

# FINANCING AIR QUALITY PLANS

Guidance for cities and local authorities



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## Guidance for cities and local authorities

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This document is a deliverable of **Action 3 – ‘Better Targeted Funding for Air Quality’** of the Action Plan implemented by the EU Urban Agenda – Partnership on Air Quality.

The Urban Agenda – Partnership on Air Quality was founded in 2016 with the main objective of improving air quality in cities and bringing the ‘healthy city’ higher on the local, national and EU agenda as part of the Urban Agenda for the EU.

Action 3 is led by the City of Milan/AMAT and performed in collaboration with the European Investment Bank Advisory Hub.

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# List of abbreviations

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<b>AQF</b>	Air Quality Fund
<b>AQP</b>	Air Quality Plan
<b>CEF</b>	Connecting Europe Facility
<b>CF</b>	Cohesion Fund
<b>CO<sub>2</sub></b>	Carbon dioxide
<b>CSR</b>	Corporate Social Responsibility
<b>EBRD</b>	European Bank for Reconstruction and Development
<b>EEEF</b>	European Energy Efficiency Fund
<b>EIB</b>	European Investment Bank
<b>ERDF</b>	European Regional Development Fund
<b>ESCO</b>	Energy Service Company
<b>ESF</b>	European Social Fund
<b>EU</b>	European Union
<b>FI</b>	Financial Instrument
<b>FIA</b>	Foundation for the Automobile and Society
<b>GET</b>	Green Economy Transition
<b>GNI</b>	Gross National Income
<b>IFI</b>	International Financial Institution
<b>ITI</b>	Integrated Territorial Investments
<b>LEZ</b>	Low Emission Zone
<b>NCOFF</b>	Natural Capital Financing Facility
<b>NO<sub>x</sub></b>	Nitrogen oxides
<b>NPB</b>	National Promotional Bank
<b>PF</b>	Project Finance
<b>PF4EE</b>	Private Finance for Energy Efficiency
<b>PM</b>	Particulate Matter
<b>PPP</b>	Public Private Partnership
<b>SPV</b>	Special-Purpose Vehicle
<b>TIF</b>	Tax Increment Financing
<b>TPF</b>	Third Party Financing
<b>UIA</b>	Urban Innovative Actions

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## Context and background

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**T**he EU Clean Air policy framework constitutes the foundation of national, regional and local policies on safeguarding air quality to ensure that effective and efficient action is taken across all member states. Article 23 of Directive 2008/50/EC on ambient air quality and cleaner air for Europe prescribes that, when levels of pollutants exceed the limit or target values provided in given zones or agglomerations, member states are required to ensure that Air Quality Plans (AQPs) are established for those areas. The Directive also states that AQPs should cover all pollutants in breach of the limits via a single, integrated Air Quality Plan in order to achieve compliance of limit and target values while keeping the period of exceedances 'as short as possible' for the protection of human health. Not least, the increasing importance of air quality has also been emphasised in the recent Communication of the European Commission titled "A Europe that protects: Clean air for all" (Brussels, 17.5.2018 COM(2018) 330 final).

Depending on the internal organisation of single member states, regions or local authorities are responsible of the development, implementation and reporting of AQPs. Given the localised nature of the drivers and consequences of air pollution on citizens' health, municipal and local authorities are often best placed to implement effective measures to improve air quality, due to their knowledge of the territory, actors and policy levers (e.g. urban planning, infrastructure/traffic management, housing permits, parking policy, etc.). In any case, multi-level governance cooperation is required to fully implement the Directive 2008/50/EC.

Improving air quality and curbing air pollution requires the deployment of significant resources, not least financial. EU and national funds are available to prepare and implement national, regional and local pol-

icies to tackle air pollution. However, at present, programmes are rarely dedicated to improvements in air quality by financially supporting measures that tackle the issue directly. Improvements in air quality are often regarded as additional outcomes of measures originally aimed at other specific objectives (e.g. improvement of public transport, energy efficiency, etc.). They are rarely considered as the sole purpose of any programme or intervention, with a few exceptions.

Air quality is one of the twelve priority themes of the “Urban Agenda for the EU” and the related Urban Action Partnership on Air Quality is dedicated to implement solutions to ensure a good air quality for human health (Pact of Amsterdam, May 2016). In order to do so, regulatory and technical actions have to be undertaken to curb air pollution by intervening on its main sources (e.g. transport, energy, agricultural sector).

The Partnership on Air Quality identified the actions needed to tackle the financial issue, building upon Action no. 3 – Better Targeted Funding for Air Quality of the Urban Agenda for the EU, which stresses the need to increase financial solutions for urban air quality actions, in particular in the framework of Air Quality Plans. Specifically:

- An assessment of funding needs and development of appropriate business models to fund air quality measures
- The development of recommendations for improving the targeting of existing funding instruments on air quality and promoting better accessibility to funds

### **Funding versus Financing**

*In this document, we will often refer to “funding” and “financing”. Albeit sometimes used interchangeably, the terms have different meanings. For the purpose of this document, we refer to funding when considering the provision of monies with no expectation of repayment (e.g. government grants). Oppositely, we refer to financing when a financial institution (or others) provides capital (debt or equity) expecting to have it repaid in time with interest.*



## Purpose and structure of this document

**T**he present guidance is intended as a supporting tool for the main actors at EU, national, regional, metropolitan and urban level to identify, integrate and improve traditional and innovative financing schemes dedicated to the implementation of air quality measures. In doing so, the guidance seeks to highlight opportunities to leverage the involvement of both private and public financial resources.

AQPs can draw upon a wide range of interventions to reach their intended objectives. For instance, it is possible to nudge citizens towards more environmentally friendly behaviours via incentives (e.g. charges, tax credits, etc.). Alternatively, the actors introducing the AQP may directly support an investment plan targeted at air quality improvement (e.g. transport infrastructure planning, energy efficiency improvements, etc.). All these activities require resources to be deployed coherently with the available financial resources as well as the timeframes and aims of the AQP measures.

Local governments have different economic issues to take into account in the design and implementation of AQPs. For this reason, a thorough analysis to identify sources of funding for measures included in the action plans is needed. This is especially crucial at a time when access to finance for local authorities is particularly problematic. The cost of developing and implementing interventions within an AQP are often huge and are borne upfront while the economic, social and environmental benefits tend to be accrued over a longer period.

This guidance takes into account common technical and financial needs across local authorities. It also sets out how a multi-city financial instrument providing standardised solutions and delivery models could be a viable solution to support the achievement of urban air quality objectives.

The document leverages on the experience from the draft AQP prepared by the City of Milan and from the experiences shared by the members of the Urban Agenda – Partnership on Air Quality.

Figure 1 – The structure of this guidance

## What to financially support?

Understanding the measures inside AQPs and how each of them can be financed



### 1. Analysing the Air Quality Plan

- Scope
- Financial sustainability
- Impact

## Using which resources?

A commented presentation of the financial sources available... and a few practical recommendations



### 2. Identifying the sources of finance

- Public funding
- Financing

## How to manage the demand and supply of finance?

A few examples from different sectors can demonstrate how air quality measures can be designed to generate revenues



### 3. Financing model for Air Quality Plans

- Single-measure approach
- Multi-sector investment programme

## A few examples on designing financially sustainable measures

Air quality measures and a few examples from different countries of financially sustainable measures and applicable financing schemes that have potential to attract private investors... analysing the financial sustainability, scope, stakeholders involved and expected impact



### 4. Financing measures

- ...in Transport and mobility sector
- ...in Energy Efficiency
- ...in Urban and green infrastructure



# 1. Analysing the Air Quality Plan

---

In this document, the analysis of Air Quality Plans is proposed to assess their content from the financial perspective. This translates into assessing the scope of AQPs, the financial sustainability of their measures and their expected impacts against the AQPs' objectives.



## Developing the Air Quality Plan

Before offering guidance on how to financially support AQPs, they must be designed and the tools and equipment for their monitoring must be deployed accordingly. This requires financial resources, too.

National and European support programmes do not generally focus on air quality specifically. The financial resources required to design AQPs are drawn from programmes and funds that support indirectly the improvement of air quality. A few sources of funding are indeed available for the authorities in charge of preparing and deploying AQPs – the main ones are outlined below.

At EU level, the development of AQPs can be funded through programmes targeting climate actions, such as Life Programme, which under the new Multiannual Financial Programme 2021-2027 is expected to support projects with the potential to leverage public and private resources. The aim is to demonstrate good practice and promote the implementation of air quality plans and legislation<sup>1</sup>.

In addition to financial resources dedicated to support the development of AQPs, public authorities can benefit from efficiency in system monitoring deployment by integrating the implementation of air quality monitoring systems in wider projects. Such synergies are promoted at EU level – e.g. investments for upgrading transport infrastructure in order to monitor noise and emissions have been funded under Horizon2020 call 2018-2020 mobility for Growth – or can be created in the context of structural funds.

In a few member states where national air quality funds have been established – i.e. Croatia and Czech Republic – the fund directly supports the preparation of projects and plans targeting air quality improvement. A blend of the different sources of finance that jointly sustain the air quality fund i.e. national resources, EU funds and revenues from financially sustainable measures (see following sections) can therefore be directed to support not only the single measures, but the whole AQP, including its establishment and monitoring.

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<sup>1</sup> Proposal for a Regulation of the European Parliament and of the Council establishing a Programme for the Environment and Climate Action (LIFE) and repealing Regulation (EU) No 1293/2013

# 1.1. Scope

<b>What is it?</b>	The analysis of the scope aims to identify the characteristics of the AQPs and measures defining the sectors, actors involved, scale and investment volume.
<b>Why?</b>	The scope is crucial to define the most appropriate area of intervention and to determine which sources of finance can apply (i.e. investors shall comply with their organisation's investment policies) and whether any financial inflow linked to the investments proposed is subject to a sufficiently diversified risk.
<b>How does it work?</b>	The plan is broken down into measures which are assessed on the basis of: <ul style="list-style-type: none"><li>- The spatial scope</li><li>- The amount of resources required to implement them</li><li>- The users/actors to be involved (and their roles)</li><li>- The duration of the actions envisaged</li></ul>

The scope of a plan is crucial in determining its attractiveness and suitability to potential investors and, in general, finance providers. A wider scope, usually determined by a larger territorial and demographic coverage, tends to be accompanied by a diversification of the risks involved and the possibilities to benefit from economies of scale.

At the same time, the type of pollutants, the actors and the business requirements tend to be sector-specific. Consequently, the analysis of an AQP can start with a sectoral breakdown, differentiating measures into main clusters and then proceeding with sub-categories of actions, as in the example below. This is an important aspect for investors since resources (both public and private) tend to be allocated through investment strategies that are diversified according to the asset type and sector of intervention.

Figure 2 – Air quality measures that could be included in investment strategies and/or targeted by investors



### TRANSPORT

- Charging/restriction areas for private traffic
- Promotion of green vehicles/ retrofitting of older vehicles (private vehicles; infrastructure development; public transport)
- Promotion of active transport initiatives



### ENERGY

- Energy efficient buildings (new construction and refurbishment)
- Sustainable heating systems
- Green infrastructure and buildings



### URBAN ENVIRONMENT AND OTHER

- Urban green and blue infrastructure
- Urban planning and reduction of exposure to air pollution
- Containment of pollution from agricultural activities

## A checklist to analyse the scope of AQPs

### SECTORAL INTERVENTION

**Sector-level:** Does the AQP focus on a single sector or does it involve multiple sectors?

### SIZE OF THE INTERVENTION

**Dimension:** The dimension of the intervention (and of single measures) gives an estimate of the number of actors that should be involved. In case of replicable, standardised measures, it provides the reach of the replication area.  
The dimension is also a critical element as it defines the amount of financial resources that are required to implement each measure and the AQP alike.

**Territorial reach:** The intervention may involve a single or multiple municipalities – even regions – that must cooperate and coordinate.

### USERS/PLAYERS INVOLVED

**Actors and users:** The analysis should also consider the stakeholders affected by the implementation of the AQP. Stakeholders can be identified based on their nature (e.g. public, private) or their involvement with the intervention. This includes road users that may be required to pay a charge or energy and transport companies that would need to comply with new standards to operate. Depending on the intervention envisaged, it may be necessary to involve actors responsible for operations and management of physical and digital assets (e.g. consultancies, developers). Similarly, any actor linked to the financing of the intervention (e.g. through grant or financial instruments) should be considered. The number and nature of the stakeholders involved determine the complexity of the intervention.

### DURATION

**Timeframe:** Both the AQP per se and the measures within it are related to a specific timeframe, which includes the implementation period and the operation period.

### Size matters

*Larger AQPs are more likely to attract financial resources, due to a better chance of risk diversification and access to economies of scale.*

*This is welcome news for urban areas that are large enough to develop an ambitious AQP and have the capacity to implement it on a large scale.*

*However, when a larger scope is achieved by pooling together different cities and local authorities, particular care must be taken when designing the governance structure to ensure that the plan is compliant with all applicable legal frameworks and compatible with different local needs. This increases the complexity of developing and managing the plan as well as the increasing number of stakeholders involved – and the capacity required to manage such complexity as well, which is often a barrier for local, smaller administrations.*

# 1.2. Financial sustainability

What is it?
Why?
How does it work?

Financial sustainability relates to the capacity of a project to generate sufficient revenue or savings to cover the cost of the initial investment, operation and maintenance.

The financial sustainability ultimately determines who bears the costs of implementing a measure and which financial resources and products are more suitable. It is crucial to differentiate between measures that are revenue (or savings) generating and the extent to which they are so – therefore supporting the prioritisation and the choice of the resources to draw from (e.g. grant, debt, etc.) to finance them.

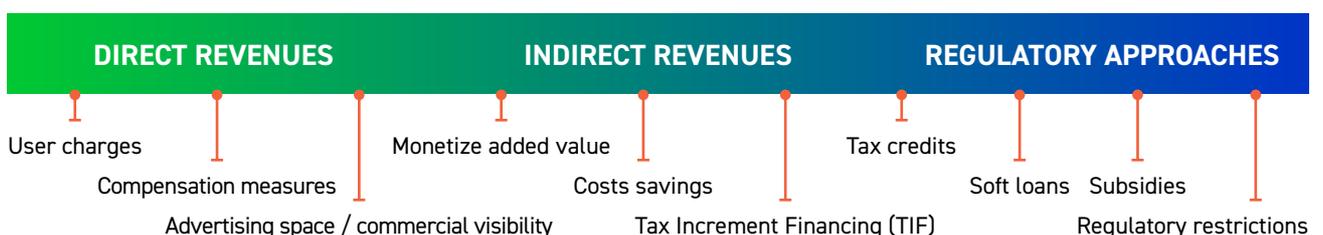
Financial sustainability is determined by the revenue model of the different measures. This relates to the way measures are implemented. For instance, capital can be raised to finance the initiatives, requesting payments in exchange for certain services and saving costs through higher efficiency, or it can be decided to directly change people's behaviour towards a more desirable one.

Historically, public resources have been used to pay for and operate any social utility interventions. Nevertheless, several possibilities can be leveraged to ensure that such costs are shared, entirely or in part, with other categories of actors (i.e. private investors, users, etc.). Generalising to the extent feasible, private actors tend to get involved when they can be remunerated. For this reason it is important to distinguish measures that are not financially sustainable and can be funded by public budget and donations and measures that generate sufficient revenues or savings to, albeit partially, repay the costs of its development and operation.

Importantly, the same measures can be designed to be either financially sustainable or not. As an example, should a municipality wish to reduce vehicle access to a certain area, it can opt for a regulatory restriction. In this case the restriction would not generate any revenues, yet the municipality would sustain the costs related to its enforcement. Oppositely, the municipality can charge users entering the perimeter a fee to discourage them and benefit from some revenues paid by those entering the area.

Non-financially sustainable interventions will rely solely on public funding, donations and other forms of in-kind support, while financially sustainable measures can attract both private and public resources.

