
	Gajnice
	Grigora Viteza (Ratarska 5)
	Grigora Viteza (Rudeška 71)
	Jabuka
	Jarun
	Kolibri
	Kustošija
	Maksimir
	Mali princ - PO Kozjak
	Milana Sachsa
	Pčelica
	Prečko
	Različak (Petrinjska 31/II)
	Različak (Podrebernica 15)
	Savica (Ulica VI. Ruždjaka 7)

TYPE OF BUILDING	NAME
	Savica (Ulica VI. Ruždjaka 22)
	Siget (Siget 12)
	Siget (Aleja pomoraca 27)
	Sopot
	Srednjaci (Vladimira Filakovca 2)
	Srednjaci (I Loparska 11)
	Tratinčica (Svetog Mateja 131)
	Vjeverica
	Vrapče (N.Gorjanskog 7)
	Vrapče (Stipana S bb / Vrabečak 5)
	Vrapče (Kerestinečkih žrtava 13)
	Vrapče (Mihovila Gračanina bb)
	Zrno
	Zvončić
	Vrbik (Prisavlje 4)
	Vrbik (Gagarinov put 10)
	Krijesnice
Retirement homes (4)	Retirement home Dubrava
	Retirement home Ksaver
	Retirement home Park
	Retirement home Trešnjevka
Health centres (3)	CENTAR - Kruga 44
	ISTOK - Grižanska 4
	ISTOK - Ivanićgradska 38
City administration buildings (3)	City administration office Sesvete
	City administration office Susedgrad
	City administration office Trnje
Buildings of local self-government (16)	BREZOVIKA - MS Brezovica
	DONJA DUBRAVA - MS Novi Retkovec
	GORNJA DUBRAVA - MS Dubrava
	GORNJA DUBRAVA - MS Oporovec
	GORNJI GRAD - MEDVEŠČAK - MS Voćarska
	MAKSIMIR - MS Bukovac
	NOVI ZAGREB - EAST- MS Buzin
	NOVI ZAGREB - WEST - MS Hrvatski Leskovac
	PEŠČENICA - ŽITNJAK - MS Bruno Bušić
	PODSLJEME - MS Šestine
	SESVETE - MS Vugrovec

TYPE OF BUILDING	NAME
	STENJEVEC - MS Stenjevec - SOUTH
	TREŠNJEVKA - NORTH - MS Pongračevo
	TRNJE - MS Staro Trnje
	Podsused-Vrapče MO Vrapče centar
	GORNJA DUBRAVA - MS Poljanice
Secondary schools (6)	Machinery and Technical School Fran Bošnjaković
	The postal and telecommunications school
	Nursing school
	Technical school Ruđer Bošković
	Trade school
	XV. high school
	<i>LOCATION</i>
	Lower city
	Upper city- MEDVEŠČAK
	TRNJE
	MAKSIMIR
	PEŠČENICA - ŽITNJAK
	NOVI ZAGREB – EAST
	NOVI ZAGREB – WEST
	TREŠNJEVKA – SJEVER
	TREŠNJEVKA – JUG
	ČRNOMEREC
	GORNJA DUBRAVA
	DONJA DUBRAVA
	STENJEVEC
	PODSUSED – VRAPČE
	PODSLJEME
	SESVETE
	BREZOVICA

Annex 8: Estimated investment cost for implementation of EE/RES measures by cities per SEAP

City	Investment cost (EUR)
Bjelovar	20,674,997
Buje	1,770,313
Buzet	1,031,950
Duga Resa	3,541,716
Dugo Selo	48,572,596
Gospić	2,994,954
Jastrebarsko	4,427,437
Karlovac	61,738,707
Klanjec	416,160
Korčula	301,173
Koprivnica	108,864,407
Križevci	6,918,012
Krk	662,740
Labin	1,439,720
Ludbreg	573,598
Ogulin	1,874,894
Opatija	411,500
Otočac	8,731,100
Ozalj	2,898,691
Pazin	1,489,176
Poreč	580,874
Pregrada	3,420,060
Rijeka	41,845,458
Rovinj	990,548
Slunj	3,168,617
Samobor	78,121,300
Sv. Nedjelja	9,989,055
Umag	591,199
Varaždin	23,895,248
Velika Gorica	8,355,595
Zadar	55,563,156
Zaprešić	1,409,447
TOTAL	507,264,398

Source: SEAPs of Croatian cities

Annex 9: Local and regional government in Croatia

2nd tier 20 Counties + Zagreb (NUTS 3)	Counties Units of regional self-government 20 – 3,494,872 inhabitants (without ZG) (81.5% of the overall population) 204,315 – average size (ZG included) 175,000 – average size (without ZG)	Zagreb (ZG) Special status (Law on the city of Zagreb) 790,017 inhabitants (18.4% of the overall population)
1st tier 556 units 7,715 – average size (ZG included) 6,300 – average size (without ZG)	Municipalities 428 1.26 million inhabitants (29,6%) 2,960 – average size of a commune	Towns 127 (103+24 – “large towns” and County seats, special status since 2005)** + 1 (Zagreb) 3.02 million inhabitants (70.4%) 23,784 – average size (ZG included) 17,681 – without ZG 16 “large towns” (more than 35,000) 51 towns – between 10,000 and 35,000 inhabitants 60 towns – less than 10,000 inhabitants
	Units with special status due to development reasons Units of Special State Concern – 184 Units in Hilly and Mountainous Areas – 45 Units on Islands – 50 Number of units with the status of assisted areas - 264 (of which 10 Units in Hilly and Mountainous Areas and 155 with units of special state Concern)	

Source: Population census, 2011 and Analytical Study on Sustainable Urban Development (2014)

Annex 10: Key headings of the business plan to be submitted by the financial intermediary

- a. Organisational structure and governance framework
- b. Expertise, experience and management team if relevant
- c. Implementation
- d. Management cost and fees
 - i. Organisation/responsibilities of team/ key experts
 - ii. Independence/conflict of interest
- e. Planning
 - i. Terms and conditions of financial product(s), including pricing (as appropriate)
 - ii. Methodology for selecting and appraising Final Recipients
 - iii. Marketing
 - iv. Project pipeline (if relevant)
 - v. Risk management and internal control systems
 - vi. Additionally of intervention
- f. Exit policy
 - i. Fee structure and calculations
- g. Any additional relevant information in connection with the underlying financial instrument
 - i. Financial forecast
 - ii. Indicative timetable for Final Recipient selection and disbursement

Annex 11: Methodology for the calculation of demand in the EE investment area

Public buildings*

% of retrofitted buildings	Total				Continental				Coastal			
	Area (m2 million)	Investment needs (HRK billion)	Energy saving (kWh million)	Cost saving (HRK million)	Area (m2 million)	Investment needs (HRK billion)	Energy saving (kWh million)	Cost saving (HRK million)	Area (m2 million)	Investment needs (HRK billion)	Energy saving (kWh million)	Cost saving (HRK million)
100	6.06	7.88	783.3	469.7	4.06	5.28	630.3	377.9	2.0	2.60	153.0	91.8
50	3.03	3.94	391.65	234.85	2.03	2.64	315.15	188.95	1.00	1.30	76.50	45.90
25	1.52	1.97	195.83	117.43	1.02	1.32	157.58	94.48	0.5	0.65	38.25	22.95

43,9% of the total usable floor area in Croatia (i.e. 13.8 million m2)

Sum of energy saving and cost saving of continental and costal Croatia

4.06 million multiplied by the cost assumed for retrofitting public buildings (i.e. HRK 1,300 m2)

4.06 million multiplied by the cost saving achievable (HRK 93.1 m2) introducing energy saving measures

These are the same type of calculation carried out for the continental Croatia, but with different variables (e.g. 76.53 kWh/m2 for energy saving and HRK 45.89 m2 for cost savings)

6.06 million multiplied by the cost assumed for retrofitting public buildings (i.e. HRK 1,300 m2)

43.9% of the total usable area of continental Croatia (i.e. 9.25 million m2)

4.06 million multiplied by the energy saving per building area achievable (155.26 kWh/m2) by the implementation of EE measures

43.9% of the total usable area of coastal Croatia (i.e. 4.55 million m2)

* The values for the 50 and 25% of retrofitted building scenarios are the half or a quarter of the values obtained in the 100% scenario.

Private buildings

Percentage of retrofitted buildings	Total				Continental				Coastal			
	Heated area (m2 million)	Investment needs (HRK billion)	Energy saving (kWh billion)	Cost saving (HRK billion)	Heated area (m2 million)	Investment needs (HRK billion)	Year energy saving (kWh billion)	Year cost saving (HRK billion)	Heated area (m2 million)	Investment needs (HRK billion)	Year energy saving (kWh billion)	Year cost saving (HRK billion)
Multi-apartment buildings	36.36	47.27	4.45	2.31	23.38	31.40	3.58	1.86	12.98	16.87	0.87	0.45
Single family homes	59.89	73.96	10.58	5.48	36.58	47.57	8.44	4.37	20.31	26.40	2.14	1.11
Commercial buildings	24.21	31.47	4.15	2.49	16.22	21.09	3.35	2.01	7.99	10.39	0.81	0.48
Total	117.30	152.70	19.18	10.28	76.18	99.04	15.37	8.23	41.28	53.66	3.82	2.04
Multi-apartment buildings	18.18	23.63	2.23	1.15	11.69	15.20	1.79	0.93	6.50	8.44	0.44	0.23
Single family homes	28.44	36.98	5.29	2.74	18.29	23.78	4.22	2.19	10.15	13.20	1.07	0.55
Commercial buildings	12.10	15.74	2.08	1.24	8.11	10.54	1.67	1.05	3.99	5.19	0.40	0.24
Total	58.73	76.35	9.59	5.14	38.09	49.52	7.68	4.12	20.64	26.83	1.91	1.02
Multi-apartment buildings	9.09	11.82	1.11	0.57	5.85	7.60	0.89	0.46	3.24	4.22	0.22	0.11
Single family homes	14.22	18.49	2.64	1.37	9.15	11.89	2.11	1.09	5.08	6.60	0.53	0.28
Commercial buildings	6.05	7.87	1.03	0.62	4.05	5.27	0.84	0.51	2.00	2.60	0.20	0.12
Total	29.36	38.17	4.80	2.57	19.05	24.76	3.84	2.06	10.32	13.41	0.95	0.51

66.25% of the total usable floor area of multi-apartment buildings in Croatia (i.e. 54.88 million m2)

Sum of energy saving and cost saving of continental and coastal Croatia

23.38 million multiplied by the cost assumed for retrofitting MABs (i.e. HRK 1,300 m2)

23.38 million multiplied by the cost saving achievable (HRK 79.35 m2) introducing energy saving measures

These are the same type of calculation carried out for the continental Croatia, but with different variables (e.g. 67.17 kWh/m2 for energy saving and HRK 34.79 m2 for cost savings)

36.36 million multiplied by the cost assumed for retrofitting MABs (i.e. HRK 1,300 m2)

66.25% of the total usable area of continental Croatia MABs (i.e. 35.65 million m2)

23.38 million multiplied by the energy saving achievable (153.19 kWh/m2) by the implementation of EE measures in MABs

66.25% of the total usable floor area of MABs in Croatia (i.e. 19.80 million m2)

For the other type of private buildings, the same calculation were carried out, considering however other variables. These variables are presented in the following two tables. Please note that the heated area, on which EE interventions are envisaged, correspond to 66.25% of the total usable floor area.

Table 111: Overview of national residential and non-residential building stock by climate zone

	Multi-apartment buildings	Single family homes	Commercial buildings
Continental	35,648,303	55,775,475	24,482,108
Coastal	19,789,760	30,963,140	12,058,351
Total	55,438,063	86,738,615	36,540,459

Source: Long-Term Strategy for Mobilising Investment in the Renovation of the National Building Stock of the Republic of Croatia.

Table 112: Overview of cost and energy saving per location and building type

Building category	Continental Croatia		Coastal Croatia	
	Energy saving (kWh/m ² per year)	Cost saving by useful building area (HRK/m ² per year)	Energy saving (kWh/m ² per year)	Cost saving by useful building area (HRK/m ² per year)
Commercial buildings	206.24	123.67	101.18	60.67
Multi-apartment building	153.19	79.35	67.17	34.79
Single family homes	230.70	119.50	105.27	54.53

Source: Long-Term Strategy for Mobilising Investment in the Renovation of the National Building Stock of the Republic of Croatia.

Moreover, the values for the 50 and 25% of retrofitted building scenarios are the half or a quarter of the values obtained in the 100% scenario.

Annex 12: Methodological annex

Calculation of expected results

As mentioned in section 6.2, expected results have been calculated for three out of the four market segments included in the OPCC:

- Public residential and non-residential buildings (SO4c1), for which the OPCC allocates EUR 211.81 million;
- Private commercial buildings (SO4b2), for which the OPCC allocates EUR 40 million;
- Public lighting system (SO4c4), for which the OPCC allocates EUR 20 million.

Expected results for the fourth market segment (Industrial production process (SO4b1), for which the OPCC allocates EUR 60 million) have not been estimated, due to the absence of market benchmarks and to the variety of interventions supportable under the OPCC.

1. Calculation of the envelope for each market segments

The analysis has been carried out assuming that the financing resources available in the EE fund total envelope are distributed proportionally to the resources allocated in the OPCC. This means that, taking as an example public residential and non-residential buildings, the envelope available has been calculated following the proportion: *200 million (total envelope): 331.81 million (OPCC's budget for the four specific objectives) = x : 211.81 million (OPCC's budget for SO4c1).*

Following the proportions aforementioned, 64% of the resources have been allocated to interventions in public buildings, 12% to private commercial buildings, and 6% to public lighting system.

As for leverage effect, it was calculated both at the **financial intermediary level** and at the final recipient one. At the financial intermediary level, two hypotheses have been taken into consideration and analysed:

- A leverage effect of 2x, which means that the financial intermediary contributions equals the OPCC's contribution;
- A leverage effect of 1.3x, which implies that the financial intermediary contribution corresponds to 30% of the OPCC's contribution.

As for the **final recipient level**, on the basis of historical data of FIs similar to the ones designed in this study²⁸², it is assumed that the envelope available at the fund level, is disbursed by:

- 90% in the form of loans, that according to market benchmarks in similar peer countries, may trigger leverage at the final recipient level between 1.2 and 2x;
- 10% in the form of equity, that according to market benchmarks in similar peer countries, may trigger leverage at the final recipient level between 2 and 3x.

²⁸² This estimation is based on the following experiences: JESSICA Sardinia, JESSICA Campania and JESSICA Sicily.

This means that, to the results achievable at the financial intermediary level assuming leverage at 1.3 and 2x, the results achievable with the resources triggerable at final recipient level shall be added.

The following table presents, given the assumption presented above, the final leverage considered at the final recipient level.

Table 113: Leverage at final recipient level

Item	%	Leverage 1	Leverage 2	Average leverage	Ultimate weighed leverage
Loan	90	1,2	2	1,6	1,69 ²⁸³
Equity	10	2	3	2,5	

Source: PwC 2015 own elaboration

Considering the allocation of resources above-mentioned, the two possible scenarios for the leverage effect at the financial intermediary level and the additional leverage at the final recipient level, it results that:

- in the hypothesis of a 2x leverage effect:
 - EUR 216.32 million (i.e. 128 million at fund level²⁸⁴), will be invested for EE interventions in public residential and non-residential buildings;
 - EUR 40.56 million (i.e. 24 million at fund level), will be invested for EE interventions in private commercial buildings;
 - EUR 25.35 million (i.e. 15 million at fund level), will be invested for EE interventions in public lighting.
- in the hypothesis of a 1.3x leverage effect:
 - EUR 140.61 million (i.e. 83.2 million at fund level), will be invested in EE interventions in Public residential and non-residential and commercial buildings;
 - EUR 26.36 million (i.e. 15.6 million at fund level), will be invested in EE interventions in private commercial buildings;
 - EUR 13.18 million (i.e. 7.8 million), will be invested in EE interventions in public lighting.

2. Calculation of the expected results for public residential and non-residential and commercial buildings

a. Assumptions

The analysis is based on the following data set, the same used for the quantification of demand in section 5.1.1:

²⁸³ This value has been calculated as a weighed average of the value presented in the table, namely: $(90 \times 1,6 + 10 \times 2,5) / (10 + 90)$

²⁸⁴ This value has been obtained by multiplying the resources at fund level (i.e. financial intermediary) by 1.69, which is the estimated leverage at the level of the final recipient.

- A unit retrofitting cost of 1,300 HKR/m² (about 169.93 EUR/m²) has been considered for calculating how many square metres can be retrofitted by investing the sum mentioned in the previous sections;
- It has been roughly determined the ratio between coastal and continental building stock, since different energy savings values are reported for the two areas. It has been calculated as the ratio between the share of square metres comprised respectively in the coastal and the continental area and the amount of square metres of the total building stock. The ratio has been calculated separately for the private and the public sector. The resulting values are: 67% of continental square metres and 33% of coastal square metres for the private sector and 67% of continental and 33% of coastal square metres for the public sector;
- All the other data about floor composition (public and commercial) correspond to the information reported in Chapter 5 as well as values of unit energy saving for each type of building.

b. Calculation

Based on the assumptions above mentioned, calculation has been carried out following the steps described below:

- The sub-envelope available for each kind of building has been divided for the unit retrofitting cost in order to calculate the total number of potentially retrofittable square metres;
- Potentially retrofittable square metres both in public and private buildings have been divided into coastal and continental, following the proportion described in the above paragraph;
- The values obtained for each category of square metres (e.g. continental square metres of public buildings) have been multiplied for the respective annual unit energy savings achievable reported in section 5.1.1.1, in order to calculate:
 - the achievable annual energy saving for each category of buildings;
 - the total achievable annual energy saving, which corresponds to the sum of the energy savings achievable in all categories.

Focus on table “Comparison of results using grant or FIs (values in kWh per year)²⁸⁵”

	Grant	Financial instrument	
		Leverage 2x	Leverage 1.3x
OPCC contribution: EUR 76 million	102,826,043 ²⁸⁶	205,652,086	133,673,856

The value for the grant (102,826,043 kWh per year) has been computed hypothesising that also with grants, a leverage effect of 1.69 at final recipient level could be achieved.

