JESSICA

Joint European Support for Sustainable Investment in City Areas

2014-2020 Evaluation Study for Ireland

June 2013

FINAL REPORT

Table of Contents

Abbreviated Terms

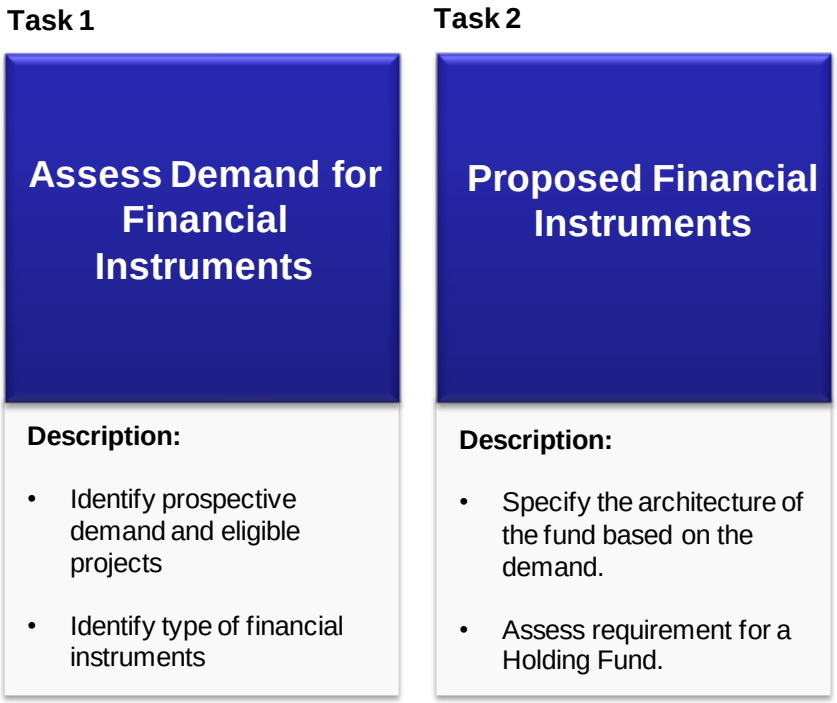
Term	Description
BER	Building Energy Rating
BMW	Border, Midlands & Western
CAPEX	Capital Expenditure
CEB	Council of Europe Development Bank
CER	Commission for Energy Regulation
CHP	Combined Heat and Power
CF	Cohesion Fund
CSF	Common Strategic Framework
DPER	Department of Public Expenditure and Reform
DG Regio	EC Directorate General for Regional Policy
DG Competition	EC Directorate General for Competition
EAFRD	European Agricultural Fund for Rural Development
EIB	European Investment Bank
EIF	European Investment Fund
EMFF	European Maritime and Fisheries Fund
ERDF	European Regional Development Fund
ERR	Economic Rate of Return
ESF	European Social Fund
ESCO	Energy Service Company
EU	European Union
FI	Financial Instrument
HeCHP	High Efficiency Combined Heat and Power
HF	Holding Funding
HFA	Housing Finance Agency
ICT	Information and Communications Technology
IRR	Internal Rate of Return
JESSICA	Joint European Support for Sustainable Investment in City Areas
KWH	Kilowatt Hour
LLP	Limited Liability Partnership
LP	Limited Partnership
OPEX	Operational Expenditure
PPP	Public Private Partnership
PwC	PricewaterhouseCoopers
R&D	Research and Development
RFT	Request For Tender
S&E	Southern & Eastern Regional Assembly
SME	Small Medium-sized Enterprise
SPV	Special Purpose Vehicle
UDF	Urban Development Fund
VC	Venture Capital

1. Introduction

1.1 Overview of Evaluation Study

This study has been produced with the financial assistance of the European Union and was commissioned in November 2012. The terms of reference for this study included; assessing the prospective demand for financial instruments, proposed financial instrument architecture and synergies between ERDF and ESF in urban development. Initial discussions with the Project Steering Group suggested that given the earmarking of ESF funds and the limited experience of financial instruments in Ireland, it is not possible at this stage to consider the synergies between ERDF and ESF funding. As such, the evaluation study involved two main tasks as outlined in Figure 1.1. The first task involved identifying the prospective demand in order to assess the feasibility of establishing a financial instrument in Ireland. This task also served to highlight the potential thematic focus of a financial instrument if established. The other major task of the study was to specify the architecture of the fund in terms of geographic and thematic focus, number of Urban Development Funds (UDFs) and size of a potential fund. This task also assessed the requirement for a Holding Fund.

Figure 1.1: Tasks of the Evaluation Study



The following section provides an introduction to financial instruments and the relationship between financial instruments and State Aid.

1.2 Introduction to Financial Instruments

A financial instrument (FI) is essentially a fund which is set up using EU Structural Funds with the aim of investing in projects and leveraging other financing, including that from the EIB. Instead of using EU funds as a grant, a financial instrument invests in projects that generate a return. The current financial instrument is known as JESSICA i.e. Joint European Support for Sustainable Investment in City Areas. JESSICA responds to the requirement to support sustainable urban transformation by addressing a perceived shortage of investment dedicated to integrated urban renewal and regeneration projects in European cities. The main financial innovation is that instead of paying out capital as a grant, capital is revolving and can therefore be reinvested in new projects (enabling the "recycling of funds"). There are four highlighted benefits of financial instruments such as JESSICA:

1. Ensuring long-term durable support to urban transformation processes through the revolving character of European Regional Development Fund (ERDF) contributions to JESSICA financial engineering instruments. This leads to a more efficient and effective use of ERDF allocations relative to grants.

2. Contributing financial and managerial expertise from specialist institutions such as the European Investment Bank (EIB), the Council of Europe Development Bank (CEB) and other financial institutions.

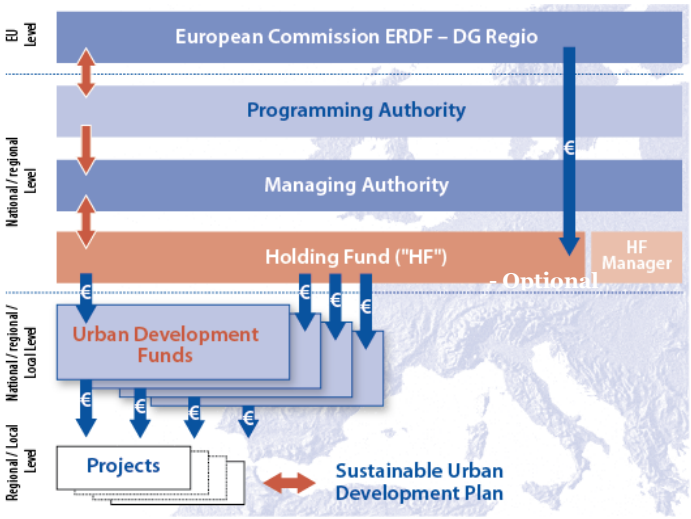
3. Leveraging additional resources for Public Private Partnerships (PPPs) and other urban projects in the EU. This is enhanced by the ability to leverage not only required matching funds but also the potential for other investment at the fund level and third party finance at the project level.

4. Creating stronger incentives for successful implementation by final recipients, since Managing Authorities receive part of the capital backflow of successful projects which can be used for further investment.

The considerable benefits of establishing a financial instrument must be weighed against the associated risks and opportunity costs including the costs of set-up and operation, alternative uses that the funds could be put towards, availability of a sufficiently robust pipeline of viable and eligible projects for investment. The architecture of the financial instrument may include Urban Development Funds (UDF) and the Portfolio Fund known as a Holding Fund (see Figure 1.2). A UDF is a fund investing in public-private partnerships and other projects included in an integrated plan for sustainable urban development. Holding Funds act as funds for investment in other financial instruments and are optional features of the financial instrument structure. Investments made within the frame of reference of a financial instrument need a comprehensive urban development plan and must cover investments in projects that are repayable, for subsequent re-investment of capital.

In order to benefit from Structural Funds, any financial instrument, including UDFs and Holding Funds need a Business Plan produced by co-financing partners, shareholders or their representatives, depending on the legal form they take, establishing the feasibility, the specific activity they aim to finance and justifying the use of Structural Funds. The contributions which finance the UDF can come from three sources; National Exchequer Funds, Structural Funds and Private Investors. Investment in projects is possible by means of loans, shares and guarantees and as such, there is a wide range of investment possibilities and tools to invest in feasible projects and for the investment to be returned to the funds with the appropriate yield.

Figure 1.2: Financial Instrument Structure



1.3 Financial Instruments and State Aid

The objective of State Aid control is, as laid down in the founding Treaties of the European Communities, to ensure that government interventions do not distort competition and trade inside the EU. State Aid according to article 87 of the EC Treaty is "any aid granted by a Member State or through State resources in any form whatsoever (subsidies, loans, guarantees, or other measures which reduce the financial burden on businesses) which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, insofar as it affects trade between Member States, be incompatible with the common market". The EC Treaty pronounces the general prohibition of State aid. In order to control State aid within the context of financial instruments, projects must aim to promote urban development by remedying market failure and/or enhancing socio-economic equity, limiting aid to the minimum necessary to achieve the desired market outcome and minimising potential distortions of competition and trade. Table 1.1 provides an overview of the criteria that UDFs must meet to comply with State Aid requirements. Efforts are underway within the European Commission Services to simplify the application of the State Aid rules to Financial Instruments for the next Programming Period 2014-20.

Table 1.1: UDF State Aid Principles

Principle	Description
Common Interest	• UDF must target projects that are in the public interest, which is integrated urban development and form part of an Integrated Plan for Sustainable Urban Development and pursue eligible investment activities
Necessity	• UDFs must target projects that would not otherwise be delivered by the market due to market failure to achieve the desired outcome and urban deprivation affecting projects' viability
Minimum Necessary	• UDF intervention limited to the minimum necessary to achieve the desired outcome limiting expected returns for promoters and private investors
Limiting Potential Distortions	• UDF activities should limit potential distortions of competition and effects on trade

The next section provides an overview of the strategic analysis conducted for this study.

2. Strategic Analysis

2.1 Introduction

In order to ensure a clear strategic direction exists for this project and key parameters are identified, a strategic analysis was conducted. This strategic analysis was of added importance given that the Managing Authorities are at the beginning of a new programming period. The strategic analysis included three strands; a) Europe 2020 priorities, b) the current market conditions in Ireland and c) 2014-2020 funding priorities. This section provides an overview of each of the three strands beginning with the overarching strategic context of Europe 2020.

2.2 Europe 2020

Europe 2020 is the EU's growth strategy. It includes four priorities for delivering growth that is a) smart b) sustainable and c) inclusive growth. Table 2.1 provides an overview of the four priorities of Europe 2020.

Table 2.1: Europe 2020 Priorities and Key Targets

Priority	Key Targets
Smart Growth: improving EU performance in Education, Research/Innovation and Digital Society	• Public & private investment levels to reach 3% of EU's GDP • 75% employment rate for women & men aged 20-64 • Reduce school drop-out rates below 10% • 40% of 30-34 year-olds with 3rd level education
Sustainable Growth: competitive low-carbon economy, protecting the environment, green technologies, harnessing EU scale networks and helping consumers	• Reducing greenhouse gas emissions by 20% • Increasing the share of renewables in final energy consumption to 20% • Moving towards a 20% increase in energy efficiency
Inclusive Growth: raising Europe's employment rate, investing in skills & training, modernising labour markets and welfare and ensuring benefits of growth reach all	• 75% employment rate for women and men aged 20-64 • Reducing school drop-out rates below 10% • 40% of 30-34–year-olds completing third level education • 20 million fewer people in or at risk of poverty and social exclusion

To ensure that the Common Strategic Framework (CSF) funds deliver long-lasting economic and social impacts, the Commission has proposed a new approach to the use of the funds in its proposal for the 2014-2020 Multiannual Financial Framework. Strong alignment with policy priorities of the Europe 2020 agenda, macroeconomic and ex-ante conditionality, thematic concentration and performance incentives are expected to result in more effective spending. This builds on experience from previous programming periods and serves to address several factors affecting effectiveness of investment including the need for a strategic orientation and concentration, the need to avoid fragmentation of investments and a weak response to actual needs. The Common Strategic Framework translates the objectives and targets of the Union priorities of smart, sustainable and inclusive growth into key actions for the ERDF, the CF, the ESF, the EAFRD and the EMFF in order to ensure an integrated use of the CSF Funds to deliver common objectives. In order to reinforce the strategic programming process, 11 thematic objectives in line with Europe 2020 have been defined:

1. Strengthening research, technological development and innovation;
2. Enhancing access to, and use and quality of, information and communication technologies;

3. Enhancing the competitiveness of small and medium-sized enterprises, the agricultural sector (for the EAFRD) and fisheries and aquaculture sector (for the EMFF);
4. Supporting the shift towards a low-carbon economy in all sectors;
5. Promoting climate change adaptation, risk prevention and management;
6. Protecting the environment and promoting resource efficiency;
7. Promoting sustainable transport and removing bottlenecks in key network infrastructures;
8. Promoting employment and supporting labour mobility;
9. Promoting social inclusion and combating poverty;
10. Investing in education, skills and lifelong learning
11. Enhancing institutional capacity and efficient public administration

Europe 2020 provides the overarching strategic framework to guide this project. The market conditions in Ireland are now assessed to identify priorities for the use of structural funds in Ireland paying particular attention to the European Commission's Position Paper on the development of the Partnership Agreement and Operational Programmes for the period 2014-2020.