Figure 3 – Financing options for air quality measures



## Financing options for air quality measures

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<b>User charges</b>	<p>Payment in exchange for a particular service usually aimed at cost recovery of collective services. The fee can be based on a quantity or quality of pollutants released into the environment.</p> <p><i>E.g. Private vehicle owners can be forced to pay when entering a pollution-restricted area.</i></p>
<b>Compensation measures</b>	<p>Payment of a fee to offset an action that, albeit lawful, entails negative impacts on air quality.</p> <p><i>E.g. Developers can be forced to pay a surplus costs for the construction of buildings subtracting agricultural areas.</i></p>
<b>Advertising space/ commercial visibility</b>	<p>Revenue streams are generated by making available advertising space or commercial visibility to the private sector in exchange for a good or service free of charge or at a discounted rate.</p> <p><i>E.g. Private companies are encouraged to invest in charging stations infrastructure when they have the possibility to display their logo or brand.</i></p>
<b>Monetise added value</b>	<p>Revenues come directly generated by the development or improvement of the goods or services offered.</p> <p><i>E.g. Investment in eco districts would allow to improve buildings and infrastructure in the area, increasing the real estate economic value.</i></p>
<b>Costs savings</b>	<p>Due to increased operational efficiency of a system.</p> <p><i>E.g. Energy efficiency interventions allow to save costs of energy consumption.</i></p>
<b>Tax Increment Financing (TIF)</b>	<p>TIF is a financing method by means of an investment, usually directed to the development or re-development of a specific area, whose repayment is anticipated from capturing the uplift in value via an increase in the tax base in the area directly affected by the intervention during operation.</p> <p><i>E.g. TIF provides means for cities to gain approval of redevelopment of blighted properties or public projects such as city halls, parks, libraries etc.</i></p>
<b>Tax credits (for the local authority)</b>	<p>Tax credits allow taxpayers to save costs by subtracting the amount of the credit they have accrued from the total they owe.</p> <p><i>E.g. Member states may provide tax credit mechanisms in order to incentivise homeowners to develop energy efficiency interventions.</i></p>
<b>Soft loans</b>	<p>Soft loans represent a mechanism coming between revenue models and non-revenue models. These are forms of support where borrowers repay investments at better-than-market conditions (e.g. low or non-existent interest rates). In this instance, the lender may – depending on the case – require the payment of a limited, null or even negative interest rate. This is usually the case of foundations or public authorities that can operate either alone or sustaining the social cost for a loan involving private institutions as well.</p> <p><i>E.g. Loans can be channelled through state owned banks at interest rates ranging from zero to just marginally below commercial interest rates for pollution abatement investments.</i></p>

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### Subsidies

Subsidies are a measure to ensure that a certain category of users is incentivised to perform a specific action in line with the objectives of the provider of the subsidy. As a cash-out, they are usually not related to any revenue or cost reduction, if not in the very long run (i.e. as effect of the result of the incentive policy).

*E.g. Private vehicle owners can be exempt from paying vehicles fee and taxes if they buy green vehicles.*

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### Regulatory restrictions

Prohibitions or restrictions provided by authorities without charges for users. The only source of funding could be provided by non-compliance charges/penalties fees for surpassing regulatory limits.

*E.g., Municipalities and road transport authorities can deny permission to certain categories of polluting vehicles to enter certain areas.*

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## Financial sustainability

*Financial sustainability refers to a project's capacity to repay the investment, maintenance and operating costs. Ultimately, it determines whether an intervention has to rely on public subsidies during construction and/or operation or if it is able to leverage private capital for construction and generate sufficient revenue during operation to cover operation and maintenance costs.*

# 1.3. Impact

## What is it?

The impact of a plan is measured against its capacity to ensure compliance to air quality standards (as set out in article 23 of the Directive 2008/50/EC) as well as to any other objectives specified in the AQP (e.g. reduction of health impact on population, protection of vulnerable segments of the population, etc.).

## Why?

The expected impact is useful to prioritise between interventions in case of scarcity of resources and, therefore, focus more where most relevant results can be achieved with comparable efforts.

## How does it work?

In practice, the impact is measured taking into account a range of factors, such as the sectors, the stakeholders and the areas affected by the intervention as well as its scope. Usually, in terms of improvement of air quality, the largest impact is achieved by targeting the most relevant sources of pollutants, namely the transport and energy sectors. To monitor the actual impact of the interventions carried out, it is recommended to set up a set of specific indicators and IT/ technology systems, measuring the progress towards the objectives of the plan.

**T**he expected impact of the AQP reflects on the extent to which it will meet its objectives. AQP objectives can refer to general levels of city-wide pollution or to the protection of specific segments of the population that are considered at-risk (e.g. children, elderly people). Therefore, the impact of an intervention is not necessarily proportional to its magnitude – where relevant, localised interventions that improve air quality for the most vulnerable individuals will still carry significant impact.

In addition, the exercise of maximising the impact of the available resources is aimed at identifying the relevant AQP stakeholders and prioritising specific actions, as to focus on the largest impact in size terms may result in effective measures at a more localised scale being overlooked.

### Making an impact

*The impact of an Air Quality Plan is measured by its effectiveness in reaching its policy objectives. These may include both compliance to set air quality standards, reduction of health problems that are linked to air pollution and protection of specific segments of the population that are considered at-risk.*



## 2. Identifying the sources of finance

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Funding for AQPs may come from public sources, private sources or a blend of both. Public sources include government or public authorities' resources that are generally employed to provide goods and services to society. Private investments include any kind of direct involvement from private actors e.g. deploying measures with own capital. This is strictly dependent on the possibility to remunerate them, as outlined earlier in this document.

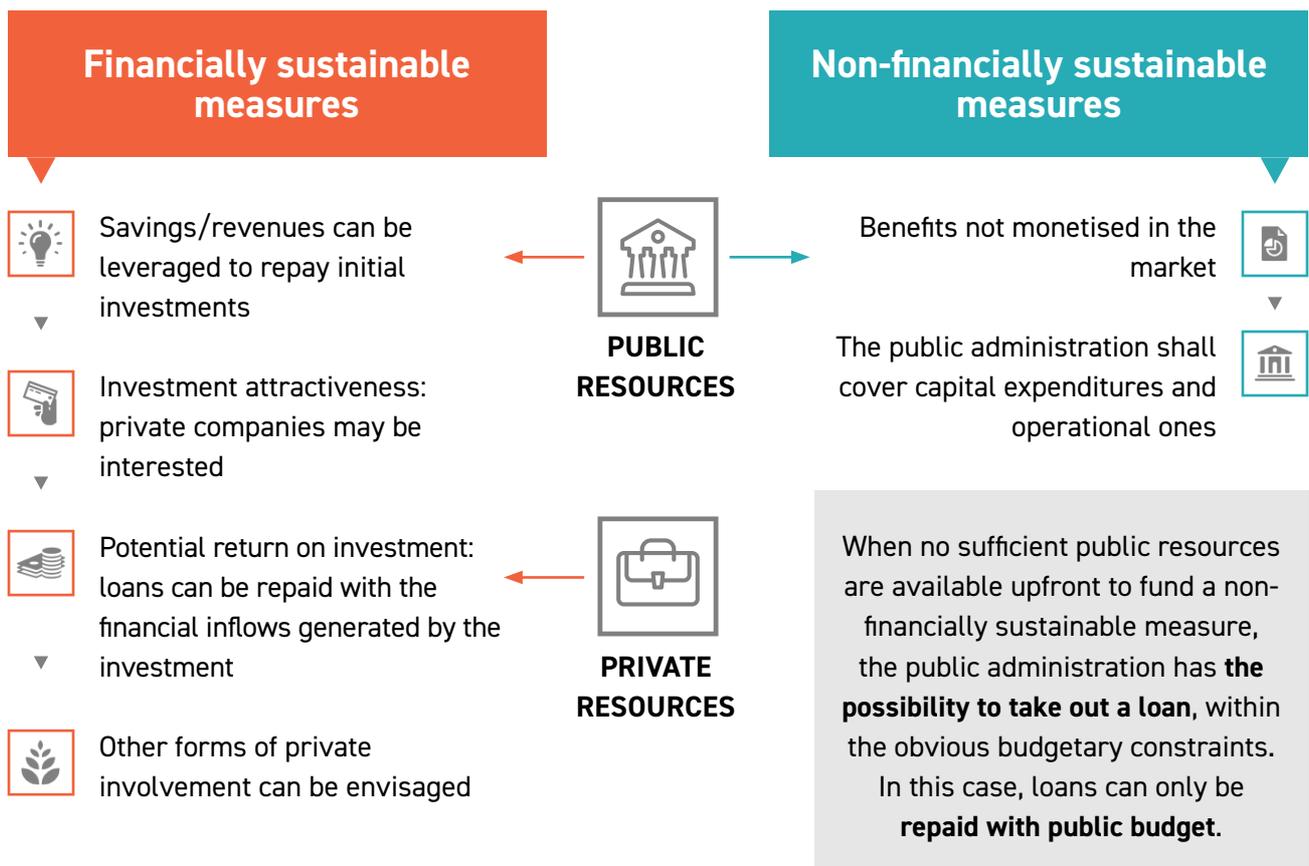
In addition, other sources can support the development of socially relevant measures free-of-charge: foundations and private companies - in compliance with their corporate social responsible strategies - can donate capital or in-kind support to develop measures for the benefit of the society.

Implementing measures does not only require initial investments. Financial resources must cover operating expenditures, too. For this reason, the choice of financial resources must take into account the complete time horizon of implementation. Both public and private financial institutions can support an AQP's deployment, anticipating capital that will be repaid in time with interest. This is the case of i.e. public and private financial institutions such as banks, IFIs, the EIB, NPBs, commercial banks, etc.

### Finding the balance

The following sections present resources available for non-financially sustainable measures as in opposition to those available for financially sustainable measures. However, it is common that a measure is sustained by both, as revenue generated and costs saved may not be sufficient to cover the investment and operating costs entirely.

Figure 4



## 2.1. Resources available for non-financially sustainable measures

Public monies are the primary source generally leveraged to support investments and operations of public interest. The main providers of public funds are local authorities through their own resources, national/ regional budget and EU funding programmes. The main advantage of public funding is that the investments do not have to be repaid and can be used to finance non-revenue generating measures. However, public resources are scarcer than the demand for public interest investments and are allocated on different, potentially conflicting priorities. Moreover, budgetary constraints limit the possibility for public administrations to invest their own resources beyond certain thresholds.

Support to local authorities can be found at EU level. Approximately 80% of EU funding support to member states developing their economies, societies and environment, equal to a few tens of billions per year, is managed under programmes jointly administered by the European Commission and national, regional or local authorities. In particular, the most relevant sources of funding supporting the implementation of measures for air quality improvement in urban areas can be identified in the European Regional Development Fund (ERDF) and the Cohesion Fund (CF). The ERDF promotes balanced development in the different regions of the EU - with significantly higher support to less economically developed regions - while the CF funds mainly transport and environment projects in countries where the gross national income (GNI) per inhabitant is less than 90% of the EU average.

*The proposal adopted by the Commission on 2 May 2018 on the multiannual financial framework for the period 2021-2027, which also includes the ERDF, increases the focus on sustainable urban development by dedicating 6% of the ERDF resources to this area.*

*These actions are to be delivered through territorial instruments, such as community-led local development, integrated territorial investments (ITIs) or other tools under the policy objective 5 A Europe closer to citizens<sup>2</sup>. An integrated planning-led approach, for example as per the preparation of an Air Quality Plan as part of the city's overall strategy, is a pre-requisite for the allocation of this funding.*

In addition to resources available from the public budget and from EU programmes, local authorities may require to borrow capital to implement non-revenue generating measures. Financial institutions can lend capital to public authorities and, differently from revenue-generating projects, be repaid with tax-revenues rather than from revenues generated from the project itself (see financing table below).

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2 The proposal for a regulation of the European Parliament and of the Council on the European Regional Development Fund and on the Cohesion Fund simplified the eleven thematic objectives used in 2014-2020 to five clear policy objectives: a smarter Europe, a greener, low-carbon Europe, a more connected Europe, a more social Europe and a Europe closer to citizens – sustainable and integrated development of urban, rural and coastal areas through local initiatives.

In relation to the objective a Europe closer to citizens, the new European urban initiative, to be implemented by the Commission through direct and indirect management, will contribute to the Urban Agenda of the EU, covering all urban areas. See <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2018%3A375%3AFIN> for details.

## Funding

Funding is the amount of capital that is provided free of charge. National, regional and local governments, philanthropies, foundations and donors support investments that generate welfare for the community, but fail to monetise the benefit they generate into positive cash-flows (and therefore cannot pay for their capital and operating expenditure).

### EXAMPLES OF SOURCES OF PUBLIC FUNDING

<b>Municipal budget</b>	Municipalities directly invest in projects allocating money generated from local taxes or other local revenues. In case municipalities need capital upfront, they can borrow it from financial institutions and repay it with tax-revenues over a longer time.
<b>National/Regional budget</b>	Specific programmes at national and regional level can support measures through various forms, either directly investing in projects or indirectly (managed locally).
<b>Fiscal incentives</b>	Instead of investing in projects, the public administration can support investments granting promoters of specific projects fiscal incentives.
<b>EU funds</b>	EU funds represent the largest number of investments in urban development projects and socially oriented projects in Europe. These typically take the form of grants, which can be centralised (managed by the EU directly) or decentralised (managed at local level).

### EXAMPLES OF OTHER SOURCES OF FUNDING

<b>Banking Foundations</b>	Foundations support efforts to reduce problems related to air quality also by transferring financial resources to dedicated investment projects.
<b>Other corporate responsibility programmes</b>	Corporate responsibility strategies can entail both the provision of financial resources and in-kind donations to support socially relevant projects.

## 2.2. Resources available for financially sustainable measures

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**F**inancially sustainable measures are characterised by the capacity to generate positive cash flows to repay the investment and operating costs. These measures can attract private investments and thus reduce the burden for the administrations or, if implemented with a public budget, generate revenues which administrations can collect and re-invest.

Thanks to the revenues generated and costs saved, financially sustainable measures do not need to be supported through grants or donations. Nonetheless it is often necessary to gather finance (i.e. debt or equity) to meet the capital expenditures when these accrue.

As for non-revenue generating measures, public and private financiers can provide loans (i.e. International Financial Institutions – such as the European Investment Bank and National Promotional Banks – may be public, but they provide financing and not grants). Differently from projects that do not generate revenues, investors can be (at least partially) remunerated with revenues generated by the project, with limited recourse to public budget.

Public resources are generally used as a lever to create the conditions and confidence for the private sector to invest alongside, or complementarily to, public entities. The private sector holds significant resources which can be invested directly (e.g. loans, equity or direct implementation of measures with own resources) or used in partnership with public administrations to achieve both public policy goals and an adequate level of profit for private investors.

Attracting private capital for the development of a given project or a pipeline of projects requires a deep understanding of the project's fundamental components, including its ownership and its sources of revenue. While some investors invest only in traditional assets such as energy systems, others invest in projects matching investment strategies focused on particular infrastructures, sectors or themes.

### Example of financing mechanisms

The financing of both revenue generating and non-revenue generating projects can be ensured in a number of different ways. The choice of the most appropriate financing mechanisms should be made on a case-by-case basis depending on the project's features, on the actors involved, on the providers of finance involved, etc. Public and private lenders finance both revenue generating and non-revenue generating projects, provided that the repayment of the debt is ensured (in the latter case through tax-revenues). A few common examples of financing mechanisms are provided in the table below.

