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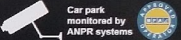
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Funding and Financing Options for Sustainable Urban Mobility

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About

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Funding and Financing Options for Sustainable Urban Mobility

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1. Executive summary

This Topic Guide relates to 3rd phase of the SUMP cycle (Measure planning, Activity 8.2: Estimate costs and identify funding sources). It supports urban transport and mobility practitioners and other stakeholders identifying suitable funding and financing options for the implementation of SUMP measures.

The transformation of urban mobility systems causes upfront costs for the procurement of innovative products and services and the adaptation of existing infrastructure. While public budgets are limited, debt financing private investors often are reluctant to invest into sustainable transport projects. Thus, cities need to seek additional funding and financing options and to develop business models to attract private sector investments into the development of the urban transport system. The range of instruments includes the exploitation of local sources such as public transport fares, the introduction of road user charges and parking fees, the lease of advertising space in buses, or the use of value capture mechanisms. Additional external finance can be raised for example through issuing green bonds. Finally, a prudential engagement of the private sector in infrastructure development and services provision can reduce the burden on public budgets while enhancing service quality.

The applicability of specific financing options critically depends on the national legislative environment. Many of the instruments and case examples presented here may not be transferred to other Member States due to the different distribution of responsibilities and powers between the political levels in the Member States. This report, however, can inspire the search for potential funding and financing sources and is therefore aimed not only at local and regional authorities but also at decision-makers at national level. Still, whether a specific instrument can be used in a Member State needs to be assessed on a case-by-case base.

2. Introduction

This Topic Guide aims at informing public authorities, urban mobility practitioners, and policy makers about funding and financing options that facilitate the transformation of urban mobility systems towards sustainability. While this guidance cannot explore all options in detail, it may serve as a source of inspiration for sustainable financing actions and the identification of funding sources.

Although many sustainability solutions have positive effects on public budgets in the mid to long run, the transformation of mobility systems causes upfront costs: Procurement of innovative products such as e-buses and charging technology, extending the cycle network or the use of ICT solutions to integrate transport modes requires initial investments. Private and public mobility investors often are reluctant to invest in sustainable transport and mobility projects, as they do not expect high financial returns, benefits tend to be diffuse and barely monetisable, and impacts are causally difficult to trace (see Shergold & Parkhurst 2016). Thus, cities need to seek funding and financing options beyond the use of public budget and to develop business models to attract private sector investments in the development of the transport system.

The transition towards a sustainable urban mobility system that is universally accessible and meets the basic mobility needs of all users requires a readjustment of the financial environment: The greatest share of funding, financing, and implicit subsidies still go into motorised individual transport. The true costs of individual car trips for the society are not reflected in prices and, on an individual level, the use of a car in a specific situation is not related to out-of-pocket costs – unlike the purchase of public transport tickets.

Tapping financial sources for the renewal of the urban mobility system requires institutional capacities, skills and expertise that city administrations often lack. Funding programmes frequently are linked to co-funding, which cities cannot afford out of their budget, and what makes co-financing arrangements necessary.

This Topic Guide is based on the CIVITAS SUITS project's *Guidelines to Innovative Financing*, edited by Aleksei Lugovoi and Alice Parker (Arcadis); and on the CIVITAS SUMP's-Up project's *Guideline on Financing Sustainable Transport Measures and the Role of Public Procurement*, edited by Stefan Werland, Frederic Rudolph, Thorsten Koska and Kain Glensor (Wuppertal Institute).

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3. The 8 SUMP principles in the context of funding and financing

The 8 SUMP principles:

1. Plan for sustainable mobility in the 'functional city'

Innovative financing and funding mechanisms are designed to support sustainable trips from origin to destination, and they are designed to keep trips and distances covered at a necessary minimum. Fiscal incentives may also be designed in a way that they discourage travellers to use their car by increasing prices for individual motorised transport. Many of such interventions target at commuters between the central city and the rest of the metropolitan area.

All financing and funding should consider the whole metropolitan area, that is, impacts on the entire trip as well as intermodal options to travel. Revenues should be distributed and shared according to the cost occurring for the different entities involved. For example, high parking tariffs may facilitate commuting by public transport, but also increase the demand for park and ride. Municipalities should therefore apply a stringent tariff policy for the metropolitan area and redistribute the revenues to account for different infrastructure/service cost (public transport and digital infrastructure, bike and ride, etc.).

2. Develop a long-term vision and a clear implementation plan

Financing relates to ensuring that the financial resources or mechanisms are in place to cover the project costs as they occur. Therefore, project proponents should plan how to meet non-recurring and recurring cost. Infrastructure schemes may incur heavy upfront investments, while regulative measures may comprise recurring personnel cost.

Funding relates to the means of generating the income to pay for the investment. This may induce obligations such as loans, which may have changing interest rates over time.

3. Assess current and future performance

Financial mechanisms such as congestion charges, parking policies and toll roads are steering levies. If these mechanisms successfully discourage private car usage, city revenues may decrease over time. At the same time, costs and proceeds for other modes such as collective transport and shared mobility may vary due to increasing demand.

Cities should anticipate these impacts, prepare for turnover variation of involved institutions and apply institutional governance.

4. Develop all transport modes in an integrated manner

A significant part of sustainable financing relates to fiscal incentives which steer away from individual motorised transport. As such, these (dis-)incentives develop all transport modes in an integrated manner.

In the near future, the opportunities opened by digitalisation may facilitate payment platforms that incorporate the services of different public and private mobility providers, the core feature of a concept known as "Mobility-as-a-Service" (MaaS). User-friendly payment systems may also foster the usage of alternative transport modes and shared mobility.

5. Cooperate across institutional boundaries

Usually, local public transport services do not operate cost effectively and are financed through a combination of user fees, public subsidies, and other sources such as revenue from the rental of advertising space. Public authorities' departments should closely cooperate to ensure stable financing for the local public transport provider. Public authorities from different areas of a region should come together to find funding solutions to implement measures that facilitate sustainable trips within the region.

Public-Private Partnerships (PPPs) are forms of cooperation between public authorities and businesses. The European PPP Expertise Centre (EPEC) refers to PPPs as: "an arrangement between a public authority and a private partner designed to deliver a public infrastructure project and service under a long-term contract. Under this contract, the private

partner bears significant risks and management responsibilities. The public authority makes performance-based payments to the private partner for the provision of the service (e.g. for the availability of a road) or grants the private partner a right to generate revenues from the provision of the service (e.g. tolls from users of a bridge). Private finance is usually involved in a PPP. When properly prepared, PPP projects can provide significant benefits to the public sector as well as to the project users."

6. Involve citizens and relevant stakeholders

Public investments in public transportation or infrastructure can increase adjacent land values, thus generating a profit for private landowners. The resultant increases in land value (which otherwise benefit private landowners cost-free) may be "captured" by converting them into public revenue through various mechanisms. Vice versa, new residential development could place extra burdens on the existing infrastructure and resources in the local area, such as an increased volume of traffic and congestion.

Public authorities, land owners and project developers should collaborate closely to find sensible and satisfying ways of sharing expenses and earning when they develop further land and transport infrastructure. To gain ownership of the implemented measures, the way measures are funded should be explained to the citizens. Explaining that some of the revenues from various mechanisms will be used for implementing mobility measures in the community will facilitate ownership.

7. Arrange for monitoring and evaluation

As outlined in the 2nd principle, financing relates to ensuring that the financial resources or mechanisms are in place to cover the project costs as they occur. Revenue streams and expenses should be monitored in order to avoid funding shortfall.