²⁸⁵ Additional explanation on the calculation are in annex.

²⁸⁶ The results achievable with grants include the leverage at financial recipient level of 1.69x.

Accordingly, with an initial envelope of OPCC resources of EUR 76 million, investment for c. EUR 128.4 million could be triggered (i.e. 76×1.69). Computing in the model the same variables used for the calculation of the energy saving achievable with the financial instrument (leverage at 1.3x and 2x) (cfr. Table 94), it can be estimated that with grants, energy saving can be achieved in the measure of 102,826,043 kWh per year.

This value can also be obtained by running the following proportion:

$$256,880,000 : 205,652,086 = (76,000,000 \times 1.69) : x$$

Where:

- 256,880,000: amount of investments envisaged with FI (leverage 2x (cfr. Table 94)
- 205,652,086: year energy saving (in kWh) (cfr. Table 94)
- $76,000,000 \times 1.69$: amount of investments envisaged with grant

3. Calculation of the expected results for interventions on public lighting

The achievable results in terms of energy savings have been calculated as the reduction in energy consumption achievable by replacing existing light bulbs with more efficient and less energy-consuming LED lamps.

a. Assumptions

As for the characteristics of public lighting and the size of the intervention, the calculation is based on the following assumptions:

- It has been hypothesised 6% of the envelope is available for intervention in the public lighting system, as described above;
- The average cost for replacing each lamps equals to EUR 300²⁸⁷;
- The average consumption of existing light bulbs is 0.15 Kwh²⁸⁸;
- The achievable savings are calculated considering that the public lighting stays on 10 hours per day on average;
- The total annual electricity consumption for public lighting amounts to 450 GWh, as reported in the Third NEEAP (2009 values).

b. Calculation

Considering on the above-mentioned assumptions, calculation has been carried out following the steps described below:

- The sub-envelope available for the specific objective has been divided for the unitary cost for replacement intervention, in order to calculate the total number of public lights that could be potentially replaced by investing all the resources available;
- It has been calculated the difference in unit energy consumption between existing lamps and LED lamps: 0.15 (mercury-vapour lamp, sodium-vapour lamp, metal-halide lamp unit energy consumption) – 0.035 (LED lamp unit energy consumption). Dividing the value obtained

²⁸⁷ According to information provided by Croatian energy efficiency expert.

²⁸⁸ According to information provided by Croatian energy efficiency expert.

for the unit energy consumption of existing lamps and multiplying the result obtained per 100, the achievable unit energy saving percent can be determined;

- To calculate the annual hours of lighting of each lamp, the average hours of lighting per day (10) have been multiplied for the number of days in a year (360);
- The unit energy saving achievable by replacing existing lamps with LED lamps has been multiplied for the total hours of lighting in a year per lamp in order to calculate the annual energy saving achievable per lamp;
- The annual energy saving achievable per lamp has been multiplied for the number of lamps potentially retrofittable in order to calculate the total annual energy saving achievable. This result has been expressed as a percentage of the current total annual electricity consumption for public lighting.

4. Calculation of the expected results for Private-sector investment into RDI in support of an innovative and competitive business and research environment

Output indicator “CO24 – Research, Innovation: Number of new researchers in supported entities”

– the following proportion was run:

$$351.37 : 660 = (75 \text{ or } 125) : x$$

Where:

- 351.37: gross domestic expenditure in R&D in Croatia (according to the Statistical Report Research and Development)
- 660: FTE in the field of R&S hired in Croatia in 2013
- 75: investment envisaged with an overall leverage effect of 1.5x
- 125: investment envisaged with an overall leverage effect of 2.5x

Output indicator CO27 Research, innovation: Private investment matching public support in innovation or R&D projects – the two financial envelope envisaged were subtracted by the OPCC financial contribution of EUR 50 million.

Output indicator “1b11 – Number of R&D projects supported” – the financial envelope of EUR 75 or 125 million have been divided by 200,000.

Any other business

The following value “HRK 0.06 = EUR 0.07 per Kwh” has been calculated by running the proportion:

$$783,300,000 : 469,700,000 = 262,500,000 : x$$

Where:

- 783,300,000 - Energy saving (kWh million) achievable by refurbishing 100% of public building (benchmark obtained by NEEAP);
- 469,700,000 - Cost saving (HRK million) achievable by refurbishing 100% of public building (benchmark obtained by NEEAP);
- 262,500,000 – energy saving (kWh million) by implementing the measures envisage in the SEAP (value obtained by the SEAP)

By computing this proportion, it emerges that by implementing the measure in the SEAP, cost saving for c. EUR 20 million (HRK 157.41 million) can be achieved.



Annex

13:

Sample
call for

Expressions of Interest.



**Call for Expressions of Interest:
Ref. VP- 993**

**Subject: JESSICA Holding Funds for Sardinia
Selection of Urban Development Funds**

JESSICA (Joint European Support for Sustainable Investment in City Areas) is an initiative developed by the European Commission ("Commission") and the European Investment Bank ("EIB"), in collaboration with the Council of Europe Development Bank ("CEB"), in order to promote sustainable investment, growth and jobs in urban areas.

The EIB is launching a Call for Expressions of Interest ("Eol") with the aim of selecting entities as Urban Development Fund(s) ("UDF(s)") that will receive resources from the JESSICA Holding Fund for Sardinia ("JSHF"), to facilitate the disbursement of European Union ("EU") Structural Funds through financial engineering instruments in the form of actions which make repayable investments in public-private partnerships or other projects included in Integrated Plans for Sustainable Urban Development ("Urban Projects") or to legal or natural persons carrying out specific investment activities in energy efficiency and use of renewable energy in buildings included in Integrated Plans for Sustainable Urban Development ("EE/RE Urban Projects").

The selection will be carried out in two stages, as described below. The entities willing to participate in this Call for Eol are requested to forward their Eol, encompassing their responses to Stage 1, as stated in Annex 3, enclosed in two sealed envelopes, the outer envelope bearing instructions not to open the inner envelope, which should be marked:

DO NOT OPEN:

Ref. VP- 993

Subject: JESSICA Urban Development Funds in Sardinia

Deadline for reception of Expressions of Interest: 7 November 2011

and delivered:

(a) either by registered post, to the following address:

EUROPEAN INVESTMENT BANK
For the attention of Ms. Véronique Paulon
Purchasing and Administrative Services Division
98-100 boulevard Konrad Adenauer
L-2950 LUXEMBOURG

by midnight on 07 November 2011 at the latest, as evidenced by the postmark, or by
(b) handing it in (by messenger or courier) at the reception desk of the

EUROPEAN INVESTMENT BANK
For the attention of Ms. Véronique Paulon
Purchasing and Administrative Services Division
98-100 boulevard Konrad Adenauer
L-2950 LUXEMBOURG

The EoI must be posted or handed in by 07 November 2011 at the latest (up to midnight Luxembourg time in the case of delivery as described in (b) above).

The receipt dated and signed by the officer at the reception desk of the EIB who receives the EoI (reception desk open 24 hours a day) shall form the evidence of the EoI having been handed in.

Submissions will not be accepted if they:

- a) are not sent in two sealed envelopes;
- b) are not sent or delivered by hand to the EIB before the specified deadline (as evidenced by the postmark or receipt signed and dated by the officer at the reception desk);
- c) do not conform to the provisions of this Call for EoI.

Those applicants who are selected to proceed to Stage 2 will be notified in writing of the submission date for Offers (the "Submission Date"), in the form of a Business Plan.

The indicative timetable for this Call for EoI, which may be subject to change at EIB's discretion, is therefore:

Activity	Timing
Issue of Call for EoI	04 October 2011
Deadline for Stage 1 requests for additional information	20 October 2011
Deadline for submission of Stage 1 EoI	07 November 2011
Notification to applicants of outcome of Stage 1 EoI assessment	21 November 2011
Deadline for submission of Stage 2 Offers (i.e. Submission Date)	28 December 2011
Notification to applicants of outcome of Stage 2 Offers, following Investment Board approval	01 February 2012
Start of negotiations on Operational Agreements	16 February 2012

Applicants must pay attention to the important notices below. Unless expressly stated otherwise, the terms and expressions used in this document shall have the meanings set out in Appendix F.

Applicants must take account of the following provisions (more detail is provided in Annex 3).

1. The selection of the UDF(s) will proceed in two stages:

- I. **Stage 1** (applying the Exclusion and Selection Criteria): EoIs will first be assessed against the Exclusion Criteria (as outlined in Section III of Annex 3). Admitted EoIs, will then be assessed according to the Selection Criteria, also included in Section III of Annex 3.
- II. **Stage 2** (applying the Award Criteria): all selected applicants will be invited to submit their Offers (including detailed Business Plans, drafted according to the indications set in Annex 3). The Offers will be evaluated according to the Award Criteria, as outlined in Appendix A.

2. Information on both Stages 1 and 2 is included in this document. However the first required submission relates solely to Stage 1, which entails the application of the Exclusion and Selection criteria only. Applicants wishing to commence work on the Offer prior to notification of selection will do so entirely at their own risk and costs.
3. Offers must be firm and the price, non-revisable, must be quoted in EURO and free of taxes and duties, the EIB being exempt there from under the Protocol on the Privileges and Immunities of the European Union.
4. Each applicant must declare that it has taken note of the conditions of the Call for EoI and the Terms of Reference contained herein and has had the opportunity to gauge the scope and quality of the services required, as well as the possible difficulties.
5. The applicants cannot invoke any error, inaccuracy or omission in their submissions - meaning both EoI and Offer (the "Submissions") - to call any Operational Agreement (as defined in Appendix F) into question or to attempt to have any Operational Agreement amended.
6. The EIB reserves the right to reject any Submission that fails to comply with the specifications of this Call for EoI.
7. The EIB reserves the right to reject any applicant:
 - I. guilty of material misrepresentation;
 - II. who contravenes any of the terms of this document; or
 - III. undergoing a change in identity, control, financial standing or other factors impacting on the selection and/or evaluation process affecting the applicant.
8. Submissions must be drawn up in writing in English. EoI and/or Offers submitted in other languages will not be accepted.
9. Applicants must respond to the specifications, set out in the Terms of Reference, item by item.
10. The EIB reserves the right to award the Operational Agreement(s), subject to the approval of the Investment Board (as defined in Appendix F), in accordance with the criteria set out in the Terms of Reference, or not to award an Operational Agreement to any applicant or to extend the deadline for the submission of the EoI or the Submission Date, at its own discretion. The EIB may cancel the procedure at any time excluding any claim by the applicants to any rights, including any rights arising under any pre-contractual liability. Applicants should only participate in this Call for EoI on the understanding that they would not be entitled to any form of compensation, should the EIB decide to interrupt the procurement procedure before the Operational Agreement(s) is/are signed. In the event that only one application is received during Stage 1, the EIB reserves its right to proceed to the next stage or to cancel the procurement process. Likewise, the EIB reserves the right to award the Operational Agreement(s) to a single applicant, provided that the applicant satisfies all the requirements set out under this Call for EoI.
11. Participation in this Call for EoI involves acceptance of all the terms and conditions mentioned in the present Call for EoI.
12. The following documents are integral part of this Call for EoI:
 - Annex 1 - "Template for Expression of Interest"
 - Annex 2 - "Declaration to be made by the applicant"
 - Annex 3 - "Terms of Reference"
13. Any requests for additional information on Stage 1 should be addressed, in writing, at the latest by 20 October 2011, to Ms Veronique Paulon, fax: +352- 437962545, [e-mail: bei.asa@eib.org](mailto:bei.asa@eib.org). Please note that the EIB responses to any queries or clarification requests will be made available to all applicants through publication on the Call for EoI website before the deadline for submission of the EoI expires.
14. EoI must be drawn up on paper in duplicate, i.e. one original and one copy, clearly marked as "Original" and "Copy". An electronic copy in MSWord or PDF format on a single CD-ROM marked with the name of the entity shall also be submitted.

15. Before an Operational Agreement is signed, the selected applicant(s) must undertake to comply with all current laws and provisions and to obtain all relevant permits required to provide the services to be awarded.
16. Applicants will be informed of the outcome of their Submissions by communication sent out to the e-mail address that is indicated by the applicant in the EoI.
17. Applicants that have submitted Offers may be invited to a presentation, if the EIB so decides. Applicants will not be permitted to modify the terms and conditions of their Submissions during their presentation or at any other time after the Submissions have been transmitted to the EIB. The EIB reserves the right to seek additional detail from an applicant to clarify any part of its Submissions.
18. Any dispute concerning procurement conducted by the EIB falls under the exclusive jurisdiction of the European Court of Justice.

DISCLAIMER

The EIB (including any employees, officers, Investment Board members, advisers and/or contractors of the EIB who contributed to the preparation of this Call for EoI) makes no representation, warranty or undertaking of any kind in relation to the accuracy or completeness of any information provided in, or in connection with, this Call for EoI (for the purposes of this section the "Information").

The EIB will not be liable or responsible to any person in relation to any inaccuracy, error, omission or misleading statements contained in the Information. The EIB will not be liable or responsible to any person in relation to any failure to inform any person of inaccuracy, error, omission or misleading statement contained in such Information of which it becomes aware after the date of release of that Information. The EIB shall not be liable to any person for any damages, losses, costs, liabilities or expenses of any kind which it may suffer as a consequence of relying upon such Information.

Any person considering making a decision to enter into contractual relationships with the EIB, JSHF and/or any other person on the basis of the Information provided to (or otherwise received by) applicants - whether prior to this Call for EoI or at any point during the UDF(s) selection process - in relation to it should make their own investigations and form their own opinion. In particular, the distribution or receipt of this Call for EoI shall not be considered, nor understood as providing any kind of investment advice or a recommendation by the EIB.

Only the express terms of any written contract (as and when it is executed) shall have any legally binding effect in connection with the selection process.

All applicants are solely responsible for their costs and expenses incurred in connection with the UDF(s) selection process, including the preparation and submission of EoIs and Offers and participation in all stages of this process. Under no circumstances will the EIB be liable for any costs or expenses borne by applicants or any of its supply chain, partners or advisors in this selection process.

CONFLICTS

The EIB requires all actual or potential conflicts of interest to be resolved to the EIB's satisfaction prior to the submission of an EoI. Failure to declare such conflicts and/or failure to address such conflicts to the reasonable satisfaction of the EIB could result in an applicant being disqualified at the sole discretion of the EIB.

CANVASSING AND NON COLLUSION

The EIB reserves the right to disqualify (without prejudice to any other civil remedies available to the EIB and without prejudice to any criminal liability which such conduct by an applicant or consortium

member - as the case maybe - may attract) any applicant - irrespectively to the legal form chosen to participate in the selection procedure - who, in connection with this document:

- I. offers any inducement, fee or reward to any Investment Board member, employee or officer of EIB or any person acting as an adviser for EIB in connection with this Call for Eol;
- II. contacts any Investment Board member, employee or officer of the EIB about any aspect of this Call for Eol in a manner not permitted by it;
- III. fixes or adjusts the amount of his Offer by or in accordance with any agreement or arrangement with any other applicant or consortium member or supply chain member of any other applicant (other than its own consortium members or supply chain);
- IV. enters into any agreement or arrangement with any other applicant or potential applicant or consortium member of any other applicant or potential applicant to the effect that it shall refrain from making a submission or as to the amount of any Offer;
- V. causes or induces any person to enter such agreement as is mentioned above or to inform the applicant or a consortium member of the applicant of the amount or approximate amount of any rival Offer;
- VI. canvasses any person related to this Call for Eol who is not one of its own consortium members or one of its own team;
- VII. offers, or agrees, to pay or give or does pay or give any sum of money, inducement or valuable consideration directly or indirectly to any person for doing or having done or causing or having caused to be done any of the above activities in relation to any other submission or proposed submission; or
- VIII. communicates to any person other than EIB the amount or approximate amount of his proposed Offer, except where such disclosure is made in confidence in order to obtain quotations necessary for the preparation of the Offer.

INTELLECTUAL PROPERTY

All documentation supplied by the EIB in relation to this UDF(s) selection process is and shall remain the property of the EIB and must be returned on demand, without any copies being retained. Applicants are not authorised to copy, reproduce, or distribute such documents at any time except as is necessary to produce a Submission.

PUBLICITY

Applicants shall not undertake (or permit to be undertaken) at any time, any publicity with any section of the media in relation to the UDF(s) selection process other than with the prior written agreement of the EIB. Such agreement shall extend to the content of any publicity. In this paragraph the word "*media*" includes, but without limitation, radio, television, newspapers, trade and specialist press, internet and emails accessible by the public at large and the representatives of such media.

COMMUNICATIONS

Applicants should note that they are expressly prohibited from contacting, in connection with this Call for Eol, any of the Investment Board members, advisers and/or contractors of the EIB who contributed to the preparation of this Call for Eol from the date that it has been issued. All clarifications should be through the EIB as stated in the introduction to this Call for Eol.

PRIVACY STATEMENT

The personal data provided by the applicants will be processed in accordance with Regulation (EC) 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the EU institutions and bodies and on the free movement of such data. The information requested for the Call for Eol is necessary in order to assess the Submission, and will be used solely for that purpose under the authority of the EIB

Procurement and Purchasing division (PROCUR), in accordance with the EIB procurement rules, approved by the Management Committee of the EIB. Please note that for the Submission to be considered, it may be mandatory to answer some or all of the questions in the declaration to be made by the applicant.

In order to assess the EoI and, if applicable, the subsequent Offer, the personal data provided will be accessed by members of the Selection Panel and the Directorate which requested the Call for EoI.

Upon request, access to this data may be granted to the EIB's Office of the Chief Compliance Officer, the legal service or the Inspectorate General. The data of the successful applicant shall be retained for the duration of the contract, plus two years in the central archives, unless these are needed in the context of litigation or claims. The data of unsuccessful applicants shall be retained for four years, unless these are needed in the context of litigation or claims. Applicants have the right to access and rectify or update their data. They can exercise these rights by contacting the Head of Division Procurement and Purchasing (bei.asa@eib.org). They also have the right to call upon the European Data Protection Supervisor at any time.