### Financing mechanisms

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<b>Traditional loans and leases</b>	The most common form of financing mechanism concerns the provision of resources, which are repaid at a deferred moment in time and with interests directly from the public authority or, in case the project generates cash flow, through revenues generated or costs saved.
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<b>Soft loans</b>	Public authorities have the possibility to access loans made available at favourable conditions by international financial institutions, national promotional banks, etc.
<b>Revolving financial instruments</b>	Revolving financial instruments dedicated to finance AQPs can be established to leverage public and private resources – including resources from European structural funds – for the implementation of the plan.
<b>Project financing</b>	Typically used in case of projects of relatively large size, project financing relates to projects in which the cash flows specifically generated by the project (rather than of the organisation/ administration as a whole) are used to repay the financing. The projects' assets are held as collateral.
<b>Third party financing (TPF)</b>	TPF is a contractual formula through which a usually private company finances the realisation of interventions and is remunerated directly by the monetised outcomes of the investment. E.g. an Energy Service Company (ESCO) finances an energy requalification project and a share of the economic savings obtained from the improvement of energy performance represents the annual fee that the final user pays to the ESCo.
<b>Direct investment</b>	Private entities can also invest directly in a project as equity partner or with its own organisation, given the possibility to gain returns commensurate to the project risks.
<b>Project Finance (PF)/Public Private Partnership (PPP)/Concession</b>	In case of large projects, private companies can invest in (and operate) a public service asset which provide services. Revenues repay for the investment and operating costs over time. These may be generated from the service users or may be guaranteed through availability payments from the public, regardless of the demand (i.e. concessions).

The following section offers a summary of some of the most common forms of public and private financial support.

## Main funding and financing instruments and sources for air quality measures

SOURCE	COUNTRIES	MANAGING	MOST COMMON FORM OF FINANCIAL SUPPORT
Private companies/ESCOs	Any	Own	Direct investment/participation in partnerships with public
Commercial banks	Any	Own	Loans, financial instruments of various type depending on projects and investment policies

SOURCE	COUNTRIES	MANAGING	MOST COMMON FORM OF FINANCIAL SUPPORT
IFIs/NPBs	Various	IFIs/NPBs	Soft loans, financial instruments of various type
EIB	EU-28 & EU accession, neighbourhood and partner countries (e.g. TR, ME, UA)	EIB	Investment loans, framework loans, intermediated loans, equity, guarantees
European Bank for Reconstruction and Development (EBRD) – Green Economy Transition (GET)	AL AM AZ BY BA BG HR CY EG EE GE GR HU JO KZ XK KG LV LT MK MD MN ME MA PL RO RU SR SK SI TJ TN TR TM UA UZ	EBRD	Guaranteed loans, direct equity, equity funds and credit lines in the context of individual green projects
World Bank	Global (less developed countries)	World Bank Group	Mostly loans and guarantees
European Regional Development Fund (ERDF)	EU- 28	National or Regional managing authorities DG REGIO	Grants, Financial instruments
Cohesion Fund (CF)	BG, HR, CY, CZ, EE, EL, HU, LV, LT, MT, PL, PT, RO, SK and SI	National or Regional managing authorities DG REGIO	Grants, Financial instruments
LIFE Programme 2014-2020	EU-28	EASME/EIB, DG ENV, DG CLIMA	Grants, Financial instruments
CEF – Connecting Europe Facility	EU- 28	EC/INEA	Grants, Financial instruments
UIA – Urban Innovative Actions	EU- 28	DG REGIO	Grants
EEA	15 EU in Central and Southern Europe and the Baltics	Donor countries: Iceland, Liechtenstein and Norway	Grants
FIA Foundation for the Automobile and Society	Global	FIA Foundation	Donations and technical support to road safety, sustainable mobility and air quality initiatives

SOURCE	COUNTRIES	MANAGING	MOST COMMON FORM OF FINANCIAL SUPPORT
Rockefeller Foundation and 100 Resilient Cities	Global	The Rockefeller Foundation	Financial and logistical guidance and expert support helping cities worldwide to improve the well-being of urban populations
Ashden Trust	UK	The Ashden Trust	Grants for low carbon and sustainable development in cities
European Climate Foundation	EU	European Climate Foundation	Grants to foster the transition to a low-carbon society in Europe



# 3.

## Financing model for Air Quality Plans

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In the previous sections, we provided a framework for the analysis of AQPs and provided an overview of different financial sources for their implementation. The next step is to determine the best way to select the most appropriate sources to the different measures included in AQPs. This section provides guidance on the definition of a financing model for AQPs.

The financing model is usually designed for financially-sustainable measures. It can also be applied to non-financially sustainable measures, should the capital be repaid with municipalities' own budget.



**T**he main criteria for choosing the financing model of each measure lies in the investment size. Large projects usually need to be separately managed and financed. Conversely, financing smaller measures together enhances their financial viability – by enabling to reach the critical mass necessary to attract investors and financiers – and improves the efficiency of the process, avoiding duplication, reducing transaction costs and achieving economies of scale.

Advantages and disadvantages of each approach – i.e. financing single measures (projects) or financing more projects with a comprehensive investment programme – as well as the conditions when they should be used are described in the following sections, alongside examples of some of the main instruments available at EU level.

### Strength in numbers

*Regardless of the selected approach, local authorities should seek to establish a governance model appropriate to the number of stakeholders involved. Administrative barriers could hinder the implementation and financing of the AQP, in particular when more municipalities need to cooperate to reach air quality targets.*

*Financial opportunities can be missed due to fragmented demand. Small municipalities struggle to attract large capital providers, such as institutional investors and asset managers, mostly due to the limited size of the investment they offer. At the same time, a single city may not be able to offer the necessary level of investment diversification, resulting in an excessive risk level. Lastly, larger entities (e.g. metropolitan authorities or associations of municipalities) are more likely to have the capacity to access public funds than individual, small and medium-sized cities, both in case of direct support and even more when local authorities need to demonstrate their capacity for competitive bidding.*

*Nonetheless, a larger size also implies increased complexity and the need to coordinate the action of a wider range of public and private stakeholders, which may hinder or delay the effective implementation of the measures included in an AQP. The choice of the appropriate area of intervention is crucial in determining the success of the AQP.*

## 3.1. Financing single measures

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**A**n AQP may recommend large infrastructure projects, which, together with improving services and performances in a specific sector, strongly impact on air quality (e.g. metro lines, new districts, etc.). These large projects are usually implemented individually and may require a separate management in the operating phase. Against this background, these projects can be more efficiently developed through a dedicated financing approach.

To begin with, the municipality/ local authority should identify the available sources of funding and financing available on the market. Subsequently, it should assess the financial sustainability and revenue generating potential of the project and decide whether funding sources, financing sources, or a combination thereof, are best suited.

The available resources are often not specifically dedicated, or earmarked, for air quality measures. As such, air quality measures can be funded and financed through sources targeting different objectives (i.e. energy efficiency, GHG reduction, congestion reduction, etc.) which indirectly contribute to reducing air pollution.

As shown in the figure below, the municipality/ local authority can pool these different resources together and, directly or together with private companies, through the establishment of a special-purpose vehicle (SPV) which carries out the investment, implement, operate and maintain the project. The implementation of the investment typically requires the municipality (or the SPV) to select subcontractors selected through a specific procurement procedure, in compliance with national and EU regulatory framework. This requires a sufficient capacity of the contracting authorities to launch and manage the tendering process and may require the use of external experts or consultants (e.g. support in the preparation of the tendering documents, legal counsel in the negotiation of the contracts, etc.).

### For which projects/measures?

Very large projects, where the complexity and size of the investment justify a bespoke approach, which would be difficult to apply through pooled investment facilities and are typically financed as single large investment projects with a financing plan and approach tailored to the specifics of the project.

### Success factors

- Ensuring that project characteristics match the eligibility criteria/investment conditions of the sources of finance identified
- Ensuring that the project is monitored in coordination with the rest of the AQP
- Sufficient capacity of the local and municipal authorities to manage the procurement process and oversee contracts with construction companies and operators
- Sufficiently developed legal framework for PPPs and concessions at the national level and sufficient capacity of market actors

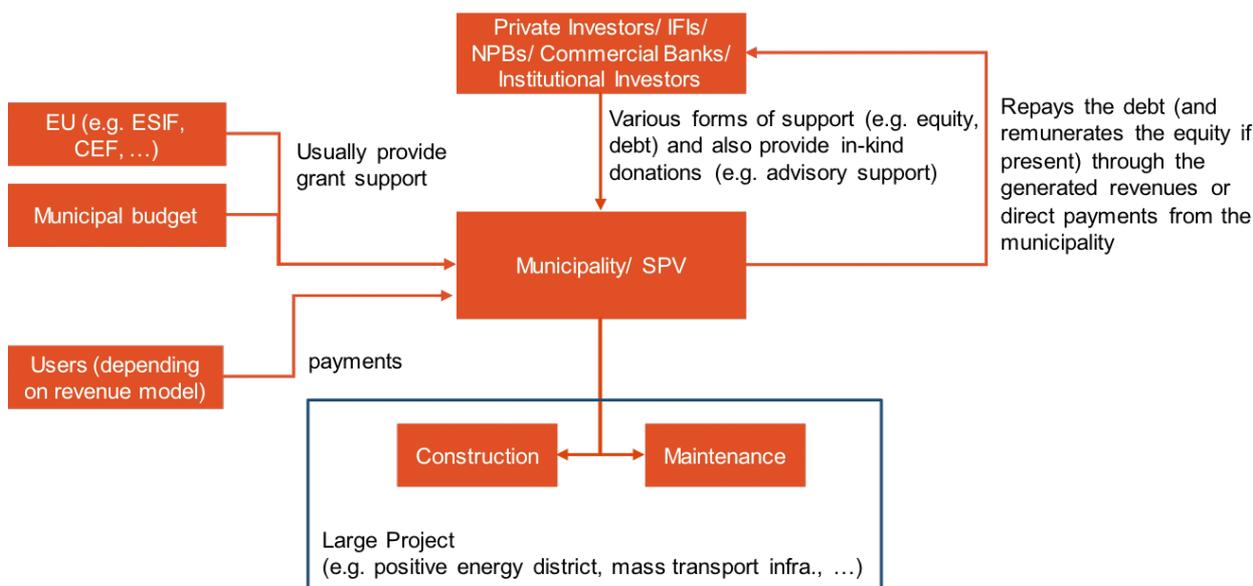
### What are the benefits?

Identifying a dedicated financing model for large-scale projects enables the design of a solution that suits the project's needs in the investment and operating phases. It also enables the attraction of public and private providers of finance.

## Governance related to the AQP

Depending on the case, public and private actors can share the management of the project (e.g. in case of PPPs or concessions). It is important to ensure that the public body managing the implementation of the AQP coordinates with the actors managing the single large projects, to ensure it contributes to the air quality objectives as planned.

Figure 5



### **⚠ WARNING**

*Designing a financing model following the “single-measure” approach entails the identification of project-specific technical solutions and – more importantly – its management. While this is feasible and recommended in case of very large projects and when local authorities have sufficient capacity, it is burdensome and inefficient for smaller projects. The complexity of governing the sources would increase exponentially and, from a financier perspective, the assessment of the investment would not be justified for singular small-scale projects.*

*As a result, the approach is feasible when focussing on a limited number of projects of large size. Increasing the number of projects implemented separately may be overwhelming and hamper the AQP implementation, if not properly managed. At the same time, if these projects do not reach a certain size, the efforts and costs to define their financing model may not be justified.*

Among the possible financial products that can be used to finance large projects, loans provided by commercial banks, national and international financial institutions are among the most widely used financial products, since they tend to be flexible and relatively simple to manage. Depending on the project, the borrower will be the municipality or other actors such as municipal companies, utilities, etc. While loans are the most common financial product used to finance single projects, other products are available to project promoters including equity investments in SPV and project bonds. These products however require a higher level of sophistication and financial capacity of the promoter and will not be analysed in detail in this guidance.

## EIB direct loan

### What does it support?

EIB provides direct lending for large projects – with total investment cost exceeding € 50 million – in key sectors, with the aim of delivering a positive impact on the economy, including strategic infrastructure (digital, transport, water, energy, etc.) and the environment.

### How does it work?

The loan provides upfront capital to finance the project that should be repaid by the borrower over a long time-period (usually 15 years and up to 30 years, depending on the project). Similar tenors match the needs of infrastructure projects, which usually entail a long lifecycle and a long repayment time.

### Who is the borrower?

EIB can lend to:

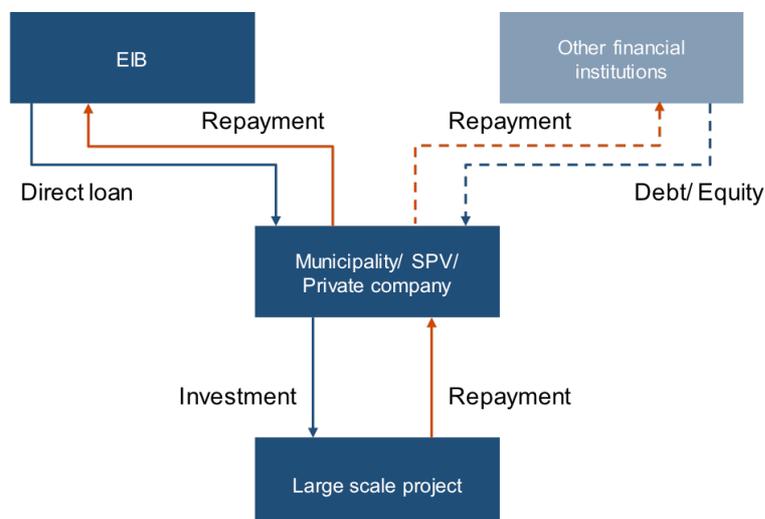
- Public entity, i.e. national administrations or local authorities
- Public sector companies
- Large companies and Midcaps
- PPP/SPVs (including for project finance)

### Benefits

- EIB long term loans present favourable conditions in terms of duration of the tenor and pricing
- EIB's involvement encourages the participation of other finance providers providing comfort to other potential investors and lenders

### Necessary conditions

- Direct support is provided for projects exceeding a certain size (approximately € 50 million). EIB's loan can cover up to 50% of the investment cost
- The project must comply with EIB's eligibility criteria and must be economically, financially, technically and environmentally viable
- Direct support is not provided for projects not reaching a minimum size (approximately € 50 million).



## 3.2. Financing a multi-sector investment programme

In addition to large stand-alone projects, AQPs most often include a number of smaller projects targeting different sectors. Financing these measures individually would entail a duplication of costs and procedures for municipal administration, as well as very complex coordination among administration departments, as measures often refer to different policy objectives. Furthermore, (international) financial institutions, just like most large investors, find it difficult to support small projects individually. The limited size does not justify the administrative and technical procedures, as well as the transaction costs, required for their involvement.

The solution often lies in bundling. When projects are bundled together they can reach a critical mass that attracts investors, and, being managed as one, ensure the achievement of economies of scale.

The investment programme including the bundled measures has the possibility to mirror the AQP measures and objectives. However, its scope should be carefully evaluated to ensure a balanced risk – specifically in terms of sectors covered and investment area. Further, it is necessary to check that the scope of the investment programme and the single measures matches the eligibility criteria of financiers supporting the programme.

### **⚠ WARNING**

*Defining an adequate geographical scope may require different cities and local authorities to team up and take part in a common investment programme. In this way, smaller cities benefit from investments that they could hardly attract on their own, and large cities reach the geographical extension needed to enable a proper investment diversification.*

*Investment programmes with a multi-city spatial dimension entail specific requirements in terms of governance i.e. with smaller cities appointing the large cities to coordinate the programme.*

*At the same time, coordination should be ensured within administrations as different departments would use resources to achieve different policy objectives than the AQP only. Conflicts on the budget allocation which may arise among the different departments must be properly managed.*

### **Not only a matter of financial viability**

Developing a common investment programme for neighbouring municipalities lowers the risk level of the programme – with a greater diversification of investments – and gains resources that could not be attracted by single cities. But the benefits are not just financial. This approach also enhances the effectiveness of the programme.