2.3 Market Conditions

Positive growth has been recorded for the past two years with provisional figures indicating that GDP expanded by 0.9 per cent in 2012 with a stabilisation of domestic demand in the latter half of the year. Disposable household income rose over the course of the past 12 months, while the household savings rate declined from the second quarter onwards. In the short-term, GDP is projected to increase by 1.3 per cent this year with the pace of economic expansion projected to strengthen in 2014 and over the medium term. A general government deficit of 7.6 percent of GDP is estimated for 2012. Table 2.2 provides macroeconomic forecasts with respect to economic growth, general government balance and debt-ratio.

Table 2.2: Economic Growth, General Government Balance & Debt Ratio

	2012	2013	2014	2015	2016
Real GDP (%Change)	0.9	1.3	2.4	2.8	2.7
General Gov. Deficit	7.6	7.4	4.3	2.2	1.7
Debt Ratio	117.6	123.3	119.4	115.5	110.8

Source: Department of Finance (2013). Irish Stability Programme. April 2013 Update.

The labour market situation remains challenging with an unemployment rate of 14.7% in 2012 and an average rate of 14.0% forecast for 2013. However, there are signs of stabilisation with increases in employment for both the third and fourth quarter when adjusted for seasonal factors. Table 2.3 forecasts the labour market developments from 2012 to 2016.

Table 2.3: Labour Market Forecasts (% change unless otherwise stated)

	2012	2013	2014	2015	2016
Employment	-0.6	0.4	1.1	1.3	1.4
Unemployment Rate	14.7	14.0	13.3	12.8	12.3
Labour Productivity	1.5	0.9	1.3	1.5	1.3

Source: Department of Finance (2013). Irish Stability Programme. April 2013 Update.

There are notable regional differences in economic performance and unemployment levels. Ireland has established two regions to create a more balanced approach to the design and delivery of EU-funded programmes. The regions are the Southern and Eastern (S&E) Region and the Border

Midland and Western (BMW) Region (see Figure 2.1). Table 2.4 provides a view on the regional differences for a number of key indicators.

Figure 2.1: Two Regions to Deliver EU-funded Programmes

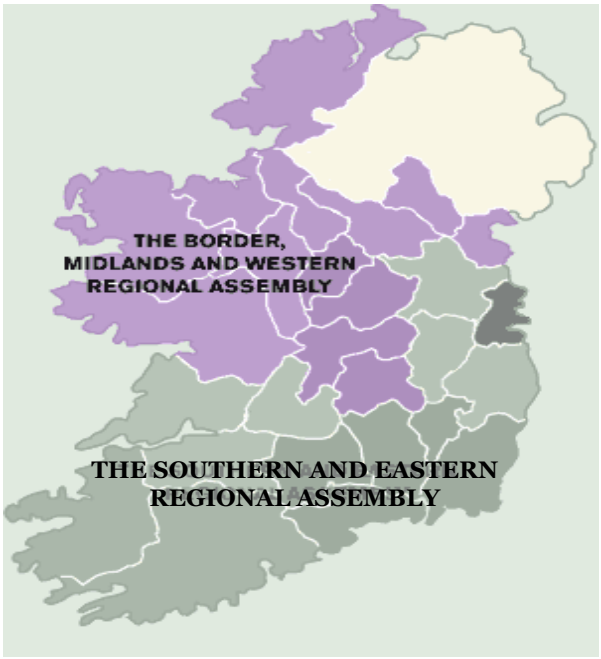


Table 2.4: Regional Indicators for S&E and BMW

Priority	S&E	BMW
GDP Per Capita[1]	• 144.3% EU27 Average	• 84.1% EU27 Average
Unemployment[2]	• 13.1%	• 15.8%
Labour Force Participation[3]	• 60.6%	• 56.8%
At Risk of Poverty[4]	• 14.3%	• 20.4%
Tourism - % of Total Overseas Visitors[5]	• 78.8%	• 21.2%
Competitiveness[6]	• 43rd	• 129th

Source: Regional Assemblies.

2.4 2007-2013 Programming Period

The 2007-2013 programme built on the success of its predecessor and aimed to address the challenges of both the S&E and BMW regions. The objective was to facilitate innovation, ensure sustainable development, improve accessibility and develop the urban fabric within the regions in order to enhance overall productivity and competitiveness. The development strategy for both regions is specified in Table 2.5.

[1] CSO (2013), County Incomes and Regional GDP 2010
[2] CSO (2013), Quarterly National Household Survey Q4 2012
[3] CSO (2013), Quarterly National Household Survey Q4 2012
[4] CSO (2012), Survey on Income and Living Conditions (SILC) 2011 and revised 2010 results
[5] Fáilte Ireland (2012), Overseas Visitors to Counties in 2010 and Associated Revenue
[6] European Commission (2012), Regional Competitiveness Index 2010

Table 2.5: Priorities of the Regions for 2007-2013 Programming Period

Border, Midlands & Western	Southern & Eastern
1. Innovation, ICT and the Knowledge Economy	1. Innovation & the Knowledge Economy
2. Environment and Risk Prevention	2. Environment & Accessibility
3. Urban Development & Secondary Transport Networks.	3. Sustainable Urban Development

The European Commission approved S&E Regional Programme on 16 October 2007 with a budget of €367 million total eligible co-funding. This has resulted in a planned investment of €146.6 million in the S&E Region through the European Regional Development Fund (ERDF) by the EU. The ERDF is the only Structural Fund co-funding the 2007-2013 S&E Regional Programme. The BMW Regional Operational Programme 2007-2013 has resulted in a planned investment of €458m of which €229m is provided by the EU Structural Funds under the Regional Competitiveness and Employment objective. One of the conditions of the BMW's designation as an Objective 2 'phasing in' region was that 79% of the EU contribution has been committed over the first three years of the programme.

2.5 2014-2020 Funding Priorities

Based on this context, the Directorate-General for Regional and Urban Policy of the European Commission (from here-on 'DG Regio') has developed a Position Paper in order to prioritise direction for the use of Structural Funds in the next programming period. In summary, it calls for optimising the use of CSF Funds by establishing a strong link to productivity and competitiveness enhancing reforms, leveraging private resources and boosting potential high growth sectors, while emphasising the need to preserve solidarity within the Union and ensuring the sustainable use of natural resources for future generations. There is also a need to concentrate future EU spending on priority areas to maximise the results to be obtained, rather than spreading funding too thinly. It encourages Ireland to focus on fostering competitiveness and employment and to address inefficient use and exploitation of natural resources and exploiting the job-creation and commercial opportunities provided by harnessing of Ireland's substantial renewable energy resource including marine renewables. The Position Paper provides an indication of Ireland's current status and identified targets for key areas against headline targets established by the Europe 2020 strategy (see Table 2.6).

Table 2.6: Ireland's performance and targets against Europe 2020 targets

Europe 2020 Headline Target	Current Situation	National 2020 Target in NRP
3% of expenditure on research and development	1.8%	2%
Reduction of greenhouse gas emissions in sectors not covered by the Emission Trading System by 20% compared to 2005 levels.	-7.6% (2010)	-20% (national binding target for non-ETS sectors compared to 2005)
20% of energy from renewables	5.8% (2010)	16%
20% increase in energy efficiency	N/A	20%
75% of the population aged 20-64 should be employed	64.1%	69-71%
The share of early school leavers should be under 10%	10.6%	8%
At least 40% of 30-34 year olds should have completed a tertiary education	49.4%	60%
Reducing the number of people at risk of poverty or exclusion by 20 million in the EU	277,000	200,000 fewer people experiencing consistent poverty by 2020

The Position Paper provides an analysis of Ireland's most pressing challenges including the high levels of overall and youth unemployment, increasingly long-term in nature, and the increasing risk of social exclusion, insufficient commercialisation of basic research and low availability of finance for the private sector, particularly for SMEs and the inefficient use of resources. Based on these challenges identified above, the Position Paper specifies three 'priorities for funding' with respect to the structural funds thematic objectives and specific objectives (see Table 2.7). The Steering Group agreed to focus on Resource Efficiency as the key thematic area of the evaluation study.

2.6 Market Failure & Resource Efficiency

The position paper outlines that 'particular effort should be made to optimise use of financial instruments by deploying them more widely in sectors where they are particularly suitable and where an ex-ante assessment has established evidence of market failure or sub-optimal investment situations'. Public policy intervention is justified where the market has not, and cannot by itself be expected to deliver an efficient outcome. With respect to Resource Efficiency, three types of market failure can be identified in the Irish context; a) externalities; b) incomplete information; and c) split incentives. The first type of market failure, externalities, is where there are spillover effects on third parties that are not captured by prices i.e. environmental benefits from the reduction of CO2 and other emissions and energy supply security from energy efficiency.

The second market failure is incomplete information whereby stakeholders may not be aware of the opportunities for resource efficiency or alternatively they may be aware but have inaccurate information about the costs and benefits of particular measures. The third type of market failure relates to split incentives such as between tenants and landlords. Tenants often have limited influence on the implementation of energy saving measures used in buildings and landlords may be unable to pass through the costs of these measures to tenants. As Section 6.3 demonstrates, there is also a suboptimal investment situation with respect to Resource Efficiency thus supporting the view of public policy intervention.

Table 2.7: Funding Priorities, Thematic Objectives and Specific Objectives

Funding Priority	Thematic Objective	Specific Objective
1. Combating long-term and youth unemployment and social exclusion	Promoting employment and supporting labour mobility	• Access to employment for job-seekers and inactive people, including local employment initiatives and support for labour mobility
		• Sustainable integration of young people not in employment, education or training (NEET) into the labour market
		• Modernisation and strengthening of labour market institutions, including actions to enhance transnational labour mobility.
		• Facilitating diversification and job creation in rural areas
		• Facilitating the transition towards new skills and jobs in the context of required structural adjustment (e.g. in the marine economy)
	Promoting social inclusion and combating poverty	• Active inclusion
		• Support to basic services and other poverty reduction measures in rural and coastal areas
	Investing in education, skills and lifelong learning	• Reducing early school-leaving and promoting equal access to good quality early childhood, primary and secondary education
		• Lifelong learning, training and advisory services for farmers, seafarers and rural population
2. Promotion of R&D investment and the competitiveness of the business sector	Strengthening research, technological development and innovation	• Promotion of business R&I investment, product and service development, technology transfer social innovation and public service applications, demand stimulation, networking, clusters and open innovation both nationally and in broader cross-border perspectives and through smart specialisation
		• Enhancing innovation in the SME sector
	Enhancing the competitiveness of small and medium-sized enterprises, the agricultural sector and the fisheries and aquaculture sector	• Promoting entrepreneurship, in particular by facilitating in both the national and cross-border perspectives the economic exploitation of new ideas and fostering the creation of new firms
		• Developing new business models for SMEs, in particular for internationalisation
3. Promotion of environmentally-friendly and resource efficient economy	Supporting the shift towards a low-carbon economy in all sectors	• Promoting the production and distribution of energy from renewable sources
		• Promoting energy efficiency and renewable energy use in SMEs
		• Supporting energy efficiency and renewable energy use in public infrastructures and in the housing/business/transport sectors.
		• Climate change mitigation measures
	Promoting climate change adaptation, risk prevention and management	• Supporting dedicated investment for adaptation to climate change
		• Promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems
	Protecting the environment and promoting resource efficiency	• Improving the quality of water
		• Protecting biodiversity, soil protection and promoting ecosystem services including NATURA 2000 and green infrastructures

3. Identification of Financial Instrument Demand

3.1 Introduction

This section provides an overview of the submissions received to inform our assessment of the likely demand for a financial instrument. Based on the initial strategic analysis, over 100 stakeholders were contacted from relevant organisations to invite them to provide information on projects that may be suitable for the 2014-2020 funding period or bring this study to the attention of other organisations that may have suitable projects. Stakeholders were informed that projects must take account of the funding provisions as set out in the capital envelope for each year to 2016 and that potential projects will have to be funded from within existing funding provisions as set out in that envelope with no scope for increasing the envelope. In order to guide stakeholders in the identification of potentially suitable projects, a 'Project Profiling Tool' was created. The purpose of the tool was to capture project characteristics across four areas:

1. Project Details: name, principal organisations / stakeholders, city, county, sector, project summary and contact details.
2. Project Stage: Business plan progress, Project Delivery Risks, project life cycle stage, SME life cycle stage.
3. Project Funding Process & Structure: timing of initial investment, funding period, total investment required, fundraising process, funding structure, security, payback period and estimated IRR.
4. Project Impacts: geographic scope of impact, European Commission resource efficiency sector impact, resource efficient impact and project outputs.

Stakeholders were informed that all information requested in the Profiling Tool did not need to be provided but that projects that are more progressed in their planning are more likely to be included in the study. Based on our strategic analysis and Project Steering Group guidance, stakeholders were also informed that in line with overall EU targets the focus is on types of projects that increase the overall sustainability of a region e.g. energy efficiency in buildings, sustainable transport, renewable energy, waste to energy, energy efficient street lighting etc. This focus was reflected in the 'Project Impacts' section of the Project Profiling Tool. At the outset and throughout the project, all stakeholders were informed that project information requested is for input into the market feasibility study and did not represent an application or an offer for funding from EIB or any future financial instrument. The following section provides an overview of the demand received. At this point, no filtering of projects with regard to specific criteria has taken place.