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ANNEX 1

TEMPLATE FOR EXPRESSION OF INTEREST

(name of the applicant)

EXPRESSION OF INTEREST

(place of conclusion)

(date)

(Stamp of the applicant)

1. Information about the applicant

1.1. General information about the applicant¹

EoI may be submitted by a consortium that, if awarded the Operational Agreement, shall assume a legal form by incorporation, partnership or any other form required by the EIB, which would enable the members of the consortium to contract as a single entity. Where such a consortium exists, the applicant shall be responsible towards the EIB and act as the interface between the EIB and the members of the consortium.

Name of the applicant	
Address (registered office)	
Registration number ² (copy of certificate to be attached)	
Telephone No.	
Fax	
Email	
Names and organisation registration numbers of proposed consortium members, if applicable	

1.2. Person authorised to submit the EoI³

Name, surname	
Position	
Contacts: Address Telephone No Fax Email	

~~1 In case the EoI is submitted by a consortium, it will be necessary to include the information contained in the table above for each of the members of the consortium. The aforementioned information must be accompanied by a cooperation agreement signed by each of the members, including their commitments to participate in this Call of EoI, an authorisation from all the consortium's members to be represented by the leading party at all stages of the procedure, and the identification of the percentage that each of them represents in the consortium. In any case, there should be a leading party within the consortium holding more than 50% of participation.~~

² Registration with the official companies registry, chamber of commerce, or other competent authority.

³ A power of attorney authorising the person to submit the Submissions and to represent the applicant/consortium at all stages of the selection procedure is necessary.

1.3. Person for communications (if different from paragraph 1.2)

Name, surname	
Position	
Contacts:	
Address	
Telephone	
No Fax	
Email	

1.4. Lot for which the applicant wishes to express interest, as defined in Annex 3. Applicants may express interest in either one lot only or in both lots. The current Call for EoI includes two lots as follows:

<u>Lot 1. Urban Projects</u>	
<u>Lot 2. EE/RE Urban Projects</u>	

By submitting this EoI, the undersigned having:

- taken note of this Call for EoI;
- taken note of the specifications and the documents referred to therein; and
- completed the requisite declaration (see Annex

2) hereby

1) declare(s) that:

- a) there is no Exclusion Criteria preventing its selection under the terms of this Call for EoI;
- b) the applicant is fully aware that resources of the JSHF, whose aim is to finance Urban Projects and EE/RE Urban Projects, are provided by the EU Structural Funds 2007-2013;
- c) the information contained in this EoI and its Annexes is complete and correct in all its elements;
- d) the applicant has taken note of conditions of the Call for EoI and the Terms of Reference contained herein and has had the opportunity to gauge the scope and quality of the services required, as well as the possible difficulties.

2) undertake(s), unconditionally, in accordance with the provisions of the aforementioned documents, to supply the services on the terms set out in this Call for EoI, the Offer to be submitted being binding upon the applicant, however, only if its acceptance is notified by the EIB within 180 days from the Submission Date.

3) declare(s) that is authorised to do so on behalf of any consortium members listed in paragraph 1.1 of Annex 1 and in doing so commits those consortium members to supply the services on the terms set out below in this Call for EoI, for 180 days from the Submission Date.

ENCLOSED:

1. Declaration to be made by the applicant in Annex 2

2. Supporting documents relating to Annex 2 (to be completed by the applicant):

a) ...

b) ...

c) ...

3. Evidence relating to the Exclusion Criteria as set out in Section III of Annex 3 (Exclusion Criteria) below:

a) ...

b) ...

c) ...

(position)

name, surname)

signature)

•

ANNEX 2

DECLARATION TO BE MADE BY THE APPLICANT

1. Name of the applicant.....
2. Type of business
3. Address (registered office)
-
4. ~~Number and date of entry in trade register.....~~
5. Represented by (name and position):
.....

Questions 6 to 16 should be answered on behalf of the applicant and any proposed consortium members. ~~These questions will be assessed on a pass/fail basis. Responses to questions 6 to 12 and questions 15 and 16 should be stated in the form of "Yes"/ "No" or "Certified" with accompanying details provided where requested. In case of a consortium, questions 14 and 15 will refer to the member of the consortium holding the relevant requirement.~~

6. Are there any liens or charges outstanding against the applicant/consortium member at a commercial court (or any other relevant authority)?
7. Is the applicant/consortium member in receivership or the subject of bankruptcy, recovery or composition proceedings (or the subject of equivalent proceedings)?

If so:.....

(a) date of the receivership or the bankruptcy order or date of opening of the above mentioned proceedings:

(b) on what terms is the applicant/consortium member authorised to carry on its activity? Specify in particular:

the name and address of the receiver(s):

the date and period of validity of the authorisation given by the official receiver or the court to continue the business or activity:

8. Is the applicant's/consortium member's organisation or any of the persons authorised to act on its behalf in liquidation?

.....
.....
.....

9. Has the applicant/consortium member or any of the persons authorised to act on its behalf been the subject of any sentence, with the force of *res judicata*, for fraud, corruption, involvement in a criminal organisation or any other illegal activity detrimental to the Community's financial interests, or found guilty of grave professional misconduct, as sanctioned by disqualification or penalty regarding the proper pursuit of commercial or industrial occupations, or under the rules on prices and competition?
-

10. ~~Has the applicant/consortium member or any of the persons authorised to act on its behalf a conflict of interest that may affect the performance of the tasks referred to into this Call for EoI?~~

11. ~~Has the applicant/consortium member complied with its obligations relating to the payment of social security contributions or the payment of taxes in accordance with the legal provisions of the country in which it is established or with those of Italy, including compliance with prudential requirements compulsory to financial institutions, where applicable?~~

12. Is the applicant/consortium member authorised to carry out business in Italy under the applicable regulatory framework? If applicable, a copy of all authorisations, licences, permits, approvals, consents, resolutions, exemptions, filings and registrations provided by a competent authority evidencing that the applicant/consortium member is authorised to carry out business in Italy under the applicable regulatory framework should be enclosed.

13. The applicant/consortium member certifies relevant experience in the targeted market of Urban Projects or EE/RE Urban Projects. The experience requested from the applicant/consortium member includes the execution of different types of Urban Projects or EE/RE Urban Projects and different roles held by the applicant in the project, including advisory services, financing of the projects, execution, monitoring, audit and others.
Relevant experience may be provided by the applicant/consortium member, its shareholders or founders.

Relevant experience for Lot 1:

NO.	NAME OF THE PROJECT	PERIOD OF EXECUTION OF THE PROJECT (MM/YYYY – MM/YYYY)	DESCRIPTION AND ESTIMATED VALUE OF THE PROJECT (INCLUDING INFORMATION ON PRIVATE AND/OR PUBLIC PARTNERS ENGAGED IN THE PROJECT, IF APPLICABLE)	APPLICANT'S ROLE IN THE PROJECT	RELEVANCE OF THE PROJECT TO JESSICA MECHANISM

Relevant experience for Lot 2:

NO.	NAME OF THE PROJECT	PERIOD OF EXECUTION OF THE PROJECT (MM/YYYY – MM/YYYY)	DESCRIPTION AND ESTIMATED VALUE OF THE PROJECT (INCLUDING INFORMATION ON PRIVATE AND/OR PUBLIC PARTNERS ENGAGED IN THE PROJECT, IF APPLICABLE)	APPLICANT'S ROLE IN THE PROJECT	RELEVANCE OF THE PROJECT TO JESSICA MECHANISM

Explanatory note:

Should the portfolio of the applicant/consortium member's experience, relevant to JESSICA mechanism, consist of a considerable amount of items, it is possible to present relevant experience in an aggregated form (e.g. projects aggregated by types or by types of the applicant's role). In a case of a consortium the above table should be completed separately by each member of the consortium. Contact names and details should be provided for project investments quoted by the applicant where the EIB may seek a reference.

Information provided under the item "RELEVANCE OF THE PROJECT TO JESSICA MECHANISM" should include: funding requirements, method and sources of funding, details of whom the funding was provided to and the terms of the investment and exit strategy.

14. The applicant/consortium member certifies a rating of:

Explanatory note:

Should the applicant be a consortium, the leading party (which should hold more than 50% of participation and be a financial entity with proven experience in financial services) or any of the parties undertaking joint and several liability with the other members of the consortium, shall provide the rating or the parent company's expression of support, as specified in Annex 3, under section III, paragraph A, point 3.

15. The applicant/consortium member has/ commits to procure within 6 months from the signature of the Operational Agreement, availability of at least one structure (e.g. local office, branch or representative office, etc) located in the province of Cagliari and operating in the whole Sardinia region.

16. The applicant/consortium member certifies that all information submitted in the previous paragraphs is correct and is supplying all the information required under this Call for EoI in good faith and without misrepresentation.

Done at (date)

STAMP

NAME(S)

SIGNATURE(S)

ANNEX 3

TERMS OF REFERENCE

(I) GENERAL INFORMATION

A. Background on JESSICA

JESSICA is an initiative developed by the Commission and the EIB, in collaboration with the CEB, in order to promote sustainable investment, growth and jobs in urban areas.

Under EU Structural Funds Regulations, Member States are being given the option of using part of their EU Structural Funds allocation to make repayable investments in projects forming part of relevant Integrated Plans for Sustainable Urban Development.

JESSICA responds to the request by several Member States and the European Parliament to pay special attention to the need for urban regeneration and urban investments, including projects in energy efficiency and renewable energy sources, and the initiative is based on the scarcity of investment funds to finance integrated urban renewal and regeneration projects in pursuit of more sustainable urban communities. JESSICA has been launched with a view to providing new opportunities for managing authorities responsible for the current cycle of Cohesion Policy programmes by:

- ensuring long-term sustainability through the revolving character of the EU Structural Funds' contribution to UDF(s) investing in Urban Projects and/or EE/RE Urban Projects;
- creating stronger incentives for successful implementation by beneficiaries, by combining loans and other financial instruments;
- leveraging additional resources for PPPs and other public or public-private initiatives for urban development, with a focus on sustainability and funds recyclability in EU regions;
- contributing financial and managerial expertise from specialised institutions such as the EIB, the CEB and other (international) financial institutions.

B. European Regional Development Fund Operational Programme in Sardinia

The Sardinia OP of the RAS initially approved by the Commission through Decision C(2007) 5728 on November 20th, 2007 contains the following seven Priority Axes:

1. Information Society;
2. Inclusion, Social Services, Education and Lawfulness;
3. Energy;
4. Environment, Attractiveness of Natural and Cultural Resources, Tourism;
5. Urban Development;
6. Competitiveness; and
7. Technical Assistance.

The Sardinia OP has been recently amended so as to include the possibility of using financial engineering instruments, specifically JESSICA, to finance initiatives under Axis 5, as well as under Axis 3.

Within the Sardinia OP, EUR 296,309,295 (approx. 17% of total funding), of which EUR 118,523,718 from the ERDF, are dedicated to Axis 5 - Urban Development, and EUR 182,184,735 (approx. 11% of total funding), of which EUR 72,873,894 from the ERDF, are dedicated to Axis 3 - Energy.

Axis 3 - Energy

Axis 3 of the Sardinia OP is mainly focused on improvement and sustainable management of energy sources. Specific goals consist in the promotion of solar energy, energy produced by biomasses, hydraulic energy and wind power (in particular, promoting small and micro sized plants). Interventions will also be promoted in order to pursue energy efficiency and energy savings in public buildings as well as in public use of energy. At the same time, local enterprises will be incentivised to adopt high-efficiency technologies for energy savings, to be applied to buildings, factories, and warehouses.

Axis 5 - Urban Development

Through Axis 5 of the Sardinia OP, the RAS aims at realising integrated infrastructural actions in Sardinian cities and towns, in order to promote urban rehabilitation and regeneration improving environmental, social and productive conditions and strengthening relationships with the territory. Integrated infrastructural actions could also support the development of disadvantaged minor areas, tackling the decline and valuing the historical, productive heritage and landscape.

The implementation strategy of Axis 5 consists in improving the quality of life in urban areas through the diffusion of high quality services, and the valorisation and rehabilitation of urban environment. This should also contribute to foster tourism, improve sustainable urban transport and flexible mobility, and promote sustainable buildings, including either construction of new buildings or renewal of existing infrastructures.

This will be done by focusing investment on sectors which would contribute to achieve the following objectives:

- Optimizing sustainable mobility, urban transport connections and accessibility;
- Redevelopment of public areas (including public parks and gardens and historical heritage), and setting up of new infrastructures aimed at providing innovative urban services and promoting socio-economic activities;
- Enhancing social inclusion through interventions aimed at promoting integration and development of human capital;
- Promoting pilot actions aimed at supporting territorial entrepreneurship,
- Recovery of environmental heritage and protection of historical and cultural territorial features;
- Supporting specific territorial know-how and promoting productive systems in minor urban centres.

C. Integrated Plans for Sustainable Urban Development to implement JESSICA in Sardinia

Pursuant to Article 44 of Regulation 1083, Urban Projects, financed by JESSICA, must be part of an Integrated Plan. An Integrated Plan comprises a system of interlinked actions, seeking to bring about a lasting improvement in the economic, physical, social and environmental conditions of a city - or even just an area within the city - or a network of cities.

According to recent amendments to the EU Structural Funds Regulations⁴, projects related to energy efficiency and renewable energy in buildings do not necessarily have to be part of an Integrated Plan. However, where a UDF also invests in energy efficiency and use of renewable energy in buildings together with other projects, such EE/RE Urban Projects should be included in Integrated Plans.

The EU Structural Funds Regulations do not include a precise definition of, or specific requirements for, an Integrated Plan. Consequently, such plans or strategies are defined by the competent authorities in the Member States and/or Managing Authorities, taking into account Article 8 of Regulation 1080 and the specific urban, administrative and legal context of each region.

In the context of the execution of JESSICA in Sardinia Integrated Plans, according to Article 44 of Regulation 1083, are implemented through:

- i. PISU, i.e. "*Piani Integrati di Sviluppo Urbano*";
- ii. PAES, i.e. "*Piani d'azione per le Energie Sostenibili*" (Sustainable Energy Action Plan).

⁴ Regulation (EU) No 539/2010 of the European Parliament and of the Council.

c.i. PISU

The implementation strategy defined for the Axis 5 of the Sardinia OP foresees the development of adequate planning tools for the implementation of the “*Piani Strategici Comunali*” of city areas and/or the “*Piani Strategici Inter-comunali*” of networks of small cities (“Strategic Development Plans”). According to this strategy, PISU shall translate urban development strategies into integrated sets of projects, identified through a dialogue among main stakeholders (RAS, municipalities, private partners, citizens).

As of today, 34 municipalities belonging to the 8 Sardinian urban areas of Cagliari, Carbonia-Iglesias, Nuoro, Olbia-Tempio, Oristano, Medio Campidano, Sassari and Ogliastra have defined their own Strategic Development Plans.

In 2009, the Managing Authority provided financial support to the above mentioned 34 municipalities for the development of feasibility studies and of preliminary projects in order to prepare their PISU.

PISU are created through a bottom up approach: first, key projects are identified and then PISU are prepared. Although no PISU has been finalized yet, a list of initiatives has been identified by the 34 municipalities, some of which, following the awarding of grants from the RAS, have been, or will soon be, translated into feasibility studies or preliminary projects.

To date, implementation of PISU in Sardinia is still on-going. Promoters shall verify compliance of Urban Projects with the relevant “*Piani Strategici Comunali*” or the “*Piani Strategici Inter-comunali*” prior to any request for financing to the UDF(s).

c.ii. PAES

Reduction of CO₂ emission is a key objective of the regional policy of the RAS and it is translated in the Sardinia OP, which aims at taking concrete actions for improving energy efficiency and increasing the share of energy produced via renewable sources.

In such framework, the RAS is carrying out the Sardinia CO₂.0 initiative to stimulate the recourse to energy efficiency and renewable energy.

Sardinia CO₂.0 is an innovative pilot initiative promoted by the *Giunta Regionale della Sardegna* (Sardinia Regional Council) whose ambitious goal is to reduce CO₂ emissions in Sardinia by increasing the use of renewable energies, and improving energy efficiency and savings thus fostering, in a long term perspective, the transformation into a carbon free economy.

The initiative includes several strategic initiatives for the sustainable development of the territory, in particular:

- f* Smart City – Comuni in Classe A⁵ (“Smart Cities - Energy efficiency Class A labelled Municipalities”);
- f* Reconversion of the oil power plant of Porto Torres into a biomass power plant;
- f* Realisation of the network infrastructure for the gas transmission and distribution in the region connected with the GALSI (Algeria-Sardinia gas interconnector).

To date, implementation of PAES in Sardinia is still on-going. As a consequence, the Managing Authority may consider the inclusion in the PAES of additional projects and/or initiatives provided they are consistent with the Sardinia OP.

Technical Assistance

The RAS has earmarked EUR 4,000,000 from the Sardinia OP for the communication to stakeholders and the provision of technical assistance for the start-up phase of the Sardinia CO₂.0 project.

Technical and administrative assistance will be provided by Sardegna Ricerche, an in-house research institute of the RAS, while financial advisory will be provided by the SFIRS SpA, the in-house financial body of the RAS, in order to develop their PAES.

⁵<http://www.regione.sardegna.it/jv75?s=1&v=9&c=1505&c1=1505&id=25699>

Technical and economic advice will be provided on assessment of projects capacity to yield financial returns, on administrative procedures and on financial structuring of projects. In addition, under this initiative the Pioneer communities will benefit of coaching activities for their technical staff: the support will focus on analysis of local community energy consumption, current greenhouse gas (GHG) emissions, existing energy policies, and analysis of potential measures to reduce GHG emissions.

D. JESSICA Holding Fund in Sardinia

The Funding Agreement for the establishment of the JSHF between the EIB and the RAS – which was represented by the Managing Authority - was signed on July 20th, 2011.

Governance of the JSHF

The JSHF has been established as a separate block of finance within the EIB for the purpose of investing the contributed funds as repayable investments in PPPs and other Urban Projects or specific investment activities in EE/RE Urban Projects. The functioning of the JSHF is supervised by its Investment Board, an independent body currently consisting of five independent members appointed by the Managing Authority, after consultation with the EIB.