Air quality measures must go beyond the single administration borders to reach effectiveness and ensure that the AQP actions in one municipality are not nullified by neighbouring ones failing to adopt coherent measures. Therefore, partnering at inter-municipal level favours a consistent deployment of an effective AQP and helps find the necessary resources to finance it.

## For which projects/measures?

Programmes encompassing a large number of measures of different size – yet not sufficiently large to justify an individual investment – and from different sectors (depending on the possibility to match the investment policies of the sources).

## Success factors

- Technical and administrative preparation of all the actors involved (public authorities, financial intermediaries and recipients)
- Coordination and cooperation across different municipalities and involved departments within each municipality to avoid conflicting priorities.

## What are the benefits?

- Bundling small-scale investments to reach the critical mass necessary to attract investors
- Financing all measures together, potential divergences on budget allocation within the public administration can be overcome
- The approach can support the coordination of more municipalities, which must embrace the AQP to achieve the desired air quality objectives
- The different resources gathered can be used to sustain the whole AQF, including its establishment and monitoring

## Governance related to the AQP

In case of a model designed to support the AQP entirely (ideally leaving out large projects, see above) the governance of the financial resources should mirror the financial needs of the AQP. This may also require to manage the AQP and pool together resources beyond the municipal borders, for which a dedicated agreement among relevant public bodies can be envisaged.

Different financial structures and products can be set up to support air quality investment programmes (or relevant sections of programmes). The remainder of this section presents a few examples:

- An EIB framework loan to finance long-term investments in multiple sectors. At EU level it is hereby reported as reference the EIB Framework Loan, thanks to its proven effectiveness in supporting urban development projects and programmes.
- An EIB intermediated loan, which makes available to financial institutions resources to finance small-scale investments.
- An investment fund specifically managed and dedicated to support measures within the Air Quality Plan (“Air Quality Fund”), which can blend different sources of finance.

## EIB Framework loan

### What does it support?

EIB Framework loans provides a solution to finance simultaneously multiple small and medium-sized projects, most frequently in the urban transport infrastructure, energy efficiency/renewables and urban development and renewal sectors, with a total project cost of individual investments in the range of €1-50 million.

### How does it work?

The EIB framework loan provides flexible long-term financing. The typical terms for a loan set a loan maturity of 20-25 years (matching the economic life of infrastructure) and, crucially, a grace period during which repayments are not due (e.g. during construction) of 3-5 years.

### Who is the borrower?

- A public entity, usually the city or the region
- Companies with which the public entity have legal relationships, through the public entity on-lending the debt at the same conditions made by the EIB

### Benefits

- Cities and regions benefitting from the European Structural and Investment Funds (ESIF) can use loans as a means of co-financing for the investments they are undertaking, either independently or drawing from ESIF funds
- The involvement of the EIB may attract other financiers/ investors from the private sector
- The EIB Framework Loan does not require the investment programme to be set out in detail to be eligible, instead, an indicative investment programme and the sectors covered are deemed sufficient, granting a level of flexibility that is often needed in long-term urban investment plans
- The EIB Framework Loan can be mixed with other financial resources (i.e. EU grants and private finance) to cover the investment needs

### Necessary conditions

- The investment programme must be in line with the EIB's lending objectives and must be economically, financially, technically and environmentally sound
- The total costs of any investment programme financed must be usually over €100m with the EIB framework loan (at least €20m per year for 5 years)
- EIB framework loans can be combined with EU grant funds as long as the total sum of the funds (EIB and EU) does not exceed 90% of the total cost of the investment programme in less developed and transition regions and 70% for developed regions<sup>3</sup>

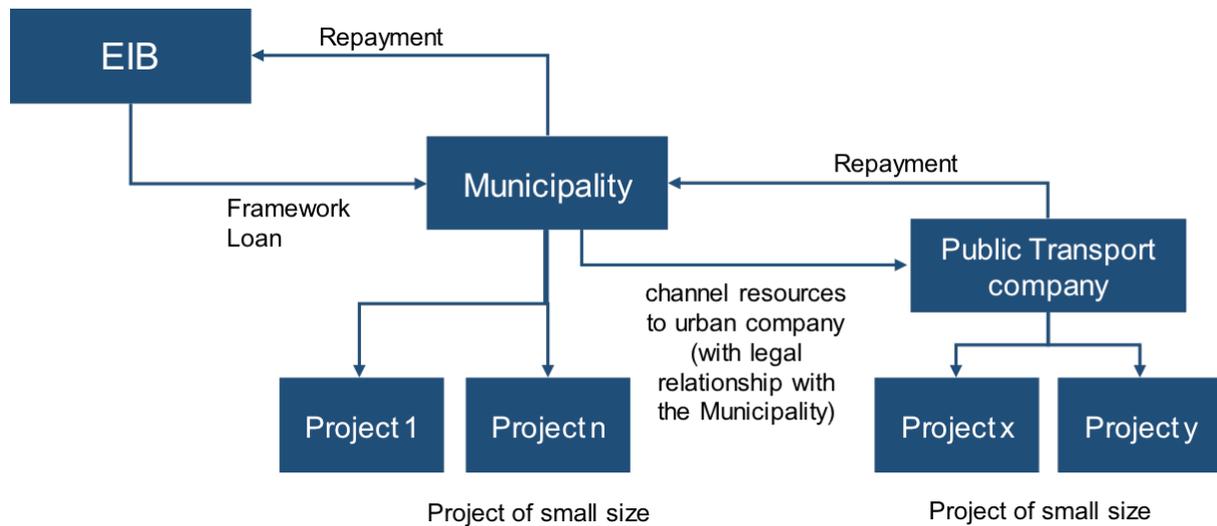
3 The percentage of investment that cannot be supported by the EIB + EU, may be covered by other players (e.g. foundations, local private investors).

- EIB's loan cannot finance more than 50% of the overall investment programme (though EIB funds can finance more than 50% of a single project provided there are other projects with a lower share to make the average share less than 50%)
- The borrowers need to be generating sufficient investment volume (e.g. covering an area inhabited by at least 75,000 people)
- EIB financing cannot be granted to investments with progress status higher than 50%

## Governance implications

The region or city taking the leadership of the investment directly interface with EIB from the identification of the project opportunity phase to the repayment phase.

The region or city can channel part of the loan to a third-party having a legal relationship with said region or city (e.g. energy or urban transport companies owned by the municipality that may be directly responsible for the implementation of the intervention).



## EIB Intermediated loan

### What does it support?

EIB intermediated loans provide solutions to finance small-scale investments by local authorities and public sector entities, promoting projects in several areas: the knowledge economy/skills and innovation, projects linking regional and national transport infrastructure, environmental sustainability, growth and employment potential, economic and social cohesion. The mechanism also supports multi-sector operations.

### How does it work?

EIB intermediated loans are medium and long-term loans for financial institutions across Europe, which subsequently on-lend to local authorities and public sector entities promoting eligible projects. In particular, a financial intermediary takes a loan indicatively above € 25m to on-lend to municipalities that use it to finance multiple projects of at least € 200m in total. The tenor of the loan is up to 15 years depending on the credit risk profile and economic life of the asset.

### Who is the borrower?

EIB can lend to:

- National promotional banks
- Commercial banks and other financial institutions
- Leasing companies

The financial intermediary subsequently “on-lend” to the final beneficiaries:

- Small and-medium-sized businesses
- Midcap businesses
- Large businesses
- Local authorities
- National administrations
- Public sector bodies

### Benefits

- EIB intermediated loans present favourable conditions in terms of long tenors and attractive pricing
- The mechanism could allow to create synergies with other financial products of the EIB, as the European Fund for Strategic Investment (EFSI)<sup>4</sup>
- An EIB intermediated loan can be mixed with other financial resources (i.e. EU grants and private finance) to cover the investment needs
- Loan conditions can be flexible in terms of the size, duration, structure etc.

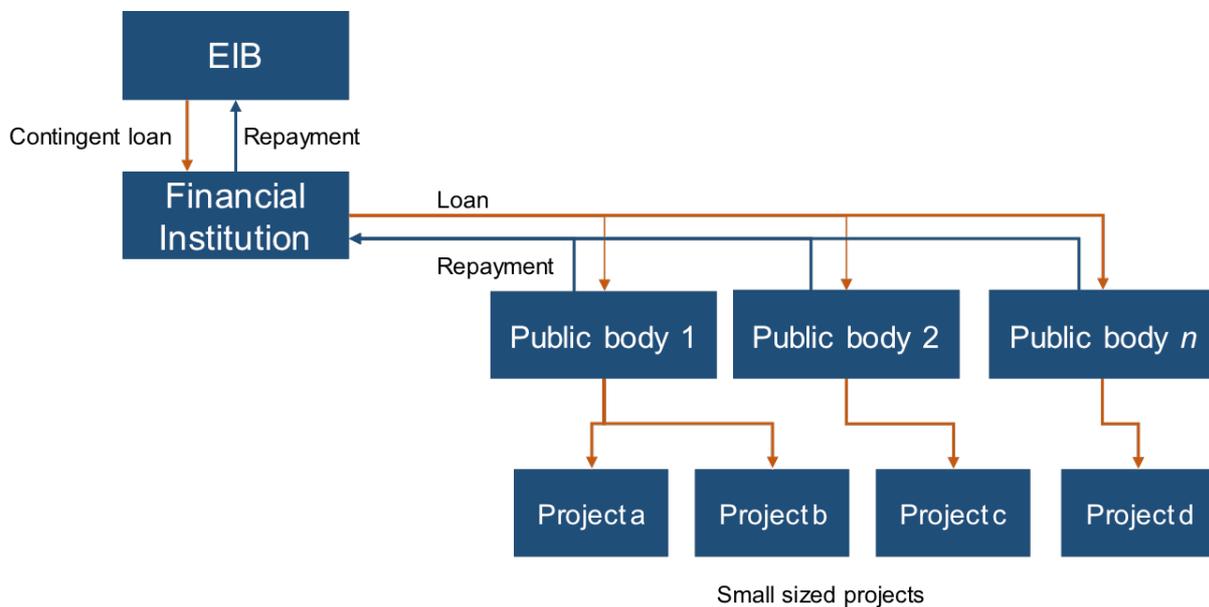
<sup>4</sup> Depending on the risk of the specific operations, the EIB intermediate loan can be supported by the European Fund for Strategic Investments (EFSI).

## Necessary conditions

- The investment should involve a sufficient pipeline of eligible underlying projects
- In order to be eligible, projects must support EU public policy objectives
- The individual cost of a project typically does not exceed 25 €m
- For each project undertaken, the amount of EIB loan allocated to it cannot exceed 50% of the project's investment cost
- On-lending decisions remain with the intermediary institutions

## Governance implications

An EIB intermediated loan implicates that on-lending decisions remain with the intermediary institutions, which also retain the financial risk of the on-lending. Normally, under intermediated loans the municipality does not have any contractual relationship with the EIB.



## Air Quality Fund

### What does it support?

An Air Quality Fund is a financial instrument specifically designed to finance the measures contained in the AQP.

AQFs can be established at either a national, regional, inter-municipal or local/city level in response to integrated air quality plans, project pipelines and investor interests. Identifying the geographical scope of the fund plays a key role in this search.

The investment scope should be wide enough to ensure that investment and risk are properly diversified and yet the efforts of the municipalities involved are effective.

### How does it work?

AQFs are established by public bodies willing to finance their AQP. Public and private financiers and investors can contribute to the fund either increasing its envelope or financing specific projects among those targeted by the AQF. The possible sources of finance of the AQF (or its target projects) include the EIB Framework Loan mentioned above.

AQFs could follow two different approaches: a Single-sector Fund and as a Multi-sector Fund. Single Funds cover a single thematic area and offer a simple model to address the financing needs of a specific sector, while Multi-sector Funds cover multi thematic areas and offer a complex model to address financing needs spread across difficult sectors. In the latter case, funds are channelled via sector-specific investment compartments, chosen by investors on an individual basis. Moreover, Multi-sector Funds allow public and private resources to be leveraged at the fund-, compartment- and project-level (see figure below).

### Who is the borrower?

The AQF finances the promoters of the different eligible measures, including the municipalities and private companies (either in collaboration with the public authorities or on their own).

### Benefits

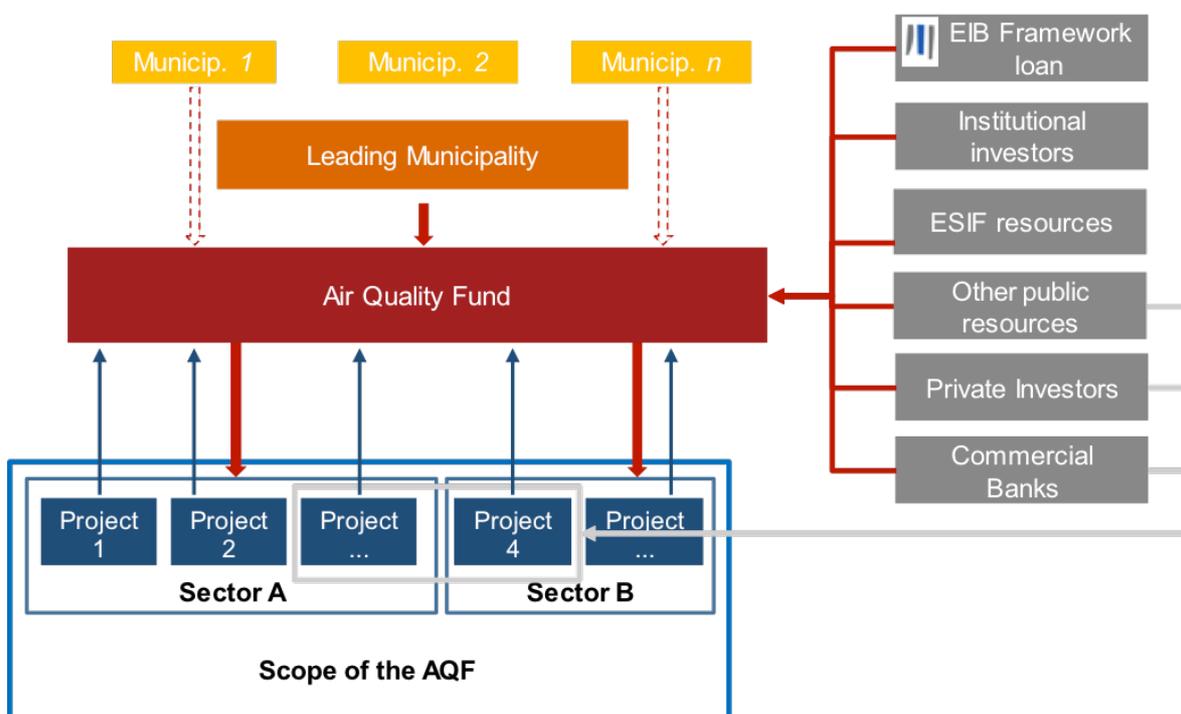
- Alignment between APQ objectives and measures financed by the AQF
- Opportunity for raising additional financial resources from private and public investors, at fund and at project level
- AQF can be combined with EIB Framework Loan to simplify the search for the financial resources needed
- Possibility to invest the (usually scarce) public resources more than once (revolving instrument) since the funds can be recycled when loans are reimbursed
- The different resources gathered can be used to sustain the whole AQF, including its establishment and monitoring

## Necessary conditions

- Sufficient capacity of the local administration to implement the solution
- Sufficient degree of sophistication of the financial sector
- Capacity to cover costs to develop and manage the financing solution tailored to the AQP
- Interest from public and private investors
- Uniformity of the urban issues faced by the municipalities involved (necessary to ensure consistency across policy objectives and political commitment)
- Adequate level of projects' diversification to manage risks
- Alignment of the measures provided by the AQP with the Thematic Objectives and/or eligibility requirements of eventual Operational Programmes contributing to the AQP
- Effective communication to potential beneficiaries to ensure adequate absorption/use of the funds

## Governance implications

- Should the AQF target investments in different municipalities, the different bodies shall agree upon on the investments to be carried out, reducing the risk of political and administrative barriers
- Cities can take the lead when establishing a new financial instrument, as it is in their interest to define the investment strategy and identify the right projects for investors, both public and private, from an early stage. This must be balanced against the requirements of compliance with the existing legislation and any other requirement by private investors (e.g. introduction of an independent fund manager)





# 4.

## Financing measures

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Having provided a few examples of financial structures and products applicable to both stand-alone projects and multi-sector investment programmes, this section aims to analyse in more detail some of the most common measures included in Air Quality Plans, clustered in three main sectors: transport, energy and urban development.