3.2 Overview of Demand

In this section an unfiltered overview of the demand is presented. In total, 84 projects were submitted with 79% (66) projects submitted from the Southern and Eastern (S&E) Regional Assembly and 21% (18) projects submitted from the Border, Midlands and Western (BMW) Regional Assembly (see Figure 3.1). The predominance of submissions from the S&E Regional Assembly is largely due to the fact that 4 of the 5 major urban areas are located in the S&E, i.e. Dublin, Cork, Limerick and Waterford. In total, 62 projects were submitted from the 5 major urban areas (74% of the total). Figure 3.2 categorises the projects in terms of the purpose of the investment, i.e. whether they are a 'new investment', a 'redevelopment' of an existing site or a 'retrofit' of an existing site across each of the major urban areas. As illustrated in Figure 3.2, new investments are predominant.

Figure 3.1: Percentage of Projects Submitted from each Regional Assembly

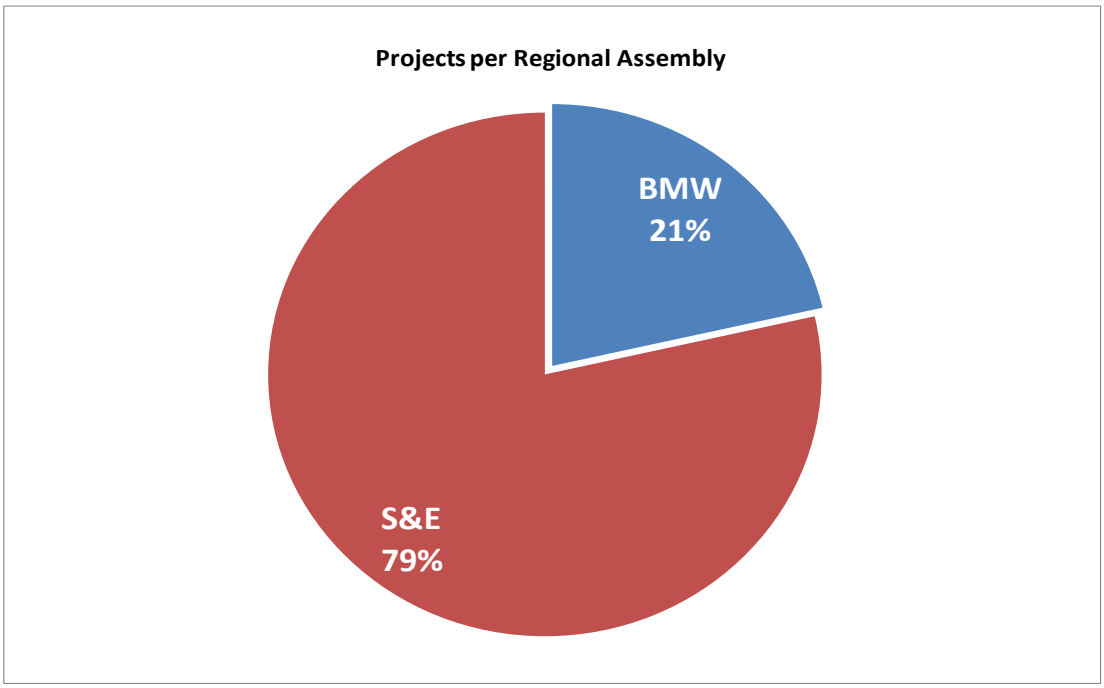
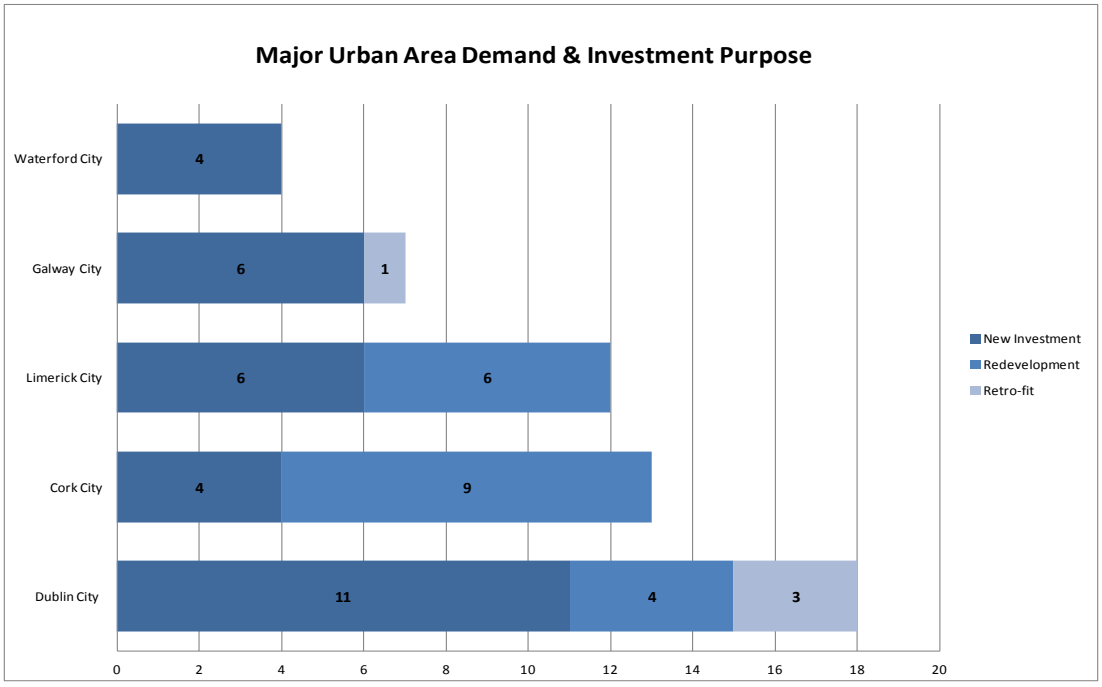
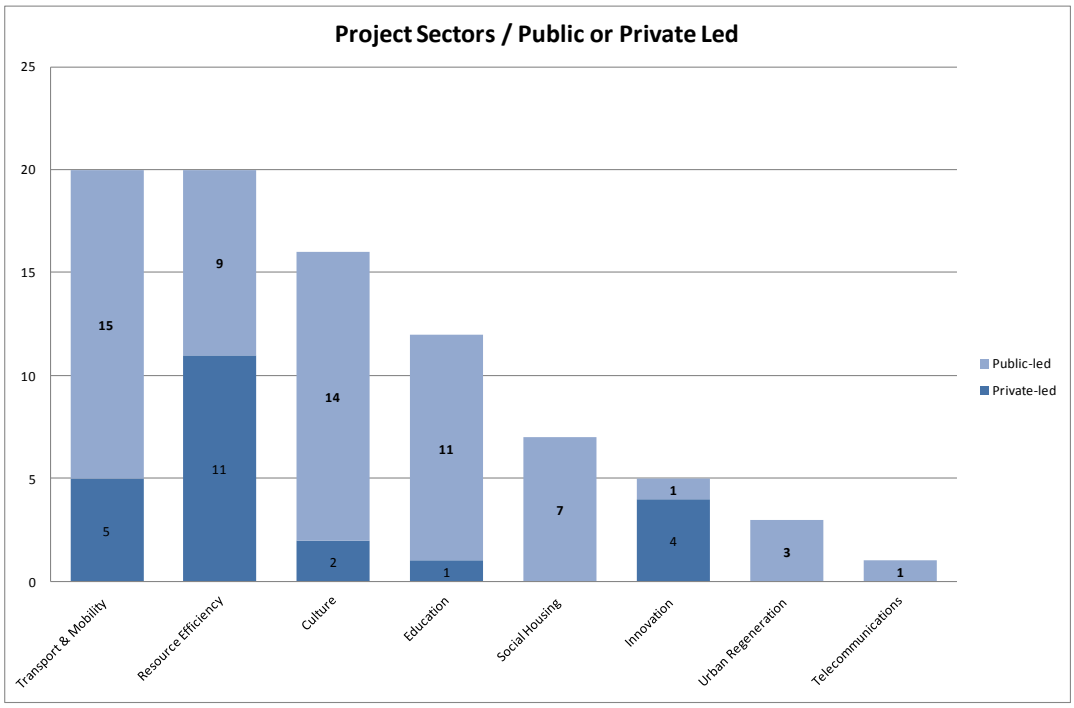


Figure 3.2: Major Urban Area Demand & Investment Purpose



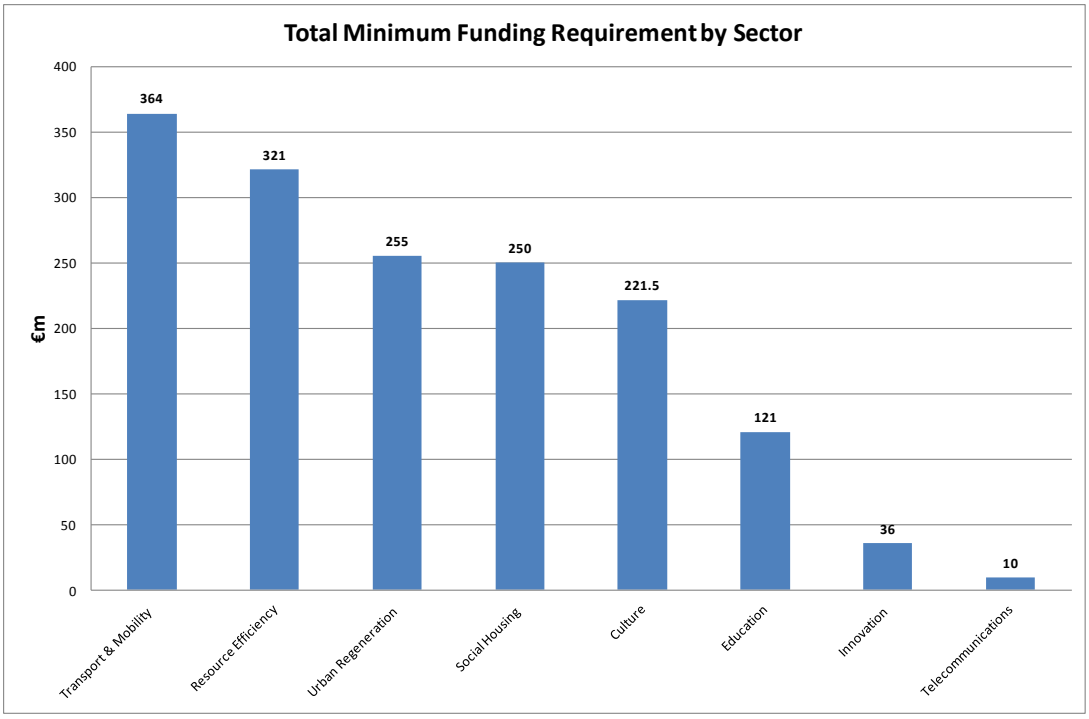
The projects can be segmented into 8 primary sectors with transportation and cultural projects (i.e. Cinema, Opera and Tourism) projects predominating. As illustrated in Figure 3.3, the majority (73%) of these projects have self-identified as 'public-led' projects rather than 'private-led'.

Figure 3.3: Project Sectors and Public or Private Led



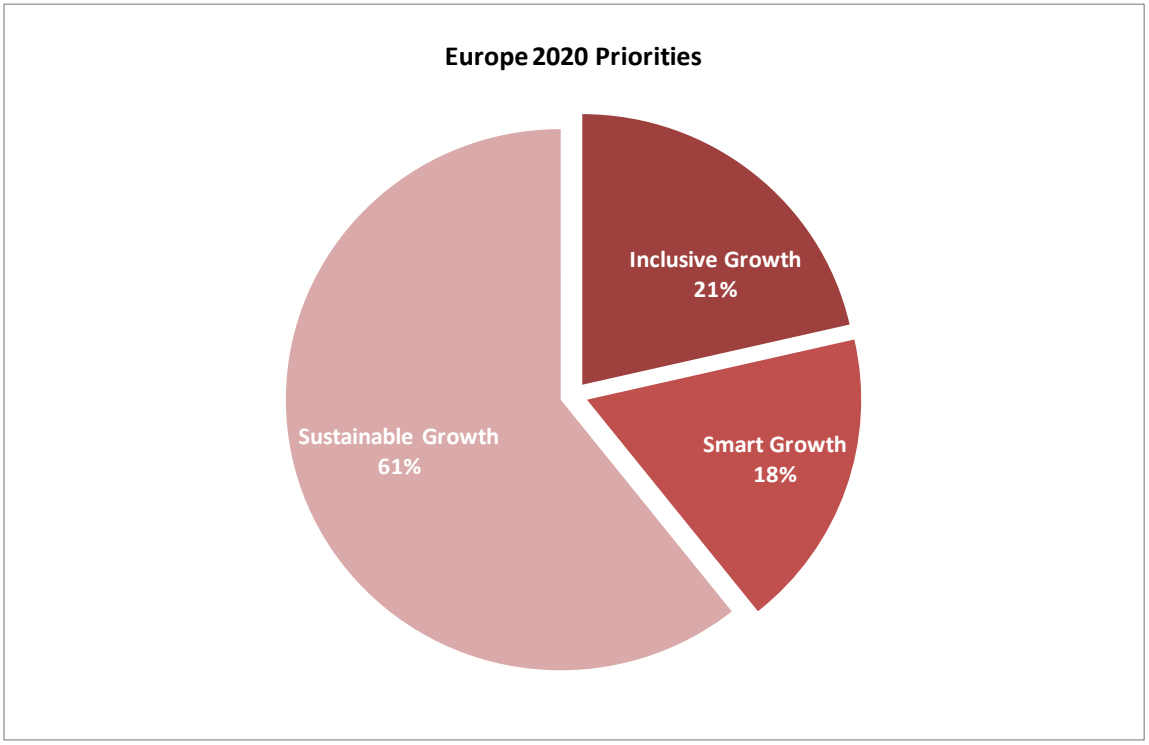
By taking the minimum funding requirement from the range (i.e. €1m - €5m range = €1m minimum funding requirement) and totalling across all projects, it is possible to get a sense of the total minimum funding requirement across all projects submitted. The total minimum funding requirement is €1.6 billion when three Dublin City Transport projects in excess of €750m are excluded (see Figure 3.4). Please note that this is the total minimum funding requirement across all projects submitted inclusive of projects that do not fit with a financial instrument.