The Investment Board is mainly responsible for approving or rejecting recommendations made to it by the EIB, as the JSHF manager including, inter alia, the contract terms and conditions of the Operational Agreement with the UDF(s).

E. Urban Development Fund(s) in Sardinia

In light of the new stimulus provided by recent developments in EU Structural Funds Regulations⁶, financial engineering instruments, such as UDFs, have emerged as key investment priorities for achieving sustainable urban development objectives. At the same time, energy efficiency and renewable energy measures can play a significant role in achieving sustainable urban development.

It was, therefore, decided to launch a Call for EoI for the selection of UDF(s) divided in 2 Lots:

- f Lot 1: devoted to Urban Projects, using resources from Axis 5;
- f Lot 2: devoted to EE/RE Urban Projects, using resources from Axis 3.

Following the award of each Lot, a financial mechanism will be set-up whereby funds from the JSHF will be channelled into the UDF(s) and then finally invested into specific Urban Projects and/or EE/RE Urban Projects.

Loans, equity and equivalent financial instruments are the investment products that can be used by the JSHF.

a. The role of the UDF(s)

In line with the JESSICA concept, UDF(s) should be active partners with regional and local authorities in stimulating the development of individual areas, while investing in Urban Projects or EE/RE Urban Projects with a long-term perspective. Broadly speaking, the main tasks of the UDF(s) will be to:

- identify, invest in and lead the negotiation and structuring of financial investments in viable Urban Projects or EE/RE Urban Projects, fitting the agreed Business Plan of the UDF, the Investment Strategy of the JSHF and the eligibility requirements and criteria applicable to the Sardinia OP;
- work in coordination with the Managing Authority to identify possible investment opportunities in Urban Projects or EE/RE Urban Projects, either within the project pipeline of the relevant Integrated Plans or new projects that fit within the agreed Investment Policy of the UDF;
- monitor projects to provide the necessary information in order to comply with the reporting obligations of the Commission in accordance with the EU Structural Funds Regulations;
- source additional co-financing to the extent possible. This aims at enabling the investment by the JSHF to be further leveraged for Investment in Urban Projects or EE/RE Urban Projects and

⁶ EC Regulations 539/2010 of 16 June 2010

to ensure that sufficient Eligible Expenditure can be declared in those projects in accordance with EU Structural Fund Regulations; and

- recommend and manage appropriate exit strategies from Investments in Urban Projects or EE/RE Urban Projects.

UDF(s) must ensure that the Urban Projects and the EE/RE Urban Projects are viable from an economic, social and technical point of view, and that they meet the eligibility criteria established in the EU Structural Funds Regulations as well as the specific eligibility criteria of the JSHF.

Therefore, the UDF(s) must analyse the associated risks, the financing structure and income foreseen for the parties involved in the Urban Projects and the EE/RE Urban Projects, in order to establish the conditions required for the participation of the UDF(s) in the financing of these projects.

b. Legal and ownership form

UDF(s) may be established as: joint stock companies, PPPs, investment funds, or as a separate block of finance within a financial institution or other organisational forms requiring a special legal regulation/statute. The proposed legal form must be acceptable to the JSHF and compliant with EU and Italian regulations applying to the investment activities to be carried out.

The UDF may be owned and/or managed either by private investors (e.g. Italian or international banks, real estate developers, fund managers, private companies, etc.) and/or public entities (e.g. local authorities, municipal companies, local agencies, etc.).

c. Focus of the UDF(s)

The key investment activities anticipated of the UDFs include:

- direct lending (senior, junior or mezzanine);
- equity investments;
- other equivalent financial instruments.

F. Eligible Urban Projects and EE/RE Urban Projects

UDF(s) may only make investments or commit to investment in projects which, *inter alia*:

- are in compliance with the relevant Strategic Development Plans or PAES;
- according to the EU Structural Funds Regulations, are part of an Integrated Plan, such as those mentioned in Section I C) above (i.e. PISU or PAES);
- offer an acceptable return on investment in line with market standard following the contribution of JESSICA funds;
- have not been already completed. A UDF shall not re-finance acquisitions or participate in projects already completed;
- demonstrate soundness in terms of business model, cash flows, partners, etc.;
- are capable of ensuring economic and/or social benefits (including quantitative outputs as set in Appendix D);
- are implemented by:
 - Public entities;
 - Private companies and natural or legal persons;
 - PPPs (including mixed public-private companies and private partners of contract-type PPPs);
 And solely for EE/RE Urban Projects:
 - Energy Services Company (ESCOs).

F.I. Specific types of Urban Projects

Typical Urban Projects would be part of urban renewal schemes and relate to the productive, environmental and service sectors eligible under Sardinia OP, particularly Priority Theme 61, such as:

- a) rehabilitation or upgrading of existing basic urban infrastructure, including streets and other public spaces, utilities, public transport stations, parking facilities, etc.;
- b) infrastructures and buildings accommodating innovative activities and SMEs, including research centres, office facilities, industrial estates supporting innovation and entrepreneurship, etc.;
- c) cultural and historical heritage restoration and re-use;
- d) redevelopment of derelict areas (e.g. old industrial and depot sites) for non-residential purposes;
- e) local development initiatives and structures providing neighbourhood services and creating jobs;
- f) sustainable tourism investments.

F.II. Specific types of EE/RE Urban Projects

The types of EE/RE Urban Projects targeted by the UDF are defined by the Priority Themes below and are detailed as follows:

Renewable Energy, wind power, solar power, biomass, hydroelectricity, geothermal power, others (Priority Theme codes number 39, 40, 41 and 42)

The themes cover all investments which have the main objective of producing energy from renewable sources. Projects are eligible only if the energy is mainly produced for the self sustainability of the local communities. Priority will be given to renewable energy projects that are integrated in an overall energy efficiency operation.

Energy Efficiency, Cogeneration and Energy Management (Priority Theme code number 43)

The theme covers all investments which have the main objective of reducing energy consumption and increasing the energy efficiency in the eligible sectors. Projects can involve public and private buildings to support increased energy efficiency.

Investment can also include projects related to clean and energy-efficient public transport where projects can improve the energy efficiency of the transport fleet and support the integration of renewable energy sources, e.g. hybrid buses and changing to a cleaner fuel (e.g. ethanol); electrical or low-carbon propulsion systems; increasing public transport fleet; electric vehicle infrastructure etc. Eligible projects should apply pollution standards stricter than the minimum standards, in particular concerning energy efficiency.

General financial eligibility criteria for energy efficiency projects and public transport

Investments should result in an increase in energy efficiency of at least 20% compared to the situation without the project. Investments made by the UDF that result in an increase in energy efficiency of less than 20%, should contribute to decreasing energy consumption and/or increasing the energy efficiency in the eligible sectors. The energy savings generated by these investments should justify at least 50% of the investment cost, in terms of Net Present Value (NPV), and using a discount rate of 5%.

Furthermore, the following projects are eligible despite not being subject to the financial eligibility criteria described above:

- a) Energy savings/ Energy efficiency in buildings
 - Investments for the renovation of existing buildings which aim to improve energy efficiency through measures such as improving the building envelope, upgrading or replacing inefficient heating/cooling systems with more energy efficient HVAC

(Heating Ventilating, and Air Conditioning), and installing more energy efficient lighting systems.

- Investments in new buildings achieving an energy efficiency standard class A or B. Funds can finance the additional cost in relation to the minimum standards.

b) High-efficiency Co-generation of Heat and Power

High efficient Co-generation (Combined Heat and Power, CHP) are eligible provided that they meet the criteria for high-efficiency cogeneration according to the relevant EU Directive (2004/8/EC and subsequent amendments thereof)⁷. CHP projects using renewable energy or the recovery of industrial products that are currently wasted are eligible.

c) Renovation or extension of existing district heating or cooling networks

Renovation and extension of district heating networks (and cooling networks) are eligible provided that the long-term heat supply costs, including all necessary reconstruction and renovation, are competitive with the supply costs from individual heat boilers.

(II) AMOUNT ALLOCATED FOR THE CALL FOR EOI

1. The amount of JSHF funds to be allocated in response to this Call for Eoi is approximately EUR 66,220,000. The amounts invested may be increased at a later stage by any returns on investment in the UDF, additional EU Structural Funds or any other funding that may be held by or become available to the JHFS, subject to applicable public procurement rules. It is also highlighted that, in addition to JSHF resources, all investments mentioned below will be eligible for receiving grants directly by the Managing Authority following appropriate procedures, or as freely decided by RAS in any other circumstances and in compliance with all applicable legislation, including EU State Aid Rules.
2. The amount allocated under this Call for Eoi is further divided in two Lots, as described below:

Lot	Amount Available (EUR)
Lot 1 – Urban Projects	Approximately 33,110,000
Lot 2 – EE / RE Urban Projects	Approximately 33,110,000

3. Applicants may apply for a single Lot or for both Lots, by specifying the preferred option in their Eoi. In case they apply for both Lots, selected applicants shall submit two separate Offers in the form of a Business Plan. For the sake of clarity, even if an applicant has submitted an Eoi for both Lots, subsequently he can choose to submit an Offer only for one Lot. However, the reverse is not allowed.
4. Applicants shall mention in their Offer the Lot(s) they are bidding for. Each Lot will be individually evaluated and awarded.

(III) PROCUREMENT PROCESS FOR THE UDF(S) SELECTION

The process, by which the JSHF will engage with one or several UDF(s), begins with this Call for Eoi and consists of two phases which are described in detail in the following sections.

⁷ Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on a useful heat demand in the internal energy market and amending Directive 92/42/EEC, as subsequently amended by Regulation (EC) n. 219/2009 of the European Parliament and of the Council of 11 March 2009.

PHASE 1 – Call for EoI

This phase is split in two stages.

- **Stage 1** (applying the Exclusion and Selection Criteria): EoIs will first be assessed against the Exclusion Criteria (as outlined in Section III of Annex 3). Admitted EoIs will be then assessed according to the Selection Criteria, also included in Section III of Annex 3.
- **Stage 2** (applying the Award Criteria): all selected applicants will be invited to submit their Offers (including detailed Business Plans, drafted according to the indications set in Annex 3). The Offers will be evaluated according to the Award Criteria, as outlined in Appendix A.

A. Stage 1

1. Submission of EoI

Each EoI submitted by an applicant shall be prepared in accordance with the template attached as Annex 1 and shall be accompanied by the following annexes:

- A declaration, to be made by the applicant, as per the form attached as Annex 2; and - Any supporting documents.

2. Exclusion Criteria

Applicants will be excluded from participating in this Call for EoI if any of the following Exclusion Criteria applies to them or, if the EoI has been submitted by a consortium, to any of its members, namely if:

- a) they are bankrupt or being wound up, having their affairs administered by the courts, have entered into an arrangement with creditors, have suspended business activities, the subject of proceedings concerning those matters, or in any analogous situation arising from a similar procedure provided for under national laws or regulations;
- b) they have been convicted of an offence concerning their professional conduct by a judgment which has the force of *res judicata*;
- c) they have been guilty of grave professional misconduct proven by any means which the EIB can justify;
- d) they have not fulfilled their obligations relating to the payment of social security contributions or the payment of taxes in accordance with the legal provisions of the country in which they are established or with those of the country of the contracting authority or those of the country where the contract is performed;
- e) they have been the subject of a judgment which has the force of *res judicata* for fraud, corruption, involvement in a criminal organisation or any other illegal activity detrimental to the Community's financial interests;
- f) they are guilty of misrepresentation in supplying the information required by the contracting authority for participation in this Call for EoI or have not provided such information.
- g) Applicants must show that they are not in one or more of the situations listed above by answering to the questions included in Annex 2, as well as providing the following evidence in relation to the items mentioned above:
 - In relation to items (a), (b), and (e) above, relevant extract(s) from the judicial record or, failing that, equivalent documentation issued by a competent judicial or administrative authority in the country of origin or provenance showing that those requirements are satisfied, not earlier than 3 months before the deadline for the submission of the EoI. Having regard to the national laws of the Member State where the applicants are established, such requests shall relate to legal and/or natural persons, including, if appropriate, company directors and any person having powers of representation, decision or control in respect of the applicant and, in particular, to the person(s)

empowered to represent the applicant and sign the Operational Agreement if the applicant is successful. If such documents are not available in the country of origin or provenance, the applicant:

- i. For any entity incorporated in Italy, such entity may provide a substitutive self-declaration further to Presidential Decree, 28 December 2000, 445;
 - ii. For any entity not incorporated in Italy, such entity may provide a declaration on oath or, in Member States where there is no provision for declarations on oath, by a solemn declaration made by the person concerned before a competent judicial or administrative authority, a notary or a competent professional or trade body, in the country of origin or in the country from where that person comes, stating that such documents are not available and that Exclusion Criteria (a), (b) and (e) do not apply to it.
- In relation to item (d) above, the most recent certificates issued by the competent social security and tax authorities of the country where they are established. The certificate (or substitute declaration or statement) provided must be dated not earlier than 3 months before the final date for submission of Eols. Having regard for the national laws of the Member State where the applicants are established, such requests shall relate to legal and/or natural persons, including, if appropriate, company directors and any person having powers of representation, decision or control in respect of the applicant and, in particular, to the person(s) empowered to represent the applicant and sign the Operational Agreement if the applicant is successful. Where such certificate is not issued in the country of establishment, or provenance, this can be replaced by:
- i. For any entity incorporated in Italy, such entity may provide a substitutive self-declaration further to Presidential Decree, 28 December 2000, 445;
 - ii. For any entity not incorporated in Italy, such entity may provide a declaration on oath or, in Member States where there is no provision for declarations on oath, by a solemn declaration made by the person concerned before a competent judicial or administrative authority, a notary or a competent professional or trade body, in the country of origin or in the country from where that person comes, declaring that such documents are not available and that Exclusion Criteria (d) does not apply to it.
- In relation to items (c), and (f) above, a declaration made as indicated above, stating that the applicant is not guilty of professional misconduct, and is supplying all the information required under this Call for Eol in good faith and without misrepresentation. This solemn declaration should be signed by the person(s) empowered to represent the applicant and sign the contract if the applicant is selected and dated not earlier than 3 months before the final date for submissions.

Applicants may also be excluded where a conflict of interest subsists, whose absence must be declared under Annex 2.

3. Selection Criteria

Applicants not excluded due to the Exclusion Criteria will be assessed on the basis of the following Selection Criteria:

- a) The Eol is prepared in accordance with Annex 1, and all supporting documents are provided;
- b) Declarations indicated in Annex 2 are completed to the satisfaction of the EIB. In particular:
 - b.1 declarations and questions relating to the Exclusion criteria are completed and the relevant documents as requested by Section III.A.2 are enclosed;
 - b.2 declarations and questions relating to the following Selection Criteria are completed, i.e.:

- b.2.1. Authorisation to carry out business in Italy under the applicable regulatory framework If applicable, a copy of all authorisations, licences, permits, approvals, consents, resolutions, exemptions, filings and registrations provided by a competent authority evidencing that the applicant/consortium member is authorised to carry out business in Italy under the applicable regulatory framework should be enclosed;
- b.2.2. Experience in the relevant targeted market: at least two years out of the last five (i.e. from 2007 to 2011), spent in the management of equivalent or similar projects to those foreseen in this Call for EoI. Applicants that apply for two Lots shall demonstrate relevant experience in both fields targeted by Lot 1 and Lot 2;
- b.2.3. Minimum rating of BBB/Baa2 provided by either Standard & Poor's Rating Services (a division of The McGraw-Hill Companies Inc.), Moody's Investors Service Inc. or Fitch Ratings Ltd.; or presentation by the applicant of a letter of support from a parent company /or other company having a specific agreement with the applicant/consortium member, which meets the same minimum rating, confirming that it will support the performance of the UDF's obligations under the Operational Agreement and that the applicant has the financial capacity and suitability to be involved in the management of equivalent or similar projects to those foreseen in this Call for EoI;
- b.2.4. Presence in the Sardinia region: the applicant has, or commits to procure within 6 months from the signature of the Operational Agreement, availability of at least one structure (e.g. local offices, branch or representative office, etc) located in the province of Cagliari and operating in whole region..

The experience requested from the applicant under point b.2.2 above includes that derived from different types of Urban Projects or EE/ER Urban Projects executed and from different types of roles played by the applicant, including advisory services, financing of the project, execution, monitoring, audit and others.

For Lot 1, relevant experience in Urban Projects related to:

- improvement of social integration;
- development of cultural, sport and recreation infrastructures;
- creation of entrepreneurial support structures and development of creative industries clusters;
- improvement of mobility;
- reconversion of buildings, including residential ones, for non residential uses;
- reconversion of industrial and degraded areas.

For Lot 2, relevant experience in EE/RE Urban Projects related to:

- Energy savings/ energy efficiency in buildings
 - Insulation of building envelope (wall, roof, balcony "glazing")
 - Heating control systems, energy consumption regulators
 - Lighting upgrades, self-ballasted lamps
- Cogeneration (CHP)
 - Renovation or extension of existing district heating or cooling networks with high efficiency CHP
- Renewable Energy
 - Solar photovoltaic (PV) for electricity, Solar thermal for heating water
 - Biomass
 - Wind -
- Clean Transport
 - Electric vehicles, including automobiles, motorcycles and bicycles
 - Fleet management and biofuels to improve energy efficiency.

The EIB will particularly look for:

- Relevant track record in appraising, making and managing financial investments (in particular loans) made for Urban Projects or EE/RE Urban Projects.

- For Lot 2, track record of financing energy efficiency projects “off” the public sector balance sheet (i.e. where the financing associated with energy efficiency assets does not count as public sector borrowing), e.g. direct lending to special purpose energy efficiency asset financing vehicles established by energy service providers/banks etc; asset financing organisations for energy efficiency in public buildings and/or social housing.

Relevant experience shall be provided by the applicant, its shareholders or founders, members of the consortium or parties to a cooperation agreement as specified in Annex 2, point 13. However, experience of other members of the consortium, the applicant's parent company or other companies in its group will only be relevant to the extent that these other entities are directly involved in the delivery of the services, or to the extent that the applicant will be able to demonstrate that it will directly benefit from the quoted experience when performing the required services under the Call for EoI.

