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Multi-Regional Assistance Project-Revolving Investment for Cities in Europe (MRA-RICE)

Final Phase 1 Report

February 2018

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List of Acronyms

CID	Central Innovation District
ED	Energy Fund Den Haag
ERDF	European Regional Development Fund
EFSI	European Fund for Strategic Investments
ESIF	European Structural and Investment Fund
FEF	Foresight Environmental Fund
FRED	Economic Development Fund
GSH	Greener Social Housing
LEEF	London Energy Efficiency Fund
MA	Managing Authority
MEEF	Mayor of London's Energy Efficiency Fund
PPP	Public-Private Partnership
RDI	Research Development and Innovation
TA	Technical assistance
VVE	Homeowner associations (*"Vereiniging van Eigenaren"*)

Glossary of terms

Equity	Provision of capital to a company through direct/indirect investment, in exchange for total/partial ownership of that company and the equity investor can have some management control of the firm and share its profits.
Guarantee	Written commitment to hold responsibility for all/part of a third party's debt/obligation/successful performance of third part's obligations in case of the occurrence of an event that triggers such guarantee, e.g. loan default.
Limited partnership agreement	Legal form that allows the partners of the agreement to have limited financial liability for the organisation's debt, implying their liability only until a certain level.
Loan	An agreement between the lender and the borrower, which obliges the lender to make available to the borrower an agreed sum of money, for an agreed period of time and where the borrower is obliged to repay that amount within the agreed period of time. The FIs facilitate the provision of loans, where banks are not willing to provide loan on terms acceptable for the borrower, offering lower interest rate and longer repayment periods or having lower collateral requirements.
Mezzanine financing	Hybrid form of finance for high risk projects that includes features of both debt and equity. There is a range of different types of mezzanine financing, e.g. subordinated loan, participating loan and convertible bonds. Tend to generate higher returns than bank lending rates and lower than equity investment returns
Microfinance	Small loans provided to support, e.g. minorities/marginalised communities with development of economic activities
Patient capital	Referred to as long-term capital with a grace period; investment where the capital is invested for long-term and no immediate capital reimbursement to be expected
Quasi-equity	Financing type that ranks between equity and debt. Quasi-equity has a higher risk compared to senior debt and a lower risk compared to equity. These investments can be structured as debt, e.g. unsecured and subordinated and sometimes convertible to equity. The associated risk return profile of quasi-equity in a firm's capital structure is positioned between debt and equity.

Progress achieved to date

Date	Key Activities	Comments
29 June 2017	Kick-off Meeting	Meeting held
21 September 2017 3-4 October 2017	Interviews in London	Completed
19-20 September 2017 20 November 2017	Interviews in Manchester	Completed
27 September 2017	Workshops in Milan	Completed
29-30 June 2017 12-13 October 2017	Interviews in The Hague	Completed
8 November 2017	Working workshop PwC - EIB	Delivered
4-5 December 2017	MRA Workshop 1	Completed
31 January – 2 February 2018	Interviews in Milan	Completed
16 February 2018	Draft Final Phase 1 Report	Submitted

1 Introduction

As part of the "Multi-Regional Assistance Project – Revolving Investment for Cities in Europe", henceforth referred to as the MRA-RICE, EIB with the support of PWC is providing advisory services to the cities of London, Manchester, Milan and The Hague. This chapter provides an outline of the objectives and the scope of the study, as well as the scope covered by this first deliverable of the study.

1.1 Objectives of the study

The main objective of the study **is to identify common technical and financing needs across cities, in order to design a multi-regional financial instrument that provides standardised solutions and delivery models to provide financing and technical support to cities urban development projects**. To achieve this, the project aims to explore the common themes of urban financial instruments across London, Manchester, Milan and The Hague, the potential demand for a range of financial products, and to identify the barriers to their implementation.

Phase one aims to identify common investment priorities and financing needs in urban development and to investigate how these could be addressed by financial instruments. This phase encompasses the delivery of Report 1 and of one Case Study per city.

Phase 2 considers the potential legal and governance issues associated with the creation of a potential multi-regional financial instrument for urban development and assesses the financing options, including opportunities to blend European Structural Investment Funds (ESIF) with financing from the European Fund for Strategic Investment (EFSI). As part of this, a series of standardised investment products (such as debt, equity or guarantees which will be further detailed in the phase 2 report) is to be developed together with a set of options for the delivery of technical assistance (TA) to the cities (such as support for assessment of needs as well as development of new financial instruments). The outputs of this phase include a report on TA needs and the final report.

Finally, Phase 3 focuses on the dissemination of the results of the study.

1.2 Objectives and scope of Report 1

Report one aims to identify common investment priorities and financing needs and provides an analysis of the key investment barriers. As part of this, it provides a high-level assessment of the scale of the investment needs required. Based on the outcomes of the analysis, recommendations for multi-regional support are formulated on the target sectors.

This report is structured as follows:

- Chapter 1 gives an introduction to the objectives and scope of the assignment;
- Chapter 2 focuses on the methodology used in the study;
- Chapter 3 provides an overview of the cities' strategies, the project pipelines and the existing financial instruments;
- Chapter 4 outlines the identified financing and technical assistance needs;
- Chapter 5 focuses on the key investment barriers;

- Chapter 6 presents the conclusions, including the key TA and financing needs;
- Chapter 7 outlines the next steps and the next deliverables.

2 Methodology

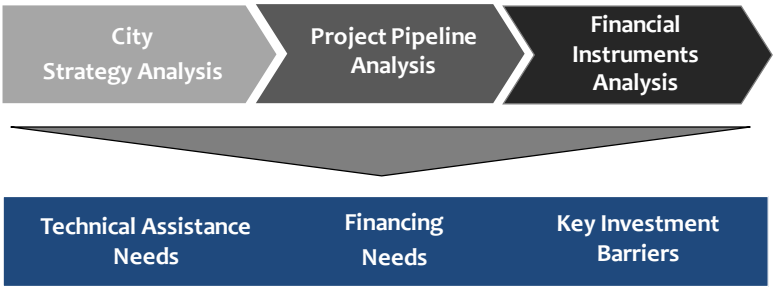
2.1 General structure of the approach

Phase 1 of this project focuses on the identification of common investment priorities, TA and financing needs in urban development projects. The methodological approach used is based on the analysis of:

- **Cities' strategies:** the cities' policy documents describing urban development strategies provide a high-level view on the cities' mid- and long- term goals, the sectors targeted for investment, the project plans developed and the approach taken to achieve these goals. The information collected in this stage serves as the basis for input for the following stage of analysis.
- **Project pipelines:** the list of urban development projects for each city provides insight on the key sectors targeted for investments, the investment amount needed in these sectors, the potential funding supply and key project partners.
- **Existing financial instruments**: an analysis of the existing financial instruments gathers information on the former and ongoing practices in the use of the city funds. The review allows identifying the demand for scaling up or setting up the financial instruments required to face the current project pipeline needs. This assessment provides an overview of the lessons learnt, best practices and potential financing needs.

For these three areas, the similarities and differences across the cities are analysed. As outlined in Figure 1, the main findings feed into the identification of the TA and financing needs, the key investment barriers and the conclusions. This also includes recommendations on targeted sectors for financial instruments.

Figure 1: Assessment of city analysis approach

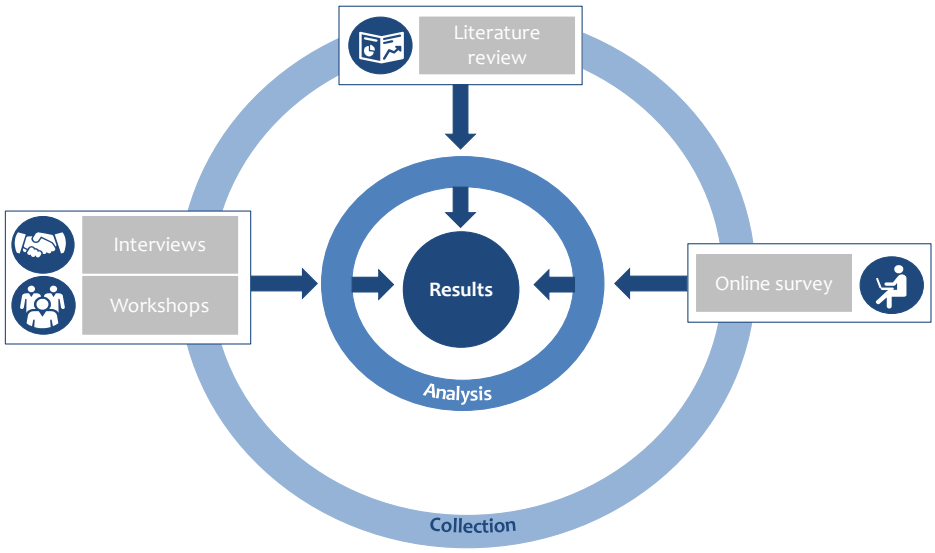


2.2 Analysis tools

To ensure that the report is compiled based on the most reliable and complete data, the information used in the study comes from multiple data sources, namely desk research, stakeholder interviews and workshops.

Data collected through desk research, stakeholder interviews and workshops are crosschecked between each other, ensuring that obtained results are based on more than one source of information. The following figure illustrates this approach.

Figure 2: Analysis approach



Desk research was conducted on selected documents, including:

- The cities' policy documentation, detailing the cities' strategies in terms of urban development;
- The documents of the projects included in the project pipelines;
- The technical and legal documentation on financial instruments provided by the cities and Fund Managers.

The list of the documentation used for the study is provided in Annex 4.

Stakeholder interviews and **workshops** were conducted with:

- Financial Institutions (i.e. commercial banks; asset management, fund management and investment management companies; regional financial institutions);
- City Administrations (i.e. economic, financial, legal, strategic, corporate estate and environmental departments; as well as climate change, transport agencies);
- Demand side representatives and field experts (i.e. research bodies; entrepreneurs; incubators; consultancies; project promoters).

The table below illustrates the summary of the conducted interviews and workshops. The full list of the stakeholders interviewed is attached in Annex 3.

Table 1: Summary of interviews and workshops

City	Number of stakeholders interviewed
London	22
Manchester	29
Milan	32
The Hague	18

Further to the interviews conducted with the stakeholders, two workshops took place with the EIB and the representatives of the four cities. The first workshop started the project, while the second allowed to share the first findings and to receive feedback from the city representatives.

3 Assessment of cities

To identify common **investment priorities**, **TA** and **financing needs** among the partnering cities, this chapter analyses the cities' strategies, their project pipelines and existing financial instruments.

- The assessment of the cities' strategies facilitates understanding of how each city shapes its strategy and which are the key sectors cities focus on.
- The analysis of the project pipelines gives an insight on the sectors most relevant in each city, the investment size and the outstanding financing.
- The financial instruments section gives information on the main aspects of the financial instruments developed in the cities of London, Manchester and The Hague.

This analysis feeds then into the identification of the main financing and TA needs, as well as the key investment barriers.

3.1 Analysis of cities' strategies

The visions of the cities define their long-term policy goals and set the direction of urban development. These long-term policy goals are included in the specific strategies of the cities that are later implemented through execution of the development plans and concrete projects.

For each city, the underlying objective is to increase their attractiveness and competitiveness, while at the same time address the most pressing challenges such as growing population, climate change and sustainable economic growth.

Below is a summary of the visions of the four cities analysed and their respective main priorities.

The Hague's vision

To leverage on the existing cluster of national administration and international agencies, The Hague is striving to become the International City for Peace, Justice and Security. As part of this, The Hague is further developing The Hague Security Delta, a leading cluster in Europe where businesses, governments, and knowledge institutions work together on innovation and knowledge in the field of cyber security, national and urban security, protection of critical infrastructure, and forensics.

Moreover, in order to diversify its economy, The Hague is also following the "City in transition" initiative, which describes the change from a city of national administration towards a more diverse economy. The Hague has also developed a Spatial and Economic Investment Strategy[1], which describes the trends in the population patterns, economic development, investment priorities and budgets, but also outlines the investment needs required.

Another key strategic document is the regional Roadmap Next Economy (RNE), an integrated economic and urban strategy, which will enable the region to respond to the challenges and

[1] The Municipality of The Hague, 'Ruimtelijk Economische Investeringsstrategie Den Haag', 2016

opportunities of the "Third Industrial Revolution" and diversify its economy.[2] The RNE, developed by the Rotterdam The Hague Metropolitan Area (MRDH), an association of metropolitan authorities of which The Hague is a partner, outlines a long-term strategy to tackle challenges around five strategic pathways relating to digital, energy, circular economy, entrepreneurship and skills development.