Figure 3.4: Total Minimum Investment by Sector



In terms of Europe 2010 priorities, 61% self-identified their projects as supporting the Sustainable Growth priority with 21% and 18% identifying as Inclusive and Smart Growth respectively (see Figure 3.5).

Figure 3.5: Europe 2020 Priorities



4. Assessment of Demand

4.1 Evaluation Criteria

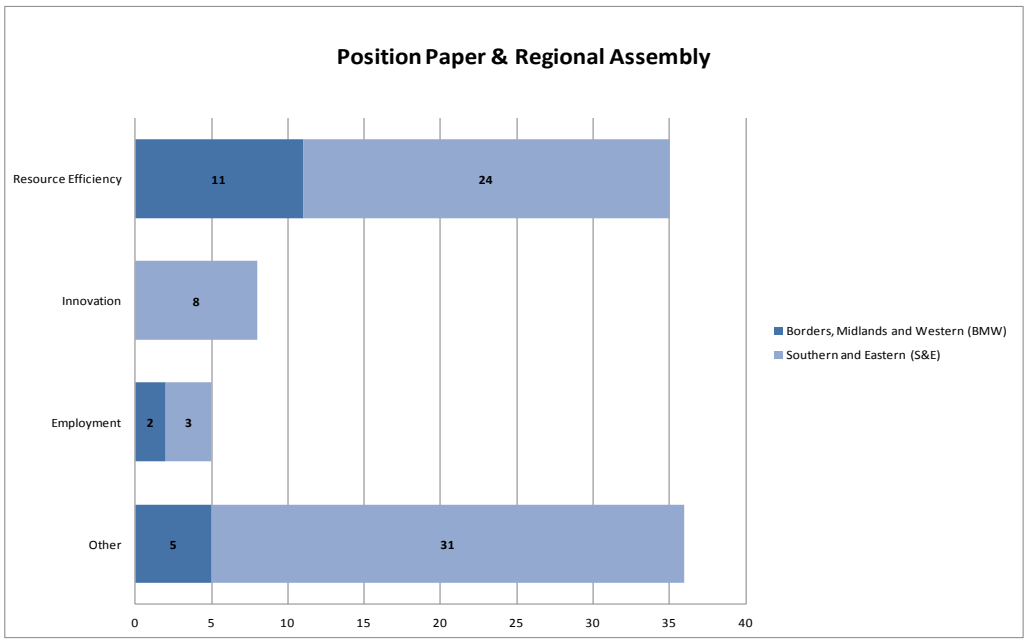
The purpose of this section is to filter the demand in order to assess the fit with a potential financial instrument in Ireland. Appendix A provides the set of questions included in the Project Profiling Tool to gather the required information. In order to assess fit, two 'evaluation' criteria were applied; 1) fit with European Commission's position paper; and 2) fit with potential financial instrument. Where information was available, the assessment took place across three areas; analysis of scope, financial analysis and technical analysis (see Appendix B for the elements included). As described above, DG Regio outlined the need for Structural Funds to be concentrated on a limited number of priorities in order to increase effectiveness of public interventions. Three such priorities were identified for Ireland; employment, innovation and resource efficiency (see Table 4.1)

Table 4.1: Position Paper Categories

Priorities	Definition
Employment	• Projects that specifically focus on long-term and youth unemployment and social exclusion
Innovation	• Projects that aim to promote R&D investment and the competitiveness of the business sector.
Resource Efficiency	• Projects that address the efficiency of resources utilised including energy efficiency of buildings, waste-to-energy projects and district heating systems.

Each project was assessed and categorised in terms of whether it addressed one of the three major issues identified in the European Commission Position Paper. A significant proportion of the projects (36) were categorised as 'other' i.e. not directly addressing one of the three issues. These projects included 'cultural' projects such as Operas, Cinemas and Cultural Tourism related projects. While such projects may have an employment benefit, they do not directly address the long-term and youth unemployment challenges identified by the Position Paper. 42% (35 projects) were identified as Resource Efficiency related with 10% (8 projects) identified as Innovation and 6% as Employment. Through the application of the first evaluation criteria and filtering out the 'Other' category, there were 48 projects remaining that fit with the Position Paper priorities.

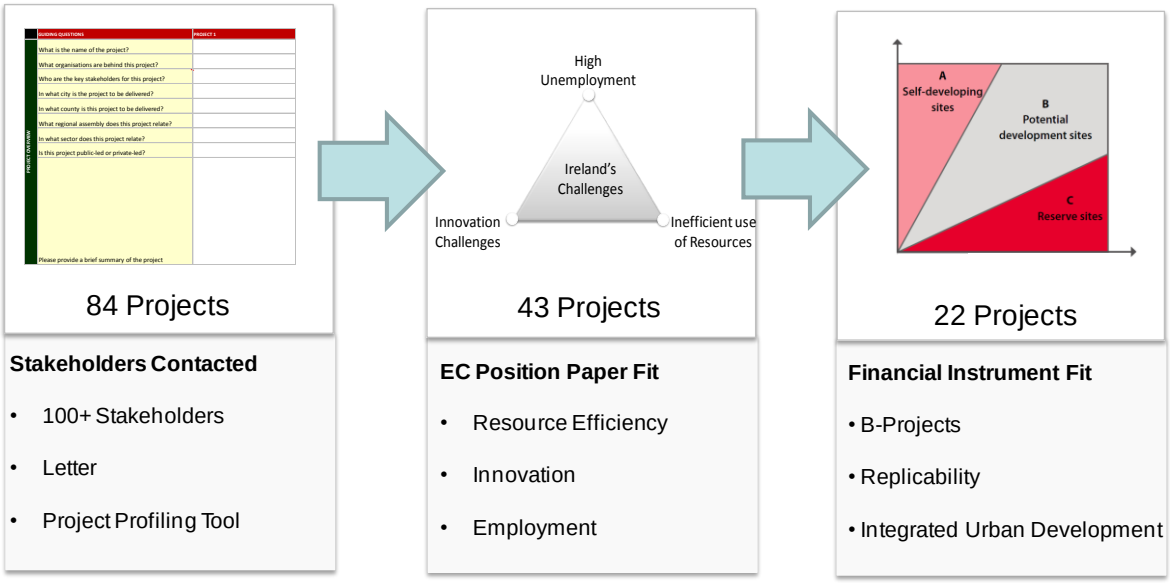
Figure 4.1: Position Paper Categories and Regional Assembly



pwc ARUP

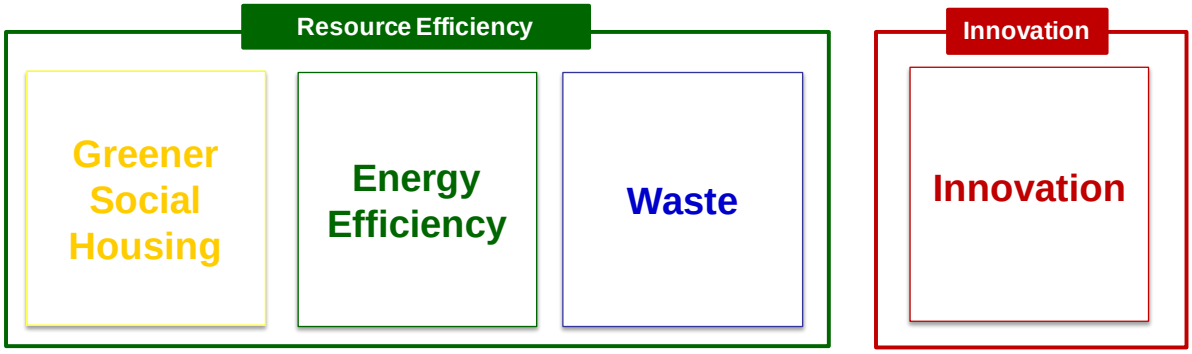
In terms of the second evaluation criteria, all UDFs have to fulfil a certain internal rate of return (IRR) target to secure the functioning and sustainability of the fund. The nature of the projects to be funded plays a significant role in the sustainability of the fund. As such, our second evaluation criteria assessed the fit with the financial instrument. Projects were categorised into three types: A-Projects, B-Projects and C-Projects. A-Projects are projects that are profitable and *are* likely to meet the performance goals of private investors. These projects are commercially viable and are unlikely to require public policy intervention. B-Projects are characterised by a limited internal rate of return that is not sufficient to meet performance goals of private investors. In general, UDFs focus on B-Projects, as they are marginally viable. In contrast, C-Projects may not generate any capital backflow at all. This assessment was, by necessity, high-level given the lack of detailed project information available. Another important financial instrument fit criteria that was utilised to assess the projects was their replicability in different geographic regions and whether they did or could form part of an integrated urban development plan.

Figure 4.2: Filtering of Demand to Appropriate Project Samples



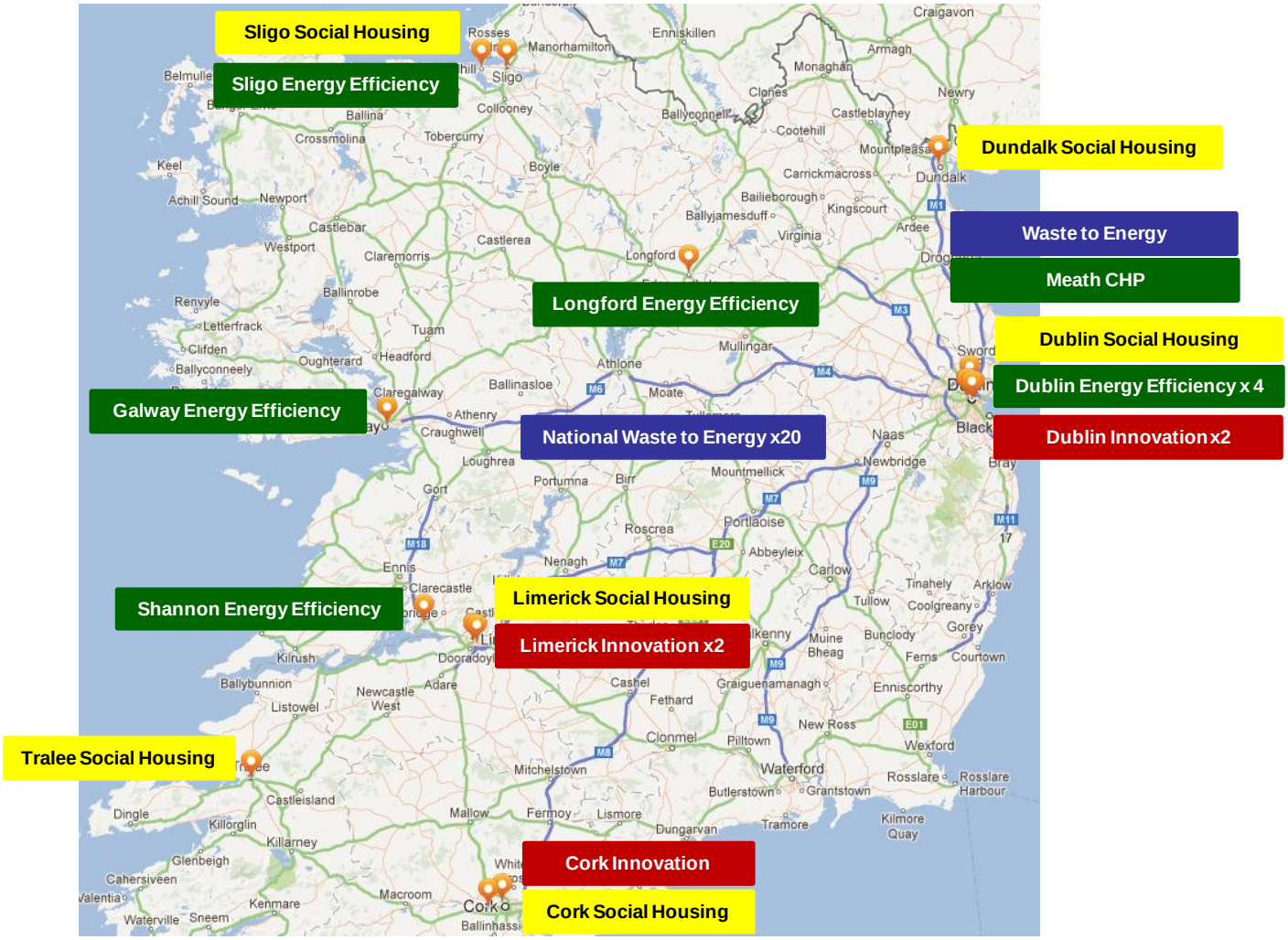
As illustrated in Figure 4.2, the application of the evaluation criteria resulted in 22 sample projects that a) fit with the Position Paper priorities and b) fit with the parameters of a financial instrument. On closer examination of the 22 projects, two key thematic areas emerged, Resource Efficiency and Innovation with the Resource Efficiency theme composed of three sub-themes; Greener Social Housing, Energy Efficiency and Waste-to-Energy (see Figure 4.3). The Greener Social Housing theme included social housing retrofit projects across the country but mainly concentrated in the major urban areas. The Energy Efficiency theme included retrofits of commercial buildings, street lighting upgrades, combined heat and power plants and district heating systems. The Waste theme included municipal waste to energy projects. The Innovation theme included innovation hubs, campuses and centres.