The examples provided are based on both the example of the draft Air Quality Plan prepared by the city of Milan as well as on the experience of the authors. This is not intended to be an exhaustive list.

Each measure is described in terms of its content, its role in reducing air pollution levels, its capital expenditure, operating and maintenance costs, as well as its financial sustainability and revenue generating potential. In addition, an indication of which financing structure(s) among those described in the previous section would be appropriate is provided.

Moreover, for each measure the following information is presented:

### Stakeholders involved

A list of potential public and private stakeholders

### Scope

Its potential spatial scope and/or area of intervention, specifically:

- Localised – measures whose impact limited to a specific location
- Urban – measures whose impact is city-wide
- Metropolitan – measures whose impact extends beyond city boundaries

### Cost

Its potential cost, ranging from limited to high. The assessment of the expected cost for each measure followed a qualitative approach, based on direct experience of the design and implementation of similar projects globally, as well as on the assessment of comparable programmes, such as the AQP Draft in Milan.

### Impact

Its potential impact, measured on a scale from limited to large. The impact is intended as the role that the specific intervention plays in meeting the objectives of the AQP. Importantly, AQP objectives can refer to general levels of pollution city-wide or to the protection of specific segments of the population that are considered at-risk (e.g. children, elderly people). As a consequence, for example, even an intervention whose scope is localised can have a large impact if it is aimed at schools or hospitals.

The assessment of each criterion (stakeholders, scope, cost and impact) is based on a “typical” project within each measure. Given the general nature of this guidance, the measures presented and the criteria identified may change depending on the local context.



Transport – Financing measure

# Restriction areas – Low Emission Zone (LEZ)

Stakeholders involved

Municipality/urban transport authorities, road users, taxpayers, lenders (optional)

Scope

Cost

Impact

Urban with impact at metropolitan level

◆◆◆◆◆

★★★★☆

## What is it?

An LEZ is an area where access by polluting vehicles is restricted or deterred with the aim of improving the air quality. Access may be permitted to certain alternative fuel vehicles, hybrid electric vehicles, or zero-emission vehicles (i.e. all-electric vehicles). The measure generally entails a regulatory action taken by the municipality to impose the LEZ and the related non-compliance charges (if any). The municipality (or the urban transport authority) also needs to carry out the investment to deploy the systems to control access and collect access fees (if any).

## Why?

The introduction of an LEZ can reduce the levels of the most harmful air pollutants – such as nitrogen oxides, fine particles and black carbon – by limiting and discouraging access to specific areas to all motor traffic or only to the most polluting vehicles.

## What are the potential revenue sources?

LEZ schemes can collect revenue via user charges or can be free of charge (however this will impact the scheme's financial sustainability). The charge structure may affect the effectiveness of the measure in reaching its environmental objectives (both positively and negatively) depending on whether users are deterred to use private vehicles or more likely to do so.

## What is the expected capital expenditure?

Main capital expenditure include:

- Construction/installation of the physical infrastructure, such as Automatic Number-Plate Recognition (ANPR) cameras
- The purchase/development of an appropriate IT fee collection system to ensure compliance to the LEZ restrictions.



## Restriction areas – Low Emission Zone (LEZ)

### What are the expected operating and maintenance costs?

Expected operating and maintenance costs vary depending on how the scheme is implemented, but they generally include the ongoing maintenance of the physical infrastructure (e.g. ANPR cameras) as well as regular updates to the IT fee collection system and cost for staff involved in the operation of the system.

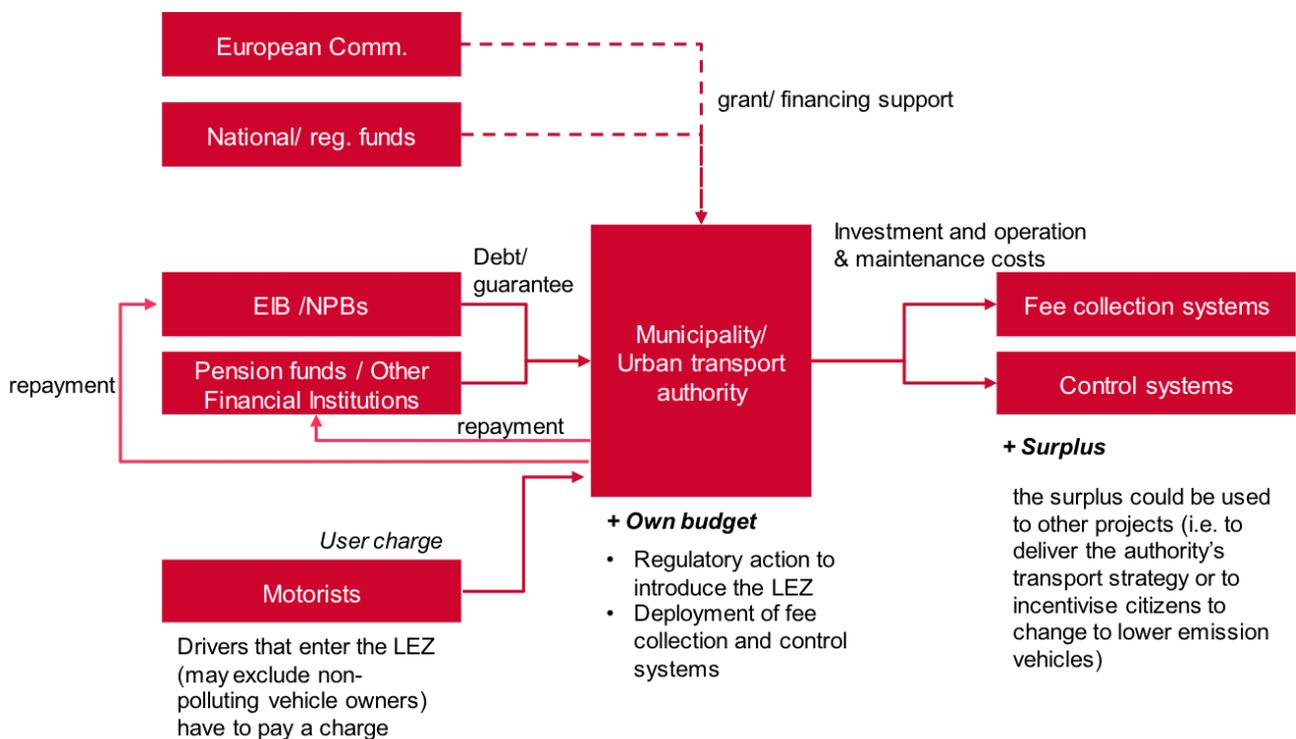
### How can it be financially sustainable?

Financial sustainability relies on the use of user charges to recover operational and maintenance costs of running the LEZ scheme. Any surplus revenue could be used to deliver the authority's (municipal or regional) transport strategy, including incentivising active transport alternatives, such as walking and cycling, and switching to low- or no-emission vehicles.

### Which scheme may apply?

- EIB framework loan
- Intermediated loan
- AQF (depending on the actual revenue-generating potential of the project)

## Restriction areas – Low Emission Zone (LEZ)





## Restriction areas – Low Emission Zone (LEZ)

### Conditions

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- ✓ Clear definition of the objective, since financial sustainability may not necessarily guarantee the achievement of air quality objectives (e.g. residents may choose to pay a fee and still use their car in the low emission zone, thus reducing the impact of the measure)
- ✓ Regulations allowing imposing charges and penalizing non-compliance
- ✓ Low commuter number and car density
- ✓ LEZ area sufficiently large to avoid pushing traffic in adjacent areas
- ✓ Local public transport sufficiently developed within the restricted areas and in connection with the surrounding areas
- ✓ Charges proportionate to the local situation in terms of traffic intensity and socio-economic conditions

### Selection of potential EU funding sources

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EU Structural Funds	EC
Urban Innovative Actions	EC

### Selection of relevant financial instruments and investors

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EIB Framework Loan /intermediated loan	EIB
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Transport – Financing measure

# Electric vehicles charging stations

## Stakeholders involved

Municipalities, private companies (e.g. from automotive industries and energy sector), advertisement companies, institutions, drivers

### Scope

Metropolitan

### Cost

◆◆◆◆◆

### Impact

★★★★★

## What is it?

Municipalities can invest in creating the necessary electric charging infrastructure to incentivise the uptake of electric vehicles. It is possible to distinguish between two types of electric charging infrastructure: “private charging points open to the public”, i.e. charging stations built by private individuals on private land, and “public charging points”, i.e. charging points deployed on public land by public bodies or private entities.

## Why?

Incentivising the switch to electric vehicles can reduce the levels of tailpipe pollutants such as particulates (PM), volatile organic compounds (VOC), hydrocarbons, carbon monoxide (CO), ozone, lead (Pb), and various oxides of nitrogen (NOx) as well as achieve a reduction in CO2 emissions.

## What are the potential revenue sources?

Different revenue sources can be considered (also to be applied jointly):

### **Option 1: Setting a users' fee**

The pay-per-use model in which consumers pay a mark-up per kWh charged or the subscription model in which consumers pay an annual or monthly subscription fee for using the charging infrastructure.

### **Option 2: Renting of advertising spaces**

Renting of advertising space on charging stations (e.g. on digital interactive screens), given the visibility they tend to benefit from due to their strategic location (densely populated areas).

## What is the expected capital expenditure?

- Installation of charging stations and connection to the grid
- IT system to manage charging points

## What are the expected operating and maintenance costs?

Expected costs include the maintenance of charging stations as well as the IT system to be developed to manage public charging points and (Option 2: Renting of advertising spaces) costs of managing the advertising platforms.



# Electric vehicles charging stations

## How can it be financially sustainable?

### Option 1: Inclusion of a fee from users

Both models make the development of electric vehicles charging stations financially sustainable and, potentially, self-sustaining when revenues exceed operating and maintenance costs. Revenues in a pay per use model are proportional to the degree of the utilisation of a single charging station (how many hours per day are cars actually charging at the station) times the electric throughput (how many kW are delivered to a car per hour) times the mark-up charged per kWh by the charging provider. In the subscription model, revenues for each provider correspond to the subscription fee times the number of subscribers.

### Option 2: Renting of advertising spaces

The sale of advertising space makes the development of electric vehicles charging stations financially sustainable and, potentially, self-sustaining when revenues exceed operating and maintenance costs.

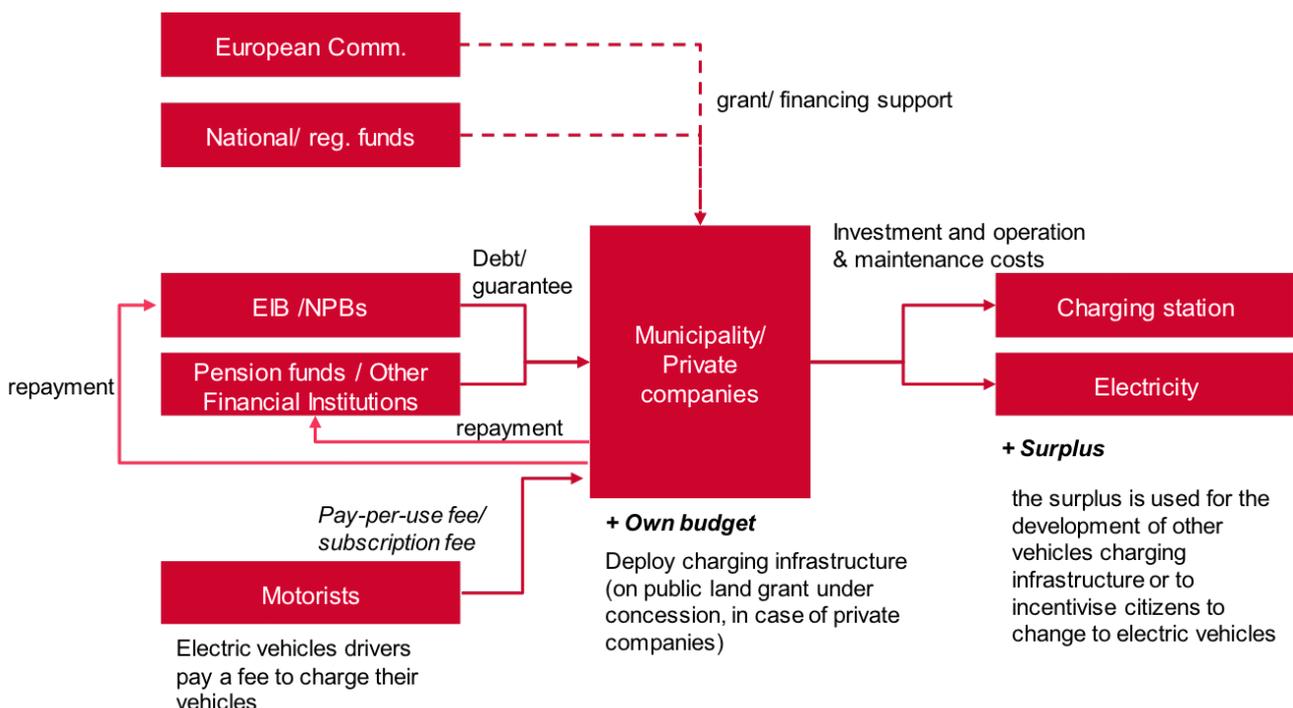
## Which scheme may apply?

Depending on the way the project is structured, managed and the size, it can be supported via:

- EIB framework loan
- Intermediated loan
- AQF

or, as a standalone project and, therefore, through a dedicated loan from a public or private financial institution, the creation of an SPV with a mix of equity and debt investment, the issuance of a project bond, etc.