London's vision

London aims to become a global leader in its approach to tackle the urban challenges of the 21st century. The fundamental strategic document of the City of London – the London Plan[3] – sets out an integrated economic, environmental, transport and social framework developed to bring the city closer to achieving its vision over the years to 2036. The underpinning theme is to address the challenges of a growing population, changing economic landscape and the transition to a low-carbon economy. The London Plan can be broken down into a number of sector-related strategies, for example, the Transport Strategy[4], Housing Strategy[5], Economic Development Strategy[6] and Environment Strategy[7]. The objectives of these strategies focus on improving the quality of life for the city's residents, expanding opportunities for London's citizens and businesses, and maximising the benefits stemming from the "energy, dynamism and diversity" that distinguish the city.[8]

Manchester's vision

Manchester's vision is to become a leader in a new model of sustainable economic growth. Following public consultation, the City has put forward The Manchester Strategy[9], which defines its high-level urban development framework until 2025. In order to deliver on the strategy, the City of Manchester has compiled a number of key strategic plans that span across a number of sectors, such as transport, green and blue infrastructure, residential growth, digital, and sustainable development[10]. An integral part of the Manchester's further growth plan is to convert the city's blue and green assets into the key components of new urban developments. These "will play a critical role in establishing Manchester as a location of choice for residents, businesses and visitors". [11]

Milan's vision

Milan's strategic goal is to turn the city and its metropolitan area into a "smart city". [12] To this end, Milan fosters a framework of governance that aims to enhance its potential and develop it further

[2] The Metropolitan Area for the Rotterdam and The Hague, 'Roadmap Next Economy', 2016.
[3] Greater London Authority, 'The London Plan', 2016.
[4] Greater London Authority, 'Mayor's Transport Strategy. Draft for Public Consultation', 2017.
[5] Greater London Authority, 'London Housing Strategy. Draft for Public Consultation', 2017.
[6] Greater London Authority, 'The Mayor's Economic Development Strategy for London. Draft for Public Consultation', 2017.
[7] Greater London Authority, 'London Environment Strategy. Draft for Public Consultation', 2017.
[8] Greater London Authority, 'The London Plan', 2016.
[9] Manchester City Council, 'Our Manchester, The Manchester Strategy', 2016.
[10] Manchester City Council, 'Our Manchester, The Manchester Strategy', 2016.
[11] Manchester City Council, 'Manchester's Great Outdoors a Green and Blue Infrastructure Strategy for Manchester. Stakeholder Implementation Plan: Working together to improve Manchester's GI 2015-2018', 2015.
[12] The Municipality of Milan, 'Guidelines. Milano Smart City', 2017.

in a smart and integrated way. The city takes a comprehensive view on the meaning of what a smart city is – the digital aspect is seen as a linking factor across domains concerning public sphere, rather than a separate component. The guidelines to deliver the strategy focus on the application of smart processes across a number of thematic areas, such as sustainable urban mobility, to reduce greenhouse gas emissions and improve air quality, environment, energy efficiency, energy networks and well-being. These, in turn, relate to specific sectors, for example transport, energy and economic development. As the Italian capital of start-ups, Milan is in a unique position of becoming an incubator for new business models and smart solutions by fostering new public-public and public-private partnerships, as well as encouraging integrated projects.

3.2 Sector specific strategies

In most cases, the visions described above serve as inputs for the sector specific **strategies**. The Hague has strategies relating to spatial development, climate, energy, mobility, smart city and smart specialisation. These strategies entail defined goals, set **priorities** and planned **activities** to bring the cities closer to their objectives. Although every city has its unique vision, all of them need to address similar urban challenges and in their efforts to do so, they focus their attention on similar sectors.

As part of this project, the sectors targeted across all cities can be defined as follows:

Urban Transport Infrastructure

This sector includes investments in transport infrastructure (e.g. rail, bus networks, as well as cycling networks) aiming at improving the connectivity at city level.

Energy

This sector includes investments in energy efficiency measures, renewable and conventional energy infrastructure and energy networks.

Economic Development

This sector encompasses investments that support the launch and the development of businesses, including SMEs and start-ups. It also includes investments in the development of new commercial/ RDI facilities.

Housing and Commercial Buildings

This sector covers investments linked to the development of additional housing and commercial units.

Blue and Green Infrastructure

This sector includes investments in the development of multifunctional green infrastructure and redesign of urban spaces to increase the share of green areas. It also comprises investments concerning blue spaces in the city, such as redevelopment of the waterways, flood risk management and development of the coastline.

The table below summarises the key goals for each city across these five sectors.

Table 2: Strategic priorities of the cities by sector

	The Hague	London	Manchester	Milan
Urban transport infrastructure	• Upscale regional public transport • Support the modal shift towards cycling and the use of public transport to reduce congestion • Improve connections from the city centre and the seaside to the suburban areas of The Hague • Deliver the *Rotterdamsebaan*, to better connect the city	• Develop and improve transport: London-wide cycle network (2017-2030), rails (2017-2041), tram and DRL upgrades, bus network • Introduce *Zero Emission Road Transport*: demonstrating zero-emission technologies • Deliver better City-to-City links – *Connecting London*	• Achieve Transport Strategy 2040 • Establish a fully integrated, high capacity transport system • Increase confidence in public transport system by improving reliability • Improve connectivity between neighbourhoods • Deliver better City-to-City links	• Reorganise transport demand effectively • Improve the use of public transport services • Provide better short-term as well as long-term parking systems • Become the leading city in the testing of car sharing and peer2peer mobility
Energy	• Become climate neutral until 2040 as outlined in The Hague's Climate Plan • Connect households to geothermal district heating • Support shift towards alternative energy sources • Support investments in energy efficiency of buildings (e.g. existing WE fund for home owner associations)	• Mitigate climate change by reducing London's CO_2 emission of 60% by 2025 • Decentralise energy networks • Increase the portion of energy generated from renewable sources. A target is the production of 8550 GWh of energy from renewable sources by 2026 • Encourage innovative energy technologies in order to reduce use of fossil fuels and CO_2 emissions • Reduce river-based emissions	• Tackle climate change by developing a low-carbon economy • Help secure investment for building retrofit and low-carbon energy projects • Reduce the city CO_2 emissions by 41% until 2020 (from 2005 levels) • Embedding a 'low-carbon thinking' in lifestyles and operations of the city • Reducing the emissions from the Council's own operations	• Improve the quality of the environment, curb pollution • Improve energy efficiency • Become the European leader in the management of urban waste • Promote energy efficiency projects and reduction of CO_2 emissions by integrating smart buildings, innovative public lighting and smart metering
Economic development	• Speed up the transition to an international, competitive and innovative knowledge-based economy focusing on Peace and Justice and The Hague Security Delta • Focus on tourism development	• Become a global hub for business and encourage entrepreneurship (*Become the best city to start and grow a business*) • Become a world leader in research, talent and innovation	• Accommodate growth; aim to exceed growth targets in employment (18% from 2011-21), and in GVA (target GBP 3.7 bn) • Support business growth with an integrated value proposition and	• Foster a framework of governance suitable for a *smart city* – transfer and acquire know-how and best practices with respect to the Smart City strategy

	The Hague	London	Manchester	Milan
	• Offer attractive business climate for start-ups and SMEs through innovation quarter • Ensure the city offers high quality living standards in terms of education, public spaces, sport facilities and cultural agenda to attract international businesses	• Ensure access to world class education, training, lifelong learning and employment for all age groups • Improve health and life expectancy, social mobility and lower inequality	improve Greater Manchester international competitiveness • Leverage on science, innovation and knowledge-based economy to promote growth • Support public and voluntary sector initiatives to develop digital skills	• Become incubator for business models leveraging the position of the Italian capital of start-ups • Encourage new public-public and public-private partnerships • Promote lifelong learning to overcome the digital divide
Housing and commercial buildings	• Create districts that can adapt quickly to changing circumstances or transitions, ensuring their relevance also in 2030 • Invest in The Hague's Central Innovation District • Support transformation of vacant offices and introduction of urban farming projects to support sustainability projects • Create additional housing units	• Improve affordable living • Increase the supply of new homes: target is the average completion of 42,000 net additional homes per year • Impose appropriate regulations on sustainable design and construction to reduce environmental impact of existing urban areas • Ensure there is enough office space in the right places to meet the workspace needs	• Stimulate and reshape the housing market • Develop new neighbourhoods that offer housing and commercial spaces • Attract a population which is able to benefit from growth in the centre and attract citizens to live in this area (i.e. housing in the centre to accommodate growth with 10,000 new homes) • Revitalise town centres	• Foster, in all neighbourhoods, up to the level of housing units, a network of relationships supported by technologies, to improve active participation and monitor the needs of even the most marginalized members of society • Support infrastructure interventions for multi-use buildings, e.g. social housing
Green and blue infrastructure	• Continue to improve coastal development • Foster sustainable urban development – create more green spaces	• Develop multifunctional green infrastructure, such as urban greening by increasing a number of street trees in the public realm and promoting green roofs • Improving water quality, water use and supplies • Improve flood risk management • Improve sustainable drainage systems on streets	• Set up new funding models to support investment in green and blue infrastructure • Encourage future investment in and management of the city's green and blue assets • Increase business investment in high environmental quality • Place green and blue infrastructure, for attractive neighbourhoods	• Aim towards the participatory management of green areas • Continue re-designing urban space and parks to get full recreational enjoyment and true multi-functionality for residents, city users and tourists

Source: PwC, 2018.

Urban transport infrastructure

Efficient transport connections boost urban productivity, contribute to the quality of life of the citizens and hold potential to attract new businesses and workers. The development of new transport networks is also one of the key aspects of stimulating spatial and economic growth. Each of the partnering cities has included improvement of urban transport infrastructure in its strategy. The common emphasis is put on delivering better City-to-City links, improving connectivity of regional public transport with the city centres and supporting modal shift to cycling.

Depending on particular needs of the city, the priority focus and the approach taken to address the challenges of urban infrastructure differs. For example, Milan focuses on an integrated and accessible public transport system, outlined in the city's transport strategy "Piano Urbano della Mobilità Sostenibile".[13] This plan seeks to achieve a more sustainable mobility, social inclusion, innovation, economic efficiency and environmental quality. London's main objective is to improve its transport links and its capacity to become well-connected capital city. To achieve this goal, the city developed an action plan to manage and enhance its entire public transport to ensure it meets the existing and future demand of the city (i.e. rails, DRL, underground, over ground, bus network). Greater Manchester Transport Strategy 2040[14] objectives include delivering better City-to-City links, integrated regional centre transport and travel across wider-city region.

Energy

As each partnering city intends to reduce its carbon footprint, **energy** is another central topic in their strategies. London aims to reduce its CO2 emissions by 60 per cent until 2025 (compared to 1990 levels).[15] Manchester is targeting to become a one hundred per cent clean-energy city by 2050[16], while in the shorter run, the city aims to reduce its emissions by 41% by 2020 (below 1990 levels). The Hague plans to be carbon neutral by 2040, as outlined in The Hague's Climate Plan.[17] In order to achieve these goals cities need to turn to innovative energy efficiency solutions and alternative sources of energy. For example, by 2026 London aims to reach the target of producing 8550 GWh of energy from renewable sources.[18] Manchester wants to help secure investment for building retrofit and low-carbon energy projects. Milan within its smart city approach wants to tackle air pollution by integrating smart buildings, innovative public lighting, smart metering, and more efficient public transport. The Hague plans to connect households to geothermal district heating.[19]

Economic development

Strategies related to **economic development** are also defined for each city; they can be sector specific or integrated. Their aim is to stimulate economic growth and facilitate transition to knowledge-based economy. This includes the development of start-up incubators, research and

[13] The Municipality of Milan, 'Piano Urbano della Mobilità', 2017
[14] Transport for Manchester, 'Greater Manchester Transport Strategy 2040', 2017
[15] Greater London Authority, 'The London Plan. Chapter Five: London's Response To Climate Change', p.179. 2016
[16] The Municipality of Hague, 'The Hague's Climate Plan', 2011
[17] The Municipality of Hague, 'The Hague's Climate Plan', 2011
[18] Greater London Authority, 'The London Plan. Chapter Eight: Implementation and Monitoring Review', p.351. 2016
[19] The Municipality of The Hague, 'Progress document on the Energy and Climate Plan', 2014

development centres, but also creation of new commercial spaces. For example, "Milan Smart City" strategy fosters a framework of governance suitable for a smart city. It provides **policies** that aim to encourage new public-public and public-private partnerships in view of becoming the Italian capital of start-ups and an incubator for business models leveraging its position as the Italian capital of start-ups. In terms of economic development, Milan also aims to focus on degraded urban spaces, which can be retrofitted to host innovative economic activities, such as digital urban manufacturing, as well as social initiatives.

The Hague focuses on the "City in transition" initiative, which describes the change from a city of national administration towards a more diverse economy. The city focuses on a number of strategic projects relating to integrated city developments, transport projects and elderly care (Central Innovation District, Coastal Development, public transport accessibility, "Next generation" city districts and Living longer at home). The Hague has also set up a Spatial and Economic Investment Strategy, which describes the trends in the population patterns, economic development, investment priorities and budgets, as well as outlines the investment needs required.[20]

Housing and commercial buildings

Meeting the demand of growing population is one of the most pressing issues to be addressed by the cities. London's annual need for additional housing units amounts to 49,000, while the maximum supply capacity that could be reached is 42,000 per annum.[21] In total, over the years from 2015 to 2025 London would need to provide 420,000 new houses, a target, which, although is feasible in terms of granting planning permissions, proves to be difficult in terms of completion.[22] The Manchester Residential Growth Strategy aims at delivering 25,000 of new housing units by 2025.[23] To deliver on this target, the city links the supply of new housing units with its urban regeneration projects. Manchester also intends to stimulate and reshape the housing market, while, similarly to London, improving affordable living. Another way of meeting the needs of both residents and businesses is revitalisation and redevelopment. Milan plans to support projects aimed at the refurbishment and development of multi-use buildings, which can be the source of additional social housing units. These developments take into account the changing requirements of today's society, in particular the sharing economy, including residential buildings with shared facilities and complementary services (i.e. assistance for the elderly)[24].

The Hague's Central Innovation District objective is to promote the urban development with knowledge economy and economic innovation.[25] The city's approach in developing new urban

[20] The Municipality of The Hague, 'Ruimtelijk Economische Investeringsstrategie Den Haag', 2016

[21] Greater London Authority, 'The London Plan. Chapter Three: London's People', p.97. 2016

[22] Greater London Authority, 'The London Plan. Chapter Three: London's People', p.97. 2016

[23] Manchester City Council, 'Report for Resolution. Delivering Residential Growth: Update and Action Plan 2017 – 2022', p.4. 2017.

[24] Città di Milano, 'Milano Metropoli Reale, Metropoli possibile. Piano strategico del territorio metropolitano' [2016 - 2018]

[25] The Hague Central Innovation District. Drie stedelijke milieus, één innovatief district. 2016

spaces is to ensure they are capable of quick adaptation to the changing circumstances, so that they are still relevant 2030.

Green and blue infrastructure

Strategies can also focus on less common themes, which nevertheless can be relevant for a number of European cities. For instance, Manchester developed Green and blue infrastructure Strategy.[26] The strategy aims to encourage future investment in and management of the city's green spaces and waterways. In order to maximise the benefits delivered by the green and blue assets the objectives of the strategy focus mostly on the improvement of quality, function and accessibility of parks and waterways. Green and blue infrastructure also becomes the key component of new urban developments and as such directly supports growth of the city.