Figure 4.3: Themes and Sub-Themes of the 22 Sample Projects



As illustrated in Figure 4.4, these projects were geographically spread with clustering occurring in Dublin and Limerick.

Figure 4.4: Geographical Spread of the 22 Sample Projects



4.2 Selection Criteria

In order to select projects for detailed analysis, a completed investment or business case was required to provide the requisite financial and technical information. Without such information it is difficult to undertake informed analysis of the ERDF eligible spend within projects or to assess the quantum of potential financial instrument investment in a project. Of the 22 projects short-listed, only 5 projects had business cases available for analysis (see Table 4.2). There are two likely reasons for the limited availability of developed business cases. Firstly, this is a point-in-time analysis and as such it cannot be expected that all relevant projects will be at the stage that business cases have been developed. However, secondly, it may also be the case that there have been limited drivers within the Irish context in the recent past to conduct detailed financial analysis and develop business cases. A consistent feature of the broader project demand was the lack of business case availability. This seems to be a feature of the market and one that will need to be addressed as Ireland shifts from grant-focused to financial instrument focused funding.

Table 4.2: 5 Project Samples to Represent Project Types

Project	Type	Description
Project A	Energy Efficiency	Retrofit of building stock to reduce energy consumption
Project B	Energy Efficiency	Production of electricity and heat from biomass HeCHP
Project C	Waste-to-Energy	Production of electricity from anaerobic digestion CHP
Project D	Innovation	Hub for research-active cleantech firms
Project E	Social Housing Retrofits	National retrofit of social housing stock

5. Analysis of Project Types

5.1 Approach

In this section we provide an overview of the analysis of the selected projects as representative case studies for the project types i.e. energy efficiency, waste-to-energy, etc. A high-level financial modelling assessment and technical assessment was completed. The purpose of the case study analysis was to assess what is needed to bring the projects of a particular type (i.e. energy efficiency, waste-to-energy, etc.) to an investment ready stage and to estimate the high-level technical and financial viability of these types of projects. It is important to note that the financial and technical assessment was based on a snapshot in time which could quickly change with additional and more detailed information becoming available. As such, the outputs of this analysis should be treated as indicative only and should not be relied upon for the purpose of assessing the financial viability of a financial instrument or specific projects. A broad assessment of the projects from a technical delivery perspective was also undertaken with respect to 6 categories; timeline to delivery (i.e. programme), technology and design, cost (CAPEX, Lifecycle and OPEX), Statutory Compliance, Site (location, access, traffic etc.) and environment.

5.2 Project A: Energy Efficiency in Buildings

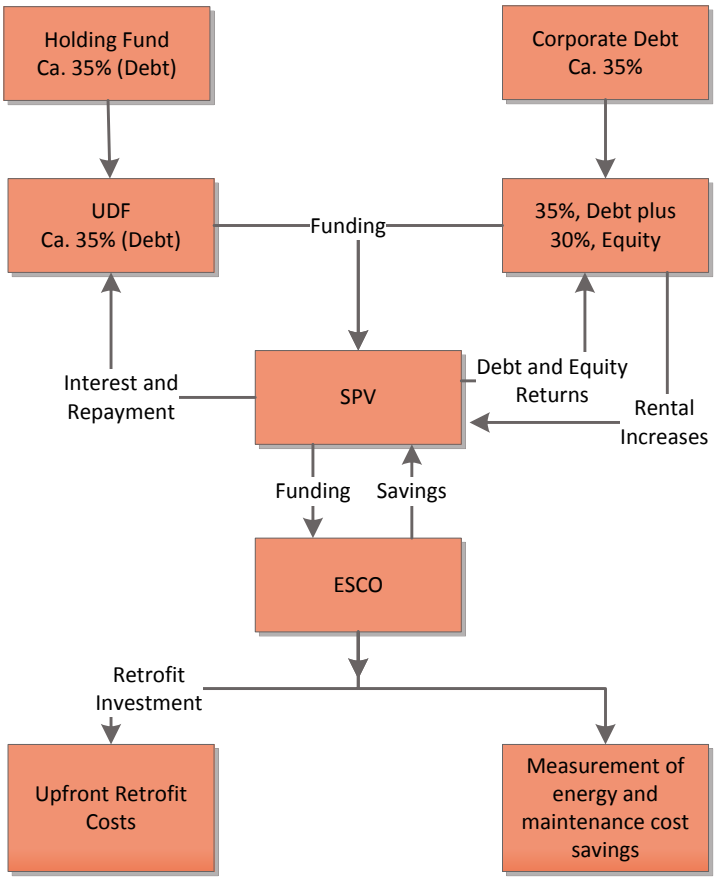
The purpose of this project is to reduce the long-term energy consumption of a large stock of buildings through a retrofitting exercise. The objective of this project was to reduce energy-related costs and exposure to energy price volatility, reduce energy-related emissions and increase value of the asset base, from a yield, capital value and tenant retention. Table 5.1 summarises the projects fit with the European Commission's Position Paper and Europe 2020.

Table 5.1: Fit with Position Paper & Europe 2020

Position Paper	Investment Purpose	Europe 2020	Thematic
Resource Efficiency	Retrofit	Sustainable Growth	Supporting the shift towards a low-carbon economy in all sectors;

The current financing constraint for the project is the long timelines for payback and consequent inefficient use of organisational capital. The revenue model for the project is a combination of energy and maintenance cost savings and increases in rental income which combine to deliver a Project IRR and Equity IRR in the low range. In the financial modelling analysis, the tenor on the financial instrument debt was assumed to be 15 years with 50% bullet with tenor on corporate debt at 10 years. Figure 5.1 provides illustrative financial structuring of the project. The financial return is inadequate for the business at normal investment hurdle rates. Capital provided by the Holding Fund (HF) allows the UDF to lend to the project on favourable terms. The favourable terms can be transferred to the project via the UDF to improve the financial returns of the project to the sponsor and encourage them to proceed with realising the benefits associated with the investment. A 35% loan for the project at a 3% rate of interest, combined with a 35% corporate loan at 6% would improve the equity IRR on the project to an acceptable level.

Figure 5.1: Illustrative Financial Structuring of Project



The impact of the Equity IRR against two variables on project financing was analysed; the interest rate on the loan provided and the amount of sponsor contribution to the capital cost (ratio). The intervention of a financial instrument means that the project has the potential to proceed thus realising the benefits and generating an acceptable return. Any provision of sub-market financing terms inevitably gives rise to considerations of State Aid, which would have to be addressed. Other possible variables to maximize project funding could include increasing the proportion of corporate debt, or increasing the overall debt capacity of the project by getting contractual underpinning for some of the project benefits.

Table 5.2 provides an assessment of the project from a technical perspective against six criteria. The project sponsors have conducted a high level study, but a more detailed study of further buildings is to be undertaken. This will examine in further detail the findings and extrapolated scope and technical assumptions of the high level study. The programme is advancing as some of the upgrade works are currently being carried out. Feedback on the success of these initial works will be useful to inform the development and implementation of the remainder of the programme from a technical perspective. If benefits are demonstrated then it will be later expanded to include more buildings in other locations. The 31 March 2014 changes to building regulations is one of several known and potential regulatory changes which will need to be considered during the life of the project. The technology available on the market to deliver the energy efficiency is continually developing. The programme will need to be flexible enough to adapt to these changes and opportunities.

Table 5.2: Technical Assessment of Project A

Criteria	Risk
1. Programme	**Low**
2. Technology and Design	**Medium**
3. Cost	**Medium**
4. Statutory Compliance	**Low**
5. Site	**Low**
6. Environment	**Low**

5.3 Project B: Energy Efficiency

The purpose of this project is to develop HeCHP plant to produce electricity and hot water to be distributed through piped district heating networks. Table 5.3 summarises the project's fit with the European Commission's Position Paper and Europe 2020.

Table 5.3: Fit with Position Paper & Europe 2020

Position Paper	Investment Purpose	Europe 2020	Thematic
Resource Efficiency	Development	Sustainable Growth	Supporting the shift towards a low-carbon economy in all sectors;

The revenue model of the project is the sales of electricity and heat, with REFIT support and contracted off-take arrangements. The business case for this project indicates that it is financially attractive. The constraint for this project is that it is likely to be difficult to access the total equity finance requirement, so a strip of mezzanine finance may be required in order to (i) bridge the equity funding gap; and (ii) improve the base case equity returns. Mezzanine capital of 5% provided by the UDF could bridge the funding gap and encourage the project sponsor to proceed with realising the benefits associated with the investment, while realising an attractive yield for the fund. 60% debt funding (split 50/50 between EIB and commercial banks) at a blended interest rate of 5% would leave an equity funding requirement of 35%. An alternative structure could involve debt funding (from a UDF) at low interest rates, backed by specific electricity and heat sales contracts. This would have a consequential impact on the other funding arrangements for the project. A 10-year, indexed linked heat supply agreement for €300k pa could support ca €2.5m in debt funding at 3% pa.

The impact on the Equity IRR for the project was analysed against the two main input variables; the forecast revenues over the life of the project; and the forecast operating costs. It shows the variations of equity internal rate of return to equity investors based on these two variables. The intervention of a financial instrument means that the project has the potential to proceed thus realising the benefits and generating an acceptable return to all shareholders. A relatively small tranche (5%) of mezzanine debt at a yield of 12% could improve the base case equity returns by ca 1.5%, a small increase, but potentially sufficient to entice additional equity investors. The sensitivity analysis shows attractive returns and under the scenarios tested, a positive IRR is achieved, thereby meeting the Jessica requirement to recycle its capital.

Figure 5.2: Illustrative Financial Structuring of Project

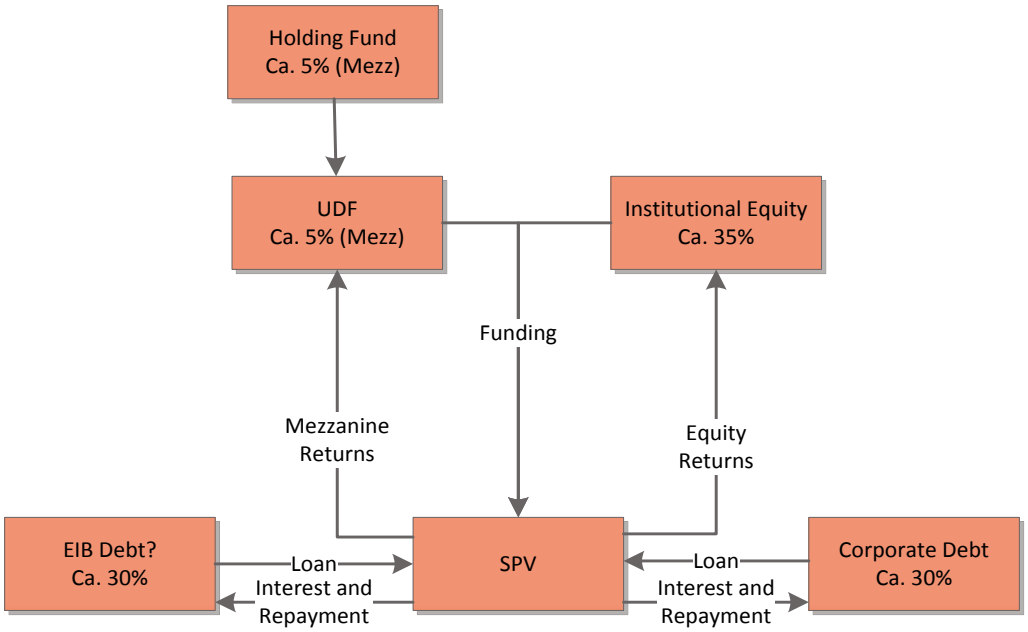


Table 5.4 provides an assessment of the project from a technical perspective against six criteria. The project is at pre-planning stage and required certification is yet to be achieved. Drafts CERs for two designs have been obtained. The technology proposed for the CHP plant (wet/green fuel) allows for increased efficiency and generation of additional thermal output through harnessing of condensation of flue gasses. Further data would be required for a detailed assessment. The CHP district heating technology is scalable and can be easily replicated in other locations. The fuel for the plant can come from variety of sources and a network of suppliers has been identified. There is a significant number of Biomass Plants projects planned throughout the country and the ability of competing plants to secure sustainable fuel supplies (and the ability of the supply market to meet the potential demand) is a risk. The ability to burn many types of wet fuel and the supply of forestry residues to the plant from forestry within a radius of 100km of the plant reduces the supply risk. The project sponsor is investing in a new efficient district heating network. Capital expenditure for the district heat network has been factored in and risk is reduced by the phased rollout of the network in response to market demand and new sales contracts. The project requires mechanical and electrical equipment to be installed in each residential and industrial unit. SEAI grants may be available with respect to this with payback expected to be 2 years or less based on heat sales per Kwh at 20-25% below gas prices and higher rates of discount for industry with 24/7 demands as off-peak savings are higher.