The EIB reserves the right to verify the correctness of the information received. The EIB may, on its own initiative, inform applicants of any error, inaccuracy, omission or any other error in their application. If clarification is required or if obvious clerical errors in the application need to be corrected, the EIB may request the applicant to provide clarifications and/or additional information provided the terms of the EoI documents are not modified as a result.

B. Stage 2

1. Submission of Offers

Applicants who are not excluded and meet the Selection Criteria, will be invited to submit Offers, in the form of a Business Plan, for the use of the JSHF resources and demonstrating economic viability of the Investment Policy. The Business Plans shall be completed using the structure and the format provided in Section IV. If any of the information required in the Business Plan is different in case the applicant is awarded both Lots, this information should be provided separately.

The Offers will be evaluated on the basis of the Award Criteria, which are described in Appendix A. Appendix A also gives guidance on the evaluation criteria which will be applied to assess each section of the Business Plan.

Upon the final evaluation of the Offers, the EIB will identify the applicant(s), in each Lot, whose Offer(s) (in the form of Business Plan) is evaluated as the Preferred Bidder(s), and will recommend the Preferred Bidder(s) to the Investment Board for its approval. This will be determined on the basis of the highest total points out of 100, after assessing the Award Criteria.

PHASE 2 – Negotiation and conclusion of the Operational Agreement

Once accepted by the Investment Board, the Preferred Bidder(s) of each Lot may be invited to negotiations with the EIB concerning the terms and conditions of the Operational Agreement. The negotiation may be developed in several phases.

In the period before an Operational Agreement is concluded, it is envisaged that the Preferred Bidder(s) will continue to develop projects included in its Business Plan and to look for other projects not identified at the time of submission of the Offer.

The negotiations with the Preferred Bidder(s) should be limited to a fine-tuning of the Operational Agreement, so as to increase the efficiency of the Business Plan and its coherence with the Sardinia OP priorities and to discuss new Urban Projects or EE/RE Urban Projects included in the Business Plan in the meantime.

In any case, it must be assured that the adjustments agreed upon would not have changed the result of this procurement process if they had been reflected in any of the Offers submitted by any of the applicants; also, it must be assured that those adjustments do not violate any of the mandatory provisions of this Call for EoI and that they respect all its mandatory specifications.

Once negotiations have been concluded, the EIB shall make a proposal on the awarding of the Operational Agreement to the Investment Board for approval. Such a proposal shall include the key terms and conditions of the Operational Agreement to be signed between the EIB, acting as manager of the JSHF according to the Funding Agreement, and the selected UDF.

Before signature of the Operational Agreement, the EIB reserves the right to verify any relevant ethical, professional and technical requirements submitted by the selected UDF under this Call for EoI.

(IV) BUSINESS PLAN

As described in Section III, during Stage 2 of the procurement process the selected applicants are invited to submit an Offer for each of the Lots they intend to apply for, in the form of a Business Plan.

The Business Plan should contain the following information:

1. Legal and ownership structure of the UDF

Applicants shall provide information on the proposed legal structure and on the ownership structure of the UDF, which must be acceptable to the EIB on the basis of the requirements of Italian legislation on the provision of financial services.

The applicant shall identify the UDF manager who will be either the applicant itself or a member of its group or a member of the consortium or their respective groups.

2. By-laws of the UDF

Where applicable, the by-laws of the UDF and licences from the competent Italian authorities giving permission to grant loans and provide equity to legal and natural entities, the validity of which should not be limited, should be enclosed. For the avoidance of doubt, signature of the Operational Agreement will be conditional on receipt of these documents to the satisfaction of EIB.

3. Governance structure

The UDF will have to propose a practical, cost-effective method to achieve a satisfactory management and governance system.

The applicant shall describe the management, administration and accounting procedures, which will be applied in carrying out the activities of the UDF. The applicant shall also present the governance provisions of the UDF, including internal control and risk management procedures that will be applied to the operations of the UDF. The governance provisions shall define the mechanisms to guarantee compliance of Urban Projects or EE/ER Urban Projects with eligibility criteria under the Sardinia OP (as described in Section I (F)), applicable local and regional legislation and the EU Structural Funds Regulations as well as the fulfilment of all obligations arising from ERDF co-financing according to Eligibility Rules.

The UDF will be responsible for obtaining all relevant authorisations and licences relevant thereto.

The applicant should pay particular attention to the procedures to be adopted to ensure the compliance of Urban Projects or EE/RE Urban Projects with Eligibility Rules and technical/economic quality requirements.

Project appraisal could be carried out internally, within the UDF, or through a third party fulfilling the relevant ethical, professional and organisational requirements under this Call for EoI. In this case, the intention to use subcontractors and the extent of the recourse to them shall be included in the Offer and the UDF shall notify the EIB of any subcontractor upon signing the relevant contract, in order for the EIB to assess the fulfilment of the above mentioned requirements.

Project appraisal should ensure that the Urban Projects or the EE/RE Urban Projects are feasible from an economic, social and technical point of view. It should also analyse the risks involved, the financial structure and the expected revenues for the different stakeholders in order to set up the conditions for the participation of the UDF in the financing of these projects.

Moreover, the applicant shall specify the strategy to reinforce local presence in the Sardinia region through existing and/or newly established local structures, in order to develop and maintain

appropriate contacts and relationships with relevant authorities (mainly the Managing Authority and local authorities) as well as local stakeholders and project promoters.

In setting up the governance structure of the UDF, the bodies having the decision-making power and those responsible for, inter alia, the approval of projects' financing should be outlined. The applicant shall indicate possible ways of coordination with the Managing Authority through consultation or propose other ways for the participation of the Managing Authority in the process of project implementation.

There will be a general presumption by the EIB that all required due diligence, including credit risk appraisal, will be conducted by the UDF, on the basis of the procedures agreed by the UDF and detailed in the Operational Agreement.

4. Key experts

The applicant shall indicate a team of experts with experience in relevant fields, which shall be established and is available in order to complete the JESSICA action's objectives.

Should any of the key experts not be at the direct disposal of the applicant, the applicant shall present a declaration of other entities confirming availability of the key expert (according to the template provided in Appendix E).

Applicants applying for both Lots are allowed to indicate the same key expert(s) for both Lots.

Lot 1

	NAME AND SURNAME	SCOPE OF DUTIES ENTRUSTED	YEARS OF EXPERIENCE
1		Key Manager of the UDF	
2		Expert on Urban Planning with specific experience on participative processes for Urban Planning	
3		PPP expert with specific knowledge of administrative procedures and public procurement	
4		Project Finance expert	
5		Public sector finance expert	
6		Team Manager for monitoring and reporting	

The applicant shall provide the relevant experience of its key experts of the team in implementing the Investment Policy as described in point 5, including:

1. An explanation of their experience of and approach to working with its proposed team;
2. Any experience of working with PPPs;
3. Their track record in Urban Projects, in line with criteria indicated in Section I (F).
For each example include: a description of the project; when it was established; total funds managed and number and amount of investments made.
In addition, the applicant should provide details of the split between proprietary and advisor project sourcing. Contact name and details should be provided for at least two projects where the EIB may seek a reference.

Relevant experiences of key experts should be provided on not more than three A4 pages each.

Lot 2

	NAME AND SURNAME	SCOPE OF DUTIES ENTRUSTED	YEARS OF EXPERIENCE
1		Key Manager of the UDF	
2		Expert on Energy Efficiency and/or Renewable Energy	
3		PPP expert with specific knowledge of administrative procedures and public procurement	
4		Project Finance expert	
5		Public sector finance expert	
6		Team Manager for monitoring and reporting	

The applicant shall provide the relevant experience of its key experts of the team in implementing the Investment Policy as described in point 5, including:

1. An explanation of its experience of and approach to working with its proposed team;
2. Any experience of working with ESCOs
3. Any experience of working with PPPs;
4. Their track record in Urban Projects or EE/RE Urban Projects as relevant, in line with criteria indicated in Section I (F). For each example include: a description of the project; when it was established; total funds managed and number and amount of investments made.
In addition, the applicant should provide details of the split between proprietary and advisor project sourcing. Contact name and details should be provided for at least two projects where the EIB may seek a reference.

Relevant experiences of key experts should be provided on not more than three A4 pages each.

5. Investment Policy

Applicants shall describe their Investment Policy for the purpose of the Business Plan. The Investment Policy should be the starting point for the identification of a portfolio of projects, for Lot 1 and Lot 2 respectively, or at least the typology of Urban Projects or EE/RE Urban Projects the applicants intend to finance, in accordance with Section I (F).

To the extent possible, applicants are asked to support their Investment Policy with details of concrete Urban Projects or EE/RE Urban Projects already identified ("Pipeline"), as outlined in point 6. However, it is understood that an existing Pipeline of Urban Projects or EE/RE Urban Projects could be difficult to outline at this stage due to the incipient nature of the targeted sectors or the early project completion stages of projects. Hence, the presentation of the applicant's Investment Policy may be based on project examples, largely based on applicant's experience and on the best practices and benchmarks in the relevant field which will be identified based on a clearly defined identification and evaluation methodology.

The implementation of the Investment Policy should be quantified through a sustainable financial model, as described in point 13.

The Investment Policy will describe the following:

Lot 1

- a) Compliance with Axis 5 of the Sardinia OP.
- b) The strategic focus of the UDF in terms of:

- The targeted market, geographical coverage, plan to capture a share of the identified market potential, and related priorities;
 - Conditions of investment products offered by the applicant as outlined in point 8;
 - Any other relevant criteria that the applicant would consider appropriate.
- c) The approach to managing engagement with public or private sector stakeholders and project promoters such as local authorities or private entities, as regards identification and financing of Urban Projects.

The Investment Policy for Lot 1 will have the following specific provision:

- The target geographic area will cover all municipalities that have developed Strategic Development Plans. Hence, the UDF shall initially invest in projects located in the 34 municipalities that have defined their own Strategic Development Plans.

Lot 2

The Investment Policy will describe the following:

- a) Compliance with Axis 3 of the Sardinia OP, particularly the following Priority themes:
- Renewable Energy, wind power (category 39)
 - Renewable Energy, solar power (category 40)
 - Renewable Energy, biomass (category 41)
 - Renewable Energy, hydroelectricity, geothermal power, others (category 42)
 - Energy Efficiency, cogeneration and energy management (category 43).
- b) Compliance with existing energy policies and/or regional plans.
- c) The strategic focus of the UDF in terms of:
- The targeted market, geographical coverage, plan to capture a share of the identified market potential, and related priorities;
 - Categories of EE/RE Urban Projects in terms of eligibility criteria, types and targets as outlined in Section I (F);
 - Conditions of investment products offered by the applicant as outlined in point 8;
 - Any other relevant criteria that the applicant would consider appropriate.
- d) The approach to managing engagement with public or private sector stakeholders and project promoters such as local authorities, private entities or ESCOs being procured by a public and/or private entity to perform actions in the field of energy efficiency or renewable energy, as regards identification and financing of EE/RE Urban Projects.

Additionally, the Investment Policy for Lot 2 will have the following specific provisions:

- limits for the geographic area: although no geographic limit were established, the UDF will initially invest in projects located in the Pioneer communities identified under the Smart City Comuni in classe A initiative.
- limits for diversification of Priority Themes: the Priority Themes for the targeted EE/RE Urban Projects are those from the Sardinia OP (i.e. priority themes 39, 40, 41, 42 and 43), no specific limits were established.

6. Pipeline

Applicants shall be responsible for the identification of types of Urban Projects (Lot 1) or EE/RE Urban Projects (Lot 2) to be included in their Business Plan in accordance with indications provided in Section I (F) for each Lot. Applicants should demonstrate the feasibility, robustness and compliance of such Pipeline with the proposed Investment Policy to be adopted.

The description of the Pipeline shall include, at the very least, the following parameters:

- a) General description of the project and the project's timetable;
- b) Justification for selection;
- c) Identification of risks (including technical, market, financial, etc.);
- d) Compliance with the requirements as described in Section I (F) including:
 - a. for Lot 1, the extent to which each Urban Project shall contribute to the objectives of the Axis 5 of Sardinia OP,
 - b. for Lot 2, the extent to which each EE/RE Urban Project shall contribute to the objectives of the Axis 3 of Sardinia OP.
- e) Preliminary assessment of the socio-economic performance including a description of the social and environmental benefits in line with the indicators included in the template provided in Appendix D.
- f) Preliminary structure of the financing, including an estimate of the expected contribution from JSHF resources.

There are no specific requirements imposed on Urban Projects or EE/RE Urban Projects with respect to financial criteria other than those described in these Terms of Reference, particularly in Section I (F). The criteria as well as the investment products selected (loans, equity and any other instrument as indicated in point 8 hereof) will differ according to the type of projects and shall be established by the UDF on a case by case basis. These criteria may include: internal rate of return, net present value, pay-back period, cash flow profile, availability and form of collateral, other financial indicators typically used in credit analysis, etc. Nevertheless, it is acknowledged that for some projects precise calculation of financial indicators may not be possible at the time of presenting the Offer. In such cases the Offer will still be acceptable.

Since it is required that Urban Projects or EE/RE Urban Projects are included in PISU or PAES, the Pipeline presented by applicants in their Business Plans shall comply with the assumptions and guidelines for local authorities as regards the key characteristic required from the existing planning documents.

Lot 1

As already mentioned (Section I.C) the integrated planning procedure put in place for Axis 5 is based on a bottom-up approach where key projects are identified first and PISU are then prepared. As most projects submitted by Sardinian local authorities (municipalities and provinces) still remain in the conceptual stage, the list of projects presented by an applicant may contain only general information whilst no financial or economic analysis may have been carried out. Therefore, feasibility studies or business plans and a reasonable cost-benefit analysis may be difficult to perform at this stage.

Lot 2

Due to the early stage of the Sardinia CO2.0 initiative, no project is currently available.

Against this background, applicants should be advised that the description of Pipeline required is aimed at testing the applicants' approach to the selection, analysis and financing of Urban Projects or EE/RE Urban Projects. It is hence recognised that some project details may be less well developed than others and that the Pipeline/financial plan will need to be subject to flexibility and further development/agreement going forward. Provisions for this will be made in the Operational Agreement to be signed with the UDF.

In spite of the above, applicants that are able to provide evidence of a Pipeline of real projects and specific details of "quick wins" projects, will provide a greater degree of comfort to the EIB that they are

in a position to invest the allocated funds from the JSHF within the relatively tight timescales envisaged for investment.

7. Methodology for the identification and evaluation of future projects

The applicant's Pipeline prepared in conformity with previous point 6 shall not be interpreted as an exhaustive or definitive list. It is expected that the selected applicant will continue to look for other Urban Projects or EE/RE Urban Projects not identified at the time of submitting the Offer. To this end, the applicant should describe the methodology for the identification and evaluation of future projects to be incorporated into Integrated Plans.

The proposed methodology shall contain provisions to ensure that the selected Urban Projects or EE/RE Urban Projects to be financed by the UDF will comply with all requirements indicated in Section I (F).

In particular, the methodology shall detail the means and the key steps applied to ensure the selected Urban Projects or EE/RE Urban Projects reach the necessary level of advancement for investment under the JESSICA financing. Such methodology shall cater for the different stages of development of each project, including projects which are now only at conceptual stage.

Based on the applicant's knowledge of the local market and local needs, the applicant shall play an active role in terms of cooperation with local authorities regarding identification, selection and financing of Urban Projects or EE/RE Urban Projects and describe the proposed cooperation procedures. In particular, it is expected that the selected UDF will actively engage in preparing selected projects for investments, so as to verify whether they meet the JESSICA financial viability's requirements.

The proposed methodology should describe how the UDF will appraise financial and economic characteristics of each project. The assessment of Urban Projects or EE/RE Urban Projects as regards their economic performance and impact should cover, to the extent possible, the following aspects: cost/benefit analysis (a qualitative analysis in all cases and, where possible, also a quantitative one); contribution to meet relevant output indicators of the Sardinia OP; and potential to attract additional funding from other public and private sources.

Finally, the applicant should also include a full description of the internal scoring system used for the credit risk assessment of each project and for the pricing of the operations, if applicable.

8. Conditions for the investment products of the UDF

The UDF will receive resources from the JSHF to invest in a revolving way in Urban Projects or EE/RE Urban Projects. For these purposes, loans, equity and other equivalent financial instruments are the investment products that can be used by the UDF. There are neither maximum/minimum requirements for loans and/or equity investments, nor limits in terms of the mixture of these products. However, it is recommended that additional co-financing from other sources should be made available.

The UDF will analyse the best investment product or combination of investment products to be provided to each project. It is expected that at the end of its investment period (i.e. before end of 2015) the range of investment products covered by the UDF will be market driven.

There are no maximum or minimum limits for the number of projects that can be financed by the UDF.

It should be stressed that, when defining the most appropriate combination of investment products to be provided to each Urban Project or EE/RE Urban Project, the UDF will have to comply with EU State

Aid Rules⁸, including the reference rate framework⁹ and EU guidelines on State aid for environmental protection¹⁰, where appropriate or any other State aid scheme cleared by the Commission applicable to JSHF pursuant to a notification procedure under the TFEU. Applicants are expected to take their own legal advice in relation to State aid.

Conditions for the UDF financial products providing support to Urban Projects or EE/RE Urban Projects shall be based on the following guidelines:

- a) Only projects, in which the sum of all project cash flows from operating and investing activities is positive before discounting (for all projects this include initial expenditure; in the case of PPP-type or similar projects this includes all potential payments to be received from relevant public authorities/other project promoters e.g. availability payments, shadow tolls, etc.), and are, therefore, consistent with the concept of the JESSICA repayable investment, should be invested in.
- b) The market sector is not fully developed and hence the JESSICA intervention has been identified as suitable.
- c) The intensity of UDF financing should not exceed the level sufficient to encourage a project promoter to execute an Urban Project or EE/RE Urban Project. The key is to limit UDF's interventions to what is necessary to proceed with project and to ensure that private partners do not benefit from a higher-than-market rate of return on investment. Following the investment from a UDF, the rate of return for equity investors and providers of debt shall not exceed the Normal Equity IRR and Normal Debt IRR respectively.
- d) The terms and conditions of project financing from the UDF must be determined before the Urban Projects or EE/RE Urban Projects are implemented and must be performed on the basis of the anticipated financial and economic results, presented as part of the financial analysis (i.e. as part of the financial plan of the project).
- e) The terms and conditions of engaging the UDF should be determined on an individual basis.