Key findings

Box 1: Key finding of the city analysis

Key findings of the city analysis
• All the cities have integrated strategies for the development of their area, informed by social and economic analysis. • The priorities of the cities correspond to key urban challenges, which remain common to the cities analysed, such as growing population, climate change, and sustainable economic growth. • The cities' strategies are ambitious and informed by a strong vision for the city and its region. A good example is setting up measurable goals, such CO2 emissions reduction targets. Additional housing units supplied, number of new jobs created. • In all cases the strategy documents provide a framework for investment by the City. These frameworks create opportunities for financial instruments to be used alongside other investment programmes in infrastructure. • The strategy documents are often sector oriented. This means there is risk that there will be more challenges in delivering multi-sectoral urban development. • An example of good practice is the presence of a leading strategic document that is integrating all of the sectoral strategies. The case in point is *the London Plan* or *The Manchester Strategy*. Integrated strategies should create a framework to align sectoral teams within organisations.

3.3 Project pipeline analysis

This section aims to describe the key characteristics of the project pipelines identified and how these relate to the cities' strategies described in the above section.

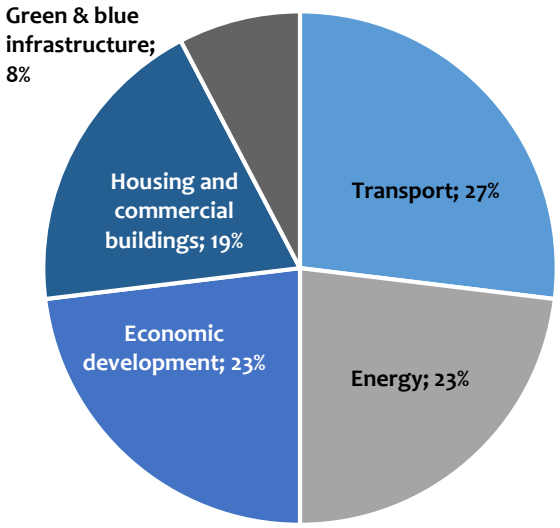
The analysis conducted in this section relies on a sample of projects provided by the cities. The amount of information provided for each project varies across the sample. The list of the project pipelines put forth by key stakeholders can be found in Annex 1.

Looking at the project pipelines across the cities, 18 projects have been analysed. Projects in transport represent 27% of the sample size and they are followed by projects in economic

[26] Manchester City Council Executive. 'Manchester City Council Report for Resolution – Draft Manchester Green and City strateBlue Infrastructure Strategy'. Item 6, 18, *2015*

development and energy, constituting each 23% of the project sample, housing and commercial buildings (19%) and green and blue infrastructure (8%).[27]

Figure 3: Distribution of the project pipeline by sector

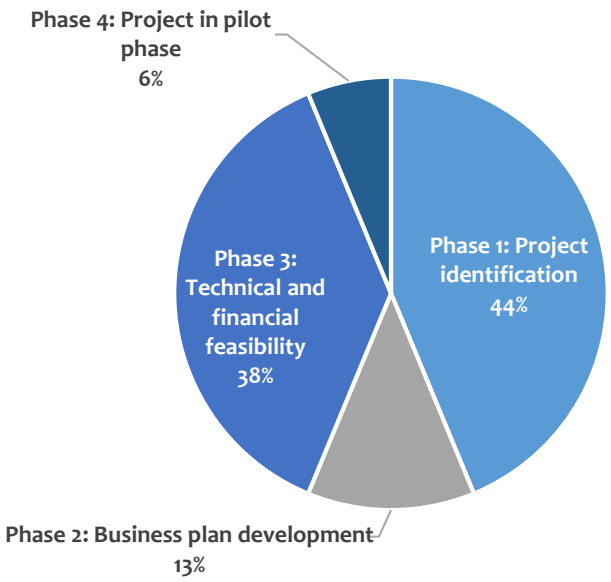


Source: PwC, 2018.

The project allocation shows that most of the sectors targeted by the cities' strategies are also represented in the project pipelines. As an example, projects in renewable energy and energy efficiency, preventing greenhouse gas emissions, are effective climate change mitigation measures. A few sectors, however, represent a smaller share than what would be expected from the number of policies focusing on these topics. For instance, the presence of projects in innovation, start-ups and the development of new businesses is limited in the current project selection, as it accounts as an additional focus only for two projects across the four cities. Furthermore, other topics, such as smart city projects, do not appear to be represented in the current selection of projects.

[27] This analysis is based on 18 projects, since the investment size was not available for all projects analysed in the project pipeline. The integrated projects, which relate to more than one sector have been considered either as urban regeneration projects, or for the sector on which they had a preponderant impact.

Figure 4: Phase of the project pipeline



Source: PwC, 2018.

In terms of development stage, it is important to note that the project pipelines provided feature a large number of early stage projects (44%). Another 13% have come as far as to develop a business plan. Only half of the projects are in the financial and technical feasibility stage or beyond.

Due to the low maturity of these projects, a financial analysis of the investment breakdown cannot be performed. Moreover, it is not possible to provide details on the type of financing (debt, equity etc.), since the overwhelming majority of these projects has not reached the investment phase.

The data collected shows that 70% of projects are specific to one **sector**, whereas only 30% are **integrated developments**. Sectoral projects seem to cover mostly the sectors of transport, energy and economic development. Integrated projects relate in particular to urban development/regeneration projects, which were put forth mostly by Manchester, The Hague and Milan. The interest of developing integrated projects comes from the idea of associating non-revenue generating activities with more profitable investments, thus attracting the private sector into financing the development. For instance, Manchester seeks to link housing developments in the urban areas, which can attract private investors, with the development of green and blue infrastructure in the development areas. New housing space could also be part of the development.

Integrated projects may concern the renovation of entire city areas or specific buildings. Their refurbishment allows to create spaces for new businesses, as well as for social and cultural activities, thus promoting social inclusion. This approach has been embraced, for example by the City of Milan (renovation of municipal markets) and the City of Hague (Central Innovation District).

The stronger representation of sectoral rather than integrated projects could be linked to the process of project initiation and development at city level, which in most cases is specific to one city department. Most city departments are organised on a sectoral basis. To develop integrated projects in these settings, this would involve a dedicated project manager liaising with at least two

or three other city departments. Difficulties might arise in terms of the budget allocation (budgeting being done on a sectoral basis) and when linked to developing integrated projects.

A number of specificities can be identified for the sectors of 1) transport, 2) energy, 3) urban development/regeneration and 4) green and blue infrastructure.

Transport

Transport projects can be stand-alone projects, or belong to wider developments. In London and Milan, the transport projects analysed relate to the extension of subway and tramway lines. In Manchester and The Hague, transport projects are mostly associated to integrated projects, aiming to improve connectivity between the economic centre of the city and these developments. **The investments required can vary greatly: for the projects pipeline analysed they range between EUR 3 m and GBP 3.6 bn.**

The interviews show that transport projects put forth by the cities outnumber the budget available for these investments. Hence, the city administrations are compelled to prioritise among them. Stand-alone transport projects are critical, due to the high investments required, the long repayment periods and the extremely limited direct revenue sources generated by the investments. Integrated projects might be developed to ensure a higher overall profitability of the investment, by associating transport projects with commercial developments. For instance, one of the main aims of the Central Innovation District, in The Hague, is to rethink the transport infrastructure in the central area of the city. Associating commercial development and energy projects allows attracting investments and ensuring the feasibility of the overall project.

Box 2: Examples of transport projects from London and Milan

Examples of transport projects from London and Milan
In Milan and London, the transport projects analysed relate to the extension of subway and tramway lines. One example from London is the extension of the underground Bakerloo line to Lewisham via Old Kent Road, with an option for a further extension to Hayes in the future. This project, like other transport investments, is capital intensive with a long investment horizon: currently, investment costs are estimated to be GBP 3.6 bn. In Milan, the extension of three subway lines aims at making peripheral city areas easier to access by public transport. The main benefits coming from these investments are non-financial, i.e. improved air quality, enhanced quality of life for the city's residents and higher attractiveness of the concerned areas. . Financial benefits, which might include a rise in the market values of the properties in the affected areas, are mostly indirect and can be difficult to monetised directly by the project (although this can be done, as in the case of the Cross Rail project in London funded also through the land value capture[28]); therefore, the investments remain largely unprofitable. However, rising property values and improved infrastructure will create further opportunities to develop, for example in sectors such as economic development and housing and commercial buildings. These secondary opportunities could be supported by financial instruments established by the City.

[28] Source: http://www.crossrail.co.uk/about-us/funding

Economic development

Projects aiming to stimulate economic development are associated with the development of business spaces, which can be used to foster innovation and stimulate the creation of new economic activities. This is the case of the *Mercati Comunali* in Milan and the Peace Room project in The Hague.

London and Manchester have also past experience with projects in economic development. For example, the Evergreen Fund invests in Manchester and provides loans to project developers to support their investment in commercial buildings and housing.

Usually, private developers develop business cases, which are revenue generating and can benefit from access to finance using the existing funding streams. However, financial instruments, such as the Evergreen Fund can be utilised to address market gaps that exist in commercial markets such as requirements regarding loan to value ratios and regional lending policies of private institutions.

Box 3: Example of economic development projects in Milan and The Hague

Example of economic development projects in Milan and The Hague

The renovation of 23 municipal markets in Milan can be considered as an example of an economic development project. These markets, built in the 1950s to host retail activities, are still used as commercial surfaces nowadays. The project encompasses not only the refurbishment of these spaces; it also aims at making them more attractive for the city's inhabitants, to ensure that the businesses continue to thrive despite the competition from high-volume stores. As part of this, the markets should host areas for cultural activities, restaurants and possibly offices, alongside retail stores. The cost of the renovation ranges between 200 k – EUR 1 m for each market, for a total of EUR 15 m for all markets[29].

The Peace Room in The Hague is a big data and artificial intelligence centre project developed by the City of The Hague in cooperation with the University of Leiden and TU Delft. The thematic focus of the Peace Room will evolve around peace, justice and security. [30] The investment needs are estimated to be EUR 5 m. This project is linked with other investments in The Hague, e.g. The Hague Security Delta, Humanity Hub and Legal Delta.

Energy

The second area of investment per number of projects, energy, includes stand-alone investments in energy that have been considered as a part of the project pipeline in London and Milan. Energy investments are integrated in urban regeneration projects in Manchester, Milan and The Hague.[31] These investments can include energy efficiency measures on public and private infrastructure, that allow to curb operational and maintenance costs in the long run and investments in conventional and renewable energy production installations. In London, investments focus on

[29] Source: project data received form the municipality of Milan

[30] Source: project data received from the municipality of The Hague

[31] Further developments are also planned in the field of geothermal energy, as mentioned during the London workshop. Currently, these projects are not part of the project pipeline analysed, thus they are not analysed in further detail.

both new conventional energy production units, renewable energy and energy efficiency for public lighting. Milan is putting forward a project for energy efficiency renovation of residential multi-apartment buildings. Energy efficiency investments in multi-apartment buildings can be hindered by complex decision making patterns in multi-apartment buildings. As an alternative, financial instruments can ease the financing of energy efficiency renovation from third-party financing, i.e. through Energy Service Companies (ESCOs).

The investment size of the projects spans from EUR 2 m to EUR 1.5 bn.

Box 4: Examples of energy projects in London, Milan and The Hague

Examples of energy projects in London, Milan and The Hague

The RE: NEW programme is a successful ongoing initiative in London that helps to make London's buildings more energy efficient.[32] It aims to curb carbon emissions and decrease energy costs for the city's inhabitants. The RE: NEW programme helps public and private organisations to implement retrofit projects, thus alleviating fuel poverty by providing the end-to-end support needed to implement the individual projects. The programme contributes to achieving the city target of a zero carbon city by 2050.

Since 2009, the RE:NEW programme has contributed to:

- the improvement of over 130,205 of London's buildings, saving annually around 46,000 tonnes of CO_2,
- retrofitting of over 603,000 homes in London, through the programme directly and/or through receipt of the main subsidies.

One of the projects implemented as part of the RE:NEW programme is the RE:FIT Project that was developed for the Royal Marsden Hospital in London in 2016 and aims at supporting the implementation of energy efficiency measures including the potential update and improvement of steam plant to combined heat and power. The investment costs of this project are estimated at the level of GBP 2 m.

Funding energy efficiency measures is one of the key priorities for the city of Milan. The city is, for instance, exploring solutions to stimulate and support investments targeted to retrofitting measures for multi-apartment buildings, where investment are often difficult due to the long and complex decision-making process of homeowner associations and the long period to repay the investment. As an alternative solution, the city is exploring the possibility of third-party financing, i.e. through Energy Service Companies (ESCOs), which would carry out the works, and repay them using the future savings from the energy bill.

The Hague is planning to shift from gas to geothermal energy for heating and hot water production in residential and commercial buildings, in order to achieve the objective of becoming carbon neutral by 2040,. The target is to connect 80,000 dwellings to geothermal heating networks by 2040. The first two geothermal sources developed so far, which were co-financed by the Energy fund, will be operational by the end of 2018 and will serve 300 residential buildings. Within the next 5 years, the municipality plans to develop three new geothermal sources and to expand the network to 4,000 additional houses. The investment required will be detailed in the business plan, which is currently under development.

[32] Greater London Authority Website. Available at: https://www.london.gov.uk/what-we-do/environment/energy/renew-o

Housing and commercial buildings

Urban development/regeneration projects that included significant development of housing and commercial buildings were identified in Manchester, Milan and The Hague. Urban regeneration allows for the development of brownfield land and underused buildings and green spaces. By recovering them, the projects aim to create new spaces for housing and other economic activities, thus improving the socio-economic situation, while making sure that environmental standards are met.