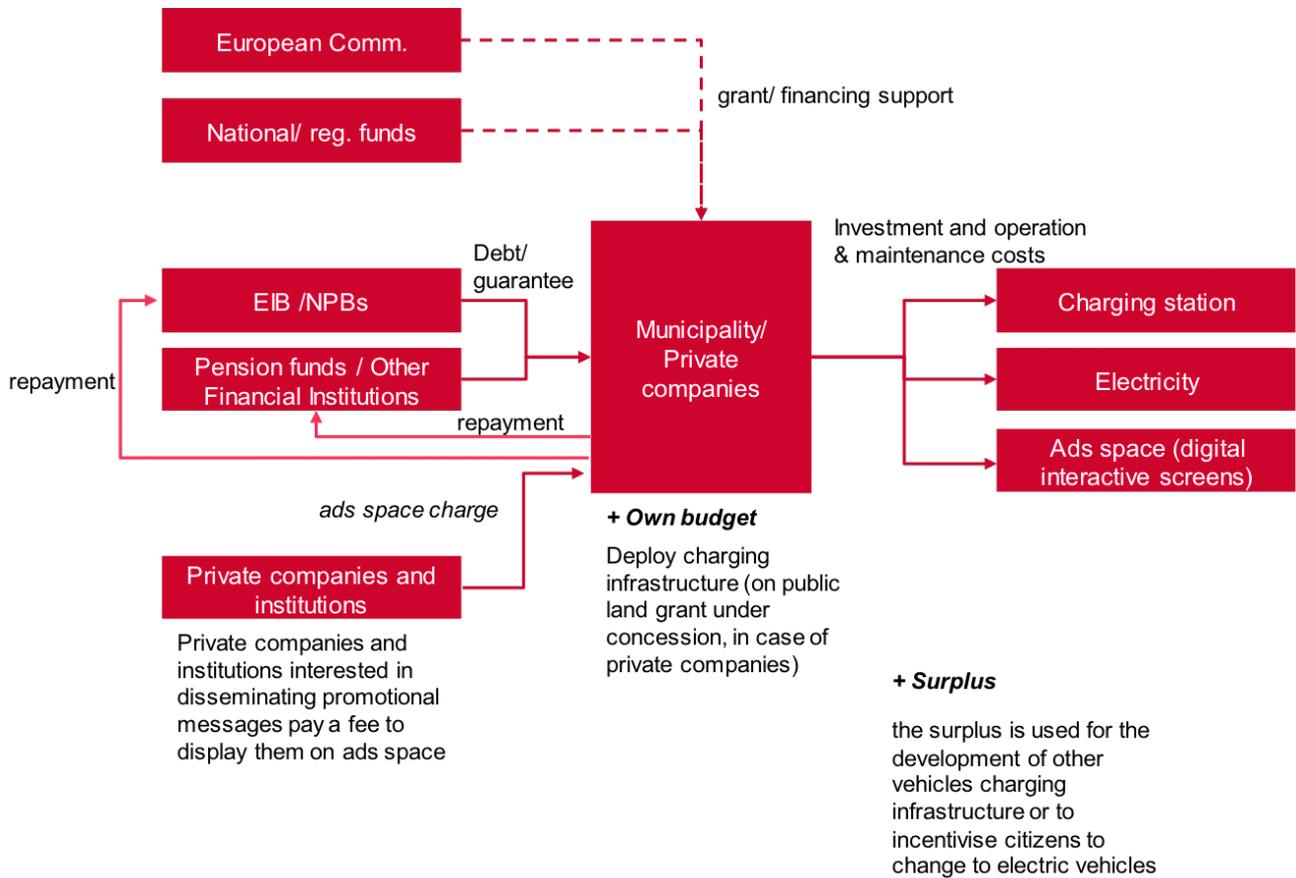
### Option 1: Setting a users' fee





# Electric vehicles charging stations

## Option 2: Renting of advertising spaces



## Conditions

- ✓ High population density

### Option 1: Setting a users' fee

- ✓ For the implementation of a pay-per-use business model, high utilization rates expected
- ✓ For the implementation of the subscription model, strong demand for charging stations expected

### Option 2: Renting of advertising spaces

- ✓ Location of charging stations in high-traffic areas such as malls, shopping centres, large retailers, office buildings, and university campuses

## Selection of potential EU funding sources

EU Structural Funds	EC
Urban Innovative Actions	EC
Connecting Europe Facility	EC/INEA



## Electric vehicles charging stations

### Selection of relevant financial instruments and investors

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EIB Framework Loan/intermediated loan (direct loan in case of large project)	EIB
Loan	Commercial banks
EBRD – Green Economy Transition (GET)	EBRD
EBRD	

### Selection of potential non-financial investors

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Companies interested in advertising space
Energy companies
Automotive sector companies (manufacturers, car sharing companies, ride hailing)



Transport – Financing measure

# Construction of new/extension of mass rapid transit line

## Stakeholders involved

Municipalities, public transport authorities, construction companies, developers, financial institutions, member states

### Scope

Urban

### Cost

◆◆◆◆◆

### Impact

★★★★★

## What is it?

Mass rapid transit lines (also known as underground, subway or metro) are high-capacity, high-frequency rail lines serving urban areas.

## Why?

Investment aimed at increasing use of public transport positively impacts air quality by reducing the number of private vehicles on the road, which reduces congestion levels and related air pollution..

## What are the potential revenue sources?

Different revenue sources can be considered (also to be applied jointly):

### **Option 1: User charges**

User charges are paid by public transport users

### **Option 2: Sale of advertising spaces**

The additional space available for advertising (stations, trains) can be sold to advertisers

### **Option 3: Monetisation of value added**

The uplift in land value captured through property taxes via an increase in the tax base (e.g. through Tax Increment Financing schemes).

## What is the expected capital expenditure?

Capital expenditure constitutes a very significant share of the project costs. They include planning and construction costs of the MRT line (e.g. groundworks, purchase of materials, track-laying, installation of IT and security systems, etc.) as well as cost for purchasing the rolling stock to be used on the line.

## What are the expected operating and maintenance costs?

Main expected costs include costs for operating the new line (e.g. personnel for ticketing/security purposes and utilities) as well as the maintenance and any other cost regarding the integrity of the physical infrastructure.

## How can it be financially sustainable?

The diverse streams of revenue make the project palatable to investors and financially sustainable, albeit, given the size and the strategic importance of the investment, it is not uncommon for national governments to fund such projects via grants.

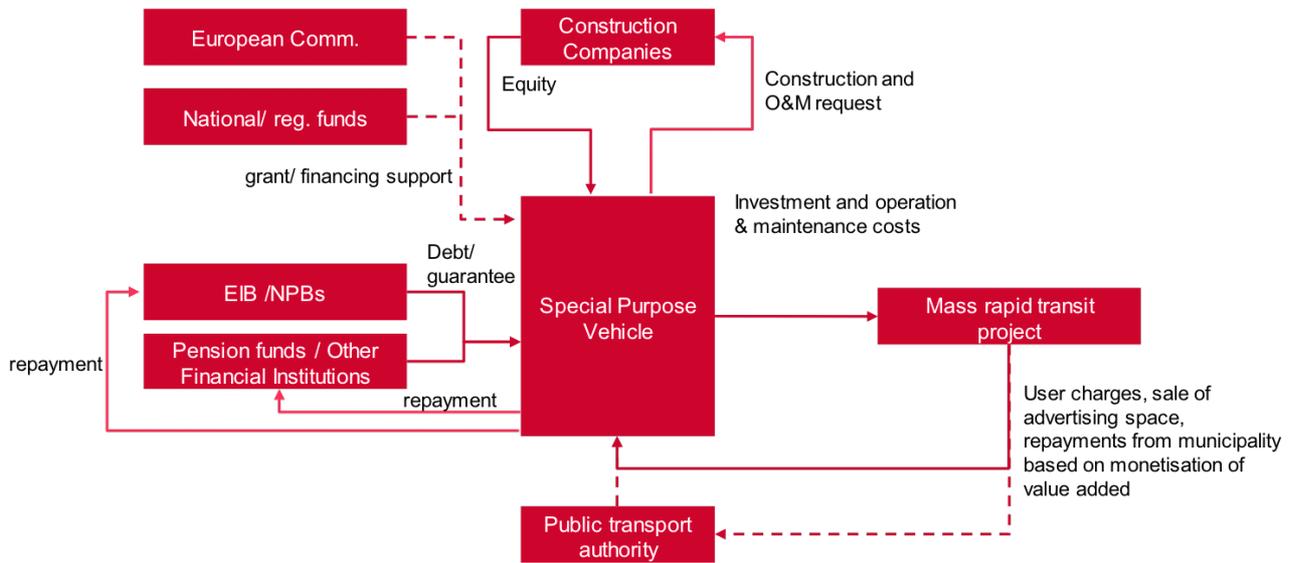


# Construction of new/extension of mass rapid transit line

## Which scheme may apply?

Due to the average size of the project, it is likely that it is supported through direct loans.

### Construction of new/extension of mass rapid transit line



### Conditions

- ✓ Availability of land for station in strategic, medium- and high-density areas
- ✓ User fees should be adapted to user capacity and willingness to pay for public transport to ensure accessibility
- ✓ Effective communication and awareness raising campaigns should be implemented to encourage modal shift

### Selection of potential EU funding sources

EU Structural Funds	EC
Urban Innovative Actions	EC
Connecting Europe Facility	EC/INEA

### Selection of relevant financial instruments and investors

Direct loan	EIB/ other banks and FIs
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### Selection of potential non-financial investors

Infrastructure construction companies (in case of metro lines or light railways)
Transport system operators



Transport – Financing measure

# Expansion and/or replacement of bus fleets, bus stops/shelters, cycle lanes

Stakeholders involved

Municipalities, public transport authorities, private companies (e.g. advertising companies), public transport riders, cyclists

Scope

Urban

Cost

◆◆◆◆◆

Impact

★★★★☆

## What is it?

Public transport investment aimed at reducing air pollution ranges from, but is not limited to, the expansion/upgrade of bus fleets to replace older and more polluting vehicles with more environmentally friendly ones or the construction of bus stops and cycle lanes.

## Why?

Investment aimed at increasing use of public transport positively impacts air quality by reducing the number of older and most polluting vehicles on the road.

## What are the potential revenue sources?

Different revenue sources can be considered (also to be applied jointly):

### **Option 1: User charges**

User charges are paid by public transport users

### **Option 2: Sale of advertising spaces**

The additional space available for advertising (interactive screens at bus stops/shelters, in-bus and side-bus) can be sold to advertisers

## What is the expected capital expenditure?

Capital expenditure varies considerably depending on measures. The purchase of new buses to replace/expand the existing fleet requires large upfront costs. The entity of the capital expenditure required for the construction of cycle lanes depends on the types that are implemented (e.g. sharrows, buffered, protected, etc.) and on their length and related planning costs. Capital expenditure for bus stops/shelters concern the installation of the stops/shelters and the set-up of an appropriate IT system, where relevant.

## What are the expected operating and maintenance costs?

Operating and maintenance costs vary considerably depending on the measure considered. For new buses, maintenance and operating costs are expected to be lower when they are replacing older vehicles, and include intervention on the physical integrity of the vehicles and staffing costs. Bus stops/shelters and cycle lanes require maintenance intervention to preserve their integrity and usability (e.g. lightning, periodic re-surfacing).



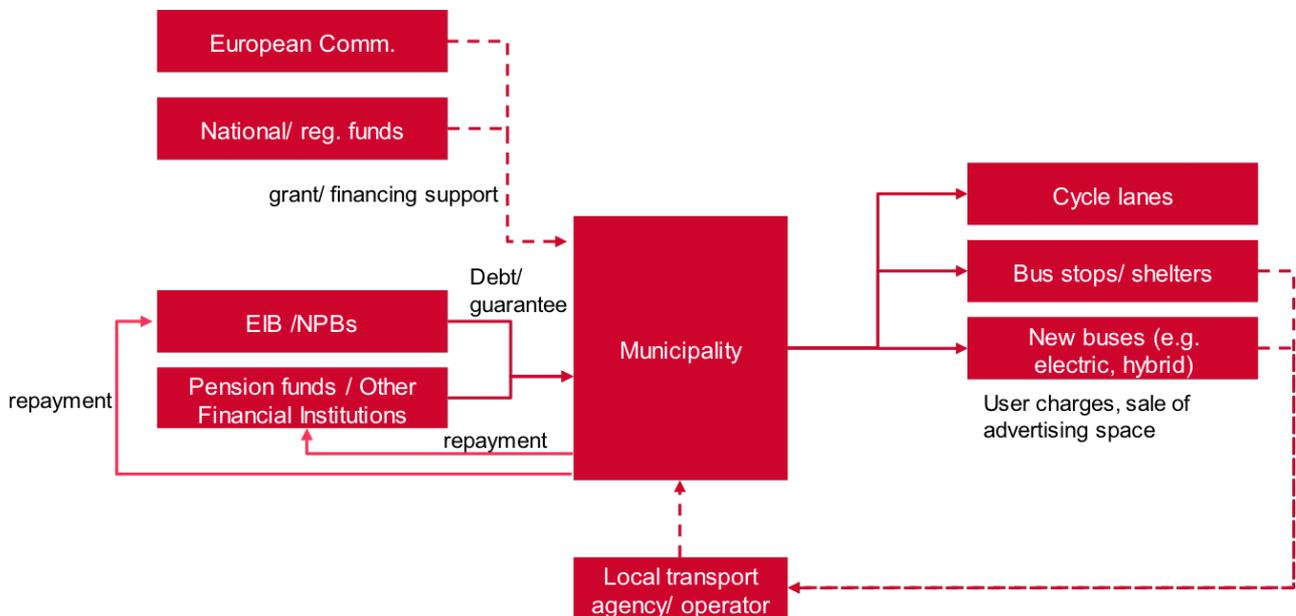
## How can it be financially sustainable?

The purchase of new buses and the construction of bus stops/shelters are followed by a cash-flow stream that makes the interventions financially sustainable. Conversely, cycle lanes are expected to be fully funded via grants and general taxation.

## Which scheme may apply?

- Considering the size and type of project, it can ideally be supported by
- EIB framework loan
  - Intermediated loan
  - AQF

## Expansion and/or replacement of bus fleets, bus stops/shelters, cycle lanes



## Conditions

- ✓ Bureaucracy barriers: planning permissions (e.g. compliance to design standards for cycle lanes, bus shelters, etc.)
- ✓ Strategic location for bus stops/shelters

## Selection of potential EU funding sources

EU Structural Funds	EC
Urban Innovative Actions	EC
Connecting Europe Facility (e.g. in case of alternative fuels)	EC/INEA



### Selection of relevant financial instruments and investors

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EIB Framework Loan/intermediated loan  
Loan

EIB  
Commercial banks

### Selection of potential non-financial investors

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Companies interested in advertising space



Energy – Financing measure

# District energy system

## Stakeholders involved

Energy users, financial intermediaries, owner (municipality/heating-cooling system developer), developers, third party purchaser, tax authorities

### Scope

 Metropolitan

### Cost



### Impact



## What is it?

A district energy system is a cluster of buildings jointly buying energy resources (one or more of heating, cooling and electricity). Sustainable heating systems may be based on co-generation technologies (i.e. combined heat and power or CHP, waste-to-energy plants, geothermal), which allow for the simultaneous generation of heat and electricity, or on exploiting excess industrial heat, thus increasing the overall energy efficiency of the conversion process by partially recovering heat produced during electricity generation. As such, these systems could also be established as part of positive energy blocks – a group of at least three connected neighbouring buildings producing on a yearly basis more primary energy than they use.

## Why?

Heating systems are one of the main causes of air pollution, being responsible for high carbon dioxide emissions related air pollutants, depending on fuel, such as PM, NO<sub>x</sub>, hydrocarbons, etc. Cooling systems tend to be energy-intensive and therefore their impact on air pollution depends on the source of energy they rely on (and whether it is produced in their vicinity). District energy systems can heat and cool buildings using less energy resources than Business-As-Usual (BAU) systems. The energy savings can come from higher overall efficiency, better utilisation of “waste heat”, and taking advantage of opportunities for “free cooling” (such as using sea or lake water), in line with the core principles of a circular economy.



### What are the potential revenue sources?

Potential revenue sources include user rates for accessing the heating and cooling systems, as well as subsidies and tax credits that can be introduced to incentivise the intervention. It is possible to use a linear levelised rate recovery structure that under-recovers investment costs in the early years of the amortisation period and over-recovers during the later years. The rate could be comprised of a fixed-capacity charge that is calculated from the fixed capital and operating costs and is based on the floor area of each building and charged monthly to owners; and a variable charge based on the actual energy consumed by individual buildings and intended to recover variable costs.

### What is the expected capital expenditure?

Capital expenditure includes, on the generation side, the construction of the relevant facility (CHP, waste-to-energy plant) and, on the distribution side, the installation of the relevant pipes, electricity lines to link the facility to the relevant buildings and the development of a smart metering system for users.

### What are the expected operating and maintenance costs?

Owners/managers of district energy systems are expected to bear the cost for energy generation as well as maintenance costs associated both with the generation and the distribution of heating and cooling fluids. Costs may also include the cost of regular updates of smart metering systems.

### How can it be financially sustainable?

The measure tends to be self-sustainable because of the cost savings generated by centralising the supply of heating and cooling sources and the potential to pair these systems to electricity generating, energy efficiency interventions and with the introduction of tax credit, if needed. Additionally, it is possible to include a stabilisation reserve, a revolving line of credit used to backstop operating cash shortfalls during early years of the project.