The compatibility of a new JESSICA State aid scheme providing for different financial conditions that can be applied to JESSICA's related investment products is currently being considered by the competent EU authorities and under the EU State Aid Rules. Subject to a final decision on this matter by the EU authorities, Offers (in the form of a Business Plan) shall be submitted in line with existing State aid rules. The Managing authority reserves the right to decide, later on, whether to establish a State aid scheme in relation to JSHF funds. Should this have an impact on the Operational agreement, the decision will be adopted in compliance with applicable public procurement rules.

9. Policy of the UDF concerning exit from Investment in Urban Projects

The applicant shall describe the rules governing the exit by the UDF from Investments in Urban Projects (Lot 1) or EE/RE Urban Projects (Lot 2).

10. Reutilisation of resources by the UDF.

The UDF undertakes to repay funding received to the JSHF or to recycle it into other Urban Projects or EE/RE Urban Projects.

⁸ For information on State aid rules, please refer to footnote no. 10.

⁹ See http://ec.europa.eu/competition/state_aid/legislation/reference.html for further details.

¹⁰ <http://ec.europa.eu/competition/stateaid/legislation/horizontal.html>

The JSHF retains the discretion to allow the UDF to reinvest repayments from Investments in Urban Projects or EE/RE Urban Projects into other Urban Projects or EE/RE Urban Projects, respectively. This will be decided by the Managing Authority in due course and the basic assumption for the purposes of the Offer should be that capital repayments from investments are in the first instance reinvested by UDF during a maximum period of 10 years ("Revolving Period"), as this will be specified in the Operational Agreement. After the expiry of the Revolving Period, repayments are transferred to the JSHF.

Detailed procedures for the return of resources to JSHF or for the reutilisation of such resources by the UDF, including the winding-up provisions, shall be described as part of the Offer.

11. Co-financing - Leverage

An important factor in the evaluation of the Offer will be the ability of the UDF to provide co-financing, either in cash terms or in kind, and to raise finance from other private or public sources. For that reason, the applicant shall present the strategy for obtaining further financing from sources other than the JSHF.

Applicants must distinguish whether the co-financing commitment is carried out at the UDF level and/or at the projects level.

One particular condition is that the UDF has no right to require a project to accept co-financing from the UDF or any other entity as a pre-condition to receiving financing from the JSHF resources managed by the UDF.

The provisions of this paragraph 11 are subject to EU State Aid Rules and any State aid scheme cleared by the Commission applicable to JSHF pursuant to a notification procedure under the TFEU.

12. Annual Management Fee

UDF(s) will be entitled to receive a Management Fee in accordance with the EU Structural Funds Regulations for their origination and servicing of the Urban Projects or EE/RE Urban Projects.

The Management Fee shall include all fees and expenses to be incurred by the UDF in relation to the selection, monitoring, supervision, administration, management and arrangement of the financing to Urban Projects or EE/RE Urban Projects and other auxiliary activities provided. If the UDF foresees receiving a combination of its proposed Management Fee along with remuneration also received from Urban Projects or EE/RE Urban Projects, then this will have to be clearly stated in its Offer. However, should this not be the case, the UDF shall not have the right to request remuneration from Urban Projects or EE/RE Urban Projects.

The Management Fee shall in principle be calculated either as (i) a percentage of the resources contributed by the JSHF to the UDF, or (ii) a percentage of the resources allocated through the UDF to the Urban Projects or EE/RE Urban Projects, not yet repaid by Final Recipients or written-off excluding any amounts which are overdue (i.e. for 60 days or more) or (iii) other amounts as indicated in the Offer. The detailed calculation criteria will be based on the UDF proposal included in the Business Plan.

The applicant should indicate in the Business Plan the percentage of the total managed JSHF resources to be claimed by the UDF as an annual management fee.

The applicant may specify whether a discount on the Management Fee will be applied in case of being awarded both Lots.

In any case, the Management Fee may not exceed, on an annual average until 31 December 2015, 3% per annum of the capital contributed from the JSHF to the UDF, in accordance with EU Structural Funds Regulations¹¹. However, the EIB is expecting Management Fee, defined by the outcome of the competitive process, to be below this cap, especially for the period post initial identification and Investment in Urban Projects or EE/RE Urban Projects. A substantial decrease on the Management Fee is expected over time; particularly since, as from 2016, the EU Structural Funds monitoring requirements and workload requested from the UDF is expected to decline. The Management Fee shall not be calculated on the amounts due by any Urban Project or EE/RE Urban Project to a UDF and not returned, due to a failure by an Urban Project or an EE/RE Urban Project to pay.

The Management Fee shall be paid in advance, unless otherwise agreed in the Operational Agreement. The detailed provisions concerning the Management Fee shall be clearly defined in the Operational Agreement. The Operational Agreement will include the rights, obligations and liabilities associated with the services that the UDF manager provides to the UDF.

The Management Fee paid from JSHF resources will not exceed the time period for eligibility of costs under the EU Structural Funds Regulations, i.e. December 31, 2015. After that period, the Management Fee will be paid from moneys returned into the UDF from investments in Urban Projects or EE/RE Urban Projects. To assess the Management Fee structure, EIB will take into consideration, amongst others, the following fee elements:

- fees payable on the amount of funds invested by the UDF during the investment period under the current programming period of the ERDF i.e. until 31 December 2015;
- fees payable in respect of returns received from investments after the end of the investment period under the current programming period of the ERDF i.e. after 31 December 2015.

The Management Fee should include a fixed and a contingent component, subject to the absolute cap of 3% defined above.

A. Fixed part

- i. Project appraisal and structuring;
- ii. "EU Structural Funds monitoring" consisting of monitoring, reporting and other services related to ensuring the compliance with EU Structural Funds Regulations and EU Rules; and
- iii. Administration of the investments in Urban Projects or EE/RE Urban Project.

B. Contingent part

It is suggested that the fixed component of the Management Fee may be replaced by or integrated with additional performance incentives. In particular, the contingent part should provide the UDF with incentives to proceed to milestone disbursement and to ensure that EU Structural Funds are invested in Urban Projects or EE/RE Urban Projects in a professional and in an economically efficient way in compliance with JESSICA policy objectives, the investment strategy and State aid rules. The contingent component may be composed of either one or both the following elements:

- i. a performance incentive fee based on disbursements/investments. The rationale of this fee stems from the fact that the industry, both at UDF level and at revenue generating project level, is still immature;
- ii. an incentive based on the *ex-post* quality of the portfolio of Urban Projects or EE/RE Urban Projects. Charging fees on invested/disbursed capital only would in fact encourage the UDF manager to invest too quickly, hence a well constructed performance fee should alleviate the risk of putting money to work too quickly and in unprofitable/risky projects.

¹¹ Art. 43(4) of Regulation 1828/2006 (amended by Commission Regulation (EC) 846/2009)

Additionally, incentives can also be set in relation to the achievement of socio-economic targets set out in Appendix D. Investment targets will be indicated in the Business Plan presented by the applicant and should be aligned with the investment timetable as detailed in point 13. Failure to meet investment targets may result in the termination of the Operational Agreement, unless otherwise agreed by the EIB, or in a reduction of the level of the Management Fee. Conversely, an earlier allocation of the resources shall be rewarded by means of appropriate incentives proposed by the applicant.

13. Financial forecasts and operational budget of the UDF

The applicant shall describe the financial forecasts and operational budget of the UDF according to the template provided in Appendix C ("Financial Model"), on the assumption that the total amount allocated for each UDF would be:

- approximately EUR 33,110,000 for Lot 1;
- approximately EUR 33,110,000 for Lot 2.

The key implementation parameters of the Financial Model of the UDF are as follows:

- a) Resources committed by the JSHF into the UDF for Investment in Urban Projects or EE/RE Urban Projects will be advanced upfront upon completion of all condition precedents set out in the Operational Agreement in one tranche and shall be kept as bank deposits, unless otherwise agreed between the EIB and the UDF in the Operational Agreement. Detailed explanation of the Financial Model shall be established in the Business Plan, based on this hypothesis. The exact terms and conditions for the JSHF deposits, and other arrangements as agreed between the parties, shall be defined in the Operational Agreement.
- b) The amount contributed to the UDF by the JSHF plus any interest accrued on the deposits, other than the portion used to meet UDF management costs, shall only be used to finance eligible Urban Projects or EE/RE Urban Projects;
- c) The boundary conditions for investment products to be offered by the UDF to Urban Projects or EE/RE Urban Projects are described in previous point 8;
- d) The exit policy from the portfolio of Urban Projects or EE/RE Urban Projects should reflect the one proposed by the applicant under point 9;
- e) The level/form of co-financing offered by the UDF should reflect the one proposed by the applicant in previous point 11;
- f) The UDF will compensate the UDF manager for the administration services provided in the form of a Management Fee, as described in point 12;
- g) The EU Structural Fund Regulations require that all ERDF and national contributions must be invested by the UDF into Urban Projects or EE/RE Urban Project by 31 December 2015. It is requested, however, to prepare a Financial Model imposing a shorter period for this investment to take place according to the following scheme:

50% of the allocated funds shall be invested by 31 December 2013

90% of the allocated funds shall be invested by 31 December 2014

100% of the allocated funds shall be invested by 30 April 2015

It is likely that the Operational Agreement will impose the same investment timeline on the selected applicant. The Operational Agreement shall also provide for monitoring dates, set before and between the ones outlined above, in which the effectiveness of the UDF's investment activity will be reviewed. Such monitoring shall enable the identification of potential implementation issues to be made in sufficient time, in order to allow for revisions to the Investment Policy to be made accordingly.

In addition to managing the JSHF, the EIB may consider providing financial support on its own funds for Urban Projects or EE/RE Urban Projects in whatever form under its own rules and procedures and within the limits set out by applicable rules. Such potential financial support may include financing extended to the UDF (provided such a UDF meets the relevant EIB credit criteria) with a view to co-financing projects.

In particular, the EIB is evaluating the possibility to provide a loan of approximately EUR140m to the selected UDF(s), if and when in line with its own eligibility and credit criteria. Therefore, UDFs are invited to provide possible additional financial structures including:

- the possibility to manage a total of EUR 210m of which, EUR 70m as funds coming from the JSHF and EUR 140m as additional EIB lending to the UDF (with EIB credit risk related to the UDF);
- the possibility to use part of the JSHF funds as a component of the UDFs's regulatory capital requirements.

14. Terms and conditions of the Operational Agreement with the JSHF

The Operational Agreement shall, notwithstanding any other terms set out in this Terms of Reference, include:

- a) the relevant rights and obligations of the UDF according to the Business Plan presented by the applicant in its Offer, the conditions established in the Terms of Reference, and the results of the selection process;
- b) the financial conditions which will apply to the JSHF resources delivered to the UDF;
- c) the events of default under the Operational Agreement and the liabilities that the UDF will assume in this particular situation.

In any case, the Operational Agreement must fulfil the requirements set forth in these Terms of Reference, the EU Structural Funds Regulations and any other applicable EU Rules, in particular EU State Aid Rules, as well as other applicable rules on the nature of Urban Projects or EE/RE Urban Projects and on the source of financing.

Following signature of the Operational Agreement, upon approval by the EIB and, where appropriate, the Investment Board, funds will be disbursed from the JSHF to the UDF in accordance with the Operational Agreement. A number of standard terms and conditions will apply to disbursement, including the provision to temporarily keep the disbursed funds in deposits. Interest on these deposits shall be used to meet UDF Management Fee or increase the amount of funds available for Investment in Urban Projects or EE/RE Urban Projects.

(V) MODIFICATION OF THE BUSINESS PLAN DURING THE OPERATIONAL PERIOD

It is accepted that the Investment Policy may evolve throughout the deployment phase of the UDF (i.e. the Operational Period) as projects are developed in greater detail and move into the delivery phase.

It will be important that, while there may be some changes in or shifting between individual projects, the UDF continues to deliver investment within the parameters of its Investment Policy. For this reason, any revisions to the initial Business Plan will be subject to review and approval by the EIB and, where appropriate, the Investment Board to ensure it continues to align with the Investment Strategy of the JSHF. This may be achieved through the participation of the EIB in a supervisory or advisory committee of the UDF, according to the provisions set forth in the Operational Agreement.

The Business Plans for use of resources received from the JSHF shall be completed and assessed on the basis set out below. The applicants scoring less than 20 points out of 55 on the technical quality (Criteria 1 to 6) will be disregarded. This threshold is aimed at excluding offers deemed unsuitable at EIB's own discretion.

Award criteria		
Criterion	Description and assessment rules	Scoring for criterion
QUALITATIVE AWARD CRITERIA (1 – 6)		0-55
1. LEGAL, OWNERSHIP AND GOVERNANCE STRUCTURE	<p>The applicant should:</p> <ul style="list-style-type: none"> • Present information on and prove the credibility of the ownership and the legal structure of the UDF. Where a separate legal entity is envisaged, provide details on the legal structure and constitution of the UDF and where appropriate the fund management vehicle, including where these will be/are domiciled together with the form the JSHF' investment into the UDF will take. • Describe the approach envisaged to guarantee regular contacts with local stakeholders and project promoters in the regional context by means of local structures (e.g. offices, info points, etc.). • Describe management, administrative and accounting procedures which will be applied in the functioning of the UDF. • Illustrate the organisational model and the corporate governance provisions for the UDF, including internal control procedures. • Propose assumptions in respect of monitoring, reporting and controlling the process of project execution. • Describe the risk management procedures that will be applied for implementation of functions of the UDF. 	0-10
	<p>Assessment rule:</p> <ul style="list-style-type: none"> • Credibility of the legal and ownership structure and its suitability to the objectives set for the UDF. • Reliability and credibility of the proposed management, administration, accounting, monitoring, reporting and controlling procedures; and the risk management procedures taking into account requirements of relevant EU and national legislation. • Reliability of processes that will be implemented to manage any possible conflicts of interest between the UDF and any other similar investments managed by the applicant. • Level and quality of an applicant (or of its parent company) Tier 1 capital. 	

Award criteria		
Criterion	Description and assessment rules	Scoring for criterion
2. KEY EXPERTS	<p>The applicant shall indicate the dedicated team of experts with experience in relevant fields, which shall be established and be available in order to achieve the UDF's objectives and project identification / implementation proposals. Applicants should provide:</p> <ul style="list-style-type: none"> • A structure diagram/table outlining key roles and responsibilities of each individual and the time they will dedicate to the UDF, both on Sardinia and outside (e.g. deal sourcing, negotiation, monitoring, back office, relationship management with the EIB); • Curriculum Vitae for key experts of the applicant (including sub-contractors and/or advisors where applicable) which outlines their relevant experience and competence in the targeted sectors (including a demonstration of the adequacy of each key experts with the role to be carried out). This should include, amongst other things, deal sourcing, negotiation, monitoring and back office skills. This information should be provided on no more than two A4 pages <p>Assessment rule: Adequacy and relevance of the experience (years of experience, similarity of past experience with JESSICA initiative, relevant project experience, etc.) of each key expert with the role foreseen in the proposed team structure.</p>	0-10
3. INVESTMENT POLICY	<p>The applicant shall:</p> <ul style="list-style-type: none"> • Prove its understanding of the objectives to be achieved through the implementation of JESSICA mechanism in the Region. • Define the goals of the UDF and objectives of its Investment Policy. • Describe the targeted market and geographical coverage • For Lot 1 prove the compliance of the Investment Policy with Sardinia OP , particularly Priority Axis 5) • For Lot 2 prove the compliance of the Investment Policy with Sardinia OP (particularly Priority Axis 3) and other relevant regional energy policies. <p>Assessment rule:</p>	0-10
	<ul style="list-style-type: none"> • The portfolio allocation in terms of geographic and sectorial coverage the applicant will put in place to ensure successful implementation of Urban Project and/or EE/RE Urban Projects. • For Lot 1 level of understanding of and compliance with JESSICA objectives and Priority Axis 5 of Sardinia OP. • For Lot 2 level of understanding of and compliance with JESSICA objectives and Priority Axis 3 of Sardinia OP. 	