These developments are by nature multidimensional, encompassing several sectors. New commercial and housing infrastructure or the refurbishment of the existing buildings might be required, in order to create mixed living spaces, integrating residential space, services and commercial activities. To make the development of these areas more attractive and sustainable, it is crucial that these city areas integrate new transport infrastructure, linking them to the city centre. To achieve high environmental standards, green infrastructure should be planned as part of the investment. For the projects analysed, the investments in Housing and Commercial Buildings range from EUR 100 m to EUR 2 bn. A key difficulty of integrated projects is the overall cost associated with them and the complexity of the developments, since they have medium- and long-term development periods. The development phase can indeed take up to 20 years. For instance, Porto di mare, in Milan, is a project which was launched at least 5 years ago, which is still in an early development stage.

Box 5: Examples of housing and commercial buildings project in Milan

Examples of housing and commercial buildings projects in Milan and The Hague
An example coming from Milan is the development of the area located in the southeast of Milan, called *"Porto di Mare"*. The plan to transform this area into Milan's river port was developed in the past; however, the project ended before the actual development of the port had started and the land was acquired by the City of Milan. Currently, urban regeneration in this area aims to create new socio-economic activities, while improving its security and connectivity, as well as scaling-up the environmental condition of the area. The new development plans include the renovation of farmhouses, which will host social and cultural centres, as well as an innovation hub dedicated to peri-urban agriculture and the green areas will be renewed. Finally, public lighting will be installed, the street network will be renewed and the area will be connected to existing cycling paths. The City of The Hague is developing the Central Innovation District (CID) that aims to transform city's central zone into innovation and economic development hub. One square mile, located between Scheveningen and Binckhorst, or more specifically around three train stations in the city centre, by 2040 will be a hotspot for additional 18,000 workplaces and 18,000 houses.[33] By transforming the area, attracting innovative businesses and research institutions, and creating space that facilitates collaboration, The Hague aims to stimulate innovation. To achieve this goal, the city needs to invest substantially in transformation of the current transport, energy and urban planning solutions. The overall

[33] Road Map Next Economy, "RNE Project and Business Case Selection", October 2017.

Examples of housing and commercial buildings projects in Milan and The Hague

investment size is foreseen to amount to EUR 2.5 b .[34] The project has now moved from the ideation phase and is currently headed towards planning and realization. [35]

Green and blue infrastructure

Green and blue infrastructure projects were discussed in the cities of Manchester and in Milan.[36] In Manchester, the city aims to realise these projects as part of integrated developments. In doing this, the city can leverage on the revenue-generating investments (i.e. housing development), which can co-finance non-revenue generating investments in green infrastructure, or transport. For instance, the Northern Gateway project in Manchester is an example of a mixed development including housing, office and commercial spaces, alongside green areas.

Blue infrastructure investments can be undertaken as flood prevention measures, for better water management and to improve the city's attractiveness.

Box 6: Examples of green and blue infrastructure projects in Manchester and Milan

Examples of green and blue infrastructure projects in Manchester and Milan

Manchester currently focuses its attention on the urban regeneration project of Northern Gateway. The project is currently in the design phase; the city aims at getting a master plan strategy for the area and a business plan by October 2018. This initiative is composed of numerous individual projects, with green and blue infrastructure being a key part of it. Projects in blue infrastructure will aim at managing the flood risk in Manchester. There is the need to regulate the river outside the city to prevent flooding in the new neighbourhood as well as in the city centre. Regarding the green infrastructure, the city plans to plant trees in the targeted area, to promote green roofs and develop recreation areas for the city's inhabitants.

The Navigli project in Milan aims to requalify the inside water belt of the Navigli's canal system, reconnecting the city canals in the north with those in the south of Milan, limiting the risk of floods in the north and droughts in the south, and improving the attractiveness of the city's neighbourhoods, in which the canals will be opened.

Key findings

Box 7: Key finding of the project pipeline analysis[37]

Key findings of the project pipeline analysis

- The project allocation shows that city' strategies in transport, energy as well as economic and urban development are present in the project pipelines.

[34] Road Map Next Economy, "RNE Project and Business Case Selection", October 2017.

[35] Den Haag Direct, "Den Haag zoekt investeerders voor Central Innovation District (CID) plan", June, 2017. Available at: https://www.denhaagdirect.nl/den-haag-zoekt-investeerders-voor-central-innovation-district-cid-plan/

[36] This however does not mean that other cities do not have interest in the topic. For instance, The Hague is also involved in the Coastal Development project, which among others includes the planning of flood protection to counter the rise of sea levels; this project is not included in the project pipeline.

[37] The analysis conducted in this section relies on a sample of projects provided by the cities. Not on the full project pipeline.

Key findings of the project pipeline analysis
• There is a significant overlap between the types of project in the cities' project pipelines including in relation to energy efficiency, economic development and housing and commercial buildings. • While projects in green and blue infrastructure are considered as a priority for all cities, they have only a marginal share in the project pipeline. This reflects the current lack of available funding products to support this type of project. • There are more sector-oriented projects compared to integrated ones. This is linked to the initiation and development process of the projects at the city level. • The maturity of projects varies among cities and sectors. The majority of the projects analysed are in the early stage. • In addition, it is understood that where a city has an established financial instrument, its project pipeline is managed by the Fund Manager and therefore has not been included in this exercise.

3.4 Existing financial instruments

The cities' strategies and the project pipeline analysis presented in the previous sections have provided an overview of the key sectors targeted for urban development. The current section focuses on the financial instruments developed in the cities analysed. While this section describes the main takeaways from the analysis, an overview of these financial instruments can be found in Annex 2. London, Manchester and The Hague have former and ongoing experience with **public city funds**. While the City of Milan has not developed any public city funds so far, other financial instruments were put in place at regional[38] and national level. This analysis, based on a selection of the successful city funds, aims to outline the cities' experience with financial instruments.

Overview of the existing financial instruments

In particular, the cities of The Hague, London and Manchester have all successfully implemented financial instruments that use ERDF to establish urban development funds, initially under the JESSICA initiative and subsequently in the 2014-2020 programming period. Financial instruments use ESIF resources to develop financial products such as debt, guarantees, equity and other risk-bearing mechanisms, which can be complemented with technical support, interest rate subsidies, or guarantee fees subsidies. These financial products are implemented to support economically viable projects promoting EU policy objectives.[39]

Financial instruments tend to respond to market failure associated with local lending restrictions that means capital is not otherwise available to fund schemes. For example, banks may impose limits to the amount of capital invested in projects, or the region and take a risk averse approach in terms of requirements for pre-lets. An overview of the ERDF-funded city financial instruments is provided below.

[38] Lombardy's regional funds focus mostly on financing social housing development projects in Milan and other cities of the region.

[39] DG REGIO, "Financial instruments in Cohesion policy". Available at: http://ec.europa.eu/regional_policy/en/funding/financial-instruments/

Table 3: List of ERDF-funded city financial instruments

City	Fund name	Type of FI	Fund size	Thematic focus
The Hague	**Energy Fund (ED) – HEID HF**	Debt, guarantees, equity	EUR 11.4 m	Renewable energy, energy efficiency
The Hague	**Economic Development (FRED) – HEID HF**	Debt, equity	EUR 14.3 m	Economic development
The Hague	**Homeowner associations (VVE) – HEID HF**	Debt	EUR 8 m	Energy efficiency, housing
London	**London Green Fund I (LEEF, GSH, FEF)**	Debt and Equity	EUR 420.4 m[40]	Energy efficiency, housing, waste
London	**Mayor of London's Energy Efficiency Fund**	Debt and Equity	EUR 450.8 m[41]	Energy efficiency, renewable energy, decentralised energy in buildings
London	**Circular Economy Fund**	Debt and Equity	EUR 112.7 m[42]	Economic development, including Innovation and SMEs
London	**MMC London Fund**	Equity	EUR 18.2 m[43]	Economic development, including innovation and SMEs
Manchester	**North West Evergreen Fund I**	Debt	EUR 71 m[44]	Housing and commercial buildings, regeneration projects
Manchester	**North West Evergreen Fund II**	Debt and Equity	EUR 61.2 m[45]	Research and Innovation or Low Carbon
Manchester	**Northern Powerhouse Investment Fund**	Microfinance, Debt and Equity	EUR 544.2 m[46]	Economic development and SMEs

Public financial instruments are designed to finance strategic projects contributing to the achievement of the goals set by the public sector, which face difficulties in accessing private financing due to their high-risk profile or long-term investment period.

[40] Exchange rate dated on 31 Dec 2008: 1.0342 as quoted by Bank of England
[41] Exchange rate dated on 31 Dec 2017: 1.1270 as quoted by Bank of England
[42] Exchange rate dated on 31 Dec 2017: 1.1270 as quoted by Bank of England
[43] Exchange rate dated on 31 Dec 2014: 1.2841 as quoted by Bank of England
[44] Exchange rate dated on 31 Dec 2010: 1.1670 as quoted by Bank of England
[45] Exchange rate dated on 31 Dec 2015: 1.3605 as quoted by Bank of England
[46] Exchange rate dated on 31 Dec 2015: 1.3605 as quoted by Bank of England

Funding

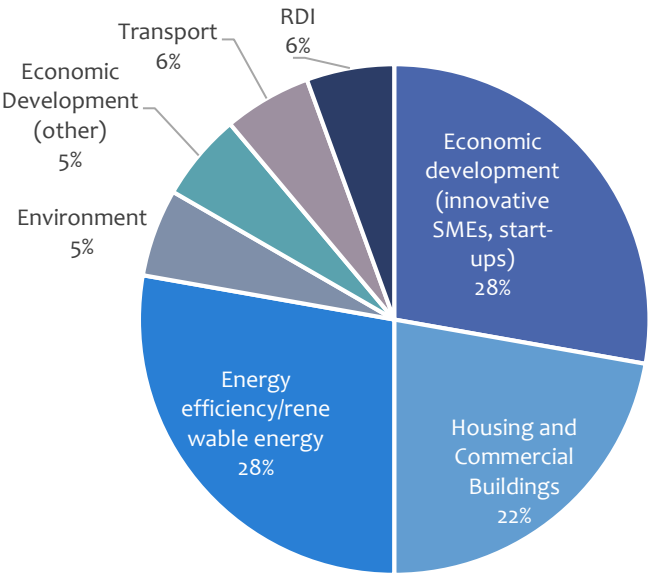
In most cases, the city funds are financed through European Structural and Investment Funds (ESIF), mostly the European Regional Development Fund (ERDF). ESIF have the advantage to be able to intervene with a higher risk profile and at an early stage of the fund development, where the economic model of the fund has not been tested yet. This allows the fund to start their activities, prove the success of the financial model, and attract private investors, who can contribute taking on lower risk profiles.

The analysed sample is built up of funds that are mostly derived from the public sphere. Public financing from European, national and local level is mobilised to boost the investments in the priority sectors. The contribution of the private sector to these funds varies across cities. In The Hague, all funds analysed are financed exclusively by public investors. In London, private investors are involved in each fund creation and their participation at the fund level varies from 10% to 60% of the fund size. In Manchester, private investors, who are present at the North West Evergreen Fund I and the Northern Powerhouse Investment Fund, invest directly into the projects; their contribution to the funds do not exceed 20% of the fund size.

Sectors targeted

The analysis shows that most of the city funds are sector specific and that big funds have few sectoral targets. This allows the investors to have an investment strategy, which is well adapted to the specificities of each sector. The thematic focus is predominantly on economic development, in particular innovative SMEs, start-ups and digital (27.8%), energy efficiency and renewable energy (27.8%), as well as housing and commercial buildings (22.2%). Moreover, single funds target also other sectors, such as transport, environment (waste management), as well as research, development and innovation (5.6%).

Figure 5: Sector focus of analysed financial instruments



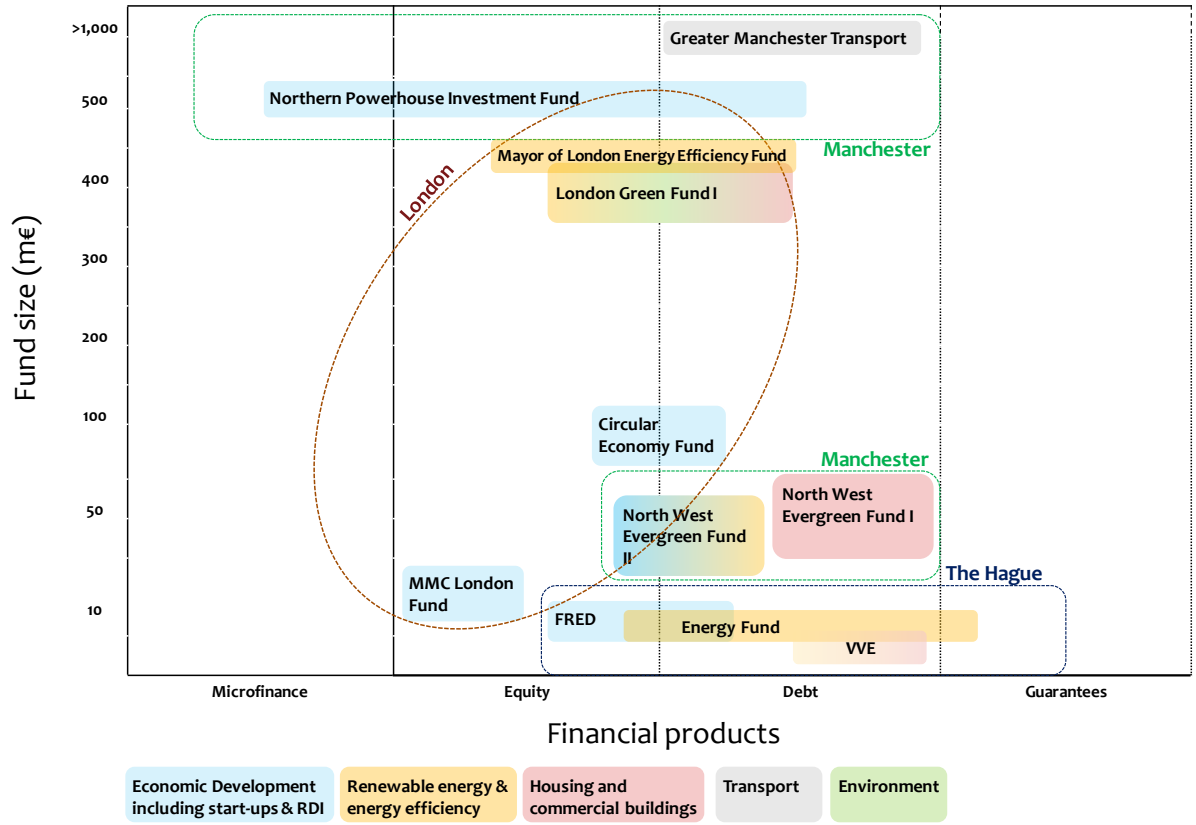
Source: PwC, 2018.