### Which scheme may apply?

Considering the size and type of project it is likely to be financed following the "financing single measures approach", i.e. the size of the investment reaches a few tens of million euros of investment.

#### Conditions

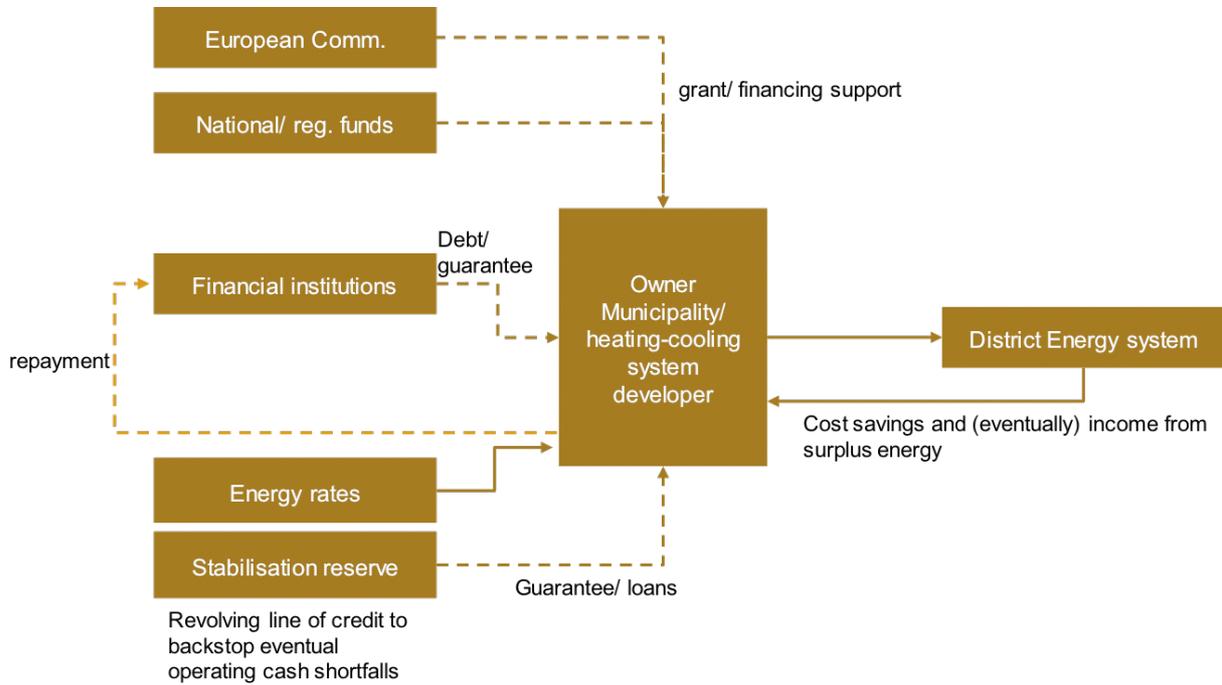
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- ✓ Access to a cool water source (lake, river, sea)
- ✓ Streamlined and clear grid interconnection standards
- ✓ Bureaucracy barriers: authorisations time, planning permits
- ✓ Availability of CHP or excess heat from industrial activities or waste-to-energy plants located nearby



# District energy system

## District energy system



## Selection of potential EU funding sources

EU Structural Funds	EC
Urban Innovative Actions	EC
LIFE Programme	EC, EASME, EIB

## Selection of relevant financial instruments and investors

European Energy Efficiency Fund (EEEF)	EC/EIB Cassa Depositi Prestiti Deutsche Bank
Direct loan	EIB/ other banks and FIs
Private Finance for Energy Efficiency (PF4EE)	EIB
EIB	
EBRD – Green Economy Transition (GET)	EBRD
EBRD	

## Selection of potential non-financial investors

Energy companies
ESCOs
Heating-cooling system developers/ manufacturers
Real estate owners



Energy – Financing measure

# Energy efficient buildings

## Stakeholders involved

Financial intermediaries, homeowners, businesses, developers, third party purchaser, tax authorities

### Scope

Metropolitan

### Cost



### Impact



## What is it?

Energy efficiency measures are interventions performed on existing buildings to reduce the amount of energy consumed while maintaining or improving the quality of services provided (e.g. insulation of façades and roofs, double/ triple-glazing windows, upgrade of air circulation and conditioning, etc.). The most notable benefit generated by energy efficiency investments is the reduction of energy used for space heating.

## Why?

Heating systems are one of the main causes of air pollution, being responsible for high carbon dioxide emissions and all the related air pollutants, depending on fuel, such as PM, NOx, hydrocarbons, etc. Measures for improving buildings energy performance are expected to be included in cities' Air Quality Plans.

## What are the potential revenue sources?

It is possible to finance energy efficiency interventions using credit made available by financial institutions, which is repaid with the cost savings ensured by the interventions. Where cost savings are not sufficient to cover the credit repayments, national and local governments may support energy efficiency in buildings by introducing transferable tax credits, which in some case can reach up to 85% of capital expenditures and can be claimed on a fixed basis over 5-10 years. In case this tax credit can be transferred to third parties, homeowners can transfer it to the developer that (by using its own resources or bank credit) carries out the works for the energy efficiency intervention. In such schemes, the developer is compensated via the transfer of the tax credit as well as the cost savings generated.

Additionally, other potential revenue sources include the monetisation of added value – for example by collecting more property taxes following an increase in the value of properties – and by cost savings due to the increased operational efficiency of a system.



## What is the expected capital expenditure?

The expected capital expenditure of improving the energy efficiency of existing buildings depends on the expected impact of the intervention, where a larger capital expenditure is generally accompanied by a larger reduction in energy consumption. Capital expenditure ranges from relatively large construction costs (cavity wall insulation, floor insulation) to relatively smaller ones, such as the installation of draught proofing doors, high-efficiency boilers and advanced metering systems.

## What are the expected operating and maintenance costs?

Expected operating and maintenance are the typical costs associated with building management, ideally lowered thanks to the intervention.

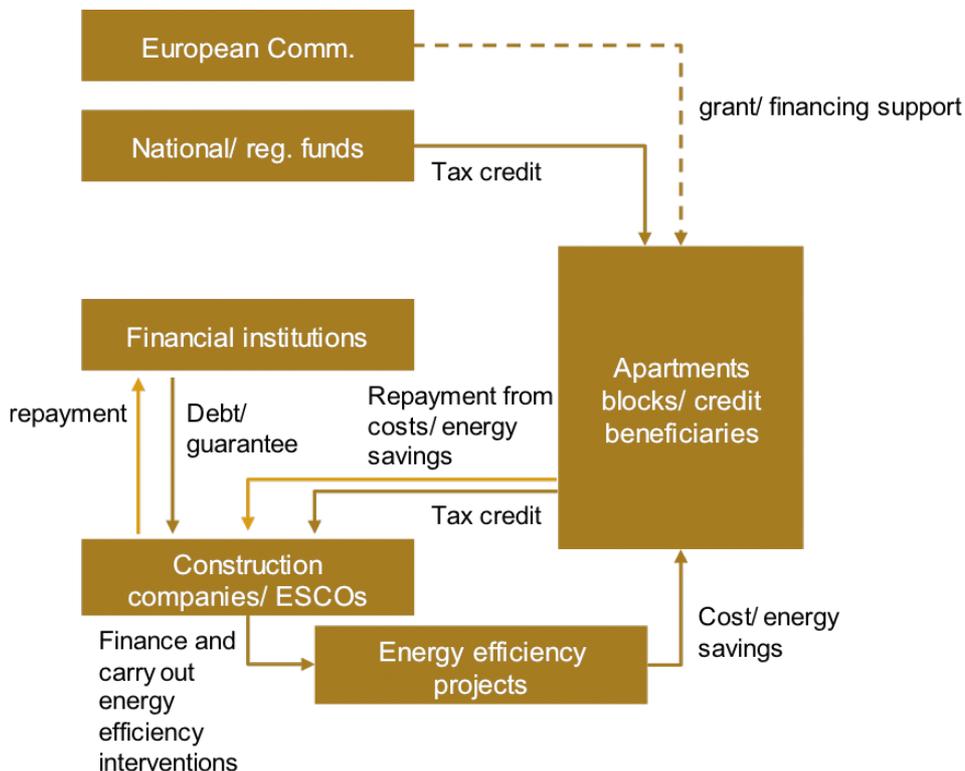
## How can it be financially sustainable?

The monetisation of added value and the cost savings generated by energy efficiency interventions should enable the intervention to be financially sustainable, particularly if accompanied by the introduction of tax credits.

## Which scheme may apply?

- EIB framework loan
- Intermediated loan
- AQF

The roles of the stakeholders involved in the implementation of the measure in case tax credit is introduced





### Conditions

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- ✓ Bonus (i.e. tax credit) for EE measures included in the legislative framework, if cost savings do not cover debt repayment
- ✓ Possibility to transfer bonus to others
- ✓ Bureaucracy barriers: authorisations time
- ✓ Possibility to cumulate these measures with other regional, provincial or local incentives
- ✓ Effective communication and awareness raising campaigns to encourage energy-saving behaviours from users

### Selection of potential EU funding sources

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EU Structural Funds	EC
Urban Innovative Actions	EC
LIFE Programme	EC, EASME, EIB

### Selection of relevant financial instruments and investors

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European Energy Efficiency Fund (EEEEF)	EC /EIB Cassa Depositi Prestiti Deutsche Bank
Direct loan	EIB/ other banks and FIs
Private Finance for Energy Efficiency (PF4EE) EIB	EIB
EBRD – Green Economy Transition (GET) EBRD	EBRD

### Selection of potential non-financial investors

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Energy companies
ESCOs
heating-cooling system developers/ manufacturers
Real estate owners



Energy – Financing measure

# Energy efficiency improvements to public infrastructure

## Stakeholders involved

Authorities, local administrations, ESCO

### Scope

Metropolitan

### Cost

◆◆◆◆◇

### Impact

★★★★☆

## What is it?

Measures to support energy efficiency improvements to public infrastructure range from the retrofitting of public buildings (i.e. schools, hospitals, sport facilities, centres for the elderly etc.) to the upgrade of heating and cooling systems and the installation of energy management and control systems (such as the installation of efficient indoor lighting). In doing so, local authorities may seek to involve private operators, such as Energy Service Companies (ESCO).

## Why?

Buildings account for around 40% of the energy consumption and 36% of CO<sub>2</sub> emissions in the EU, according to the European Commission. By improving their energy efficiency, cities could reduce their energy consumption, which would result in better air quality and reduced spending.

## What are the potential revenue sources?

On the basis of Energy Performance Contracting (EPC), ESCo assume technical and financial risks of the energy efficiency projects proceeding in their planning, realisation and management. Local authorities can meet the financial obligations arising from these contracts using the efficiency gains and cost savings achieved.

## What is the expected capital expenditure?

Expected capital expenditure of energy efficiency improvements to public infrastructure are comparable to those of existing buildings more generally. Capital expenditure ranges from relatively large construction costs (cavity wall insulation, floor insulation) to relatively smaller ones, such as the installation of draught proofing doors, high-efficiency boilers and advanced metering systems.

## What are the expected operating and maintenance costs?

Expected operating and maintenance are the typical costs associated with building management, ideally lowered as a consequence of the intervention.



### How can it be financially sustainable?

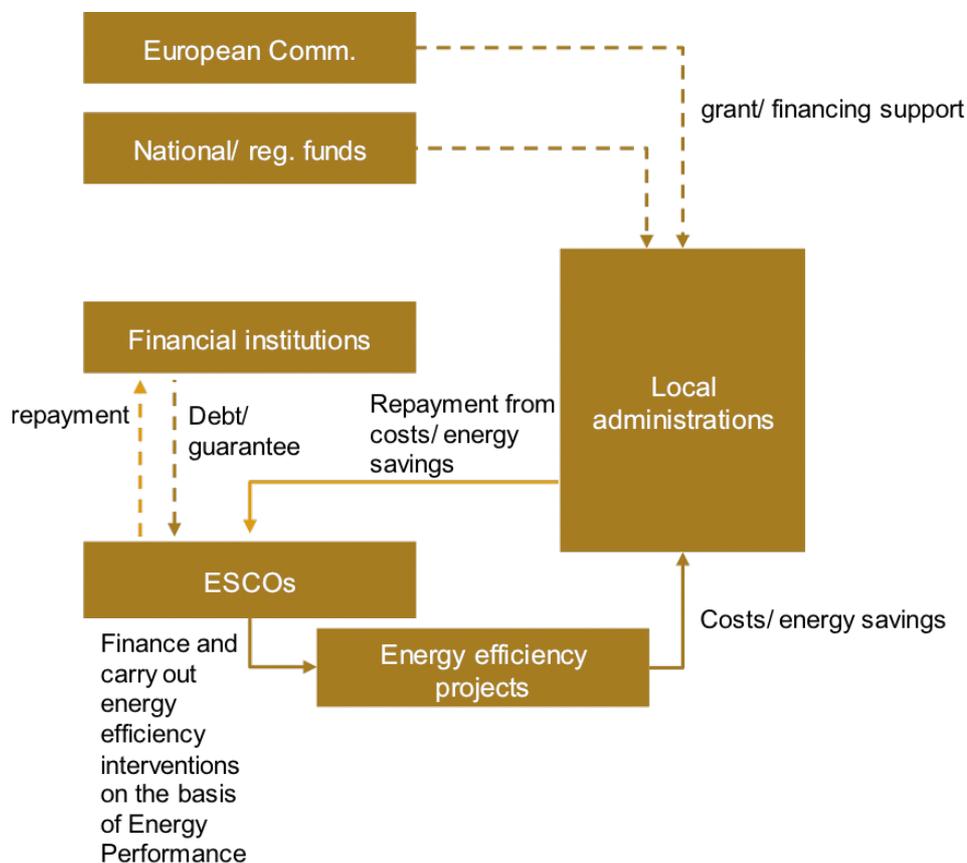
Financial sustainability is achieved when the ESCo financing the interventions is repaid for its investment with the future savings defined in the contract with the public authority.

### Which scheme may apply?

Generally being a number of small operations it can be best supported through

- EIB framework loan
- Intermediated loan
- AQF

The roles of the stakeholders involved in the implementation of the measure in case tax credit is introduced



### Conditions

- ✓ Possibility to establish Energy Performance Contracting (EPC) with third party financing (ESCO)
- ✓ Accurate energy savings forecasts for the definition of the repayments conditions.



## Selection of potential EU funding sources

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EU Structural Funds	EC
Urban Innovative Actions	EC
LIFE Programme	EC, EASME, EIB

## Selection of relevant financial instruments and investors

---

European Energy Efficiency Fund (EEEF)	EC /EIB Cassa Depositi Prestiti Deutsche Bank
Direct loan	EIB/ other banks and FIs
Private Finance for Energy Efficiency (PF4EE) EIB	EIB
EBRD – Green Economy Transition (GET) EBRD	EBRD

## Selection of potential non-financial investors

---

Energy companies
ESCOs
heating-cooling system developers/ manufacturers
Real estate owners



Urban environment – Financing measure

# Urban green infrastructure

## Stakeholders involved

Building owners, citizens, professionals, private subjects, associations, institutions, universities, schools, companies, banks, shops, bars, professional offices, regional authorities, municipal authorities

### Scope

◎ Localised

### Cost

◆◆◆◆◇

### Impact

★☆☆☆☆

## What is it?

Green infrastructure relates to trees, green walls, green roofs and other natural and semi-natural areas with environmental features designed and managed to deliver a wide range of ecosystem services in both rural and urban settings. These interventions could be coordinated to support the development of fully-fledged eco-districts. These are defined as urban areas in which collaborative economic, community, and infrastructure redevelopment is explicitly designed to save energy and materials, to achieve a diversified soft mobility and a better quality of life.