8. Assure quality

Taxes, fees and charges should be arranged in a way they steer demand for transport and mobility. At the same time, a city has to consider the local purchasing power. Cities may therefore seek for similar approaches and good practice in other cities to set appropriate price levels. Furthermore, academic literature provides information about price elasticities to be expected resulting from certain policies and measures.

With respect to funding opportunities, the donors should offer support to successfully apply for their funding streams. For instance, JASPERS offers support to public authorities in the preparation and implementation of projects funded by the European Structural and Investment Funds (ESIF).

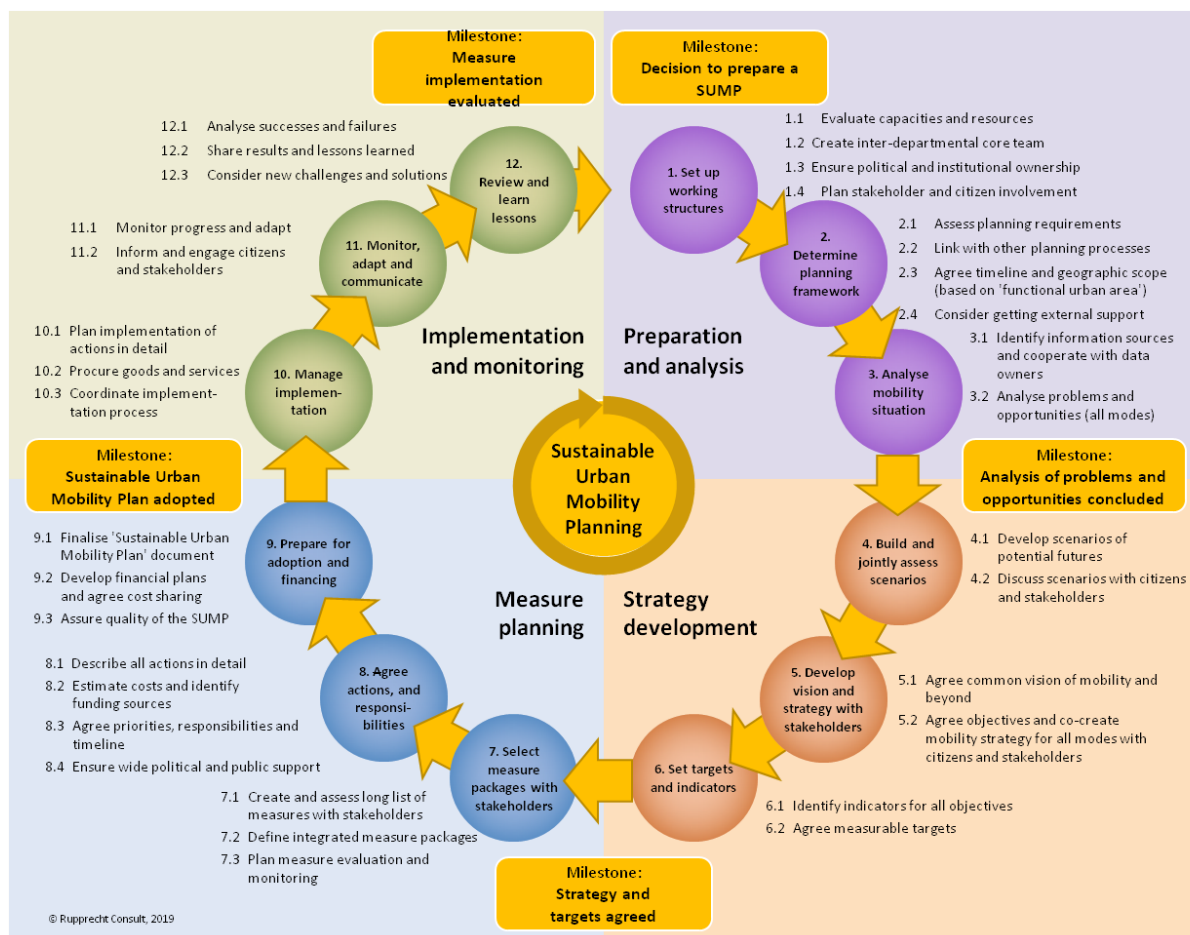
4. Sustainable urban mobility planning steps for SUMP funding and financing

This Topic Guide relates to 3rd phase of the SUMP cycle (Activity 8.2: Estimate costs and identify funding sources and Activity 9.2: Develop financial plans and agree cost sharing).

The comparison of costs and benefits in step 7 of the SUMP cycle has informed the selection of measures and measure packages, taking into account their likely overall economic performance including wider social, health and environmental impacts (see box on project appraisal and cost-benefit analysis below). Preparing the implementation of selected measures (step 10) requires assessing investment needs and potential project revenues, identifying funding sources and financing options (Activity 8.2), and the formulation of detailed financing plans (Activity 9.2).

The purpose of Activity 8.2 is to determine and to compare the performance of different measures and investment options and to rule out those measures that are not financially viable. It will also assess project-related revenues and their financial contribution to the transition of the urban mobility system. Activity 9.2 comprises a more detailed assessment of investment needs, revenues, financing and funding sources for selected measures and measure packages.

Municipalities should determine investment and maintenance costs, potential changes in revenue streams, identify financial contributors, and develop a funding and financing scheme for all measures/actions. Based on your organisation's conventions, a detailed financial scheme is part of a SUMP (or part of a separate process).



Project appraisal and Cost-Benefit Analysis (CBA)

Project appraisal is usually supported by decision support tools such as cost-benefit analysis (CBA) or multi-criteria analysis (MCA). These can be used to measure (ex-ante and/or ex-post) the potential or observed impacts of different policy options; and/or to assist decision-makers in selecting appropriate policies. CBA is a tool to improve project design, including options analysis, and in this respect its use upstream during the project cycle is recommended.

CBAs are widely used to assess large-scale infrastructure projects or other projects that are economically sensitive (e.g. congestion charges). CBA is typically used to assess only the direct costs and revenues related to projects, but can be expanded to include indirect costs and benefits, if these can be expressed in monetary terms. However, a CBA is sometimes complemented with a multi-criteria analysis (MCA) to allow appraisal of criteria that are not monetised, although the exact approaches used and the indicators assessed vary between the countries.

While one of the main advantages of CBAs is transparency and the ease in communicating the results, care must be taken selecting the assessment criteria and parameters. Also, because CBAs can be time, resource and data intensive to perform, wider social (including distributional), environmental and economic effects, along with less tangible effects, such as comfort, quality of life or aesthetics, which may even be the central pillars of a SUMP are frequently excluded. Moreover, the monetisation of non-monetary effects is difficult and can be controversial. Care is also required when defining the scope of the Analysis often the public budget is the priority, marginalising the inclusion of wider socio-economic effects.

- Identify the objectives of the project and the criteria against which it will be assessed. Clearly define the boundary of the analysis, and its perspective (e.g. the functional area) and the period over which costs and benefits are analysed
- Identify alternatives and/or business as usual or do nothing/minimum scenarios.
- Identify and quantify the effect of each scenario/project on the criteria. Some impacts might have been identified that are not quantifiable and/or difficult to measure. In a conventional CBA these impacts are often simply excluded.
- Apply monetisation factors on the effects. The monetisation of non-monetary effects is difficult and current approaches - such as monetisation of fatal accidents - are controversial. As this is an elaborate process, often guideline values are used (e.g. a standard value for the costs of one tonne of local particulate matter emitted).
- Apply local discounting rates. Future costs and benefits are discounted to their present value, allowing comparison of costs or benefits that occur at different times.
- Calculate the various output values, such as Net Present Value (NPV), Benefit to Cost Ratio (BCR) and Internal Rate of Return (IRR).
- Perform a sensitivity analysis on those variables deemed to be uncertain (e.g. discount rate, project lifetime, contentious monetisation factors).