The analysis has provided evidence that financial instruments' operations, at least initially, are better focussed more narrowly – to benefit from the sector expertise of the Fund manager and City officers supporting the operation by developing the pipeline.

Products

The products developed for the ERDF city funds encompass debt, guarantees, equity and microfinance. For one fund, the financial products are also complemented by grants. The figure below provides an overview of the ERDF city funds, their size, the sectors targeted and the financial products they offer.

Figure 6: Overview of the ERDF city funds



Source: PwC, 2018.

Transport

The Greater Manchester Transport Fund is shown on the chart above. The fund does not operate as a financial instrument but is instead a combination of national government grant and local borrowings held by the Greater Manchester Combined Authority. This funding is then used by the authority to fund transport infrastructure projects delivered directly by the authority or other public bodies on its behalf. The Hague taps into a similar structure at regional level, i.e. via funding provided by central government and managed by the Vervoersautoriteit (transportation authority) at the level of the Metropolitan Region Rotterdam The Hague (MRDH).

Energy

Energy investments can be financed through debt and equity. However, for the Energy Fund in The Hague (ED) and the London Energy Efficiency Fund (LEEF) in London, the experience has been that debt is the main source of funding for investments in this sector. ERDF funded financial instruments to support Energy Efficiency have been established by London (Mayor of London Energy Efficiency Fund), The Hague (ED) and Manchester (North West Evergreen Fund II) under the 2014-2020 programming period.

In addition, although more related to the Circular Economy than Energy, waste management investments in London were secured by the London Green Fund I over the period 2009 and 2015.

Economic development

Figure 6 above shows that microfinance and equity support early stage businesses and SMEs seeking to scale-up from the funds in London and Manchester, as well as the Economic Development Fund (FRED) in The Hague.

The Circular Economy Fund in London and the Economic Development Fund (FRED) in The Hague secure access to both **debt and equity**. In this case, equity products are critical to finance innovative start-ups with higher risk profiles and the debt allows additional financing to be provided to existing businesses without affecting the businesses' owner structure. This type of product can be used to bridge market failures at both sides of project investment. For instance, as part of FRED, financing was granted to a building developer, as well as to the business owner who purchased the property developed.

The Northern Powerhouse Investment Fund in Manchester provides a full range of debt and equity products and completes its offer of financial products with microfinance products for SMEs.

The Greater Manchester Transport Fund is the only fund focusing on transport investments. The public projects can apply for loans and grants.

The North West Evergreen Funds I and II provide debt finance to developers to support the delivery of workspace and specialist facilities, including for research, development and innovation.

Housing and commercial buildings

The North West Evergreen Fund I targeted urban development through debt finance and its portfolio of investments includes several commercial buildings. As the initial wave of investments are repaid its investment strategy has been extended to allow it to invest the reflows in a wider range of projects, including housing and commercial buildings. In The Hague the Homeowner Association (VVE) fund finances loans to homeowner associations for energy efficiency refurbishment. This is the case of Milan, social housing is financed partly through regional ethical funds ("Fondo Immobiliare di Lombardia Comparto Uno e Due"), thanks to the contribution of impact investors (i.e. foundations, Cassa Depositi e Prestiti and the Lombardy Region).

Green and blue infrastructure

Although the North West Evergreen Fund 1 and 2 can fund infrastructure and have previously funded the provision of estate roads and services as part of a commercial development, there is no specific product to meet the challenges of funding Green and blue infrastructure.

The investment size of the financial instruments varies strongly among the different cities and the funds. The funds in The Hague tend to have a relatively smaller size, comprised between EUR 8 m and EUR 14 m, whereas the funds in London and Manchester range from GBP 14 m (EUR 16 m) to GBP 400 m (EUR 460 m).

Governance

The **Governance** arrangements for the funds are similar among the analysed cities' ERDF financial instruments. The Hague, London and Manchester all outsource fund management to external Fund Managers, who have a specialised knowledge in this field. This requires the cities to develop the competencies required to undertake the early stages of the fi-compass life cycle[47] (ex-ante assessment, investment strategy, design and selection of Fund Manager) and the capacity to manage the relationship with the Fund Manager during the operation.

The Fund Managers are independent when it comes to investment decisions, which ensures that these are taken based on the investment criteria agreed upon, minimising the risk of political influence. In London, having an experienced and knowledgeable holding Fund Manager has proven to be successful for building credibility early on and crowding in private investors.

All analysed funds in The Hague fall under the holding fund HEID, which was set up as a foundation, with a flexible structure in which new funds can be easily added into, whereas the individual funds operate under **Limited Partnership** agreements. Other funds coming from London and Manchester are also set up under Limited Partnership agreement. The funds set in London are then regrouped as part of a Holding Fund, which is managed by the EIB.

Manchester also manages directly a number of (non ERDF) funds which are ring-fenced blocks of finance contributed from national or local funding held by the City to provide debt financing. These funds can provide co-financing by investing alongside the Evergreen Funds (I and II).

[47] The fi-compass, led by the European Commission in partnership with the European Investment Bank, provides horizontal, multi-regional and programme-specific assistance regarding the development of FIs. To ensure comprehensive and efficient process, the fi-compass developed a four step action plan for the design, set-up, implementation and winding-up of financial instruments, which serves as a reference point for the MAs and other stakeholders. The design phase includes the ex-ante assessment, selection of the bodies responsible for the implementation of FIs and the signing of funding agreements. The set-up phase focuses on the development of governance and management structure. The implementation phase consists of selection and informing the final recipients, followed by disbursement of the funds and re-use of the repayments. The final winding-up phase comprises repayment of the resources and closing of FIs.

Key findings

Box 8: Key finding of the existing financial instruments

Key findings of the existing financial instruments
• For the majority of funds analysed, ESIF financing, mostly ERDF, is mobilised to unlock access to other public and private financing. • Existing funds show sector-specific orientation and are not designed to address the integrated projects targeted by the cities. • Available products are debt, microfinance, equity and guarantees. Debt, alongside guarantees, are used to finance energy and economic development projects. Equity is mostly mobilised for innovative SMEs and start-ups. Microfinance is used to finance economic development projects. • Although there are similar governance arrangements for the financial instruments in the three cities, there is very little overlap between the products offered by the funds. This highlights both how financial instruments s are a flexible model that can be adapted to local needs but also the potential to adopt products that work in one place to be applied in other places by new or existing financial instruments. • There is no product currently available that offers patient long-term capital to support capital-intensive infrastructure investments or that provides financing to projects implemented as PPPs. • External fund management allows for an independent management of the project pipeline and the investment decisions. If funds are managed by the city authority, there can be a better control of the project pipeline. • Individual funds operate under Limited Partnership agreements and can be bundled together as Holding Funds.

4 Identified financing and technical needs

The analysis of the cities' strategies, the project pipeline and the financial instruments presented in the previous chapter gives insight into the investment priorities set by the city, the concrete projects under development and the current financing options available at city level. The financing and TA needs are discussed in detail in this chapter, following the structure below:

- The first section focuses on the financing needs identified for each sector;
- The second section outlines the TA needs intervening in the different stages of the project life cycle and how the cities currently meet these needs within their organisations.

4.1 Financing needs

Based on the analysis of the financing needs identified in the cities, similarities have emerged across sectors.

Transport

Transport projects are capital-intensive investments and, in most cases, they require long-term debt instruments. These investments generate limited revenues. Hence, a grant component is often necessary to make these investments viable. Despite being the sector best represented in the project pipeline (27% of total projects), only one of the financial instruments targets these investments. As indicated by London and Milan, the financing needs for transport projects outweigh substantially the available funding. These investments are not well suited to be financed through financial instruments, due to their long investment periods and investment requirements, which, for instance, reach up to GBP 3.6 bn in the sample of projects analysed from London. Similarly, without a combination of substantial public grants, these investments are also not financially viable.

This shows that cities still look for appropriate streams of funding for their strategic infrastructure projects. Therefore, there is a need for **patient long-term capital with a grant component** to boost these investment plans.

Energy

The analysis of project pipelines shows that there is a substantial demand for financing in the energy sector (23% of the project pipeline); however, these energy projects have different income generating capacity. While renewable energy projects and energy efficiency investments generate income streams, or financial savings, these might not cover the entire investment needs of the project.

London, Manchester and The Hague have dedicated funds for energy efficiency and renewable energy, which have grown steadily in recent years. The main source of financing of these projects is debt. Hence, the need is mostly to **scale-up the existing financial instruments**, to meet the growing demand for financing (which currently accounts for 28% of the financial instruments in place, based on the total number of funds analysed in Section 3.3).

In The Hague, an increase in the fund size could unlock additional financing and increase investment size of individual projects, which currently are between EUR 100 k and EUR 1 m. To increase the fund size and to meet the growing demand, the Energy Fund in The Hague is aiming to access EFSI financing. A good example that confirms how successful the fund might be in scaling-up is the LEEF in London that managed to increase its fund size by four times in only 8 years.

Economic development

Economic development projects represent approximately 23% of the project pipeline and constitute integrated investments, although if the project pipeline of established financial instruments such as the Evergreen Fund were included, the proportion would be greater. Economic development projects can involve SMEs, start-ups and digital, as well as the development of commercial space and RDI. The analysis of the financial instruments shows that a substantial number of city financial instruments target SMEs, start-ups and digital; hence these potential beneficiaries are well served through the financial instruments developed and using established models. As there seems to be no substantial unmet demand for this sector, these projects are not the main focus of the study.

Based on the examples of projects coming from Milan and The Hague, the financing needs are associated with the renovation of buildings (mostly commercial buildings), urban regeneration (considering the area where the investment is located) and energy efficiency to address the targets of the cities to become a clean-energy city in the future. This type of investment, carried out as part of business activities, generates direct streams of revenues. With the current financing conditions, characterised by low interest rates and high liquidity, projects in the economic development sector can access market financing, mostly long-term debt instruments.

Market failures or suboptimal investment situations might however emerge because of higher-risk investments (such as where space cannot be pre-sold) or when the investment and the streams of revenues, generated from it, are apart. In this case, financial instruments can be deployed to offer higher-risk capital, mezzanine financing, guarantees or patient capital (i.e. grace periods to cover the stage when the investment does not generate revenues); moreover, advantageous financing conditions can stimulate more ambitious investments, which might involve the achievement of sustainability and social goals, alongside financial objectives.

Housing and commercial buildings

Housing and commercial infrastructure developments, constituting 19% of the project pipeline, are generally revenue-generating investments, which can be financed through commercial loans. There is an overlap between the financing needs of this sector and the Economic development sector described above. Financial instruments can help address market failures and sub-optimal investment situations through senior and mezzanine debt products.

For some types of project, such as social and affordable housing projects which could be linked to revenue generating projects (e.g. commercial spaces mixed with social housing), dedicated funds might need to be set up. These projects are capital-intensive, requiring long-term capital, existing financial instruments would not be able to address the funding requirements.

F**inancial instruments for the financing of integrated projects (that could help making the project viable financially) are currently largely missing** and could be an area of intervention for the future financial instrument.

Green and blue infrastructure

Green and blue infrastructure projects are often low-revenue (or non-revenue) generating investments, with high positive environmental and social impact. Their investment size and nature varies strongly across projects and cities. There is a need for a financial instrument that would address this type of investments. Currently, funding for these projects is mostly provided through public grants, i.e. Horizon 2020. Nevertheless, **cities are looking for funding models that could support financing of these initiatives** and they identify urban development projects as a potential for blending revenue-generating projects with projects in blue and green infrastructure.

Key findings

Box 9: Key findings of the financing needs

Key findings - financing needs
Financing needs identified across sectors are for the following sectors: • **Transport** projects, which are capital intensive and generate limited income streams, require long-term capital with a grant component. • **Energy** projects, with variable investment sizes and the possibility of generating income streams (or financial savings), are already financed through financial instruments in the three cities; the main financing need is to scale up the existing funds. In Milan, financing needs were identified for energy efficiency projects in residential multi-apartment buildings, which could be addressed through the set-up of a dedicated financial instrument. • **Economic development** projects are financed through debt and equity. Financial instruments targeting economic development were developed in two of the cities (Manchester and The Hague). In Milan, financial needs for the renovation of commercial spaces, have been also identified for the possible set-up of a new financial instrument which is currently under assessment by the city. • **Housing and commercial buildings** projects have similar investment needs to the economic development sector. Urban development/regeneration projects require long-term capital; there is currently the need to develop a financial instrument for integrated projects, allowing co-financing revenue and non-revenue generating projects. • **Green and blue infrastructure** projects are non-revenue generating investments; no financial instrument is currently available to fund these investments. There could be potential in blending such projects with revenue-generating investments.

4.2 Technical assistance needs

The analysis shows that there is a need across cities for TA at the early stage of the project life-cycle. The development of successful projects depends on the quality of the project pipeline, which itself originates from the cities' strategies. Hence, TA should address the following aspects:

1) Definition of the cities' strategies;

2) Establishment of financial instruments;

3) Project pipeline development;

4) Consolidation of the project pipeline;

5) Prioritisation and selection of projects; and finally

6) Project lifecycle.

The support required in each of these stages is presented in this section.

The Hague, London and Manchester have all set up internal teams with expertise in financial instruments to support the investment operations in the city. The approach adopted by the cities helps inform the identification of the needs for TA to support the establishment and operation of financial instruments by cities.