Table 5.4: Technical Assessment of Project B

Criteria	Risk
1. Programme	**Medium**
2. Technology and Design	**Low**
3. Cost	**Medium**
4. Statutory Compliance	**Medium**
5. Site	**Low**
6. Environment	**Low**

5.4 Project C: Waste-to-Energy

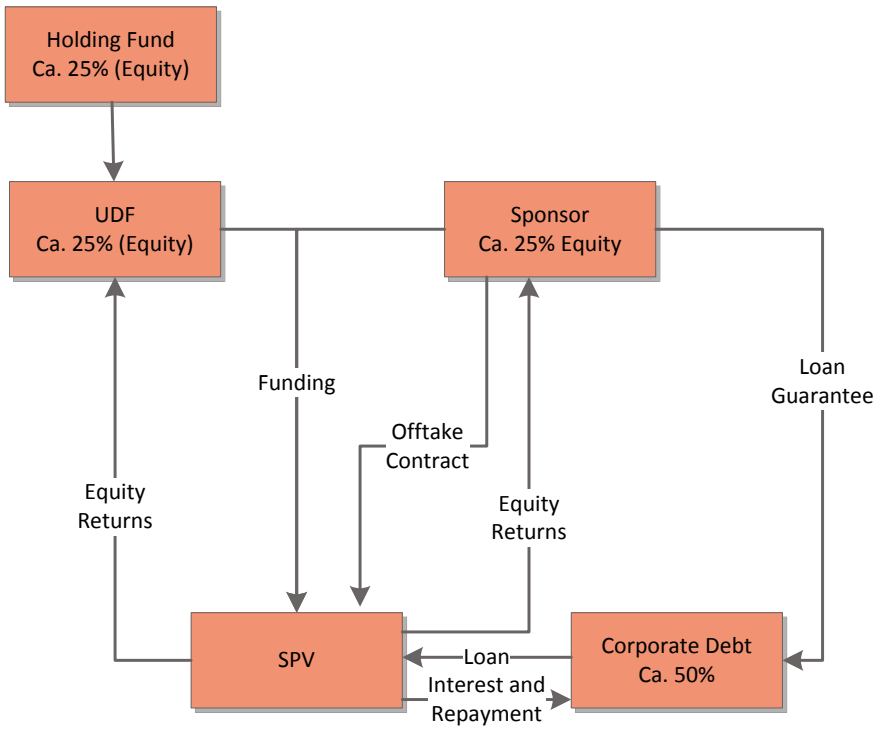
The purpose of this project was to develop an Anaerobic Digestion system to handle 40,000 tons of waste and generate carbon neutral electricity. Table 5.5 summarises the projects fit with the European Commission's Position Paper and Europe 2020.

Table 5.5: Fit with Position Paper & Europe 2020

Position Paper	Investment Purpose	Europe 2020	Thematic
Resource Efficiency	Development	Sustainable Growth	Supporting the shift towards a low-carbon economy in all sectors;

The revenue model of the project is the sale of electricity generated from the plant, at the agreed Refit rate of 14c per kwh. The gate fee revenue is assumed to compete against current landfill tax rates of €75 per tonne. The business case for this project indicates that it is financially attractive. The constraint for this project is that the project sponsor is reluctant to commit to the full equity requirement for this project given a previous financial shock. Equity capital provided by the UDF could bridge the funding gap and encourage the project sponsor to proceed with realising the benefits associated with the investment. The SPV, when adequately funded, will be able to provide the necessary security for the corporate debt. The project sponsor is flexible on how the third party equity capital would be invested and the allocation of returns. Other contractual supports may be available for the funding.

Figure 5.3: Illustrative Financial Structuring of Project



The impact on the Equity IRR was analysed against the two main input variables: the forecast revenues over the life of the project; and the forecast operating costs. It shows the variations of equity internal rate of return to equity investors based on these two variables. The intervention of a financial instrument means that the project has the potential to proceed thus realising the benefits and generating an acceptable return to all shareholders. The sensitivity analysis shows attractive returns and under the scenarios tested, a positive IRR is achieved, thereby meeting the financial instrument requirement to recycle its capital.

Table 5.6 provides an assessment of the project from a technical perspective against six criteria. The applicant has obtained planning permission for the project, and an IPPC (Integrated Pollution Prevention Control) licence application has been submitted to the EPA (Environmental Protection Agency). The design provides synergy and enhances the company's existing capabilities which include C&D (Construction and Demolition) and RDF (Refuse Derived Fuel) plants. The by-product of the Anaerobic Digestion can be sold as a fertiliser.

Table 5.6: Technical Assessment of Project C

Criteria	Risk
1. Programme	Low
2. Technology and Design	Low
3. Cost	Low
4. Statutory Compliance	Medium
5. Site	Low
6. Environment	Low

5.5 Project D: Innovation

The purpose of the project was to develop a vacant site into a recognised innovation hub focused on internationally-recognised, hub for research-active Cleantech firms in ICT and Life Sciences sectors.

Table 5.7: Fit with Position Paper & Europe 2020

Position Paper	Investment Purpose	Europe 2020	Thematic
Innovation	Development	Smart Growth	Strengthening research, technological development and innovation;

The revenue model for the project is rental income and service charges from the letting of office space. The business case for this project indicates that it requires funding for the Phase 1 development to fund the initial 4-year investment requirements and start-up losses. In addition, another organisation would provide support by funding all capital expenditure for the refurbishment of one of the buildings and development of 250 car-park spaces. Capital provided by the Holding Fund (HF) allows the UDF to lend to the project on favourable terms. The favourable terms can be transferred to the project via the UDF to reduce the subsidy required for the project from the project sponsor and encourage them to proceed with realising the benefits associated with the investment. A 32% loan for the project at a 3% rate of interest would reduce the requirement for project sponsor funding. The project sponsor would require separate donor funding to fund their element of the investment, and this has not yet been secured.

The impact of the Equity IRR for the project was analysed against the two main input variables: the level of the grant, or subsidy for the project to be provided by the project sponsor through donor(s) funding or other capital grants; and the rate of interest to be charged on the UDF loan. It shows the variations of the residual return based on these two variables. The use of a financial instrument reduces the amount of the public subsidy required. The provision of sub-market financing terms (interest rate of 3%) inevitably gives rise to considerations of State Aid, which must be addressed. Other possible variables to maximize project funding could include getting contractual underpinning for some of the project income streams.

Figure 5.4: Illustrative Financial Structuring of Project

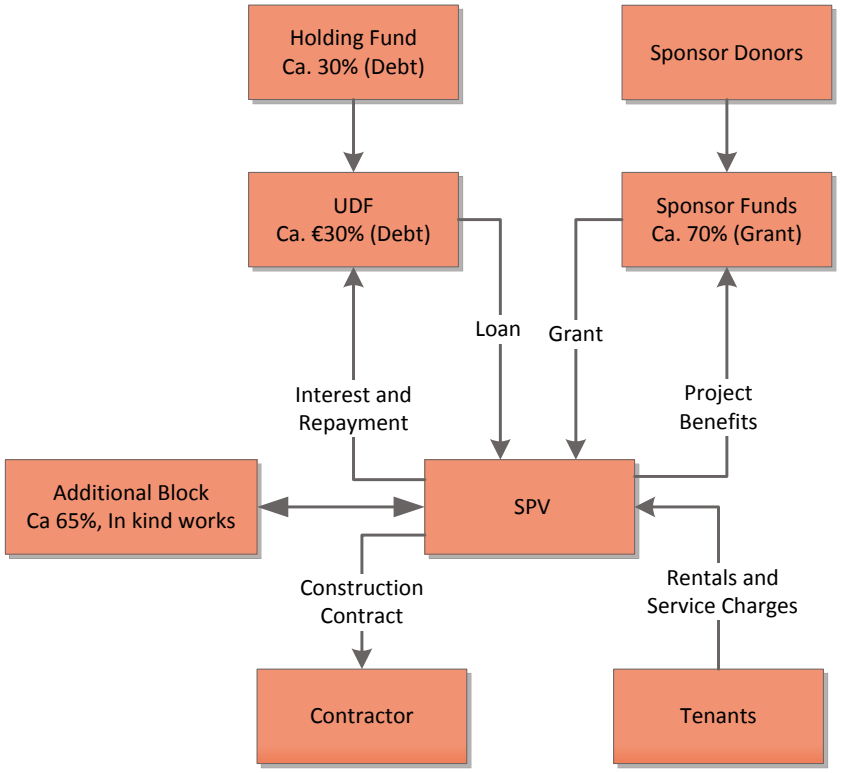


Table 5.8 provides an assessment of the project from a technical perspective against six criteria. The applicant currently occupies and has a long-term lease on the site proposed which, in addition to having submitted a planning permission application for advance demolition works, gives the programme a strong starting point. The site is well served by public transport and road infrastructure on which the diverse group of users (researchers) will rely. It is expected that the regulatory environment and processes will present little risk to the programme since the site was previously used for similar technology-based functions.

Table 5.8: Technical Assessment of Project D

Criteria	Risk
1. Programme	Low
2. Technology and Design	Low
3. Cost	Low
4. Statutory Compliance	Low
5. Site	Low
6. Environment	Low

5.6 Project E: Social Housing Retrofits

Of the 130,000 social rented properties in Ireland, there is an estimated 25,000 with low levels of energy performance (F – BER rating). Approximately 55% (15,400) of all properties are located in the greater Dublin area, Cork, Limerick, Waterford and Galway. A further 2,600 are located in counties that border Dublin with the remaining 7,000 spread across other Local Authorities. The objective of the project is to bring all of these 25,000 housing units up to the desired standard (C1 BER) resulting in improved energy efficiency, carbon savings, improved comfort levels and jobs.

Table 5.9: Fit with Position Paper & Europe 2020

Position Paper	Investment Purpose	Europe 2020	Thematic
Resource Efficiency	Development	Sustainable Growth	Supporting the shift towards a low-carbon economy in all sectors;

The revenue model for the project is rental income and net energy savings of €450 per unit assumed. A business case for this project indicates that it requires ca €10,000 in funding to retrofit each unit, with annual savings of ca €450 per unit based on an 83m² property. In addition, there would be societal benefits amounting to ca €150 pa per unit due to lower CO2 emissions. Capital provided by the Holding Fund (HF) allows the UDF to lend to the local authorities on favourable terms. The favourable terms can be transferred to the project via the UDF to reduce the subsidy required for the project from DECLG and local authorities. Total funding from local authorities of 40%, split 50:50 between the UDF loan and public subsidy. In addition, the project may qualify for a 60% EIB loan. The EIB loan could be made via the HFA, or guaranteed by the rental income stream of the HFA.

Figure 5.5: Illustrative Financial Structuring of Project

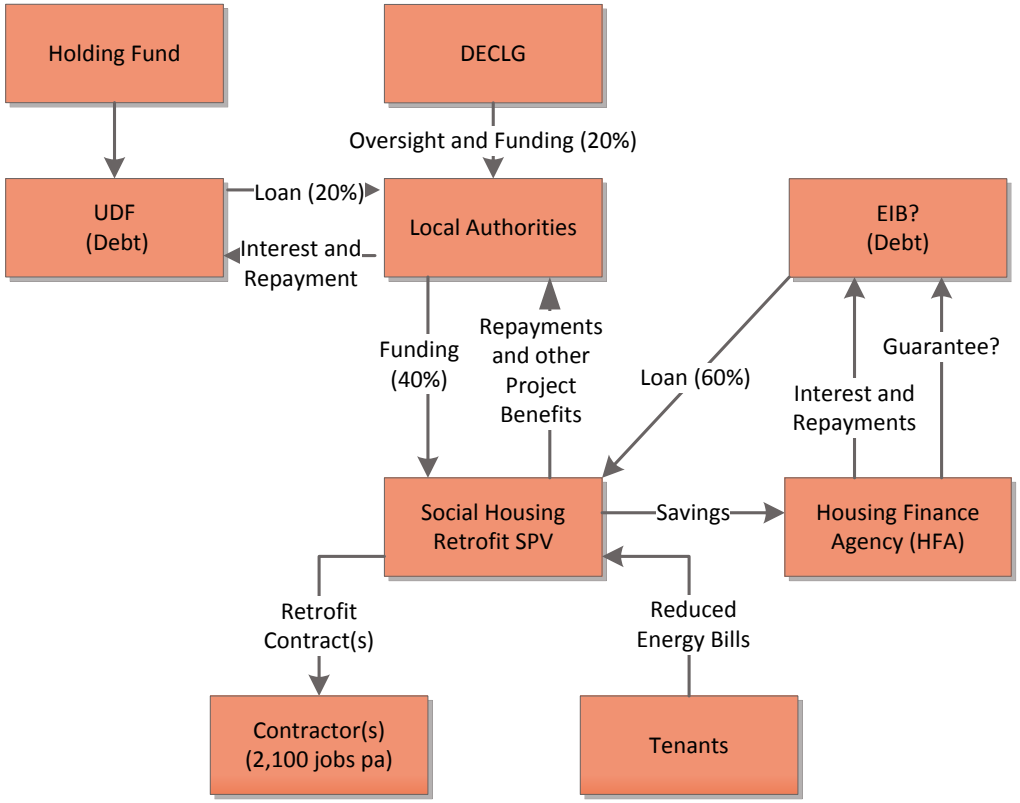


Table 5.10 analyses the impact on the Equity IRR for the project against the two main input variables: the level of the grant, or subsidy for the project to be provided by local authorities through capital or other grants; and the rate of interest to be charged on the UDF loan. It shows the variations of the residual return based on these two variables. The use of a financial instrument reduces the amount of the public subsidy required. The provision of sub-market financing terms (interest rate of 3%) inevitably gives rise to considerations of state aid, which must be addressed. Other possible variables to maximize project funding could include getting contractual underpinning for some of the project income streams.