The *CIVITAS Urban Mobility Tool Inventory*¹ provides many tools which support project appraisal, including the conversion of relevant effects into monetary units. E.g., the *uemi/solutions Impact assessment methodology for urban transport innovations* is an easy to apply tool for small scale measures, which includes CBA elements.

¹ All tools can be accessed at the *CIVITAS Urban Mobility Tool Inventory* Website: <https://civitas.eu/tool-inventory>

5. Funding and Financing Options for Sustainable Urban Mobility

The development and implementation of innovative products and services may entail extra upfront costs, for example for the adaptation of infrastructure assets to new technologies. Regarding tight public budgets, cities may seek innovative funding and financing options and/or engage the private sector in the development of the transport system.

Identifying revenue sources, which can be used to fund sustainable transport measures, forms an important component to an effective delivery of a SUMP. Innovative solutions can foster sustainable mobility options and thereby contribute to solving transport related problems in cities.

Most cities receive some level of national and EU funding (see Chapter 5.3). Although present-day financing systems may vary widely from city to city, sustainable urban transport and mobility measures often also include private financing, as well as Public-Private Partnerships (PPPs, see Chapter 5.5). PPPs are forms of cooperation between public authorities and private investors with the aim of carrying out transport infrastructure projects or providing transport services to the public.

The applicability of specific financing options critically depends on the national legislative environment and the legislative and revenue-raising power that municipalities are granted. This report can inspire the search for potential funding and financing sources. Still, whether a specific instrument can be used in a Member State needs to be assessed on a case-by-case base.

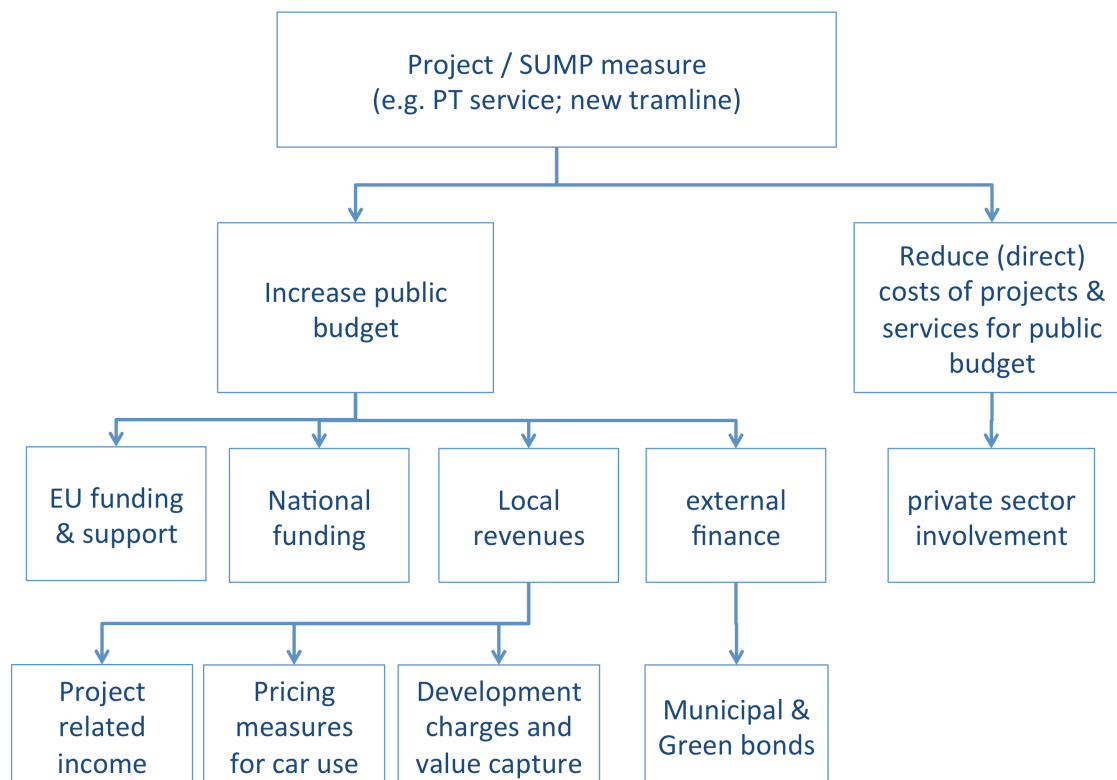
Common challenges related to financing sustainable mobility measures

Sustainable funding and financing refers to mechanisms to mobilise, govern or distribute financial resources for public transport and non-motorised modes (pedestrianisation, bicycle paths, etc.) and to steer demand for transport (also known as mobility management). They build on the principles of environmental and financial sustainability, i.e. they should also provide value for taxpayers' money and have the ability to bridge funding shortfalls and/or to create new funding streams.

That said, local authorities may face a number of challenges when considering the implementation of sustainable urban transport and mobility projects (JRC 2018):

- Multitude of public funds from different European sources: There is a range of public funding mechanisms on the EU level, as outlined in chapter 7. Lack of legal and technical expertise and capacities for the preparation of applications and securing financing can be challenging.
- Own contributions: Most public funding schemes prescribe that recipients contribute a share of the budget on their own. Tight municipal budgets often limit cities' ability to apply for funding. Thus, setting up a project might require a mix of funding and financing mechanisms.
- Lack of awareness of alternative finance options: Local authorities usually rely on public funds and are unaware of financing tools such as blending facilities, revolving funds and green bonds (see Chapter 8).
- Political resistance against local revenue sources such as parking management or road fees, which make use of private cars less attractive (see Chapter 5.2).
- Lack of ring-funding supporting non-motorised modes, transport avoidance and mobility management.
- Ensuring the bankability of projects to ensure the willingness of private investors to finance a project.

The following sections provide an overview of funding and financing options for sustainable urban transport measures.



5.1. Local revenue streams

General public budgets – both local budget and national budget allocations, for example subventions for public transport services – are the main sources of financing for urban mobility systems. Still, depending on the respective Member State's legal system and the constitutional competencies of local administrations, municipalities may exploit additional sources for financing the urban mobility system. This section outlines local revenue streams that are linked to sustainable urban mobility.

Further Information: Sintropher database on financing transport infrastructure



The *Sintropher* project's reference database on financing transport infrastructure provides more detailed information on financing instruments presented in this chapter, including fees and user charges (chapter 5.2.1) and development charges and value capture mechanisms (chapter 5.4) <https://sintropher.eu/>

5.1.1. Project generated income

Project generated income refers to user fares for example from ticket sales. They are well suited to cover a share of the operating costs of a transport solution, for example a lightrail or a BRT route. The leasing of advertising space in vehicles or at bus stops can yield an additional income stream.

Project related income will only be available after the implementation of a transport solution. Hence, using this mechanism for funding upfront construction costs requires additional arrangements. Anticipated incomes from the operation can be used for capital borrowing or as means to attract external investors via the emission of bonds (see Chapter 5.4) or serve as basis for value capture mechanisms (see Chapter 5.1.3)

Since the provision of public transport is considered a general interest service, fares may not cover all operation costs. Ticket prices should be lower than costs for private car use (parking fees, road charges, see Chapter 5.1.2) to make public transport more attractive alternative. They need to respond to social concerns by keeping the general fare level low

and by allowing reduced fares for low-income populations or pupils. Public transport operators will be compensated from the general public budget or from ring-fenced incomes from parking management, road charges, and value capture mechanisms as exemplified in the following.