Definition of the cities' strategies

Strategies describe the goals of the cities in each sector. To be effective in translating these goals into a project pipeline, the strategies should give an overview of the list of key projects and possibly refer to the envisaged investment plans. Some strategies fail to achieve this aim, for a number of reasons:

In most cases, strategies have a sectoral focus. However, projects are often integrated across several sectors. Therefore, they are not presented in a consolidated way in any predefined strategy. Since their objectives and assumptions have not been predefined at an earlier stage, these projects require a longer implementation period.

The cities' strategies might not cover emerging sectors, such as digital economy, innovation and smart cities. Hence, no project pipeline can emerge for these sectors, unless it relates also to objectives set in other sectors. As a result, **TA could be implemented for the review and mapping of the cities' strategies**.

Establishment of financial instruments

The cities can develop the capacity to set up and implement financial instruments throughout the lifecycle of the financial instruments. This capacity can be developed through external TA and financial engineering programmes allied to the development of in-house staff and recruitment of specialist experts. For instance, when The Hague, Manchester and London participated to the JESSICA programme in the last programming period, they utilised significant support from the EIB, which was Holding Fund Manager in Manchester and London and carried out a major feasibility study with The Hague. In the following programme, the cities were able to lead the implementation without requiring an external Holding Fund Manager. Instead the cities used their own capacity and expertise developed during the operation of the JESSICA and other funds augmented where required by resources including the *fi-compass* platform (provided by the European Commission in partnership with the EIB) and, in some cases bilateral advisory support to help address specific issues.

The city analysis showed the importance for cities that are seeking to implement financial instruments to set up specialist units for managing the financial instruments' operations. These units should be embedded in the city's urban development departments to ensure the set up and

management of the financial instruments is embedded in the wider delivery arrangements of the city's integrated strategies for development.

A good practice that the Greater London Authority has developed is the establishment of a specialised office that gathers specialists in financial instruments and financial engineering at the city level. This office takes care of all city funds throughout their entire lifecycle, from the design phase until the termination.

Project pipeline development

Following the formulation of the cities' strategies, the development of the project pipeline means transforming the vision into concrete projects. The strategies indicate the priority sectors for investments, however, there is still the necessity to stimulate the development of projects within these sectors to attract investors.

The analysis showed that existing financial instruments through their Fund Managers had a strong pipeline, indicating that once a financial instruments is established it can generate a deal flow. The picture is more mixed when exploring how to finance new sectors not currently within a financial instrument operation.

The teams involved in the development of project pipelines, such as the financial instruments specialists, tend to focus on the sectors in which they have existing operations, for which they have a mandate. Hence, they are disconnected from the development of responses to emerging sectors. Furthermore, the cities face challenges in particular when addressing integrated projects that require interdepartmental collaboration. This underscores that communication and collaboration at city level is essential to move from strategy to its implementation.

Consolidation of the project pipeline

The interviews showed that where new financial instrument operations are being identified/considered, often cities may have lists of prospective projects, but the investment teams will not have an overview of all projects that are planned. For instance, energy efficiency projects might be under the responsibility of different departments, depending on the type of buildings.

In the city administration, project data is in most cases organised by departments, which target individual sectors. There is not a central **coordination** point for the different departments' project portfolio that would allow for the **consolidation** of the project pipeline and for the development of integrated projects. Therefore, in many cases, integrated projects are not broken down into individual investments.

Creating a project pipeline of critical size is essential to mobilise financing. Bundling the projects together helps to achieve scale effects and to improve their bankability, however the approach per department hinders the possibility to build a strong project portfolio that could be proposed to investors. In this context, TA might be used to map projects and to create project pipelines that are most attractive for investors and independently of the internal split among different departments.

For example, Manchester has used the ELENA TA facility to support the development of a pipeline of energy efficiency projects in the City. The aim of this work has (in part) been to develop a project

pipeline for the North West Evergreen Fund II which is aiming to invest in energy efficiency projects in the city.

Prioritisation and selection of projects

Prioritisation and selection criteria should be defined for the project pipeline of the city. This study shows that the prioritisation of projects is particularly relevant, since the cities had difficulties indicating which projects of the project pipeline should be considered as priority ones.

In this case, TA can be used to prioritise which projects should be implemented and in which order. To achieve this, it is key to:

- Identify the key prioritisation and selection criteria, based on the city's strategy and the available financing;
- Estimate financial and non-financial benefits of the projects, including indirect benefits;
- Understand the potential synergies among projects.
- For instance, London is using the systemic approach to map and prioritise among relevant transport infrastructure projects identified as part of the project pipeline. This integrated approach allows to quantify the benefits generated from the development of different projects in the city, taking into consideration the synergies they can achieve.

The **project selection** can then be based on defined criteria, considering relevant variables (financial and non-financial benefits, synergies among projects, tax payments, etc.) and the funding availability.

Project lifecycle

The analysis suggests that once projects are selected, the project promotors at city level might not be equipped with the relevant technical and financial expertise for the analysis required in the project initiation and design phase. Moreover, there is a lack of a specialised unit, at the city level, that is able to provide the TA expertise required to project developers. This lack of operational competences might lead to significant delays in projects developments, as well as to the overoptimistic planning. In this phase, TA could focus on developing internal capabilities, i.e. through peer to peer exchange and the skills required to manage investment programmes and innovative financing schemes. The assistance could be set up as a one-stop shop, which would have a relevant capability to navigate around the financing available, including both public and private sources.

A good practice example is the Regional Investment Platform currently developed by The Hague that aims at gathering information about financing opportunities for projects promotors. The platform builds upon existing knowledge and experience with the use of the EU subsidies, revolving funds, crowdfunding, local co-financing allocation[48], as well as regional cooperation experience with the EIB regarding local revolving funds[49].

[48] For example: EFRO/Kansen voor West Investment programme

[49] For example: Energy Fund (ED), Economic Development Fund (FRED) and the City Ports Development Fund (SOFIE).

The city of The Hague is currently establishing the one-stop shop that will map the existing financing sources. The pilot phase of this initiative will be launched in spring 2018.

In the **project initiation phase**, TA allows improving the structuring of project programmes and developing of business plans. For integrated projects, TA could also support the organisation of the internal team, made up of different departments.

In the **project development phase**, TA can be used to carry out technical and financial feasibility studies and to prepare tendering procedures, grant applications, contractual arrangements and support projects' financial engineering. Moreover, cities need to explore innovative and alternative financing approaches, such as municipal bonds or PPPs. In this context, TA can be used to:

- Review project needs and existing financial instruments to assess the financing needs on the demand side, the capacity of the supply and to identify the financing gaps;
- Scale-up existing financial instruments, i.e. by scaling-up funds exploited so far, accessing new sources of financing, including EFSI loans or private financing;
- Design a new financial instrument, if product is not set up and there is a need for a new one.

For instance, the City of Milan is interested in developing new sources of financing. In this context, the scope for TA would include definition of the instrument's governance and financial fund structure.

Mobilising public and private sector finance through PPPs[50] could allow accelerating investment in infrastructure. Certain cities, such as The Hague, can benefit from PPPs, to carry out capital-intensive and high-risk investments. A good practice example here is the Netherlands, which has a good track record of PPPs. The public administration is considered a trusted investor and private companies are willing to enter into cooperation. However, due to their complexity, compared to conventional procurement, PPP arrangements require detailed project preparation and planning, proper **management of the procurement phase** to incentivise competition among bidders, as well as contract design to set service standards, allocate risks and reach an acceptable balance between commercial risks and returns. TA can be particularly beneficiary to meet these targets. Support in developing PPPs can be undertaken from the project identification to the implementation stage.

Key findings

Box 10: Key finding of the technical assistance needs

Key findings – technical assistance needs
The analysis underscores the importance of TA to cities which should address the following aspects: • **Definition of the cities' strategies**, which tend to be sectoral and might not cover emerging sectors. TA would ensure the review and mapping of the cities' strategies. Then, key components of the strategies should be assessed, to ensure that the foreseen investments are sufficiently designed.

[50] PPP arrangements differ from conventional public procurement since in the PPP the public and private sector collaborate to deliver public infrastructure projects with long-term contracts between public contracting authority and private sector, allowing to transfer the project risk to the private sector. Private financing is applied to underpin the risks transferred to the private sector. Payments to the private sector reflect the services delivered.

Key findings – technical assistance needs

- **Project pipeline development**: this involves stimulating the development of project pipelines in the targeted sectors, using communication and marketing efforts.
- **Establishment of financial instruments:** this involves developing internal capacity to set up and implement financial instruments. TA and financial engineering programmes can be valuable tools to build this expertise, as experienced by The Hague, London and Manchester, as part of the JESSICA programme.
- **Consolidation of the project pipeline**: the cities do not have an overview of the project pipelines managed at city level, as information is spread across departments. Support for project portfolio management, data collection and knowledge management could be needed.
- **Prioritisation and selection of projects**: the cities have difficulties prioritising among projects. TA could intervene by identifying key prioritisation and selection criteria, estimating benefits and detecting synergies.
- **The main phases of project development**, namely in the project initiation and project development phases, where support is needed to improve the structuring of business plans, finance technical and financial feasibility studies and for the management of the procurement phase. In addition, specific support would be needed in this phase for the development of PPPs.

5 Key investment barriers

The main investment barriers identified during Phase 1 of the study are the following:

Organisational barriers

City administrations are organised in sectoral departments, which makes the development of cross-sector pipelines and projects difficult, and in the result, may limit investments.

This is an issue that affects cities like Milan who do not have financial instrument as it makes it difficult to build the case for a financial instrument. It is also possibly the case in other cities with financial instruments as it limits the ability to extend existing operations to embrace new products and sectors.

The typical organisation of city administrations, where each department is responsible for a particular sector, can become a limiting factor in terms of coordination of different projects and priorities, ultimately leading to difficulties in the development of project portfolios that are attractive for investors. The implementation of cross-sector projects can be particularly complex in such set-up.

Furthermore, only one of the cities (London) is a Managing Authority (MA) and as such has full control over ESIF allocation. Manchester, Milan and The Hague are Intermediate Bodies; they can select projects and are involved in project monitoring, but cannot manage ESIF funding directly. This is a challenge, which can however be mitigated by building links with regional/national MAs and/or identifying other sources of funding.

Knowledge gap

The limited ability at the local level to provide the suitable TA and project promoters' **lack of experience** result in a low maturity of the project pipeline.

The knowledge gap applies to two levels – the promoters and the authorities – even authorities successful in one sector may lack expertise to implement in another. Greater exchange and awareness is needed about successful products and how they work to help cities design similar operations.

The **lack of financial engineering** support for project promoters, as well as the lack of a "**one stop shop**" at a local level with an overview of existing financial instruments, across different sectors were pointed out among main barriers that make it difficult for some projects to move to the implementation phase.

The experience is that once a financial instrument is up and running with the first projects invested, the deal flow increases and becomes more sustainable without the need for further support, suggesting this assistance may be needed for a limited period. In the past, the cities with a financial instrument benefitted from the support of the external holding Fund Managers. TA platforms such as ELENA and *fi-compass* have been used to help cities develop the technical capacity required.

Missing adequate financial instrument

Many key investment projects within the city require patient long-term capital and in the start-up phase, they could involve a higher risk. For instance, urban regeneration projects need a high level of initial investment, in order to unlock further development. The current **lack of tailor made financial instruments** with a long-term investment focus, for sectors such as blue and green infrastructure, hinders investment in these sectors. For projects that are not directly revenue generating, access to finance is difficult, particularly in a context of declining grants. This investment barrier is relevant mainly for transport and green and blue infrastructure, but it could also be an issue for energy sector, for instance in terms of energy efficiency projects in buildings.

Furthermore, access to financing can be limited due to the lack of alternative or innovative financing solutions, such as PPPs. These could be an interesting opportunity to develop public infrastructure by crowding in private investors. However, relevant obstacles have been identified. For example, limited expertise of the city administrations, on one hand, and some negative past experience of private investors, on the other.

In general, the eligibility criteria of city funds might be a barrier for investment; more specifically, the eligibility criteria set in the investment strategy of the fund might include specific sectors or the projects' investment size. For projects that fall under the scope of the existing funds, the **size of the fund** can constitute an investment barrier. The size of the fund is limited and cannot face the sectoral demand. In this case, scaling-up the existing financial instrument could be a solution.

Compliance with local regulations and administrative procedures

When setting-up a new financial instrument, difficulties appear in **ensuring that the fund complies with relevant regulations**. An example of regulation might be ERDF regulation for the last programme period that was in operation before 2014 and was more suited for grant support rather than for debt or equity instruments. The London Green Fund I faced numerous difficulties when setting up due to this issue.

Another possible investment barrier is related to the eligibility criteria of ESI funds. To become eligible for ESI financing, projects need to relate to the investment priorities, which are defined as Thematic Objectives. Investment barriers might arise if certain projects are not within the scope of the Thematic Objectives. For instance, in Manchester, urban development is not included under the Thematic Objectives, hence it is difficult to allocate financing to these projects. In order to fall under eligibility criteria under the Evergreen Fund II, projects in Manchester need to show links to Research and Innovation or Low Carbon Thematic Objectives.

Aspects relating to state aid and balance sheet treatment are also key investment barriers and these topics will be discussed at a partner meeting in Milan (March 2018) and further investigated when developing case studies and will be presented in the Phase 2 of the study.

6 Conclusions

Based on the analysis of the cities' strategies, the project pipelines and existing financial instruments, this report identifies common investment priorities and provides an overview of the key technical and financing needs followed by investment barriers.

As illustrated below, common **financing needs** are associated with **sectoral differences**.

Transport projects are capital intensive, generate limited direct revenues and require long-term capital with a grant component. There is a need for an additional financing instrument to unlock access to long-term capital, possibly blended with grants. Due to the scale of the investments required, they are not suitable for financial instruments set up by the city.

Energy projects, with varying investment sizes and the possibility of generating income streams (or financial savings), are already financed through financial instruments in the three cities. The main financing need is to scale up the existing funds and develop models to support PPP projects. These funds provide good models that could be developed for use on a multi-regional basis.