Table 5.10: Sensitivity Analysis on Equity IRR

Sensitivity analysis on Equity IRR

		Grant Sensitivity				
		24.00%	22.00%	20.00%	18.00%	16.00%
Interest Rate Sensitivity	2.0%	6.4%	4.8%	3.2%	1.7%	0.2%
	2.5%	6.0%	4.3%	2.8%	1.2%	-0.2%
	3.0%	5.5%	3.9%	2.3%	0.8%	-0.6%
	3.5%	5.1%	3.5%	1.9%	0.4%	-1.1%
	4.0%	4.7%	3.1%	1.5%	0.0%	-1.5%

Table 5.11 provides an assessment of the project from a technical perspective against six criteria. The structure of the programme allows for very flexible delivery strategy with projects being staged and prioritised as finance becomes available. It is possible to manage the programme efficiently through Housing Finance Agency which has close links with local authorities and other Government bodies. The technical detail for base specification is applicable to buildings with cavity walls (newer buildings). For older buildings it is likely that external insulation will have to be used which would result in creased technical and regulatory complexity (and resulting cost).

Table 5.11: Technical Assessment of Project E

Criteria	Risk
1. Programme	Low
2. Technology and Design	Low
3. Cost	Low
4. Statutory Compliance	Low
5. Site	Low
6. Environment	Low

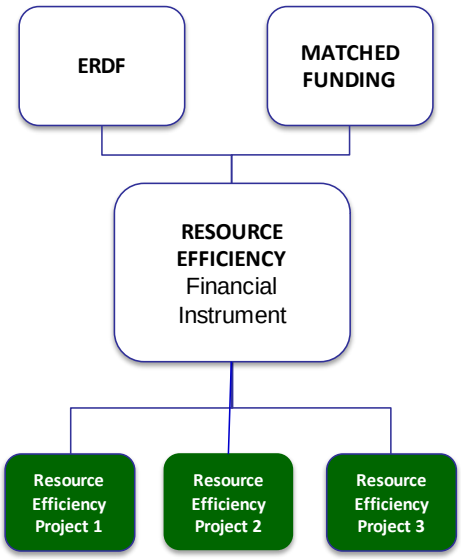
6. Implementation of Financial Instrument(s)

6.1 Options for FI Structure

Where possible, more than one financial instrument should be selected with a view to producing the best possible leverage effects for scarce public resources and for the involvement of the private sector. However, there is no specification as to the number or type of UDFs that should be set up within a financial instrument initiative. Considerations with respect to the structure of the financial instrument should take into account two parameters; 1) the geographic scope of the fund; and 2) the thematic scope of the fund. In this section, we provide three options for consideration. Please note that a Holding Fund is optional in each of the below. We consider the Holding Fund in more detail below.

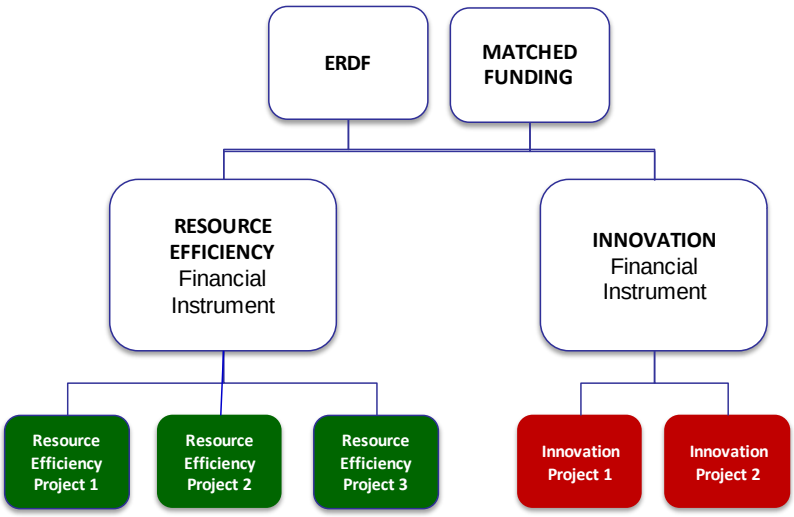
Option 1 involves the implementation of a single UDF structure that would fund predominantly Resource Efficiency projects. A single UDF may serve to facilitate set-up and ensure economies of scale and hence the leveraging of private sector investment. However, a single UDF does not respond to the demand identified in this project with respect to Innovation related projects. Figure 6.1 provides an illustration of this structure.

Figure 6.1: Option 1 - Single National UDF focusing on Resource Efficiency



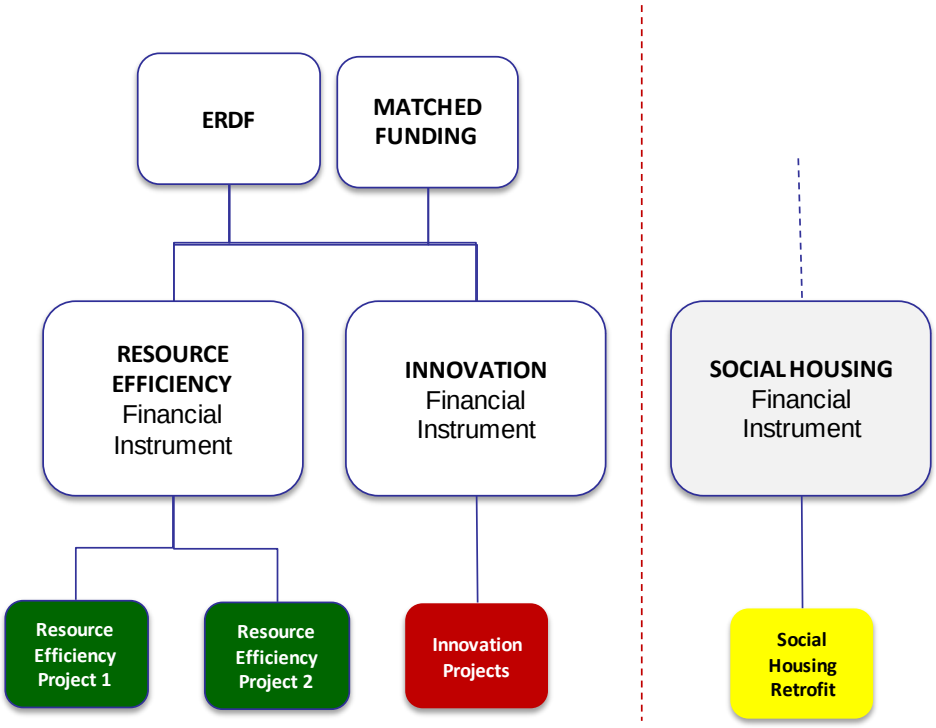
Option 2 involves the implementation of two UDFs thematically focused in order to address the demand identified during this project e.g. Resource Efficiency and Innovation. Both UDFs are nationally focused. The specialisation of the UDFs responds to the different risk profiles of Resource Efficiency and Innovation related projects. Specialisation also enables expertise to be developed by the Fund Managers and may be attractive to private sector investors.

Figure 6.2: Option 2 – Two National UDF focusing on Resource Efficiency



Given the relative size of the Social Housing Retrofits, it may be appropriate to establish a separate financial instrument for investment in this area. A separate financial instrument could exist alongside either Option 1 or Option 2. Figure 6.3 illustrates this potential structure alongside Option 2. As we point out below in Section 6.3, Social Housing Retrofit minimum funding requirement is approximately 45% of the total Resource Efficiency funding requirement. As such, it is recommended that a separate financial instrument is established for Social Housing Retrofits. For a Social Housing Fund there is also the option of allocating a portion of Structural Funds which would be eligible to finance energy efficiency retrofitting of social housing.

Figure 6.3: Option 3 – A Separate Social Housing Retrofit Financial Instrument



pwc ARUP

6.2 Holding Funds

A Holding Fund is a fund set up to invest in more than one UDF. Whilst a Holding Fund is not mandatory for the implementation of the financial instrument, there are several benefits for Member States in having one (see Table 6.1).

Table 6.1: Advantages in setting up a Holding Fund

Advantage	Description
Expertise	• If the Holding Fund is managed by the EIB or other experienced Holding Fund manager, it enables access to lessons learned through the establishment and operation of other Holding Funds and financial instruments. The EIB operates on a not-for-profit basis and currently acts as a Holding Fund on a cost recovery basis for Managing Authorities.
Independence	• Independent third party involvement in the development of governance structures, investment criteria and the selection of UDFs can be particularly useful to ensure the most appropriate structures are established.
Income	• Interest can accrue within the Holding Fund given that funding is drawn down at the Holding Fund level as a cash transfer increasing the amount of funds available. If the size of the fund established is significant this may provide additional funds.
Credibility	• Establishing a Holding Fund sends a signal to the private sector that funds are in place providing certainty for the private sector in the development of a more robust pipeline of projects.
EIB Relationship with the European Commissions	• In addition to the general advantages of establishing a Holding Fund, a Holding Fund provided by the EIB enables the Managing Authorities in Ireland to secure answers to queries and facilitate the development of financial instruments given the close EIB relationship to both DG Regio and DG Competition.
Time to Set-Up EIB Holding Fund	• A Holding Fund provided by the EIB does not require a public tender given the relationship the Structural Fund Regulations allow for the EIB. A template Holding Fund Agreement has been developed and has been used with a number of Managing Authorities to enable the relatively quick establishment of the Holding Fund.

The Holding Fund manager will charge a fee for the provision of services to a maximum 2% per annum of funds under management. The services provided by the Holding Fund manager are activities that would need to be completed by the Managing Authority in the absence of the Holding Fund. The activities of the Holding Fund include establishing Holding Fund governance arrangements including the recruitment of an independent Investment Committee, agreeing and implementing the overall investment strategy, assurance on UDF fund management arrangements and delivery, due diligence on potential projects and potential advisory services to the UDFs in preparing, implementing and managing investment.

6.3 Size of the Fund

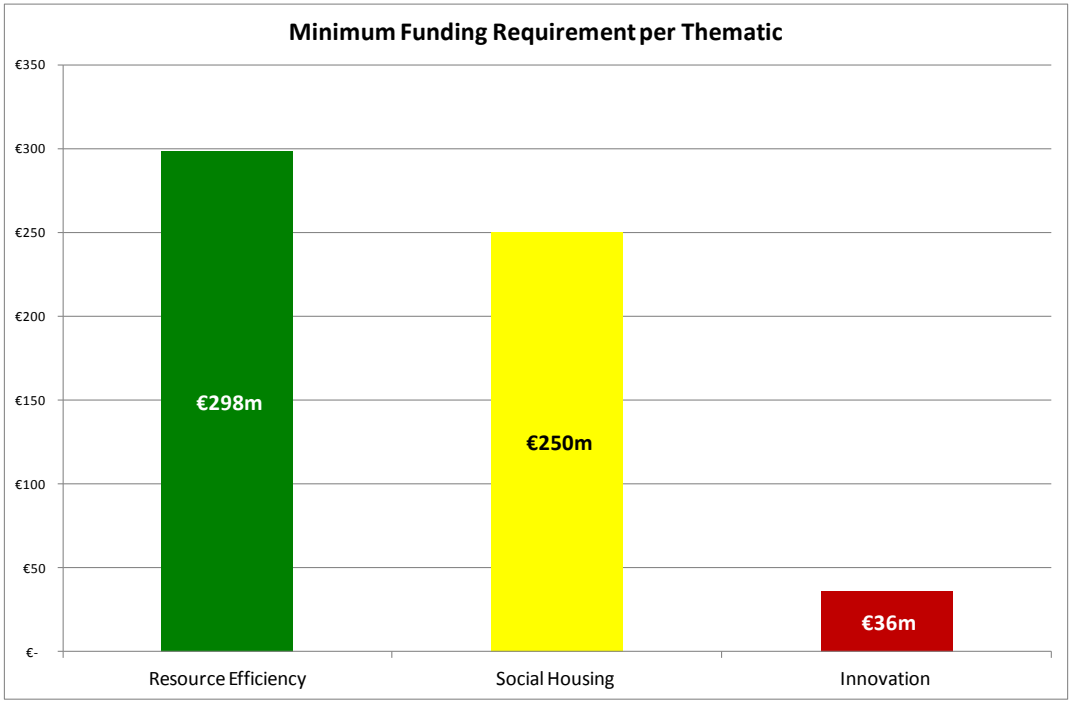
The guidance and regulations do not specify a minimum or maximum with respect to the size of the financial instrument. Table 6.2 provides a set of principles to consider in deciding the size of the financial instrument.