5.2. Pricing measures for individual car use

There exists a number of measures to create revenue streams from motorised individual transport. Depending on the specific legal environment, revenues from road pricing or parking schemes may be ring-fenced for investments into public transport and active modes (both construction and procurement costs and expenses for operation and maintenance)

Price-based instruments can form part of a push & pull approach, which aims at encouraging a shift in mobility behaviour. The rational is to charge car drivers for all or at least a substantial share of their external costs while using the additional revenues to make sustainable alternatives more attractive. Adopting the polluter-pays principle is a key component of sustainable urban mobility. Existing taxes and fees such as fuel taxes or registration fees, however, do not suffice to cover the social and environmental costs of private car use. Moreover, these financial streams normally go into the national general budget and cities do not profit directly.

For users, pricing measures directly link car use in a specific situation to out-of-pocket costs that otherwise are hidden externalities or fixed (such as vehicle taxes). In order to encourage the shift to public transport, charges for parking and road use should exceed the price of a public transport ticket (Website push&pull project).

The EU's position on external costs of road use

The EU encourages Member States to use taxation and infrastructure charging in the most effective and fair manner in order to promote the 'user pays' and 'polluter pays' principles, as enshrined in the treaties. This framework contributes to the internalisation of external costs related to road transport, such as those generated by the use of infrastructure or its environmental and social impacts. With the internalisation of costs, the EU also wants to encourage a more efficient use of transport infrastructures currently affected by congestion, thus reducing time wasted due to bottlenecks. Road charging can also be a useful instrument to generate new sources of revenue to help develop Europe's vital infrastructure, as well as cleaner, more energy-efficient modes of transport.

https://ec.europa.eu/transport/modes/road/road_charging_en

Primary policy reasons for charging schemes are to manage demand, to reduce congestion and to encourage a modal shift to more sustainable transport methods. However, measures discouraging private car usage through pricing mechanisms – including all kinds of road and parking pricing – often meet political resistance.

Public acceptance of travel demand management measures tends to be low, as they are often perceived to infringe on freedom, considered to be unfair, and unacceptable (Eriksson et al. 2006). A generally positive attitude towards a congestion charge system influences its impact on reducing car traffic. This implies that push measures should be presented in the “correct way to minimise public opposition as to make the unpopular popular” (de Groot und Schuitema 2012). It is important to provide adequate alternatives to private car use and to clearly state that revenues will be invested into alternatives such as high-quality public transport and to allow sufficient time for users to adapt their behaviour (e.g. through free public transport trials). In many cases, acceptance tends to rise during the operation of a pricing scheme. Thus, setting up a trial period may be a means to gain approval from the population (Gu et al. 2018). For instance, despite an initial strong disapproval, the congestion charge in Stockholm was supported by the majority of voters in a referendum, following a seven-month full-scale trial period.

Success factors for pricing measures

Generally, literature on road pricing and parking management system identifies the following success factors for the introduction of pricing measures:

- Thoroughly inform the public about the objective of the charging system, its intended impacts, and how revenues will be used.
- Conduct a trial period to allow road users to accustom to the new system, to test alternative travel options, and to experience potential benefits of the scheme.
- Stress the role of the charging system not as an isolated measure but as component of a widely appreciated mobility strategy.
- Communicate the measure in a positive way: not as a means to raise additional revenue but as a way to make other mobility options more attractive.
- Make clear that revenues will be reinvested into public transport and other sustainable modes in order to make alternative mobility offers more attractive.
- Consider concerns about equity and fairness, e.g. through exemptions for vehicles used by disabled people.

5.2.1. Road pricing and congestion charges

Road pricing aims at generating revenues, at reducing traffic loads and congestion, and at making cities more liveable. A congestion charge is a revenue mechanism and a mobility management strategy that surcharges users of public services as a result of excess demand. Such measures can also include discounts or exemptions for example for disabled persons or artisans to increase public acceptance. A range of European cities have introduced road charging systems, including London, Durham, Stockholm, Gothenburg, Milan, Znojmo, or Valletta.

Road pricing schemes can have a strong influence on reducing the volume of traffic and on encouraging people to switch to other modes of transport (e.g. Rye 2016; Sammer 2016).

There are different ways to implement such systems: as toll roads, where a fee is paid for the right to use a specific asset such as a highway or a bridge; as zonal schemes where vehicles travelling inside a specific bounded area are charged; as cordon schemes, where vehicles must pay for entering the city centre; or distance-based schemes. Distance-based schemes require the use of car positioning systems and thus are technically demanding and may interfere with personal data protection (Gu et al. 2018).

If the road charges are dynamic with varying amounts depending on e.g. peak hours or emission standards for vehicles (or potentially on vehicle weight or size), pricing measures can also influence mobility behaviour and the composition of the car fleet.

Milano Case Example?

5.2.2. Heavy goods vehicles charging schemes

Most European countries have implemented some form of nationwide truck charging scheme, where all hauliers from any country pay for using the roads, either by time or distance. Whilst most of the Heavy Goods Vehicles (HGV) distance-based charges are introduced and managed at the national level, roads within individual cities could also be included into the system. Participating cities would then receive their fair share of the proceeds, which they could spend on maintaining their local road network and on investing into more sustainable transportation and mobility schemes.

City example: Brussels HGV charging scheme

In 2016, the Belgian regions Brussels, Wallonia, and Flanders introduced a distance-base road charging system for heavy goods vehicles (HGV) on motorways and some major secondary roads. Brussels has tightened the nationwide system by applying the tolls to all roads within the city zone and by demanding higher charges compared to roads outside of the capital. The amount of the toll also depends on the emission standard: Trucks with a Euro 5 engine must pay a higher fee than those with a Euro 6 engine.

In addition to the revenue, the system enables Brussels and the two other regions to obtain more specific data on HGV traffic on their road network. These data will be used to inform mobility policy and adjust the toll system to better suit regional and local transportation objectives. The regions have the right to adapt the toll road network and the rates twice a year.

5.2.3. Parking management

As most car trips end up in parking spaces, there is an opportunity to use parking management strategies to influence car travel demand. Since the 1990s parking policies have increasingly been used as a tool to manage car traffic in and around urban areas in Europe. Parking pricing influences the modal split of commuters (e.g. Shoup 2005; Website push&pull).

Parking is normally managed at the city level, giving local authorities a high degree of autonomy. Usually a municipal parking policy has four main aims (Mingardo et al. 2015):

- To contribute to a better accessibility and mobility of the urban area;
- To raise municipal revenue;
- To contribute to a better quality of life in the city (mainly a better air quality and quality of the living environment);
- To support the local economy;
- The availability of poorly managed or unmanaged parking space can make investments in high quality public transport ineffective, most of all when car parking in the city centre is cheaper than travelling by bus or tramway.

Parking measures often focus on regulating visitor parking. Adequate provisions for residents such as reasonably priced annual permits in combination with a reduced demand for scarce parking spaces may contribute to the acceptability of parking management schemes.

AMSTERDAM case example?

5.3. Employers contributions

5.3.1. Workplace parking levies

A Workplace Parking Levy (WPL) is a specific parking management approach. It is a charge on employers based on the number of parking spaces they provide for their employees. The introduction of a WPL usually aims at raising funds for transport and mobility improvements and at discouraging commuting by car.

Introducing WPLs may require adapting parking ordinances that define minimum off-street parking requirements for buildings. Controlled parking management measures in the local area may be required to avoid displacement of off-street to on-street parking.

City example: Workplace parking levy scheme in Nottingham (UK)

In Nottingham, a levy on large employer's parking at workplaces was introduced in 2012. In the first three years of operation, the workplace parking levy raised £25.3 million of revenue, all of which has funded improvements in the city's transport infrastructure, including a fleet of electric buses. Recent research indicates that the levy has contributed to a 33% fall in carbon emissions, and a modal shift which has seen public transport use rise to over 40% (Hallam 2016).