Economic development projects are business oriented and revenue generating and are already funded by financial instruments in two cities, addressing market failure and mobilising co- financing that is available on the market. These funds provide a good template for a financial instrument that could be deployed as part of a multi-regional financial instrument in the future

Housing and commercial buildings often have similar financing needs to economic development projects. Larger urban development projects may require long-term capital and are often complex and cross-sector. Therefore, there is a need to develop a financial instrument for such integrated projects.

Green and blue infrastructure projects, which are typically low (or non) revenue generating, currently have no financial instrument available to fund them. Nevertheless, due to their strong positive externalities (such as increased land/house value, increased attractiveness of the city, lower flood risks), there is a potential in blending such projects with revenue-generating investments.

The analysis of the cities' strategies and project pipelines highlighted the following:

- Cities have the capacity to design and implement financial instruments that address their specific local needs. In each case the involvement of the city adds value to the implementation, working with the Fund Manager to develop a pipeline of bankable projects that are aligned with the city's strategic objectives.
- The range of different financial instruments set up by the partner cities show the flexibility of the model. It also raises the potential opportunity to use the existing products to develop a multi-regional financial instrument that could be used and adapted by other cities to address similar needs.
- Project pipelines and strategies are often sectoral. Cross-sectoral approaches are missing, thus limiting the possibilities for an integrated operational approach. The development of a multi-regional model may raise awareness of the way financial instruments can be deployed across different sectors promoting greater cross-sectoral design of future operations.

- The sectoral priorities for the cities are traditional sectors such as: 1) transport, 2) energy, 3) economic development, 4) housing and commercial buildings, 5) blue and green infrastructure. A multi-regional financial instrument should seek to address each of these sectors in the future to maximise the benefit to cities.
- Co-investment by the private sector is generally at project level. However, the MEEF is structured to allow "off-balance sheet" co-financing from the private sector and the North West Evergreen Fund I has successfully accelerated its re-flows through the sale of part of its loan book. Therefore the potential for a range of options regarding co-financing should be explored for the multi-regional financial instrument.

Similarly, existing funds are designed to focus on sector-oriented investments, rather than integrated projects. Moreover, available financial products do not offer long-term capital to support a capital-intensive infrastructure investment that in some cases also need a grant component. The city funds set up in London, Manchester and The Hague cover mostly the sectors of SMEs and start-ups, energy and housing and commercial buildings, leaving out sectors with high demand for investment, such as transport and green and blue infrastructure. It remains to be seen whether a product can be developed to allow these schemes to be funded through financial instruments.

Market practice in some sectors differs significantly between different cities. For example the PPP model used to deliver urban development in Italy is different from the approach adopted in Manchester. Therefore any multi-regional financial instrument must be capable of adapting its core model to reflect local market conditions.

Moreover, the analysis identified how TA can support cities seeking to implement a multi-regional financial instrument in the future, including:

- During the design of a city's strategies TA could support the review and mapping of existing strategies in order to ensure that **integrated operational approach** is taken into account when identifying how financial instruments can support the delivery of the strategy.

- During the design and implementation of financial instruments TA can support a city's own investment team in undertaking the initial ex-ante activity, building their capacity to undertake key tasks including developing the investment strategy and undertaking the selection and set up of the financial instrument.

- At the project pipeline development, there is a need to **support communication and integration** among departments of the city to consolidate the project pipeline. TA could also **support prioritisation and selection** of key investment projects, including joint benefits and synergies.

- During the business case development, support is needed to set up initial assumptions, identify risks and assess the market.

- For the management of the procurement phase and the development of PPPs.

Finally, the study examined the main **investment barriers and found them to be linked with** the experience and knowledge gaps, as well as their financial and administrative limitations. At the

level of the city administration, limited communication and coordination among cites' departments is one of the key investment barriers that delay the development of the project pipeline. There is a **lack of tailor made financial instruments** for specific sectors, such as green and blue infrastructure. The legal requirements for the development of financial instruments can also slow down investments. These aspects will be further explored as part of the case studies, the financial instruments and the TA report, which will be submitted as part of Phase 2 and are further described in the next chapter.

7 Next steps

Following this initial identification of the common investment priorities and financing needs across cities, Phase 2 of the study will deepen the analysis of the technical and financing needs at city level and the financial instruments and TA, which can be developed to unlock investments. This will involve:

- A detailed analysis of selected city funds for London, Manchester and The Hague, as well as the assessment of the potential set-up of a city fund in Milan will be performed as part of the case studies conducted for each city. This will serve as an input for the design of the multi-regional financial instrument. These case studies are further described in section 7.1;
- A focus on common TA needs identified at city level, experience from existing TA platforms at EU level (i.e. ELENA, JASPERS), sharing of good practices identified, and a proposed action plan for TA.
- The design of the multi-regional financial instrument, describing a set of standardised investment products, the expected results of the financial instruments, and proposing the fund structure, governance, the funding strategy, including how financing from EFSI could be integrated in the city funds, as outlined in section 7.2.

7.1 Case studies

The next report will be accompanied by case studies conducted for each city. **The aim is to identify the best practices that can be replicated in other cities** (with sufficient critical mass) **in Europe** to develop new or upgrade existing financial instruments. Each case study will look at the existing needs of the city and/or existing financial instruments that can be used for further development.

When assessing existing financial instruments, a closer look will be taken at the investment strategy to find out how the fund is structured, which products are offered, and how the fund is organised, including its governance. Further, the project pipeline will be analysed to point out its deal terms and conditions, its size and sector orientations. The main financial and operational achievements will be gathered.

This approach will help in formulating lessons learned based on the main successful factors, challenges and identify the potential areas for improvement. The assessment of the potential future development of the existing financial instrument will close each case study to show whether there is a scope for standardisation and replicability, as well as to analyse how the additional funds can be mobilised under the existing structure to scale-up the investments.

London: Mayor of London's Energy Efficiency Fund

The Mayor of London's Energy Efficiency Fund (MEEF) shows private sector interest in development of green infrastructure to address the city's ambitions to reduce Co_2 emissions. This example promotes the revolving fund scheme, which proved to be economically efficient.

The former experience of the city with the London Energy Efficiency Fund (LEEF) helped to unlock the access to private investors. Their contribution allowed increasing the MEEF size by four times, compared to the LEEF size. This case study is an example of the financial mechanism in which

investors select directly the projects for their investments (i.e. fund investments are driven by the limited partnership).

Manchester: North West Evergreen Fund II

The North West Evergreen Fund II is selected for the case study in Manchester to share the experience of the city in establishing a fund to support economic development through the provision of development finance. The study will include how the City proposed to use its own borrowings to co-finance the fund and the loan packaging and sale to unlock further fund liquidity. This example illustrates the extended geographical and thematic focus of the local fund, as it spans from commercial development and low-carbon to science, innovation and knowledge economy areas. A potential scale-up will be further analysed.

Milan: potential set-up of a city fund

In Milan, the potential set-up of a city fund will be analysed, simulating how investments could be structured and matched with selected city projects. This approach will allow illustrating the potential implementation options for the set-up of a financial instrument, using the pipeline provided by the city. The projects considered are *Mercati Comunali*, an economic development project, and the energy efficiency refurbishment of residential multi-apartment buildings; as part of the study, the financing options that can be considered for financing will be presented. For the most viable option, the possible set-up of the city fund will be detailed; this will include a high-level description of the main characteristics of the city fund, namely the financial products to be provided, thematic focus, final recipients targeted, potential funding sources and governance.

The Hague: Energy Fund

The Energy Fund is selected for the case study in The Hague. The fund's investment strategy proved to be successful, ensuring a steady pipeline of new projects. Energy investments are strategic to ensure the successful implementation of the 2040 energy transition plan. Hence, the fund has a high potential for scaling up the funds invested. The possible options for the financing of projects requiring higher investment tickets, such as geothermal energy projects, will be analysed in the study.

7.2 Design of the multi-regional Financial Instrument

The design of the multi-regional financial instrument will be further developed during Phase 2 of this assignment. The forthcoming workshops in Milan (March 2018) and in Luxembourg (May 2018) will be used to discuss the potential solutions as well as to align them with cities' expectations. The following key aspects are subject to a more detailed investigation:

- potential implementation strategies aligned to the cities' priorities, project pipelines and existing financial instruments;
- assessment of the investment strategy including financial products, thematic focus areas and profiles of final recipients;
- proposition of the governance structure in line with market good practices identified in the cities; and

- Assessment of the needs of cities for technical assistance as part of a future multi-regional financial instrument operation.

Finally, the expected results of the multi-regional financial instrument will be estimated to assess the impact of new products.

Following the next two workshops a strategy for the dissemination of the outputs of the project will be developed. Additional cities may be invited to participate in future events to provide additional insight and feedback on draft deliverables prior to delivery of the Final Report.

Annex 1 Project pipelines

London

Table 4: Project pipeline in London

Name	Thematic focus	Objective of the project	Size	Stage of the project
LED lighting	Energy efficiency	Improve communal lighting to make financial and carbon savings	*GBP 0.1 m*	Initial assumptions made
Pre-registered solar PV	Renewable energy	Install solar PV on 63 blocks of flats via the Feed-in Tariff	*GBP 1.4 m*	Business plan prepared
RE:FIT Project	Energy efficiency	Implementation of energy efficiency measures including the potential upgrade of a steam plant to CHP	*GBP 2 m*	Initial assumptions made
Bakerloo line extension	Transport	BLE to Lewisham via Old Kent Road with option to extend to Hayes in the future	*GBP 3.6 bn*	Initial assumptions made

Source: PwC, 2018.

Manchester

Table 5: Project pipeline in Manchester

Name	Thematic focus	Objective of the project	Size	Stage of the project
Northern Gateway	Urban regeneration	Brownfield regeneration, blue and green infrastructure, low-carbon, housing and transport	N/A	Preparation of the master plan strategy

Source: PwC, 2018.

Milan

Table 6: Project pipeline in Milan

Name	Thematic focus	Objective of the project	Size	Stage of the project
LEZ	Environment/ Transport	Remote control and traffic control that can be traced back to ITS applications	*EUR 11.4 m*	Pilot phase
M1	Transport	Extend the current M1 metropolitan line to reduce the use of private transport	*EUR 450 m*	Technical and financial feasibility

Name	Thematic focus	Objective of the project	Size	Stage of the project
M4	Transport	Connect the Linate airport with the city centre and interchange connections with M3-M4 lines	*EUR 70 m*	Technical and financial feasibility
M5	Transport	Sustainable mobility to ensure increased accessibility and reduce the use of private transport	*EUR 1.1 bn*	Technical and financial feasibility
Porto di Mare	Urban regeneration	Urban regeneration	*N/A*	Initial assumption made
Tramvia	Transport	Extend current tramline	*EUR 42 bn*	Technical and financial feasibility
Ascensori	Accessibility of public transport	Eliminate architectural barriers present at metropolitan stations	*EUR 3 m*	Technical and financial feasibility
Navigli	Blue infrastructure	Water management	*N/A*	Technical and financial feasibility
Mercati Comunali	Economic Development	Renovation of 23 municipal markets in Milan	*EUR 15 m*	Initial assumptions made
Energy efficiency in residential buildings	Energy, housing and commercial buildings	Support the implementation of energy efficiency renovation works in residential buildings	*N/A*	Initial assumptions made

Source: PwC, 2018.

The Hague

Table 7: Project pipeline in The Hague

Name	Thematic focus	Objective of the project	Size	Stage of the project
Schaalsprong Openbaar Vervoer	Economy, transport, energy, public spaces, buildings	Transit Oriented Development, network optimization and mobility transition to achieve profitable public transport system	*EUR 580 m – 650 m*	Initial assumptions made
Central Innovation District	Economy, transport, energy, public spaces, buildings, technological innovations	Innovation at 3 layers: economics, physical and spaces (energy)	*EUR 2.5 bn*	Initial assumptions made

Peace Room	Technology (Data Science)	Research center on Peace & Justice, Security developed by and with companies and knowledge institutes	*EUR 5 m*	Initial assumptions made

Source: PwC, 2018.

Annex 2 List of financial instruments

London

Table 8: Financial instruments in London

Product name	Type of FI	Size	EU investors	National/local investors	Private Investors	Other investors	Fund Manager	Thematic focus	Investment period
London Green Fund I (LEEF, GSH, FEF)	Debt and Equity	GBP 406.5 m	ERDF, 12.5%	regional public, 12.3%	private funding, 23.4%	EIB loan, 51.8%	Amber (LEEF) THCF (GSH) Foresight (FEF)	Energy efficiency, green social housing and waste	2009 – 2015
Mayor of London's Energy Efficiency Fund	Debt and Equity	GBP +400 m	ERDF, 15%	GLA, 25%	Commercial banks, Investors, Fund Manager, +60%	N/A	will be published in 2018	Energy efficiency, renewables and decentralized energy in buildings	2018 – 2025
Circular Economy Fund	Debt and Equity	GBP 100 m	ERDF, 32%	London Waste and Recycling Board , 7%	Funding London's previous ERDF-backed funds and other private investors, 11%	EIB, 50%	will be published in 2018	SMEs seeking to scale-up and achieve their growth ambitions	2018 – 2028
MMC London Fund	Equity	GBP 14.2 m	ERDF, 64%	N/A	N/A	ROI from previous fund, 36%	MMC Ventures	Budding tech and science start-up businesses in London	2015 – 2017
London Co-investment Fund	Equity	GBP 23 m	N/A	Mayor of London	Long list of private investors	N/A	Funding London	Early stage businesses in science, digital and tech	2014 – present

Source: PwC, 2018.