Award criteria		
Criterion	Description and assessment rules	Scoring for criterion
4. PIPELINE	<p>The applicant shall:</p> <ul style="list-style-type: none"> • Present the Pipeline including an assessment of how these projects currently deliver against the Investment Policy. • Prove the compliance of the Pipeline's objectives with the general objectives set for in the JESSICA initiative. • Prove the compliance of the Pipeline's objectives with the objectives of Axis 5 (for Lot 1) and Axis 3 (for Lot 2) of the Sardinia OP. • Describe the level of maturity/preparation of the selected projects included in the Pipeline. • Forecast and describe the expected socio-economic performance of the Pipeline, including the social and environmental benefits and costs, if any. 	0-5
	<p>Assessment rule:</p> <ul style="list-style-type: none"> • Level of compliance of the Pipeline with the Investment Policy. • Presence of "quick wins" projects in the Pipeline. As far as reasonably practicable, applicants are encouraged to demonstrate 'quick wins' that are at an advanced stage of development and ready for delivery using the UDF investment in compliance with the processes for inclusion in the Integrated Plans. • Level of maturity/preparation of the projects in the Pipeline and probability of their execution. • Financial and socio-economic performance of the Pipeline (considering indicators listed in Appendix D). 	
5. METHODOLOGY FOR THE IDENTIFICATION AND EVALUATION OF URBAN PROJECTS or EE/RE URBAN PROJECTS	<p>The Pipeline provided by the applicant shall not be interpreted as an exhaustive and definitive list. The applicant should hence explain the methodology for identification and the investment process that it will put in place to ensure that the resources of the UDF are channelled into Urban Projects or EE/RE Urban Projects which provide the most promising investment opportunities. For each category of beneficiaries (e.g. Local Authorities, PPPs, private entities, etc.) the description should include the following:</p> <ul style="list-style-type: none"> • The key stages/parameters, including the internal scoring system, that will be used to assess projects • The role of any external advisory support to the beneficiaries • The timescale which allows investment to commence in a timely manner 	0-10
	<p>Assessment rule:</p> <ul style="list-style-type: none"> • Appropriateness of the methodology to the specificity of Urban Projects or EE/RE Urban Projects. • The presence of external support for the development of potential eligible Urban Projects and/or EE/RE Urban Projects. 	
6. FINANCIAL FORECASTS, OPERATIONAL BUDGET OF THE UDF;	<p>The applicant should:</p> <ul style="list-style-type: none"> • Present the financial model that, as far as reasonably practicable, sets out the projected financial operations of the UDF. • Illustrate the financial terms and the contractual arrangements to be applied to Urban Projects or EE/RE Urban Projects. 	0-10

Award criteria		
Criterion	Description and assessment rules	Scoring for criterion
CONDITIONS OF INVESTMENT PRODUCTS AND EXIT POLICY	<ul style="list-style-type: none"> • Use an operational budget for the UDF based on the expected financial results of the UDF participation in Urban Projects or EE/RE Urban Projects. • Describe how the financing available to the UDF (i.e. from the JSHF) will be combined to offer the most competitive form of financing to the project promoters. • Describe how the possible additional financing made available by the EIB will be combined to offer the most competitive form of financing to the project promoters. • Describe the schedule for disbursement that will cater for JSHF resources to be invested before the end of 2015, including in case of co-financing, any provision for asymmetrical disbursement between JSHF' and external financing's resources. • Describe the winding-up provisions/exit policies of the UDF, including the reutilisation of resources that may be returned to the UDF from Investments in Urban Projects or EE/RE Urban Projects. The applicant shall present any other provisions which will apply upon the ceasing of operations by the UDF. 	
	<p>Assessment rule:</p> <ul style="list-style-type: none"> • Credibility of the financial forecasts and compliance with the Investment Policy. • The timing and quantum of the projected cash flows. • The alignment of investment timetable with the calendar presented in Section IV.13. • The benefit of the leverage through the possible additional financing made available by the EIB. • The evidence that proposals are compliant with EU State Aid Rules. • The reliability and credibility of the winding-up provisions and proposals for reutilisation of resources. 	

Award criteria		
Criterion	Description and assessment rules	Scoring for criterion
QUANTITATIVE AWARD CRITERIA (7-8)		0-45
7. CO-FINANCING - LEVERAGE	<p>The applicant shall present the strategy for obtaining potential financing from external sources with a view to co-financing Urban Projects or EE/RE Urban Projects and/or the UDF itself. Proposals should describe commitments for the provision of additional financing where these are in place and if they are not committed when this will happen.</p> <p>Assessment rule:</p>	0-25
	<p>The potential amount of external funds, including any commitment for the provision of additional financing. The larger the amount invested and the higher the capacity to attract private funds to the initiative - at UDF and/or at project level -, the higher the points awarded. The absence of co-financing will result in a zero score. An applicant committing to provide the greatest co-financing shall receive the maximum number of points available, the score will decrease proportionally until 0 in case of absence of co-financing. Scores are based on the following normalised method:</p> <p>Score = (co-financing amount X 25) / (maximum proposed co-financing)</p>	
8. ANNUAL MANAGEMENT FEE	<p>The applicant should present the level of the Management Fee required, in line with the methodology presented in this Call for EoI, broken down by component. Specifically, the applicant should explain:</p> <ul style="list-style-type: none"> • how the Management Fee (and any individual component parts of it such as set up, project appraisal, ERDF monitoring/reporting and loan administration costs) would be calculated and charged (with examples); • how the fee structure incentivises the UDF to invest in Urban Projects or EE/RE Urban Projects in a timely and efficient manner; • how the applicant will ensure that the Management Fee does not adversely impact on the ability of the UDF to raise additional funding. <p>Assessment rule:</p>	0-20
	<p>Lower management fees with significant performance-related elements will receive greater credit under this criterion than higher fees and/or fee proposals with no or minimal performance related elements. Performance has, inter alia, three key aspects; (1) investment of JSHF resources by 31 December 2015; (2) generation of financial returns on a timely basis; and (3) delivery of socio-economic performance defined in Appendix D. An applicant offering the lowest management fee for the period until 31 December 2015 shall receive the maximum number of points available, the score will decrease proportionally until 0 in case of an applicant offering a management fee of 3% or higher for the period until 31 December 2015. Scores are based on the following normalised method:</p>	

Award criteria		
Criterion	Description and assessment rules	Scoring for criterion
	Score = (lowest proposed management fee X 20) / (proposed management fee)	

OUTLINE OF MAIN TERMS AND CONDITIONS OF THE OPERATIONAL AGREEMENT

Outline of the terms of the Operational Agreement

Each Operational Agreement shall include *inter alia* the following terms. Each applicant acknowledges that it shall be bound to accept these terms should it be selected under this Call for EoI.

1. An obligation on the UDF to pursue the objectives set out in the Operational Agreement, which shall include the obligation to act in accordance with its Investment Policy and Business Plan.
2. An obligation on the UDF to regularly report to EIB in a standardised form and scope to be decided by EIB.
3. An obligation on the UDF to report to EIB on State aid issues.
4. An obligation on the UDF to maintain a separate accounting system or use a separate accounting code for any co-financed expenditure down to the final level of an Urban Project and/or an EE/RE Urban Project.
5. An obligation on the UDF to allow access to documents related to its JESSICA operations for any national or European entity duly empowered by applicable rules to carry out audit and/or control activities.
6. Procedures for submission of accounts by the UDF to EIB and auditing procedures to be complied with by the UDF.
7. The right of EIB to recover any losses incurred by JSHF due to a breach by the UDF of its obligations under the relevant Operational Agreement, in accordance with suitable market standard clauses.
8. The right of the UDF to payment of market-standard management costs, which shall not exceed the cap provided in these Terms of Reference, as resulting from the Offer.
9. An undertaking by the UDF that all authorisations, which it requires to carry on business have been obtained or effected and are in full force and effect and no steps have been taken to challenge, revoke, annul or cancel them, together with an obligation to obtain when required and maintain in full force and effect and renew, where necessary, such authorisations.
10. An undertaking by the UDF to be in compliance with all the EU State Aid Rules and EU Rules and to provide to EIB all relevant information regarding planned investments in Urban Projects or EE/RE Urban Projects. This information shall be forwarded by EIB to the Managing Authority in order to enable the Managing Authority to comply with its obligations under national or EU rules regarding State aid.
11. An undertaking that, in every investment agreement between the UDF and an Urban Project or an EE/RE Urban Project ("Investment Agreement"), the UDF shall provide that each project shall comply with all obligations imposed on it by the EU Rules and any other applicable laws and that each Urban Project shall do such things as may be necessary to allow the UDF to comply with its obligations under EU Rules, any other applicable laws and the Operational Agreement. In particular, every Investment Agreement shall include, *inter alia*, the following, where appropriate:
 - a) the Urban Project or EE/RE Urban Project shall keep necessary accounts;
 - b) the UDF shall be entitled to recover any losses due to a breach by the Urban Project or the EE/RE Urban Project of its obligations under the relevant Investment Agreement;
 - c) the UDF shall diligently, whether by negotiation or legal action, enforce its claims against the Urban Project or the EE/RE Urban Project;
 - d) the representatives of the Managing Authority, the Commission, the European Court of Auditors, EIB and any other national or European entity duly empowered by applicable law to carry out audit and/or control activities may access the premises and documents of the Urban Project or the EE/RE Urban Project (right to carry out on-site control) for the purpose of ensuring the legality and regularity of the JESSICA financing;
 - e) the UDF and/or Urban Project or the EE/RE Urban Project shall carry out adequate information and publicity measures in accordance with the provisions of the EU Structural Funds Regulations;
 - f) Investment in Urban Project or EE/RE Urban Project comes in full or in part from EU Structural Funds;

- g) all authorisations, which the Urban Project or the EE/RE Urban Project requires to carry on business have been obtained or effected and are in full force and effect and no steps have been taken to challenge, revoke, annul or cancel them, together with an obligation to obtain when required and maintain in full force and effect and renew, where necessary, such authorisations;
- h) the Urban Project or the EE/RE Urban Project complies with the objectives of the Sardinia OP; and
- i) the Urban Project or the EE/RE Urban Project shall engage in no action or decision contrary to EU Rules.

Financial conditions for the Operational Agreement

JSHF resources will be provided by EIB (acting as JSHF Manager) to the selected UDF, to provide a funding instrument bearing equity, loans or other financial instruments to Urban Projects or EE/RE Urban Projects (Investment Agreements).

The remuneration of the JSHF funds will depend upon the income generated by the Portfolio of Urban Projects and/or EE/RE Urban Projects of the UDF. The repayment of the JSHF funding will depend on the cash-flow generated by the flows received by the UDF under the Investment Agreements (on-lending agreements in case of loans, equity investment agreements in case of equity participation, or the specific Investment Agreements that could be signed in case of other equivalent financial instruments) composing the Portfolio of Urban Projects or EE/RE Urban Projects of the UDF.

The Investment Agreements is signed between the UDF and the entities that will develop the Urban Projects or the EE/RE Urban Projects ("Final Recipients").

The UDF further undertakes to develop (for the Portfolio of Urban Projects or the EE/RE Urban Projects), with the received JSHF funding, a new loan/equity/financial instrument partly funded from the disbursed funds and partly co-financed by external resources. The origination, due diligence, documentation and execution of the Urban Projects or the EE/RE Urban Projects will be performed by the UDF in accordance with the methodology for project selection agreed with JSHF and applying all normal standard procedures and governance structure of the UDF.

In this context, JSHF will not have any direct or indirect client funding relationship with each Urban Project or EE/RE Urban Project.

FINANCIAL FORECASTS AND OPERATIONAL BUDGET OF THE UDF

Objective

The financial forecasts and operational budget shall provide EIB with a sufficient degree of comfort that the applicant has assimilated the functioning of the whole structure from a quantitative point of view. In fact, the exercise consists in converting the Offer and, in particular, the aspects linked to investment product proposed (loan, equity, and other equivalent financial instruments), its main features (rates, subordination or “*pari passu*” and others), and the management fees plus co-financing proposals, into quantified cash flows.

General comments:

- Since underlying projects’ ability of generating returns is crucial for most of the future cash flows, a direct link with Urban Projects or EE/RE Urban Projects should be inserted, to the extent possible, in the financial forecasts and the operational budget of the UDF. In case the applicant has not been able to provide a list of specific Urban Projects or EE/RE Urban Projects, pilot projects in line with the Business plan, for which realistic assumptions should be specified, could be used. In case the financial forecasts and the operational budget are not based on project assumptions, the applicant should mention it.
- The operational budget shall be understood as a presentation of expected future key financial figures describing the functioning of the UDF, based on the assumptions made.
- The results and assumptions should be provided on an annual basis (the projections may be prepared for shorter periods, but the results should be aggregated).
- The assumption items listed are a minimum set; if there are any other assumptions with material impact, they should be included.

The attached template consists of the following

sections: **Assumptions:**

The information provided by the UDF applicant in this section includes the assumptions on which the financial projections of the UDF applicant are based. This will enable an evaluation of whether the forecasts are realistic, as well as full comparison of the results of the projections and their methodological consistence with other applicants.

I. Macroeconomic assumptions

- a) The UDF applicant should provide all the macroeconomic variables taken into account in the forecast that have an impact on the results.
- b) In particular, the UDF applicant must show the forecasted levels of the key interest rate on which the cost of financing the Urban Projects or the EE/RE Urban Projects will be based (if there is more than one rate, all rates should be provided).
- c) The variables listed are a minimum set and if there are other macroeconomic variables that have an impact on the results, they should be included.

II. UDF assumptions

To the extent possible, assumptions about the funding structure should also be detailed, including: the JSHF resources, the UDF funds, in case of co-financing, and the external funding. Assumptions about the financial product used for each source of funding should also be detailed.

- a) This section should include the assumptions adopted for the purposes of the financial projection.

- b) There will be no default assumptions on loans/equity investments.
- c) The assumptions concerning UDF funds and the terms of financing the Urban Projects or the EE/RE Urban Projects should be supplemented with other financing parameters if used in the projection, e.g. commission for granting the financing, commitment fee, etc.
- d) Average equity IRR required, financing costs and Management Fee are to be in line with the requirements set out in other sections of this EoI.
- e) Other assumptions:
 - The projection should include all other assumptions that the applicant considers relevant to the results of the financial projections;
 - The amount of external financing obtained by the UDF should be provided on a per year basis;
 - The assumed rate of return of the UDF should take into account all cash flows of the UDF and be calculated using IRR methodology.

III. Projects Indicators

As described in the first point of the General Comments above, this section should give, to the extent possible, the assumptions concerning the Urban Projects' or EE/RE Urban Projects' performance as a basis for the cash flows of the UDF. As a result and to the extent possible, some key average indicators linked to the chosen Urban Projects and/or EE/RE Urban Projects should be given:

- Average IRR;
- Average Maturity;
- Average Payback period.

The indicators shall enable an assessment of the projects' quality and of UDF Investment Policy.

IV. Results of the projection

This section shall include all the results of the projection, including all expected UDF inflows and outflows:

1. Pro forma balance sheet statements for each year of the projection, which will depend on the final structure of the UDF.
2. Pro forma profit and loss accounts for each year of the projection, which will depend on the final structure of the UDF.
3. Pro forma cash flow statements for each year of the projection.

UDF Business Plan	Unit	2011	2012	2013	2014	2015	2016	2017	2018...	¹²
		0	1	2	3	4	5	6	7	
I-Macroeconomic assumptions										
CPI (price increase)										
Reference Interest rate ⁽¹⁾										
⁽¹⁾ used as the base rate for the financing (e.g. IRS Term, Euribor, etc.)										
II-UDF assumptions										
Eligibility Period										
UDF Maturity										
Total JSHF funds under management										
Total external funds under management										
Total funds available to UDF										
Loan & Interests										
Total JSHF debt financing										
Unused portion of JSHF debt financing										
JSHF debt financing interest rate (gross margin)										
Average debt portfolio maturity										
Average grace period										
Total external funds debt financing										
Unused portion of external funds financing										
External funds financing interest rate (gross margin)										
Average debt portfolio maturity										
Average grace period										

¹² Maturity shall be adapted to the UDF Portfolio of Urban Projects or EE/RE Urban Projects.

Total debt financing	
Equity	
Total JSHF equity financing	
Average expected returns to be earned from equity investments	
Total external funds equity financing	
Average expected returns to be earned from equity investments	
Total equity financing	
Total Amount invested in projects by UDF	
Management Fee (MF)⁽²⁾	
MF Fixed part	
I-Appraisal fee	
II-EU Monitoring fee	
III-Financing administration fee	
MF Contingent part	
I - Performance fee II - Portfolio quality fee (2)	
To be adapted according to the Management fees mechanism assumed by the applicant	
Total Management Fees amount	
III- Projects indicators	
Average IRR	
Average Project Portfolio maturity	
Average Project Portfolio payback period	

IV Results of the projections**Balance sheet**Total assets

Loans granted

Investments in Urban Projects and/or EE/RE Urban Projects

Cash

Other assets

Liabilities and reserves

Sums due to JSHF

Other liabilities and reserves

Cash flow statement

Net cash flow from operating activities

I. Inflows

1) dividends received

2) interest from loans received

3) sale of investment

4) loans repayment

5) other

II. Outflows

1) equity investments

2) loans issued

3) fixed management fee

4) contingent management fee

5) other

Net cash flow from investing activities

I. Inflows

1) interest from deposits

II. Outflows

Net cash flow from financing activities

I. Inflows

1) transfers from JSHF

II. Outflows

1) transfers to JSHF

Total Net cash flow

APPENDIX D

Economic Analysis

Economic analysis is a determination of the cost effectiveness of a project by comparing the benefits derived and the costs incurred in a project, including social factors. Hereafter, one of the possible methods applicable is presented for illustrative purposes: the Cost-Benefit analysis (CBA).

Such analysis is carried out to determine whether, or to what extent, that project is worthwhile from a social perspective. Cost-benefit analysis differs from a straightforward financial appraisal in that it considers all gains (benefits) and losses (costs) to social agents. CBA analysis hinges on two main parameters: Economic rate of return (ERR) and ENPV.

- ERR is the internal rate of return calculated using the economic values,
- ENPV stands for Economic Net present Value.

Both parameters express the socio-economic profitability of a project.

Economic Growth and Quality of Life Improvements

The economic growth and the quality of life improvements shall be considered when assessing the potential Urban Projects or EE/RE Urban Projects to be funded by the UDF. Contribution to the achievement of quantitative outputs established in Sardinia OP will depend on the character of each of the Urban Projects or EE/RE Urban Projects.