The WPL is an annual charge, set in line with inflation. A retail price index is used to calculate yearly increases in the levy. An annual licence runs from 1 April to 31 March, and the cost of each liable workplace parking bay is confirmed prior to 1 January each year. A levy is issued on parking at workplaces. Employers that provide more than 10 workplace parking bays are liable to pay a charge for each of those places. Importantly, employers, rather than employees, are responsible for paying any WPL charge, although employers can choose to pass the cost of the WPL to their employees. A salary sacrifice agreement allows an employee to sacrifice part of their salary in return for a tax-exempt benefit, in this case, workplace parking. Employers that provide workplace parking may be subject to enforcement and penalties if they do not comply with the scheme.

Cross-check:

<https://www.wwf.org.uk/sites/default/files/2016-12/nottingham%20case%20study%20-%20Workplace%20parking%20levy.pdf>

www.bettertransport.org.uk/blog/better-transport/winning-policy-nottinghams-workplace-parking-levy

https://secure.nottinghamcity.gov.uk/wpl/common/Employer_handbook.pdf

<http://transformscotland.org.uk/blog/2018/10/16/sue-flack-talk-workplace-parking-levy-in-practice-experience-in-nottingham-and-elsewhere/>

5.3.2. Employers Contributions to Support Public Transport

Some authorities introduced dedicated taxes on public and private employers, which are used for enlarging, maintaining, and/or operating the public transport systems. Examples are Vienna's Dienstgeberabgabe or the Versement Transport in the Île-de-France region. The tax is calculated as a percentage of the wages (as in Île-de-France) or a fixed amount (in Vienna).

The Dienstgeberabgabe amounts to 2€ per employee and week, with exemptions for employees older than 55 years, for employees with mental and physical handicaps, part-time employees underneath a certain workload per week, employees of public authorities, soldiers in military service etc..

City Example: Versement Transport in Île-de-France

Île-de-France Mobilités is the regional mobility authority in the Île-de-France region which comprises the City of Paris and the seven other départements of the region.

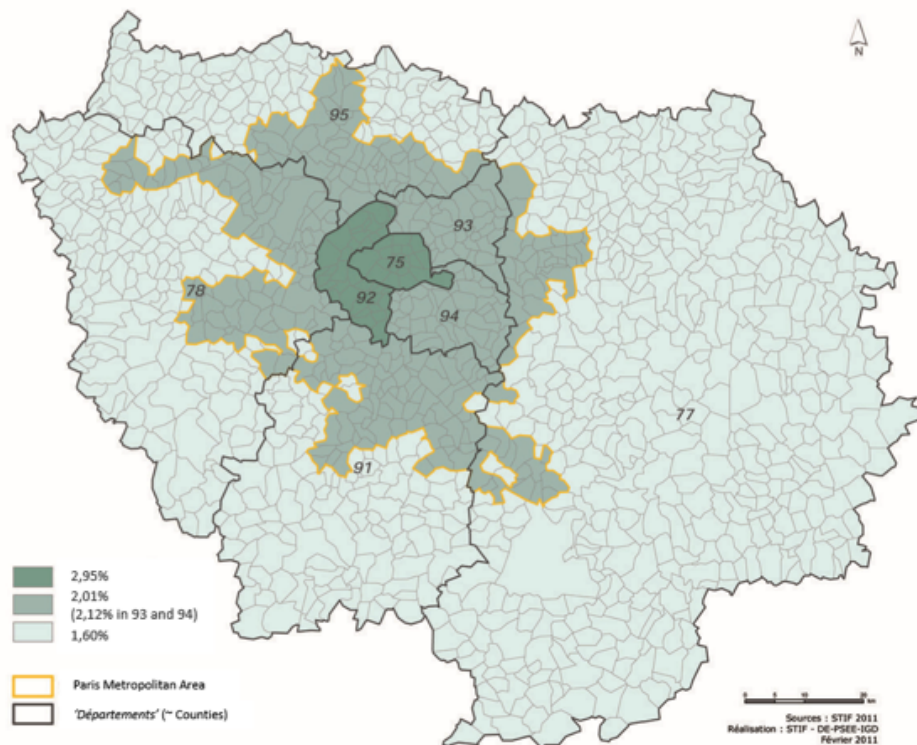
It is tasked inter alia with organising the public transport network, determining service quality, contracting PT operators, monitoring network investments, developing urban mobility plans and ensuring the financial balance of the operational expenditure.

Therefore, Île-de-France Mobilités benefits from a specific tax, the Versement Transport. This tax is levied on the employers both private and public as soon as they employ at least 11 employees. The tax is calculated as a percentage of the wages. The maximal rates are fixed by a national law and Île-de-France Mobilités decides which rate to apply (as a matter of fact maximal rates are always applied).

It is collected by the organisation in charge of the collection of social taxes on behalf of Île-de-France Mobilités. The Versement Transport is used to finance the operators (RATP, SNCF and private bus companies) within the framework of operational contracts and to finance. It also finances part of Île-de-France Mobilités investment costs, such as rolling stock renewal.

The tax contributed, in 2017, to 42 % of the financial resources that covers total operation costs and part of Île-de-France Mobilités investment costs.

'Versement transport' (transport tax) rates since 1st April 2017



5.4. Development charges and value capture

Public investments in transportation services or infrastructure or granting development rights can increase adjacent land values, generating a profit for property owners. Increases in land value may be 'captured' by converting them into public revenue through various mechanisms. Development charges and value capture are one-of and non-recurring levies. They can be used for financing transport infrastructure in newly developed areas – but will not be suitable for maintaining, operating and retrofitting existing services and assets.

Development charges have been criticised for encouraging urban sprawl since they facilitate the development of peripheral areas. On the other hand, charging schemes with variable fees that reflect area-specific costs of infrastructure and service provision might also contribute to more densely developments and contribute to an integrated sustainable mobility planning (Smith et al. 2011). Also, the rationale that those who benefit from a development and/or the provision of infrastructure and public services should make some financial contribute is a broadly accepted and powerful narrative.

5.4.1. Land value capture

Stamp duty land tax (SDLT), as introduced in England and Northern Ireland in 2003, is one such method of capturing increases in land values. Owners of properties above a certain value pay it when the property is purchased. While SDLT increases the municipality's general budget, it can be used to re-finance the development of public transport or other measures towards more sustainable trips / public space development. The main argument for using land value capture mechanisms to finance public transport is that the availability of high quality transport services increases the value of land. These benefits for landowners are partly captured through the SDLT (see TfL 2017).

5.4.2. Voluntary capture

Land development incurs costs for the public sector but increases private property value could also be captured voluntarily. Voluntary capture is a deal or partnership between developers or property owners and a local authority, where the developers or property owners offer a voluntary contribution towards the costs of a public infrastructure project. Voluntary contributions tend to be offered when the developer or property owner calculates that the benefits they will receive from the provision of public infrastructure outweigh the cost of investing in it. Since voluntary capture is a one-off payment, revenues will be used for the construction of infrastructure, not for covering the long-term operation of services.

5.4.3. Planning Obligations and Community Infrastructure Levies

Granting planning permissions for a new development typically increases the value of the affected land. The added value is commonly reaped by landowners and developers. New residential development places extra burdens on the existing infrastructure in the area, such as increasing traffic volumes or congestion, which are borne by public authorities. Local authorities are faced with a lose-lose situation: the development puts increased pressure on the infrastructure they provide, and they are unable to profit from the added value they have created in granting a planning permission.