Manchester

Table 9: Financial instruments in Manchester

Product name	Type of FI	Size	EU investors	National/local investors	Private Investors	Other investors	Fund Manager	Thematic focus	Investment period
North West Evergreen Fund I	Debt	GBP 60.8 m	ERDF, 58%	N/A	HCA, 17%	N/A	CBRE IISL	Debt for commercial property and regeneration projects	2011 – open ended
North West Evergreen Fund II	Debt and Equity	GBP 45 m	ERDF, 100%	N/A	N/A	Private sector project level match funding	CBRE IISL	Science, Innovation & Knowledge Economy, Low Carbon	2016 – present
Northern Powerhouse Investment Fund	Microfinance, Debt and Equity	GBP 400 m	ERDF, 46%	Department for Business, Energy and Industrial Strategy	British Business Bank, 12.5%	EIB	British Business Bank	SMEs start up and grow	2016 – 2021
Greater Manchester Housing Fund	Debt and Equity	GBP 300 m	N/A	Department for Communities and Local Government, 100%	N/A	N/A	GMCA	Housing offer to attract the skilled/ diverse workforce	2015 – 2025

Source: PwC, 2018.

Milan

Table 10: Financial instruments in Milan

Product name	Type of FI	Size	Public national investors	Private Investors	Fund Manager	Thematic focus	Investment period
Fondo Social Housing Cascina Merlata	Debt	EUR 130 m	60% CDP Investimenti SGR	25% EuroMilano SpA 7.5% Cnpadc 7.5% Associazione Cassa Nazionale di Previdenza e Assistenza dei Ragionieri e dei Periti Commerciali, Fondo Crono	Investire SGR	Social housing infrastructure	2013 – ongoing
Fondo Immobiliare Lombardia comparto 1	Debt, equity	EUR 426 m	Fondo Investimenti per l'Abitare (managed by CDP Investimenti SGR)	Fondazione Cariplo	Investire SGR	Social housing infrastructure	2006 – ongoing
Fondo Immobiliare Lombardia comparto 2	Debt, equity	EUR 50 m	N/A	N/A	Investire SGR	Social housing infrastructure	N/A
Fondo Immobiliare Ca' Granda	N/A	EUR 350 m	N/A	N/A	Investire SGR	Social housing infrastructure	2014 – ongoing
Fondo Immobiliare Aristotele	N/A	EUR 649 m	N/A	N/A	INPS Gestione	Social housing infrastructure	2005 – ongoing

Source: PwC, 2018.

The Hague

Table 11: Financial instruments in The Hague

Fund name	Type of FI	Size	EU investors	Public national investors	Public local investors	Fund Manager	Thematic focus	Investment period
HEID Holding Fund	Equity, debt and guarantees	EUR 39.7 m	ERDF, 45% EMFF, 4%	Ministry of Economic Affairs, 4%	Municipality The Hague, 47%	SVn	Renewable energy, energy efficiency, economic development with focus on innovative companies	2013-ongoing
Energy Fund (ED) – HEID HF	Debt, guarantees, equity	EUR 11.4 m	ERDF, 54%	N/A	Municipality The Hague, 15%	SVn	Investments in energy projects	2013-ongoing
Economic Development (FRED) – HEID HF	Debt, equity	EUR 14.3 m	ERDF, 46%	N/A	Municipality The Hague, 54%	SVn	Fund for economic development	2013-ongoing
Homeowner associations (VVE) – HEID HF	Debt	EUR 8 m	ERDF, 25%	N/A	Municipality The Hague, 75%	SVn	Fund for homeowner associations	2017-ongoing

Source: PwC, 2018.

Annex 3 List of stakeholder interviews

London

Table 12: List of interviews in London

Representatives of the City Administrations			
Organisation	**Role**	**Person**	**Interview date**
Greater London Authority	Director of Group Finance	David Gallie	21/09/2017
Greater London Authority	Financial Engineering Manager	Kenroy Quellennec-Reid	21/09/2017
Greater London Authority	Head of Growth and Infrastructure	Jeremy Skinner	21/09/2017
Greater London Authority	Growth and Infrastructure Manager	Madalina Ursu	21/09/2017
Greater London Authority	Director of Analysis	Andrew Collinge	06/10/2017
Greater London Authority	Project Manager, Regeneration Delivery Unit at Greater London Authority	Nabeel Khan	06/10/2017
Greater London Authority	Programme Manager – Programme Policy and Services	Ben Coombes	03/11/2017
Representatives of the Financial Institutions			
Abundance Investment	Founder and Joint Managing Director	Louise Wilson	30/10/2017
Amber Infrastructure Group	Investment Manager	Peter Radford	03/10/2017
Amber Infrastructure Group	Principal JESSICA	Joanne Patrick	03/10/2017
Aviva Investors	Head of Infrastructure Debt	Darryl Murphy	04/10/2017
Blackrock Investment Management	Director	Paul Tebbit	09/10/2017
CBRE	Fund Manager	William Church	21/09/2017
Representatives of the Advisory Services Companies			
ARUP	Director	Volker Busche	17/10/2017
Burohappold Engineering	Partner and Director	Andrew Comer	04/10/2017
Greenwood Strategic Advisors	Head of Partner Relations	Michael Hoffmann	03/10/2017
Greenwood Strategic Advisors	Chief Executive Officer	Andreas J.Harbig	03/10/2017
Greenwood Strategic Advisors	Deputy Chief Executive Officer	Craig A.Stephens	03/10/2017
Representatives of the Research Bodies			

Grantham Institute	Director of Innovation, Climate Change and the Environment Co-founder of Climate-KIC and the Director of Climate-KIC UK	Richard Templer	03/11/2017
Representatives of the Technology Companies			
Intel Corporation (UK) Ltd	Director at ICRI Cities in London	Wilson, Duncan J	04/10/2017
Intel Corporation (UK) Ltd	Account Executive UK Government	Stuart White	04/10/2017
Siemens	Director, Urban Development and Smart Cities	Julie Alexander	06/10/2017

Source: PwC, 2018.

Manchester

Table 11: List of interviews in Manchester

Representatives of the City Administrations			
Organisation	**Role**	**Person**	**Interview date**
Greater Manchester Combined Authority	Principal (Economics); Greater Manchester Combined Authority	Rupert Greenhalgh	19/09/2017
Greater Manchester Combined Authority	Greater Manchester Combined Authority, Investment Director	Andrew McIntosh	20/11/2017
Greater Manchester Combined Authority	Greater Manchester Combined Authority, Principal (Strategic Planning)	David Hodcroft	20/11/2017
Greater Manchester Combined Authority	Greater Manchester Combined Authority, Head of Strategic Planning	Anne Morgan	20/11/2017
Manchester City Council	Strategic Director- Development	Eddie Smith	19/09/2017
Manchester City Council	MCC Resources and Programmes Strategic Lead (EU Projects)	Mark Duncan	19/09/2017 & 20/11/2017
Manchester City Council	MCC Assistant Chief Executive (Finance and Performance)	Carol Culley	19/09/2017
Manchester City Council	Head of Strategic Commercial Team, Legal Services	Rebecca Maddison	19/09/2017
Manchester City Council	Head of Corporate Estate and Facilities, Strategic Development Directorate	Julie McMurray	20/09/2017
Manchester City Council	Head of the Investment Team for the Greater Manchester Combined Authority (till end of Sept 2017)	Sean Davies	20/09/2017
Manchester City Council	Manchester City Council, Head of Residential Growth Strategic Development Directorate	Ian Slater	20/11/2017
Manchester City Council	Manchester City Council, Project Manager, GrowGreen (H2020)	Michelle Oddy	20/11/2017

Manchester City Council	Manchester City Council, Deputy Emergency Planning Officer	Kate Green	20/11/2017
Manchester City Council	Manchester City Council, Policy Officer	Karl Astbury	20/11/2017
Manchester Climate Change Agency	Programme Director	Jonny Sadler	25/09/2017 & 20/11/2017
The Ministry of Housing, Communities and Local Government	Head of the North West Growth Delivery Team (GDT)	David Reid	19/09/2017
The Ministry of Housing, Communities and Local Government	ERDF Project Development Manager within the North West Growth Delivery Team (GDT)	Will Johnson	19/09/2017
Transport for Greater Manchester	Finance and Corporate Services Director (Finance)	Steve Warrener	27/09/2017
Representatives of the Financial Institutions			
Catapult Ventures	Chief Executive Officer of Catapult Ventures	Nick Wright	20/09/2017
CBRE	Fund Manager at CBRE	William Church	20/09/2017 & 21/09/2017
Far East Consortium International Limited	FECIL, Project Director, Far East Consortium International Limited	Tom Fenton	20/11/2017
Representatives of the Not-for-Profit Organisations			
Manchester Digital	Managing Director of Manchester Digital	Katie Gallagher	20/09/2017
Manchester Growth Company	Director of Finance & Business Finance	Paul Breen	19/09/2017
Manchester Growth Company	Account Manager at the Manchester Growth Company	Gary Pennington	19/09/2017
Representatives of the Technology Companies			
Siemens	Siemens	Tom O'Reilly	20/09/2017
Siemens	Siemens	Andrew Smyth	20/09/2017
Spica Technologies Ltd.	Managing Director of Spica Technologies Ltd.	Paul Collins	20/09/2017

Source: PwC, 2018.

Milan

Table 12: List of interviews in Milan

Representatives of the City Administrations			
Organisation	**Role**	**Person**	**Interview date**
The City of Milan Administration	Head of Unit Smart Cities Unit	Clara Callegaris	26/09/2017
The City of Milan Administration	Project Manager of Smart Cities Unit	Piero Pelizzaro	26/09/2017
The City of Milan Administration	Director, Department Budget and Revenues	Roberto Colangelo	26/09/2017
The City of Milan Administration	Director, Department of Mobility, Environment and Energy	Filippo Salucci	26/09/2017
The City of Milan Administration	Director, Department of Labour Policies and Economic Development	Renato Galliano	26/09/2017
The City of Milan Administration	Director, Department of Economic Innovation and Business Support	Annibale d'Elia	26/09/2017
The City of Milan Administration	Policy Advisor, Department of International Relations	Olimpia Vaccarino Aureli	26/09/2017
The City of Milan Administration	Assistant, Budget and State Property	Luisa Piceno	26/09/2017
Representatives of the Financial Institutions and Foundations			
Banca Etica	Analyst Trust Companies	Elisa Catellani	01/02/2018
Banca Etica	Analyst	Paolo Cominini	01/02/2018
Banca Intesa Sanpaolo (ISP)	Global Relationship Manager	Carlo Frater	01/02/2018
Banca Prossima	Relationship Manager	Massimo Stucchi	01/02/2018
Banca Prossima	Relationship Manager	Francesca Rigotti	01/02/2018
BNL BNP Paribas	Officer	Stefano Tiraboschi	01/02/2018
BNL BNP Paribas	Managing Director	Vito Zaccaria	01/02/2018
Finlombarda	Responsible Marketing Products	Paolo Zaggia	02/02/2018
Finlombarda	Responsible Development Products and Services	Federico Favretto	02/02/2018
Fondazione Cariplo	Programme Officer, Art and Culture	Chiara Bartolozzi	31/01/2018
Fondazione Cariplo	Programme Officer, Energy Efficiency and Renewable Energy	Federico Beffa	31/01/2018
Fondazione Cariplo	Director Science and Technology	Carlo Mango	31/01/2018
Fondazione Social Housing	Director	Marco Geredini	31/01/2018
ICCREA	Leveraged and Project Finance Manager	Marco Rocchi	01/02/2018

Oltreventure	Business Analyst	Nicola Lambert	02/02/2018
Unicredit (UNI)	Director	Angelo Manca	01/02/2018
Unicredit (UNI)	Leasing Analyst	Fabio Dona	01/02/2018
Unicredit (UNI)	Head of Network Support and Products Development	Filippo Monarca	01/02/2018
Unicredit (UNI)	Soft Loans, Contributions & Subsidies	Luisa Mancinelli	01/02/2018
Unicredit (UNI)	Head of Real Estate Sales	Marco Recalcati	01/02/2018
Unicredit (UNI)	Analyst	Paolo Russo	01/02/2018
Representatives of the Energy Operators			
A2A smart City SPA	Sustainable Energy Solutions Manager	Riccardo Fornaro	02/02/2018
A2A smart City SPA	Project Manager	Marco Turchini	02/02/2018
Asso ESCO	Sales and Energy Efficiency Regulatory Manager	Simona Ferrari	31/01/2018
Officina Verdi	CEO Technical Staff	Alessandra Cassisi	02/02/2018
Officina Verdi	Head of Operations and Safety	Valentina Crivellari	02/02/2018

Source: PwC, 2018.

The Hague

Table 13: List of interviews in The Hague

Representatives of the City Administrations			
Organisation	**Role**	**Person**	**Interview date**
Municipality of The Hague	Director of Urban Development Department	Peter Kievoet	29/06/2017
Municipality of The Hague	Manager of Program Management, Strategy and Research Department	Simon Vroonhof	29/06/2017
Municipality of The Hague	Business Controller	Minguel Foendoe	29/06/2017
Municipality of The Hague	Economics Department	Ton Overmeire	30/06/2017
Municipality of The Hague	Senior Account Manager	Vincent Hillen	30/06/2017
Municipality of The Hague	Revolving Investment Cities Europe Coordinator (RICE)	Patrick van Geel	30/06/2017
Municipality of The Hague	Deputy Secretary General	Koen de Snoo	13/10/2017
Municipality of The Hague	EU Funding Advisor	Joep Ebus	13/10/2017
Municipality of The Hague, Coastal and Marine Development	Project Manager	Arno Segeren	13/10/2017

West Nederland Region	EFRO Opportunities for West II Program Manager	Ruud van Raak	30/06/2017
Representatives of the Financial Institutions			
BNG	Business Developer	Thimmo Van Garderen	12/10/2017
BNG	Business Manager Structured Financing and Public Sector	Edwin van Veenhuizen	12/10/2017
SVn	Fund Manager	Richard Luigjes	30/06/2017 & 24/10/2017
Representatives of the Governmental Bodies			
Central Innovation District	Programme Manager, Central Innovation District	Borre Rosema	13/10/2017
Innovation Quarter	Financial Controller	E van der Zant	12/10/2017
Representatives of the Advisory Services Companies			
Twin Financial Services	Accountant, Twin Financial Services	Renate Schouw	12/10/2017
Representatives of the Public Sector Housing			
Vestia	Sustainability Portfolio Manager	Martin Roders	13/10/2017

Source: PwC, 2018.

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