Table 6.2: Principles for the Size of the Financial Instrument

Principles	Description
Thematic Focus	• The size of the fund will be impacted by the number of thematic areas to be focused on i.e. resource efficiency, innovation and employment and the extent of the demand.
Targets to be Achieved	• The gap between the current status and identified target to be achieved by 2020. For example, reduction in greenhouse gas emissions, energy from renewables, increases in energy efficiency and education targets.
Matched Funds	• The availability of an equal amount of monies to provide matched funding to the ERDF
Economies of Scale	• The fund should be large enough to benefit from economies of scale as set-up and operating costs for UDFs and Holding Funds decrease inversely as a proportion of the size of the investment.
Private Sector Investment	• If additional finance is to be secured from the private sector, a larger fund is likely to be more attractive to institutional investors and private equity funds.
Private Sector Fund Manager	• A larger fund provides greater opportunity for returns. As carried interest charged by private sector fund managers is on the basis of a share of fund performance, a larger fund is likely to be more attractive.

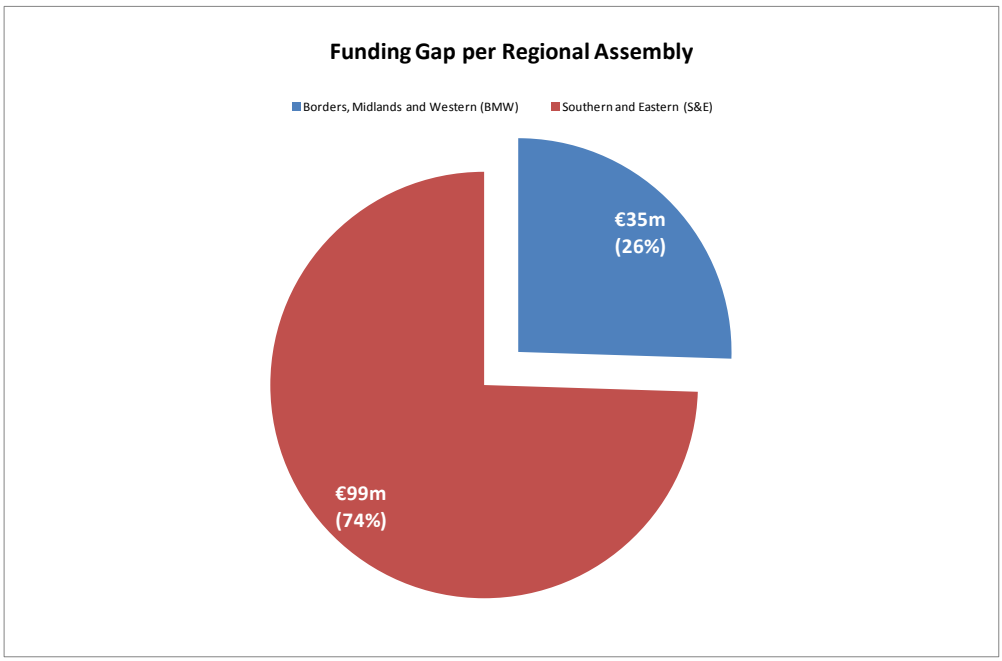
In terms of the thematic focus, from the above analysis, two major themes emerged from our analysis: Resource Efficiency and Innovation. As described above, Resource Efficiency was composed of three sub-themes; social housing retrofits, energy efficiency and waste-to-energy. Given the relative size of the social housing retrofit projects, in Figure 6.1 we have separated out the social housing projects from the other resource efficiency projects and illustrated the overall minimum funding requirement. The total minimum funding requirement, both private and public funding, for Resource Efficiency (minus Social Housing Retrofits) that met the criteria utilised in this study is €298m. Social Housing retrofits are estimated to be in the region of €250m while Innovation related projects have a funding requirement of approximately €36m. As above, it is important to point out that the initial invitation for project submissions specifically requested 'Resource Efficiency' projects which may explain the low level of projects that serve to promote innovation. Figure 6.1 serves to provide guidance on the extent of the demand for a financial instrument at a particular point in time.

Figure 6.1: Total Minimum Funding Requirement (Public & Private) per Thematic



The Project Profiling tool also requested information on the percentage public and private funding requirement that project sponsors estimated their project required. Based on the submissions received, a conservative estimate of the extent of the private sector funding provision as a percentage of total funding required is 50-60% for Resource Efficiency projects (excluding Social Housing). This results in a funding gap of approximately 40-50% or €119.2m to €149m (€134m average) for Resource Efficiency projects in Ireland. Our analysis suggests that there is a 74 / 26 funding requirement ratio between the S&E and BMW. As such, Figure 6.2 estimates the funding gap in the S&E and BMW. Assuming a similar 50-60% private sector funding of Innovation projects, a funding gap of approximately €19.8m is estimated. All the funding demand for innovation projects is from the Southern & Eastern region.

Figure 6.2: Funding Gap per Regional Assembly for Resource Efficiency



Based on our review, it appears that a €120-150m Resource Efficiency financial instrument would be a sufficient size to support implementation of the initiative. A much larger fund would be required to support the demand if Social Housing and Innovation are included. An additional €20m would be required if the Managing Authorities choose to also support the Innovation theme. Based on interviews with both equity fund managers and debt fund managers in Ireland, this size of fund is consistent with the size of funds that they manage. However, it must be noted that this is an estimate based on the submissions received as part of this project. No validation of the funding requirements specified by each of the individual projects was conducted. There is also a large variation in private sector funding at the individual project level. The 50-60% private sector funding and hence 40-50% funding gap is very much an average.

6.4 Fund Managers

As part of this project, we interviewed both equity and debt fund managers to understand their level of interest in managing UDFs if established. Preliminary views established that for equity fund managers there is sufficient expertise, experience and interest among the domestic VC community to act as fund managers for a JESSICA-type equity fund. Several fund managers have experience in investing alongside public sector sources of funding. Target sectors tend to be ICT, medical devices, life sciences, cleantech and energy efficiency with target investees being private sector SMEs. The equity fund managers would like to see a relatively high level of investment from the sponsoring authority. In terms of debt fund managers, there is also sufficient expertise, experience and interest among the domestic bank market to act as debt fund managers for a JESSICA-type debt fund. Several banks have experience in deploying EIB and EIF funded or backed debt funds. The target borrowers tend to be private sector SMEs. It should be noted that all financial instruments need to be made on a pari passu basis to be compliant on State Aid rules.

6.5 Set-Up Cost & Governance

Set-up costs include legal and financial advice in setting up the financial instrument. However, a large proportion of set up costs may be eligible to be recouped from the Holding Fund or UDF once established. Set-up costs must also be considered with respect to the lifetime of the fund which may recycle its initial capital up to two times over the period 2014-2020 without incurring additional set up costs. As such, the industry standard of setting up investment funds suggests a 1-2% of fund value. For a €100m fund, this is approximately €1m to €2m over an 18 month period. If the initial capital is recycled twice, this represents 0.5% of total funds. Set up costs vary depending on the level of skilled resource available to the Managing Authorities and the length of time taken to establish the fund(s). Appropriate governance arrangements are required at all levels to ensure requisite control, transparency and accountability in the use of public funds. If a Holding Fund is established, it is the responsibility of the Holding Fund Manager to establish appropriate governance arrangements. Typical governance includes establishing an Investment Committee / Advisory Board structure including representatives of the Managing Authorities and other key stakeholders such as independent experts from the private sector to enable appropriate levels of control and participation in the activities of the fund. The Investment Committee approves the Holding Fund investment strategy and monitors progress of the Holding Fund. Each UDF should also have appropriate governance arrangements in place. The UDFs established must demonstrate to the Holding Fund (if established) / Managing Authorities the appropriateness of its governance structures in order to access funds. The UDF should have a Management Board including representatives of the legal owners of the UDF along with expert external advisors. A committee structure may also be warranted to ensure that functions such as remuneration, appointments, audit etc. are appropriately discharged. There are no specific requirements with respect to the UDF legal structure adopted. The legal structure adopted is dependent on a number of factors including tax efficiency and robustness of governance and control.

7. Conclusions

The key conclusions and recommendations from this study are as follows:

- The implementation of a financial instrument in Ireland could provide significant advantages and a valuable source of finance to take forward projects related to strategically important themes such as Resource Efficiency and Innovation. There is considerable appetite from partners to investigate the opportunity presented by a financial instrument in Ireland.
- The invitation to submit projects identified a strong current demand for a financial instrument in Ireland particularly with respect to the Resource Efficiency thematic objective. Excluding €250m of Social Housing Retrofit demand, there is a Resource Efficiency project funding gap of approximately €120-€150m. The Resource Efficiency funding requirement is split approximately 75:25 with regard to the S&E and BMW. For innovation projects, a funding gap of approximately €20m is estimated. Based on submissions received, all the funding demand for innovation projects is from the S&E region.
- It is clear that the Project Types assessed for Ireland, appear to need some order of assistance in order to be realised (i.e. private sector market will need encouragement to invest) e.g. project subsidies, favourable loan conditions, combination of loans/equity/guarantees with grants, advisory support for project preparation and development. Other projects are financially viable and a financial instrument could help fill a market gap.
- The projects analysed represent a diverse sample of potential opportunities, at widely varying stages of development. Based on the information provided the projects appear to be technically viable and relatively robust against the assessment criteria. Further work and risk mitigation will be required as part of the development process for each project.
- Matching fund sources/private investment potential will influence the focus of any future financial instrument. Aligning financial instruments with private investment potential will also encourage leverage. The Project Types assessed as part of this project have economic benefits such as reducing energy consumption, increasing research and development/innovation facilities, job creation in addition to financial returns that are a prerequisite for financial instrument investment.
- Based on our review, it appears that a Resource Efficiency financial instrument in the order of €120-150m would be a sufficient size to support implementation of the initiative. A much larger fund would be required to support the demand if a Social Housing Retrofit project is included. As such, it is recommended that a separate financial instrument is established for Social Housing Retrofits. There is also the option of allocating a portion of Structural Funds to a wider fund which would be eligible to finance energy efficiency retrofitting of social housing. A further circa €20m would be required if the Irish Authorities choose to also support the innovation theme. Table 7.1 provides the potential line item contributions from the funding sources:

Table 7.1: Line Item Contributions

Funding Source	**Contribution**
ERDF	€60-75m
Matched Public Funds	€60-75m
Total Size	€120-150m

Appendix A

Area	Question
Project Overview	What is the name of the project?
	What organisations are behind this project?
	Who are the key stakeholders for this project?
	In what city is the project to be delivered?
	In what county is this project to be delivered?
	What regional assembly does this project relate?
	In what sector does this project relate?
	Is this project public-led or private-led?
Project Stage	Please provide a brief summary of the project
	At what stage is the business plan of the project?
	Have Project Delivery Risks been identified and a preliminary due diligence completed?
	Specify the key risks and constraints for this project
	What is the lifecycle stage of the project?
	If the project relates to an SME, what is the SME's life cycle stage?
	At what stage are the statutory permits/licenses for construction?
	What is the status of ownership of the land on which the project will be constructed?
Project Financing & Structure	What year will the initial investment occur for the project?
	What is the length of the funding period for the project?
	What is the planned start date and completion date for construction?
	What is the length of the operating period?
	What is the estimated total investment required for this project?
	Has the fundraising process started for this project?
	What types of funding (debt, equity etc.) will be utilised on this project?
	Are there contributions in-kind for this project? If so, describe.
	What percentage of funding is to be provided by private debt / equity, public debt / equity, grant?
	What percentage of total funding is to be provided by EU funds?
	If private / public debt financed, who is providing this financing?
	If private / public debt financed, what is the target rate of return?
	What security is available?
	What is the investment payback period?
	What is the Equity / Project Internal Rate of Return?
	What is the exit strategy for equity investors?
	What is the repayment strategy for debt?
Project Impacts	What is the geographic scope of the impact of the project?
	Is this project replicable in a large number of other areas of Ireland? If so, describe.
	What Europe 2020 priorities does this project serve to support?
	What European Commission objective does this project serve to support?
	What Resource Efficiency Sector does this project relate to?
	What is the Natural Capital Impact of this project?
	What is the Resource Efficiency Objective of this project?
	What are the intended outputs of the project?

Appendix B

Area	Assessment
Scope of Analysis	Project's ability to meet objectives
	Availability and reliability of cost data
	Availability and reliability of funding data
	Revenue generation capacity
	Sustainability of financial plan
	Replicability of project
Financial Analysis	Capital Costs
	Revenue Model
	Operating Costs
	Funding Plan
	Projected Cashflows
	Project IRR
	Equity IRR
	Interest Rate / Tenor on Debt
Technical Analysis	Technology / Technical Design
	Land Ownership
	Statutory Compliance
	Site – Location/Access/Traffic etc.
	Environment Issues