England and Wales introduced two mechanisms to capture additional value from new developments. Planning Obligations and Community Infrastructure Levies (CIL) are instruments to generate revenues for dealing with externalities of new developments on different scales: Planning Obligations were introduced under the UK's Town and Country Planning Act in 1990. They aim at mitigating parts of the site-specific impact of a development, either through a fixed levy, or via direct negotiation between the developer(s) and the public authority. Planning obligations can also restrict or define conditions for the way in which the land is used:

- Prescribe the nature of development (for example, affordable housing).
- Compensate for loss or damage created by a development (for example, loss of open space), or
- Mitigate a development's impact (for example, through increased public transport provision, cycle paths or pedestrian crossings).

While planning obligations are intended to make an individual planning application acceptable in planning terms (Everett and Smith, 2016), CIL focuses on the wider area and a broader development context. Revenues from CIL can be used for roads, schools, or health facilities, for example. As such, CIL and planning obligations can be implemented

complementary. Where CILs are in force, planning obligations are intended to be “scaled back to those matters that are directly related to a specific site” (CIL Review Team, 2016)

The rationale behind CIL is that those that profit from a new development should contribute to the costs of providing adequate infrastructure and mitigating negative externalities. It is a fixed charge on the development of new floor space. The charging rates are determined on a case-by-case scenario, depending inter alia on the size, the intended use, or the location. Charges are defined in advance so that revenues can be calculated prior to the execution of the works during the planning process. The corresponding charge is invoiced at the starting date of the development, following a communication sent by the local authority. A deadline for the payment of the levy is established on the invoice.

City Example: Planning Contributions and Community Infrastructure Levy in Birmingham (UK)

Birmingham City Council's SUMP Document (Birmingham Connected) was developed to support the delivery of policies set out in the Birmingham Development Plan. Planning contributions are a mechanism to secure funding as a result of development. There are two funding mechanisms combined in Birmingham:

- a) Planning obligations under Section 106 of the Town and Country Planning Act 1990 (as amended) (S106) are negotiated as a result of planning permissions and will seek funds to mitigate or compensate for development (e.g. introduce a sustainable travel plan for a new city centre office development, or a new pedestrian crossing adjacent to a new school). Each agreement is a legal contract and spending is ring-fenced for the purpose within the agreement and is time bound.
- b) Community Infrastructure Levy (CIL) is a charge across certain types of development in certain areas (dependent on viability). 80% of funds are spent on strategic infrastructure to deliver the Development Plan, 15% is passed to neighbourhoods in which development takes place and the remaining 5% is for M&A.

S106 funds have contributed significant amounts to the *Birmingham Cycle Revolution*, resurfacing towpaths for off road cycling, creation of new cycle lanes, or cycle friendly road crossings. Planning Contributions is a useful and well-established tool. However, it can be difficult to generate enough money to complete significant infrastructure projects as the funds are ring-fenced for specific projects, in particular areas.

CIL is earmarked (as part of a wider funding package) for the redevelopment of Perry Barr train station to increase capacity in time for the Commonwealth Games, but also once the Games are over, to provide additional capacity of the new housing created post Games. CIL is much more flexible and can generate large funds relatively quickly. However, setting up a CIL is costly and can take over 12 months. It takes time to change CIL rates (i.e. to reflect market conditions), so it is possible that maximum amounts may not be secured.

Both S106 and CIL require a knowledge of development viability. Specialists may be needed to conduct viability assessments for individual planning applications to maximise S106 contributions, and specialist support is needed to develop a CIL charging schedule.

More information: <http://www.birmingham.gov.uk/cil>



6. National level funding

Member states can provide grants and funding schemes for specific purposes, such as research and development or market diffusion of low-carbon technologies. A report of the Zero Emission Urban Bus System project (ZeEUS 2017) identified national programmes in Germany, Italy Poland, Spain, Sweden, and the UK.

The German National Electric Bus Funding Programme

The German Federal Ministry of the Environment has created a ca. 300 Million Euro fund to support cities and public transport operators to procure electric and plug-in electric buses. The programme (duration: 2018-2022) covers up to 80 % of the additional investment costs compared to conventional diesel fuelled buses (40% for plug-in hybrid buses). Costs for charging infrastructure and other measures necessary for the commissioning of electric buses (e.g. training courses and workshop facilities) are also eligible. In order to achieve the greatest possible impacts cities and areas where the air pollutant limits are exceeded are given preferential support.

ADD EXAMPLE FOR NATIONAL LEVEL FUNDING FOR SUMP DEVELOPMENT

National general budget can also contribute to the operation costs, for example in the form of allocations for public transport services.

7. European Funding Sources

The European Commission has implemented a vast number of initiatives and programmes that can be used for (co-)financing sustainable mobility measures. European funding programmes will mostly contribute to investments (e.g. building a tram line or procuring buses), but rarely to operating costs of infrastructures and services. Among these are Structural and Investment Funds, the European Fund for Strategic Investments, the Connecting Europe Facility, the LIFE programme or Research and innovation programmes, as outlined in the following.

- The **European Structural and Investment Funds** (ESIF) are delivered through nationally co-financed programmes and implemented by Member States and their regions. Funds are used to support economically viable projects that promote EU policy objectives, amongst others on 'sustainable transport networks and bottlenecks'. The ESIF contain five separate funds, of which the European regional development fund ERDF and the Cohesion fund may be relevant for urban transport and mobility projects.
- **European Fund for Strategic Investments** (EFSI) is a joint initiative of the European Commission and the European Investment Bank (EIB). The Fund is the central pillar of the Investment Plan for Europe and supports strategic investments in key areas, including transport infrastructure. The EFSI is a guarantee mechanism, which allows the EIB Group to provide funding especially for projects with a higher risk profile than they normally would. EFSI financing is demand-driven and provides support for projects everywhere in the EU. According to the 2017 EFSI 2.0 regulation at least 40% of EFSI financed projects will aim to contribute to climate action in line with the Paris Agreement.
- The **Connecting Europe Facility** (CEF) is a fund for pan-European infrastructure investment in transport, energy and digital projects, which aim at a greater connectivity between member states. It operates through grants, financial guarantees and project bonds.
- The **LIFE programme** is the EU's funding instrument for the environment and climate action. It funds innovative projects that demonstrate new techniques and methods.
- **Horizon 2020** is the biggest EU Research and Innovation programme and aims to achieve smart, sustainable and inclusive economic growth. H2020 is organised in seven

thematic sections called “Societal Challenges”, of which challenge No. 4 is on smart, green and integrated transport. Local authorities are able to partner with researchers and other stakeholders to access funding under the programme and they may also benefit from the outcomes of Horizon 2020 actions.

- **Climate-KIC:** the European Institute of Innovation & Technology’s (EIT) Climate-KIC supports initiatives aiming at decarbonising. Inter alia, the KIC supports cities on how decarbonise urban environments, including the urban mobility sector.

Further Information: Overview of European funding options

A more comprehensive overview can be found on the Eltis website <http://www.eltis.org/resources/eu-funding>



The Covenant of Mayors for Climate and Energy also provides a database on financing options for transforming ambitious sustainable energy and climate action plans into projects: <https://www.eumayors.eu/support/funding.html>



7.1. Support instruments for the application process

The European Commission and the European Investment Bank (EIB) have set up special support instruments to foster the take up to help cities and regions to apply for European project funding and to combining structural funds with other sources of financing:

Also add URBIS to the list

- **JASPERS** (Joint Assistance to Support Projects in European Regions) is an initiative aimed at improving the quality of investment supported by EU funds. It is a partnership between the European Commission, the EIB and the European Bank for Reconstruction and Development. JASPERS offers support to public authorities and promoters in the preparation and implementation of ESIF projects.
- **JESSICA** (Joint European Support for Sustainable Investment in City Areas) is a policy initiative of the European Commission developed jointly with the EIB and in collaboration with the Council of Europe Development Bank (CEB). The JESSICA initiative supports sustainable urban development and regeneration through financial engineering mechanisms.
- The European Investment Bank’s **ELENA** provides grants for the development (not the implementation!) of programmes above EUR 30 million with 4-year implementation period. Smaller projects can be supported when they are integrated into larger investment programmes. Public or private entities pursuing large-scale transport and mobility measures in urban areas can apply for an up to 90% coverage of technical assistance/project development costs. Eligible costs include internal staff costs, and external expertise, including feasibility and design studies, structuring of programmes, business plans, legal and financial advisory, the preparation of tendering processes, or costs for bundling smaller projects into bankable packages. Having a SUMP is one criterion in the evaluation of applications.
- The **European Investment Advisory Hub** was established as a single point of entry for project promoters, public authorities and the private sector to advisory services and technical assistance. It aims at improving the quality of investment projects by offering advisory support to European project promoters.