The tables below present the indicators that are closely linked to those relevant for the Priority Axes (and related specific objectives) that have contributed resources to the JSHF. The list includes both general indicators and specific ones and can be used to assess the impact of single Urban Projects or EE/RE Urban Projects or the Portfolio as a whole. It is understood that individual projects will not necessarily address all areas of economic growth and quality of life improvements.

f Lot 1: Urban Projects

Area		Indicator
General (for all areas)		Number of financed Urban Projects
		Potential to attract additional funding from other public and private sources
		Potential to attract investors in other projects , which would be complementary or which could create economic or social synergies
		Private financing Leverage of the UDF
		Generated investment (EUR)
Specific areas	Enhance integrated regeneration of urban areas improving environmental, social and productive conditions and strengthening the connections of these areas with the whole territory	Number of inhabitants that will use new services and infrastructures realized within the territory concerned
		Number of funded Urban Projects
	Enhance development of minor, disadvantaged centres swimming against decline and improving historical/landscape and productive heritage	Number of interventions aimed at regenerate architectural and urban areas with historical relevance
		New entrepreneurial activities located within the area of intervention

f Lot 2: EE/RE Urban Projects

Area		Indicator
General (for all areas)		Number of financed EE/RE Urban Projects
		Potential to attract additional funding from other public and private sources
		Potential to attract investors in other projects , which would be complementary or which could create economic or social synergies
		Private financing Leverage of the UDF
		Generated investment (EUR)
		Number of White Certificates (or Energy Efficiency Titles) introduced following the implementation of energy savings measures in final uses
Specific areas	Enhance energy efficiency and energy production based on Renewable Energy Sources (RES)	Number of local integrated plans aimed at improving energy efficiency
		Number of enterprises that use renewable energies
		Yearly energy savings obtained in public areas both regenerated or interested by new infrastructures

APPENDIX E

Done at (date)

EUROPEAN INVESTMENT BANK

For the attention of
Purchasing and Administrative Services Division
98-100 boulevard Konrad Adenauer
L-2950 LUXEMBOURG

JESSICA HOLDING FUND FOR SARDINIA SELECTION OF URBAN DEVELOPMENT FUNDS

KEY EXPERTS AVAILABILITY DECLARATION

As a legal representative of the company seated in registered in the register with a registration number, I hereby confirm that the company will be authorised to engage the following persons:

- 1
(name, surname)
- 2
(name, surname)
- 3
(name, surname)

to execute the role of, for the JESSICA Holding Fund Sardinia.

I confirm that upon signature of the contract between and European Investment Bank, the above -mentioned list of persons will be delegated to work on the project tasks.

Yours sincerely,

.....
(name, surname)

(signature)

APPENDIX F

DEFINITIONS AND ABBREVIATIONS USED FOR THE PURPOSE OF THIS CALL FOR EXPRESSIONS OF INTEREST

“Activities”	means the specific actions and areas requiring support on which funding will be concentrated following directly from the Priority Axes of the Sardinia OP.
“Award Criteria”	means the criteria used to select the Preferred Bidder as outlined in Appendix A.
“Business Plan”	means each business plan, relating to any Lot, prepared in accordance with the EU Structural Funds Regulations in Article 43 paragraph two of the Implementing Regulation.
“Call for Expressions of Interest” or “Call for Eol”	means this Call for Expression of Interest.
“CEB”	means the Council of Europe Development Bank.
“Cohesion Policy”	means the EU's strategy to promote and support the " <i>overall harmonious development</i> " of its Member States and regions. Enshrined in the Treaty (Art. 174), the EU's Cohesion Policy aims to strengthen economic and social cohesion by reducing disparities in the level of development between regions. Approximately 35.7% of the EU budget 2007-13 is allocated to financial instruments which support Cohesion Policy. These are managed and delivered in partnership between the European Commission, the Member States and stakeholders at the local and regional level.
“Commission”	means the Commission of the European Union.
“Directorate”	means a directorate of the EIB.
“EE/RE Urban Projects”	means specific investment activities in energy efficiency and use of renewable energy in buildings included in Integrated Plans for Sustainable Urban Development.
“EIB”	means the European Investment Bank.
“Eligible Expenditure”	means expenditure applied in compliance with the Eligibility Rules.
“Eligibility Rules”	means the rules on eligible expenditure contained in articles 48 to 53 of the Commission Regulation (EC) No. 1828/2006 (amended by EC 846/2009 and 832/2010), which apply in accordance with article 13 of Regulation 1080/2006 (amended by EC 397/2009) of the European Parliament and of the Council (subject to the list of ineligible expenditure in article 7 of Regulation 1080) and those contained in articles

56 and 78 of Regulation 1083/2006 (amended by EC 539/2010), as well as the national rules on eligible expenditures according to Presidential decree of October 3, 2008, n. 196.

“Eol”	means an expression of interest submitted under this Call for Expression of Interest.
“ERDF”	means the European Regional Development Fund.
“ESCO”	means an Energy Services Company.
“EU Rules”	means the EU Structural Funds Regulations and any other applicable EU Regulations, Directives or Guidelines.
“EU Structural Funds”	means together the ERDF, the European cohesion funds and the European social funds.
“EU Structural Funds Regulations”	means Regulation 1080, Regulation 1081, Regulation 1083 and the Implementing Regulation and relevant amendments, as well as any other EU legislation from time to time applicable to the EU Structural Funds.
“EU State Aid Rules”	means those rules embodied in Articles 107-109 of Section 2, Title VII, of the Common Rules on Competition, Taxation and Approximation of Laws Consolidated versions of the TFEU (2008/C 115/01) (previously embodied in Articles 87 to 89 of the EC Treaty), including any secondary legislation such as frameworks, guidelines and block exemptions produced by the European Commission, case law of the European Courts and decisions of the European Commission regarding the application of Articles 107 to 109 TFEU.
“EU”	means European Union.
“European Parliament”	means the European Parliament of the EU.
“Exclusion Criteria”	means the criteria used in Stage 1 of this Call for Eol to exclude applicants.
“Final Recipient/s”	means the entities that will develop the Urban Projects or the EE/RE Urban Projects, pursuant to the Investment Agreement.
“Financial Model”	means the financial model according to the template provided Appendix C.
“Funding Agreement”	means the agreement establishing the JESSICA Holding Fund for Sardinia signed by the RAS and the EIB, signed on 20 July 2011.

“Implementing Regulation”	means Commission Regulation (EC) No. 1828/2006 of 8 December 2006, amended by Commission Regulation (EC) No 846/2009 of 1 September 2009 and Commission Regulation (EC) No 832/2010 of 17 September 2010, setting out rules for the implementation of Council Regulation (EC) No 1083/2006 laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund and of Regulation (EC) No 1080/2006 on the European Regional Development Fund, as amended, supplemented or modified from time to time.
“Integrated Plans for Sustainable Urban Development”	means an integrated plan for sustainable urban development comprising a system of interlinked actions which seeks to bring about a lasting improvement in the economic, physical, social and environmental conditions of a city or an area within the city.
“Integrated Plans”	means the plans or strategies defined by the competent authorities in the Member States and/or the Managing Authority, taking account of Article 8 of Regulation 1080 and the specific urban, administrative and legal context of the RAS.
“Investment Agreement”	means an agreement signed between a UDF and a Final Recipient providing for financing of the Urban Project or the EE/RE Urban Project.
“Investment Board”	means the board, established in accordance with the Funding Agreement, entrusted with responsibilities regarding the JESSICA Holding Fund for Sardinia.
“Investment in Urban Project or EE/RE Urban Project”	means each contribution by the UDF into an Urban Project or an EE/RE Urban Project.
“Investment Policy”	means the investment policy of the UDF as presented to the EIB in the selection process and as amended from time to time.
“Investment Strategy”	means the document concerning the investment strategy and the planning of the activities of the JSHF in relation to the JESSICA initiative, attached to the Funding Agreement signed between EIB and the RAS.
“JESSICA”	means the initiative “Joint European Support for Sustainable Investment in City Areas” launched by the Commission and

EIB, in collaboration with the CEB, in order to promote sustainable investment, growth and jobs in urban areas.

“JESSICA Holding Fund for Sardinia” or
“JSHF”

means the JESSICA holding fund for Sardinia, established pursuant to the Funding Agreement and in accordance with Regulation 1083 and the Implementing Regulation.

“Management Committee”

means the EIB’s permanent collegiate executive body.

“Management Fee”

means the fee payable to the UDF, in consideration for the services provided under the Operational Agreement.

“Managing Authority”

means the RAS Managing Authority, responsible for the Sardinia OP.

“Member States”

means the Member States of the EU.

“Offer”

means the Business Plan to be submitted by applicants in Stage 2 of this Call for EoI.

“Operational Agreement”

means the agreement between the EIB, acting as JSHF manager, and the selected UDF(s).

“Operational Period”

means the period following Operational Agreement’s signature until full reimbursement from the UDF to JSHF of the contribution received. Hence, it also includes the period in which JSHF resources are disbursed to the UDF but not yet invested into Urban Projects or EE/RE Urban Projects.

“PAES”

means “*Piani d’azione per le Energie Sostenibili*” (Sustainable Energy Action Plan).

“Pipeline”

means the Urban Projects or EE/RE Urban Projects, included in the Offer.

“PISU”

means the *Piano Integrato di Sviluppo Urbano*, an Integrated Plan for Sustainable Urban Development representing one of the main tools for the achievement of the main goals under Priority Axis 5 of Sardinia OP, aimed at strengthening urban services in metropolitan areas and medium-size cities.

“Portfolio”

means the final Urban Projects or EE/RE Urban Projects, selected to be financed by the UDF.

“PPP”

means public-private partnership.

“Preferred Bidder”

means an applicant whose Offer is evaluated as the most favourable.

“Priority Axis” or “Axis” (or “Axes”, if plural)	means a set of specific aims within the Sardinia OP that are to be tackled by the delivery of particular Activities in the Sardinia OP.
“Priority Themes”	means the Lisbon priorities that are relevant to the Sardinia OP according to the category codes detailed in annex II: Categorisation of Funds assistance for 2007-2013 of the Implementing Regulation.
“RAS”	means the <i>Regione Autonoma della Sardegna</i> .
“Regulation 1080”	means Regulation (EC) No. 1080/2006 of the European Parliament and of the Council of 5 July 2006 on the European Regional Development Fund and repealing Regulation 1783/1999/EC, as amended, supplemented or modified from time to time.
“Regulation 1081”	means Regulation (EC) No. 1081/2006 of the European Parliament and of the Council of 5 July 2006 on the European Social Fund and repealing Regulation (EC) 1784/1999 as amended supplemented or modified from time to time.
“Regulation 1083”	means Council Regulation (EC) No. 1083/2006 of 11 July 2006 and amended by Regulation (EU) No 539/2010 laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund, repealing Regulation (EC) No 1260/1999, and as amended, supplemented or modified from time to time.
“Revolving Period”	means the period during which capital repayments from investments made in Urban Projects or EE/RE Urban Projects are in the first instance reinvested by the UDF(s).
“Sardinia ERDF OP 2007-2013” or “Sardinia OP”	means the European Regional Development Fund Operational Programme 2007-2013 for Sardinia, developed in accordance with Article 37 Regulation 1083, a part of which shall be administered by the JHFS, in accordance with the provisions of the Funding Agreement.
“Selection Criteria”	means the criteria used in Stage 1 of this Call for EoI to select those applicants who will be invited to submit an Offer (in the form of a Business Plan), under Stage 2.
“Selection Panel”	means the panel assessing the EoI, and if applicable, the subsequent Offer of the applicants using the Award Criteria.

“Submission”	means the EoI and the Offer submitted by an applicant under this Call for EoI.
“Submission Date”	means the closing date for the submission of the Offers as notified in writing by the EIB to the applicants selected to proceed to Stage 2 of the UDF(s) selection process.
Strategic Development Plans	means together Piani Strategici Comunali and Piani Strategici Inter-comunali.
“Terms of Reference”	means terms of reference for the selection of the UDFs set out in Annex 3.
“TFEU” or “Treaty”	means Treaty on the Functioning of the European Union.
“Urban Development Fund” or “UDF”	means a vehicle investing in one or more Urban Projects or EE/RE Urban Projects, as defined in Article 44 of Regulation 1083.
“Urban Project”	means a PPP or other project included in an Integrated Plan for Sustainable Urban Development, as described in Article 44 Regulation 1083.

Annex 14: Ex-ante assessment completeness checklist

Key checklist point	CPR reference	EE/RE	SUD	RDl
Identification of market problems existing in the country or region in which the FI is to be established	Art. 37 (2) (a)	Chapter 4.5 (p. 85), chapter 5.1.1 (gap analysis section, p. 118-122 and p. 127-129)	Chapter 4.5 (p. 85), chapter 5.2.1 (gap analysis section, p. 164-167)	Chapter 4.5 (p. 85), chapter 5.3.1 (gap analysis section, p. 191-193)
Analysis of the gap between supply and demand of financing and the identification of suboptimal investment situation.	Art. 37 (2) (a)	Chapter 5.1.1 (gap analysis section, p. 118-122 and p. 127-129)	Chapter 5.2.1 (gap analysis section, p. 164-167)	Chapter 5.3.1 (gap analysis section, p. 191-193)
Quantification of the investment (to the extent possible).	Art. 37 (2) (a)	Chapter 5.1.1 (Identification of demand for [...], p. 95-118, p. 125-127)	Chapter 5.2.1 (Assessment of demand [...], p. 154-164)	Chapter 5.3.1 (Identification of demand [...], p. 185-191)
Identification of the quantitative and qualitative dimensions of the value added of the envisaged FI.	Art. 37 (2) (b)	Chapter 5.1.2, p. 129	Chapter 5.2.2, p. 167	Chapter 5.3.2, p. 193
Comparison to the added value of alternative approaches.	Art. 37 (2) (b)	Table 44: The value added of an FI as compared to grants	Table 59: The value added of an FI as compared to grants	Table 74: The value added of an FI as compared to grants
Consistency of the envisaged FI with other forms of public intervention.	Art. 37 (2) (b)	Chapter 5.1.5 (p. 128)	Chapter 5.2.5 (p. 177)	Chapter 5.3.5 (p. 200)
State aid implications of the envisaged FI.	Art. 37 (2) (b)	Chapter 6.1.7 (p. 243)	Chapter 6.1.7 (p. 243)	Chapter 6.1.7 (p. 243)
Identification of additional public and private resources to be potentially raised by the envisaged FI and assessment of indicative timing of national co-financing and of additionality contributions (mainly private).	Art. 37 (2) (c)	Chapter 5.1.3 (p. 131)	Chapter 5.2.3 (p. 170)	Chapter 5.3.3 (p. 196)
Estimation of the leverage of the envisaged FI.	Art. 37 (2) (c)	Chapter 6.2 (energy efficiency and RE and [...] section, p. 250-255)	Chapter 6.2 (sustainable urban and [...] section, p. 255-257)	Chapter 6.2 (Private-sector [...] section, p. 257-259)
Assessment of the need for, and level of, preferential remuneration based on experience in relevant markets.	Art. 37 (2) (c)	Chapter 5.1.1 (p. 90), Chapter 6.1.7 (p. 243), chapter 6.1.5.1 (p. 224)	Chapter 5.2.1 (p. 149), Chapter 6.1.7 (p. 243), chapter 6.1.5.2 (p. 230)	Chapter 5.3.1 (p. 181), Chapter 6.1.7 (p. 243), chapter 6.1.5.3 (p. 235)

Key checklist point	CPR reference	EE/RE	SUD	RDI
Collation of relevant available information on past experiences, particularly those that have been set up in the same country or region as the envisaged FI.	Art. 37 (2) (d)	Chapter 5.1.4 (p. 134-144)	Chapter 5.2.4 (p. 172-177)	Chapter 5.3.4 (p. 198-200)
Identification of main success factors and/or pitfalls of these past experiences.	Art. 37 (2) (d)	Chapter 5.1.4 (p. 134-144)	Chapter 5.2.4 (p. 172-177)	Chapter 5.3.4 (p. 198-200)
Using the collected information to enhance the performance of the envisaged FI (e.g. risk mitigation).	Art. 37 (2) (d)	Chapter 5.1.5 (p. 144), chapter 6.1.5.1 (p. 228)	Chapter 5.2.5 (p. 177), chapter 6.1.5.1 (p. 233)	Chapter 5.3.5 (p. 200), chapter 6.1.5.1 (p. 241)
Definition of the level of detail for the proposed investment strategy (maintaining a certain degree of flexibility).	Art. 37 (2) (e)	Chapter 6.1.5.1 (p. 224)	Chapter 6.1.5.1 (p. 230)	Chapter 6.1.5.1 (p. 237)
Definition of the scale and focus of the FI in line with the results of the market assessments and value added assessment.	Art. 37 (2) (e)	Chapter 6.1.5.1 (p. 224)	Chapter 6.1.5.1 (p. 230)	Chapter 6.1.5.1 (p. 237)
Selection of the financial product to be offered and the target final recipients.	Art. 37 (2) (e)	Chapter 5.1.5 (p. 144) and Chapter 6.1.5.1 (p. 224)	Chapter 5.2.5 (p. 177) and Chapter 6.1.5.1 (p. 230)	Chapter 5.3.5 (p. 200) and Chapter 6.1.5.1 (p. 237)
Definition of the governance structure of the FI.	Art. 37 (2) (e)	Chapter 6.1.2.2 (p. 214)	Chapter 6.1.2.2 (p. 214)	Chapter 6.1.2.2 (p. 214)
Selection of the most appropriate implementation arrangement and the envisaged combination of grant support.	Art. 37 (2) (e)	Chapter 6.1.2.2 (p. 214) and chapter 6.1.2.3 (p. 217)	Chapter 6.1.2.2 (p. 214) and chapter 6.1.2.3 (p. 217)	Chapter 6.1.2.2 (p. 214) and chapter 6.1.2.3 (p. 217)
Set up and quantification of the expected results of the envisaged FI by means of output indicators, result indicators and FI-performance indicators as appropriate.	Art. 37 (2) (f)	Chapter 6.2. (p. 249)	Chapter 6.2. (p. 249)	Chapter 6.2. (p. 249)
Specification of how the envisaged FI will contribute to deliver the desired strategic objectives.	Art. 37 (2) (f)	Chapter 6.2. (p. 249)	Chapter 6.2. (p. 249)	Chapter 6.2. (p. 249)
Definition of the	Art. 37 (2) (f)	Chapter 6.4 (p. 249)	Chapter 6.4 (p. 249)	Chapter 6.4 (p. 249)

Key checklist point	CPR reference	EE/RE	SUD	RDI
monitoring system in order to efficiently monitor the FI, facilitate reporting requirements and identify any improvement areas.				
Definition of the conditions and/or the timing in which a revision or an update of the ex-ante assessment is needed.	Art. 37 (2) (g)	Chapter 6.5 (p. 268)	Chapter 6.5 (p. 268)	Chapter 6.5 (p. 268)
Ensure that this flexibility, and trigger points, is reflected in the monitoring and reporting provisions.	Art. 37 (2) (g)	Chapter 6.4 (p. 249) and Chapter 6.5 (p. 268)	Chapter 6.4 (p. 249) and Chapter 6.5 (p. 268)	Chapter 6.4 (p. 249) and Chapter 6.5 (p. 268)