## Why?

Green infrastructure plays a key role in achieving air quality objectives, mitigating air pollution in urban areas and creating local barriers to reduce citizens' exposure. In green species selection, attention must be paid to their properties to capture PM and not generate VOC precursors of ozone (O<sub>3</sub>), and their reduced allergy potential. Additional benefits are biodiversity conservation, urban regeneration and development.

## What are the potential revenue sources?

Different revenue sources can be considered (also to be applied jointly):

### **Option 1: Introduction of compensation measures**

Local or regional law can introduce compensation measures for the exploitation of soil resources. For instance, developers may be asked to contribute by funding or directly creating urban green infrastructure. Compensation measures such as developer contributions can either be received upfront or periodically, depending on their nature.

### **Option 2: Commercial visibility to the private sector**

The private sector is involved in the development and maintenance of green infrastructure in urban areas by signing collaboration agreements or sponsorship contracts with the authorities. The revenue aspect is fully covered by the private sector actors sponsoring the initiative.



### What is the expected capital expenditure?

#### **Option 3: Monetisation of the added value**

The deployment of a green infrastructure is financed via a financial instrument whose obligations are met by the additional taxes collected on the uplift in surrounding land value and, in turn, property prices. This increased value can be “captured” and monetised by property taxes both on new and existing buildings, as long as a land/property register is regularly updated to reflect the uplift.

Expected capital expenditure varies from extensive groundworks (e.g. in the case of new public parks) to smaller interventions (e.g. pocket parks). In both cases, the costs that should be considered include planning, landscaping and, where relevant, remediation.

### What are the expected operating and maintenance costs?

Expected operating and maintenance costs depend on the urban green infrastructure solution implemented and may include green maintenance and safety (e.g. patrolling) costs

### How can it be financially sustainable?

#### **Option 1: Introduction of compensation measures**

Compensation measures raise financial resources that can be invested in green systems to compensate the use of land and resources of a territory.

#### **Option 2: Commercial visibility to the private sector**

The private subject bears the costs of greening and maintenance, providing financial resources destined for a green infrastructure project. Through a technical sponsorship, the private subject can also take the responsibility for the implementation of the project. In exchange, it obtains by the authority visibility of its logo/brand on the institutional advertising spaces placed in the developed/maintained area.

#### **Option 3: Monetisation of the added value**

The degree to which value capture can be financially sustainable depends on the ability of municipalities to collect property taxes and to measure the increase in property prices for existing buildings (i.e. to keep land/property registers up-to-date).

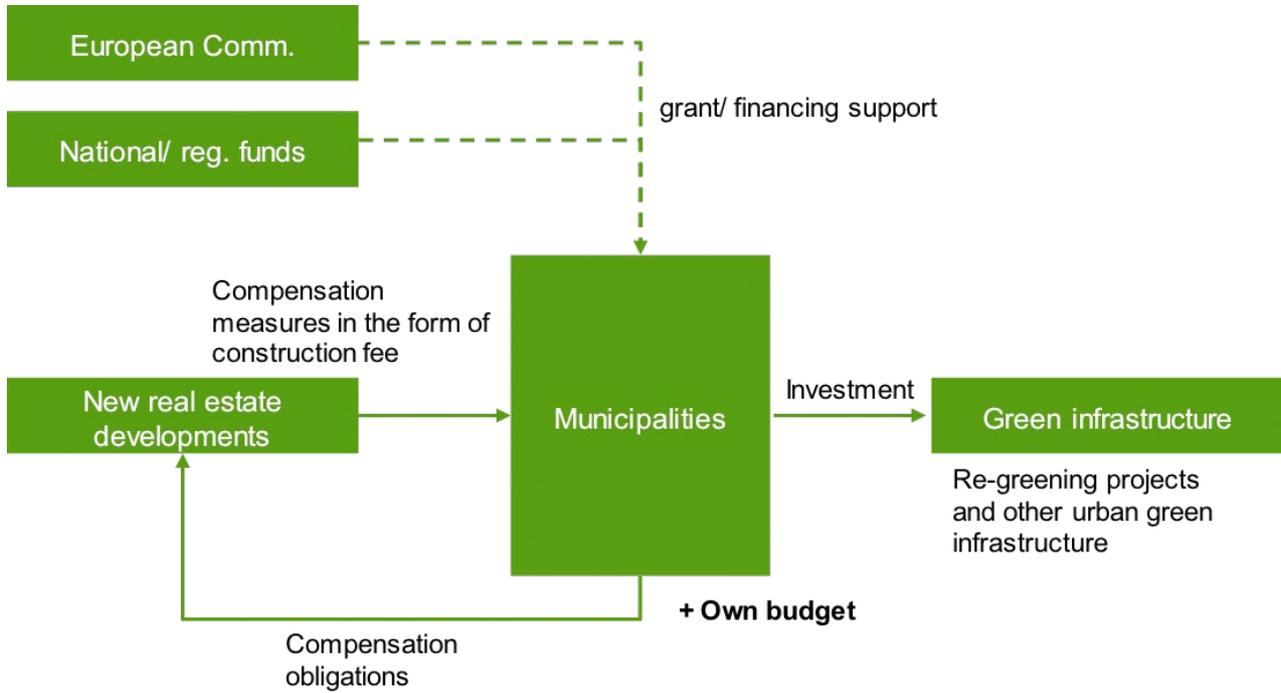
### Which scheme may apply?

Generally being a number of small operations it can be best supported through

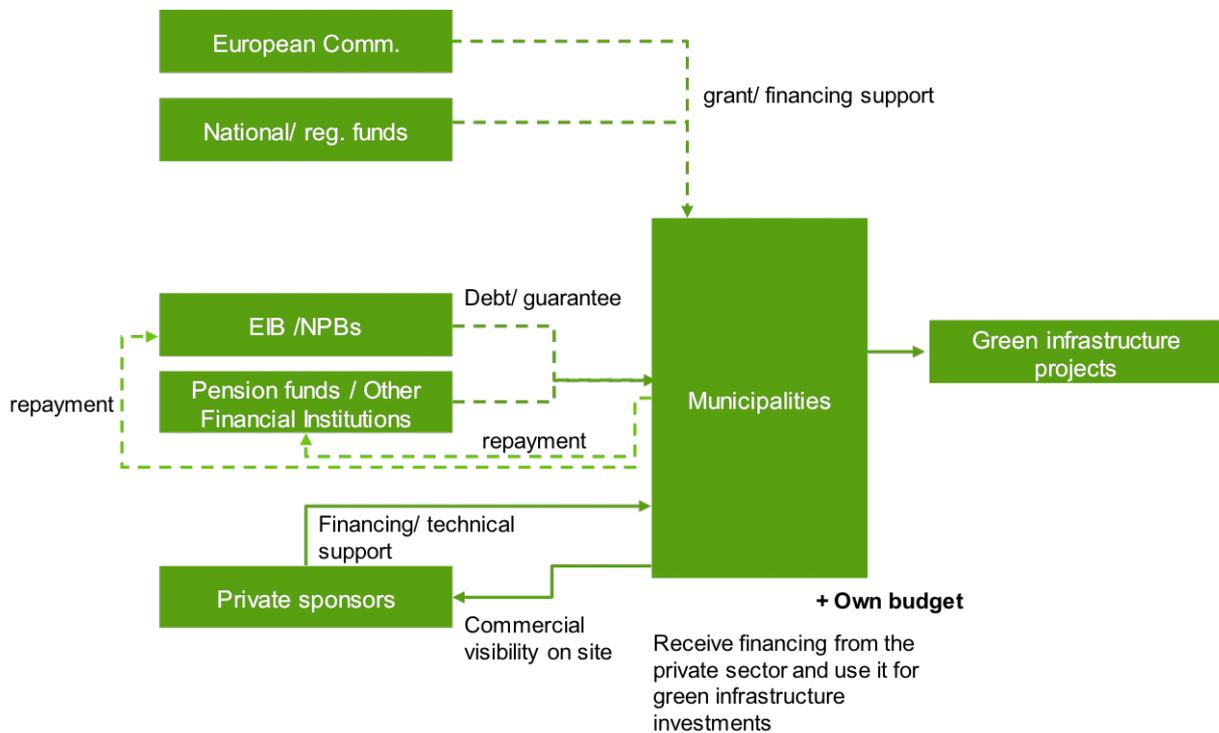
- EIB framework loan
- Intermediated loan
- AQF



## Option 1: introduction of compensation measures

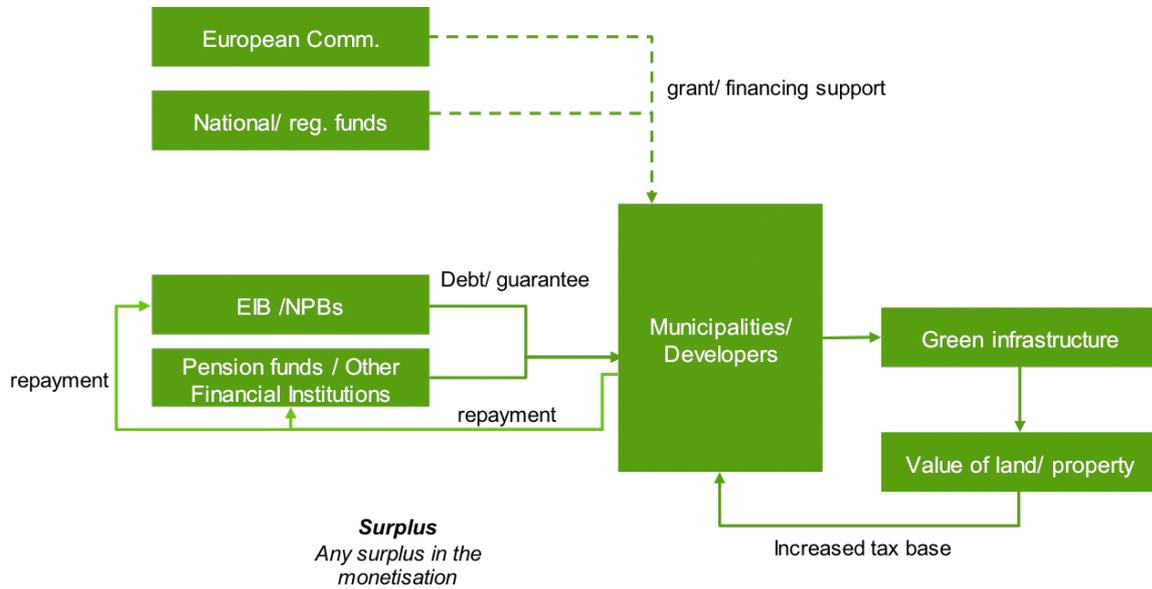


## Option 2: commercial visibility to the private sector





## Option 3: monetisation of the added value



### Conditions

#### **Option 1: introduction of compensation measures**

- ✓ Introduction of charges for greenfield development
- ✓ Direct management of resources by the municipalities, either autonomously or through a regional fund

#### **Option 2: commercial visibility to the private sector**

- ✓ Wide public area to be redeveloped/maintained
- ✓ Possibility to sign direct agreements with the authorities

#### **Option 3: monetisation of the added value**

- ✓ Ability of the local authority to capture the uplift in land value through property taxes via an increase in the tax base (e.g. through Tax Increment Financing schemes)
- ✓ Green infrastructure should be developed in the vicinity of high-drawing areas (e.g. brownfield areas near city centres, business districts, etc) to maximise the potential increase in the tax base

### Selection of potential EU funding sources

Natural Capital Financing Facility (NCF)	EIB
EIB Framework Loan/intermediated loan	EIB
Private Finance for Energy Efficiency (PF4EE)	EIB
EIB	
Loan	Commercial bank
EBRD – Green Economy Transition (GET)	EBRD
EBRD	

### Selection of potential non-financial investors

Real estate owners/ developers



# Schools protection from air pollution exposure

## Stakeholders involved

Private companies, foundations, schools

### Scope

 Localised

### Cost

◆◆◆◆◆

### Impact

★★★★☆

## What is it?

Traffic flows near a school expose children to damaging levels of air pollution during outside activities but also while they're in their classrooms. This issue is worst near roads with heavy traffic. School managing authorities (municipality, metropolitan authority, member states) or leadership teams may decide to invest in reducing traffic around the school (if practicable) and/or install high-performance air filtration systems to improve air quality.

## Why?

It has been proved that traffic-related emission exposure can compromise the lung growth of children and adolescents and also lead to neurological damage, as well as contribute to new-onset asthma. High performance air filtration systems are appliances that aid in the removal of air pollutants inside the classrooms. They can remove dust particles (PM), pollutant gases such as NOx, carbon monoxide (CO), hydrocarbons such as benzene and other toxics, and impurities from the air including pollen, mould, spores, and/or dust mites, creating a safer environment and reducing illness in children.

## What are the potential revenue sources?

This measure does not generate revenues directly. However, the benefits include healthier children, fewer sick days and a reduction in medical expenses – all of which represent lowered costs to healthcare systems.

## What is the expected capital expenditure?

Purchase and installation of advanced air filtration system represent the main expected capital expenditure of this intervention. It is possible that an IT system would need to be implemented to monitor air quality levels and operate the system.

## What are the expected operating and maintenance costs?

Operating and maintenance costs are low and mainly relate to electricity consumed for the purifiers and to regular replacement costs.



# Schools protection from air pollution exposure

## How can it be financially sustainable?

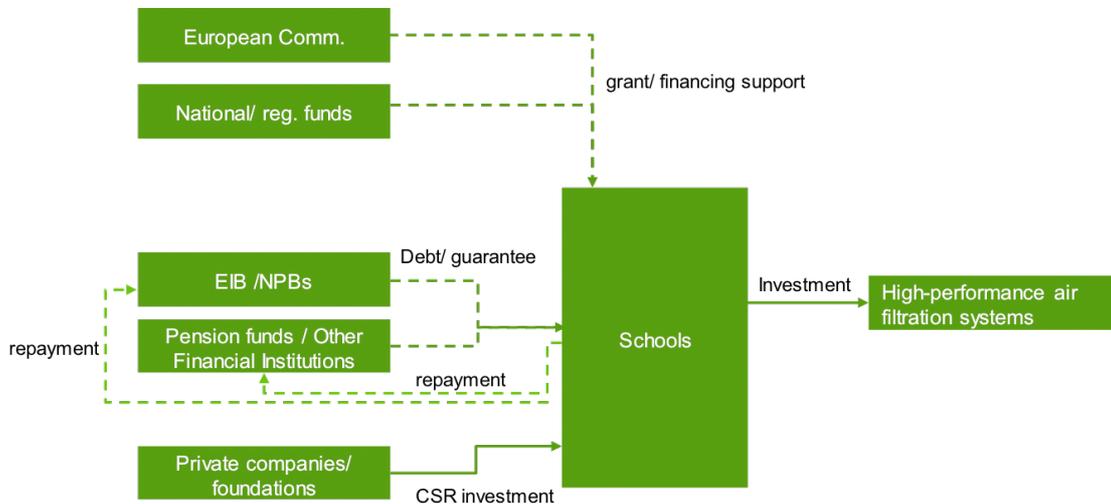
Financial sustainability is achieved when the projects raise resources from private companies able to maximise their reputational visibility from CSR activities.

## Which scheme may apply?

Generally being a number of small operations it can be best supported through

- EIB framework loan
- Intermediated loan
- AQF

## The roles of the stakeholders involved in the implementation of the measure in case of CSR investments



## Conditions

- ✔ Strong exposure of the schools to air pollution
- ✔ Presence of private entities interested in investing in CSR activities

## Selection of potential EU funding sources

Urban Innovative Actions	EC
LIFE Programme	EC, EASME, EIB

## Selection of potential EU funding sources

EIB Framework Loan/intermediated loan	EIB
Loan	Commercial bank

## Selection of potential non-financial investors

- Private schools and institutions
- Companies interested in commercial visibility

European Investment *Advisory Hub*  
Europe's gateway to investment support

<https://ec.europa.eu/futurium/en/air-quality>

<http://www.eib.org>