Combining European funds and financing instruments

In its Guide to combining EFSI with other EU funds, the EU Commission provides an

example how different European funding and financing instruments can work together:

“Different funds can finance different parts of the project, so you can have the EFSI finance one part and structural funds finance another. For example, a project promoter could apply for structural funds to pay grants for a feasibility study for the project. In addition, structural funds could finance the part of the project that would not get a financial return to allow for its repayment and to cover the operating costs. For the part of the project which will generate revenues the promoter could apply for EIB financing backed by the EFSI guarantee. This combination makes the project “bankable” and eligible for the EIB Group to consider.”



8. Debt mechanisms and external financing

Most of the instruments discussed so far generate cash flows only after the project or service starts its operation. Using expected returns to finance upfront investments in infrastructure or ICT solutions requires borrowing instruments that build on the expectation that project generated revenues or cost savings will service the debt in the operation period.

8.1. Loans

Section to be developed, → refer to EIB activities and national promotional banks

<https://www.eib.org/en/products/mooc-urban-regional-development.htm>

https://www.eib.org/attachments/documents/mooc_factsheet_eib_framework_loans_en.pdf

https://www.eib.org/attachments/documents/mooc_factsheet_eib_framework_loans_en.pdf

section to be developed

8.2. City Bonds

City bonds are debt instruments to unlock investment capital for expenditures, including transport infrastructure projects and service operation. They yield immediate capital for the issuer while repayments can be extended over a long time period of approx. 20-30 years. City governments issue municipal or city bonds, often with the intention to finance transport infrastructure or services. The issuer of a bond sets a fixed annual interest rate and a time frame for repayment and sells the bonds to creditors. Bond-holders receive a promise that the interest and the principle will be repaid on a regular schedule. In many countries bond purchasers profit from tax exemptions.

Due to fixed returns and a pre-defined maturity date, bonds generally have a lower risk profile compared to equity instruments. This makes bonds more appealing to institutional investors such as pension funds and insurance companies who are attracted to predictability, steady pay-outs and capital preservation.

Revenue bonds are often used to finance major infrastructure projects. Interests will be paid from direct project related revenues such as fares and user tolls (Chapter 7.3.1) but also indirect sources such as cost savings e.g. from more energy efficient buses.

The RATP green bonds programme

The French state-owned public transport operator RATP (Régie Autonome des Transports Parisiens) launched a green bonds programme in 2017. The proceeds of the Green Bond will be invested into future projects or used to refinance existing projects that comply with RATP's CSR objectives and fall into one of the following categories: energy transition and climate-change mitigation; pollution prevention; natural resource prevention; or other sustainability objectives such as noise reduction or enhanced comfort for passengers.

In a first step, RATP aimed at a € 500 million injection with a 10-years issue for financing the renewal of railway rolling stock, upgrading of a metro line, and the purchase of electric locomotives for the maintenance of RER infrastructures. With € 1.6 billion of orders, the bond was three times oversubscribed. A second green bond was issued in June 2019

More Information: <https://www.ratp.fr/en/en/la-ratp-et-les-green-bonds>



8.3. Green City Bonds

Green bonds are bonds with proceeds ring-fenced for sustainable projects. Issuers of green city bonds commit to using the capital raised for environmentally beneficial purposes, including sustainable mobility related projects. Examples are the procurement of e-buses and related infrastructure, the extension of tramways or the installation of BRT systems.

The Climate Bonds Initiative - Standards for Transport Projects

The Climate Bonds Initiative has issued sector specific criteria for transport projects eligible for Certification under the Climate Bonds Standard and Certification Scheme.

The Climate Bonds Standard and Certification Scheme is a labelling scheme for bonds. Rigorous scientific criteria ensure that it is consistent with the 2 degrees Celsius warming limit in the Paris Agreement. The Scheme is used globally by bond issuers, governments, investors and the financial markets to prioritise investments which genuinely contribute to addressing climate change.



Public transport projects such as urban trams, metro systems and bike transport systems as well as vehicles propelled by fully electric engines or hydrogen fuel cells are automatically eligible. For other forms of transport, the Criteria define specific thresholds which the projects and assets will have to meet in order to be eligible.

More Information: <https://www.climatebonds.net/standard/transport>

Cities may also consider other financing options:

- **Soft loans** are loans with a below-market rate of interest. Governments may grant such loans to private investors to support transport project implementation.
- **Leasing** e.g. of public transport vehicles may be an option for bus fleet or company fleet renewal.
- The **European Fund for Strategic Investments** (EFSI) aims at mobilising private financing for projects with a high risk profile, including transport projects. The EFSI provides loans, guarantees, and equity investments, but no grants. EFSI funding can, for example, complement ESI Funds (Chapter 7.1) or private investments.

8.4. Tax Increment Financing

Tax Increment Financing (TIF) is a financing mechanism to enable public sector infrastructure investment in a dedicated urban renewal district through locally generated additional revenues. It was created in California, United States in 1952 to rehabilitate urban areas (Haider and Donaldson, 2016). The rationale behind TIF is that the public sector borrows money to finance projects such as infrastructure development. Debt repayments are covered from ring-fencing expected future additional tax revenues (e.g. real estate taxes) that would not occur if the project was not implemented.

TIF operates by defining a catchment area of properties benefitting from the development of the assets. Property taxes received by the local authority are frozen at the level previous to the development for a fixed term, e.g. 25 years. In those 25 years, the actual level of property tax should increase with the increase in land values resulting from the development; the difference between the increased property taxes and the frozen level is used to pay off the debt taken out to build the infrastructure.

Cities may apply tax increment financing to develop public and non-motorised transport in certain areas. However, evaluation has shown that car-free areas significantly increase well-being of the inhabitants, leading to premium property values. One drawback of TIF is that

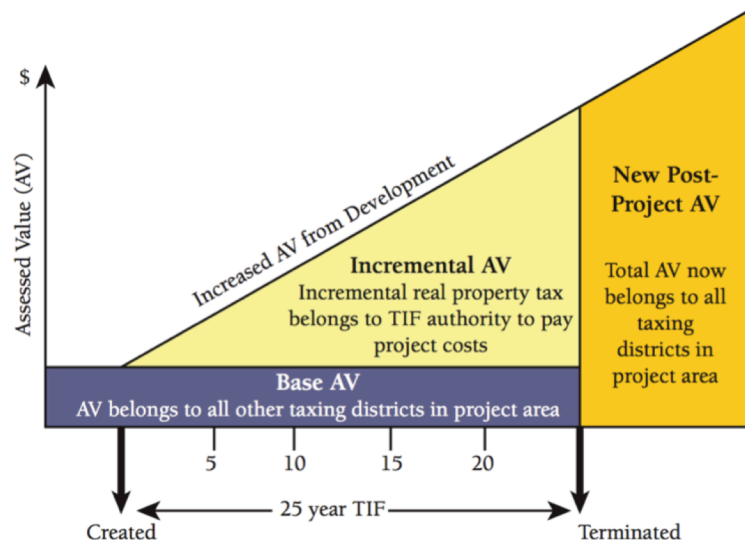


Figure 1: Working principle of TIFs (Haider and Donaldson 2016)

City example: Edinburgh St James Growth Accelerator Model

Tax Increment Financing (TIF) is being piloted in Scotland as a way to re-finance infrastructure projects that unlock the development of a specific urban area. The rationale behind TIF is that the infrastructure will increase the value of the land and induce business investment. This development will result in additional tax revenue. The anticipated additional tax income will be used to repay the loan. The Scottish Futures Trust has issued a set of guidance documents on Tax Increment Financing:

<https://www.scottishfuturestrust.org.uk/publications/tag/tif>

The Growth Accelerator Model (GAM) is a variant on the established TIF model that has been piloted in Edinburgh, Scotland by the City of Edinburgh Council, Scottish Government, and Scottish Futures Trust. The fundamental principle of GAM is the same as that of TIF: money is borrowed to invest in assets that will drive growth, the proceeds of which are used to amortise the debt. Subject to meeting targets, the Council will receive annual payments from the Scottish Government to repay the borrowing.

However, GAM has some distinctive elements. Firstly, the money received by the Council from the Scottish Government is not based solely on increased tax revenues being generated, but also upon the Council meeting non-financial targets around employment and training opportunities. Secondly, the private sector has an ongoing financial involvement, with the private developer benefiting from the growth assets also making payments to the Council to enable repayment of the borrowing as well as sharing any super-profits with the public sector. The payments to the Council from the Scottish Government and the private developer will be reduced if the cost of delivering the assets is reduced, incentivising the developer to work to bring down costs.

The total cost of the assets being delivered via the Edinburgh GAM is £61 million. The main element is a complete redevelopment of the Picardy Place junction that will improve traffic flows as well as delivering enhanced pedestrian routes; segregated cycle ways; and improved public spaces. The works will also make provision for the safeguarded tram extension and for a new tram/bus interchange to reduce motor vehicle traffic in the city centre. The £61 million is also being used to deliver an energy centre and improvement works to several surrounding roads. The assets delivered by the Edinburgh GAM are facilitating the Edinburgh St James development, a £850m regeneration of Edinburgh's East End delivering new retail and leisure space, hotels, and homes that will support hundreds of new jobs and attract significant additional visitors to Edinburgh's city centre.

The St James Growth Accelerator Model is a set of working arrangements between the City of Edinburgh Council, the Scottish Government and the St James Quarter of Edinburgh.

9. Facilitating the Involvement of the Private Sector

PPPs are a form of procurement and contract arrangements between public authorities and the private sector. They aim at delivering public infrastructure projects and/or services under a long-term contract. PPP arrangements vary in terms of their transfer of risks and management responsibilities to the private partner, the ownership of assets (infrastructure, vehicles, etc.), revenue generation, and the distribution of investments. If properly managed, PPPs can improve efficiency along the full project cycle, including operation, and allocate risks to the party better prepared to address them.

Engaging the private sector can reduce direct upfront investments and operation costs for the local authority. PPPs are also mechanisms to share risks among several partners: "The private partner is often responsible for risks, associated with the design, construction, financing, operation and maintenance of the infrastructure, while the public partner usually takes on regulatory and political risks" (European Court of Auditors 2018, S. 12).

In a SUMP context, PPPs can be concluded for the

- the provision of services, for example public transport or sharing services;
- the construction of transport infrastructure;
- the construction and operation of transport infrastructure.

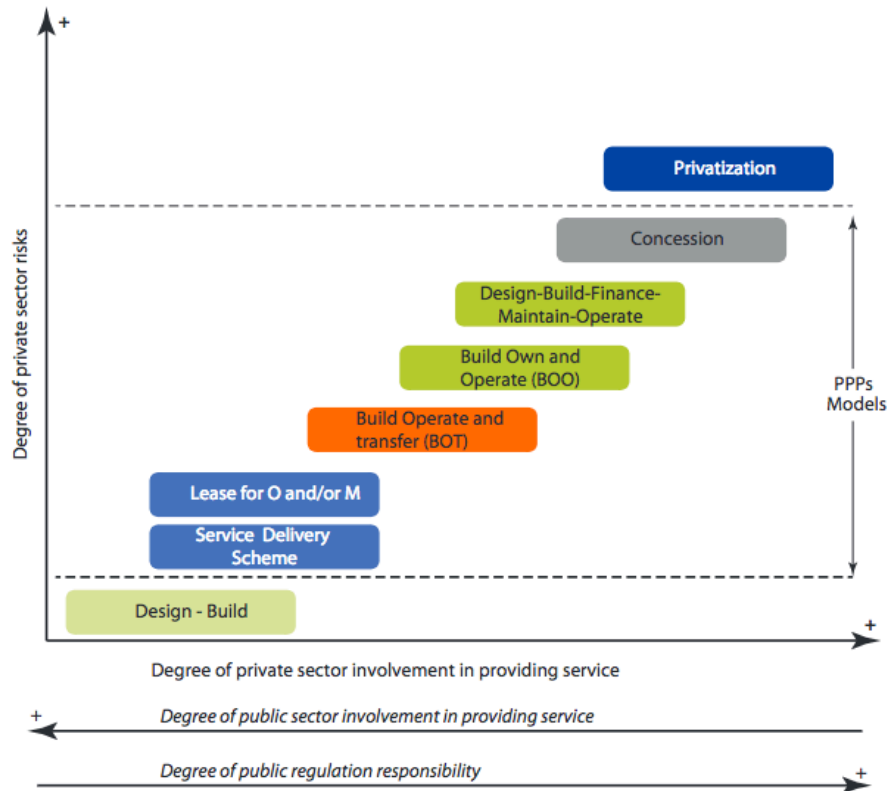


Figure 2: Types of Public-Private Partnerships. Source: [Ardila-Gomez / Ortegon-Sanchez 2016: p.80](#)

PPP and public governance

Private sector engagement for the provision of public services has provoked highly charged political debates. While proponents argue that contracting private operators through competitive tendering reduces construction and operating costs and increases efficiency, opponents fear that contracting and operation of services and infrastructure privatises short-term profits on the expense of service quality and working conditions. Achieving an 'optimal' degree of public sector engagement is a political decision and cannot be answered here.

It is important to understand that PPPs do not substitute for effective governance. PPPs are often criticised for providing profits for the private sector while socialising losses and delegating risks to the public.

Local authorities need adequate capacities to act in the public interest and to ensure the fulfilment of the private sector's obligations. PPPs thus require performance based contracts with clear quality standards and levels of services, sound performance monitoring and reporting obligations for the contractual partners. Setting up a quality management system is highly advisable. Contracts also need to define clear rules for non-compliance and failures to meet agreed standards and a mandate for enforcing mechanisms. Periodic renegotiations are essential for adapting standards and agreed levels of services and to remain responsive to changes in demand, needs and priorities. Corresponding requirements should already be specified in the tender documents.

9.1. Engaging private companies as service providers

Usually, local public transport services do not operate cost effectively and are financed through a combination of user fees, public subsidies, and other sources such as revenue from the rental of advertising space.

Digitalisation has created a number of new business models which support car-free, multimodal travelling, complement public transport services, and thus may contribute to a city's SUMP vision. Services such as bike- and car-sharing systems or on-demand services can fill service gaps and enhance first- and last mile connectivity. Mobility companies have introduced e-hailing services that facilitate ordering and/or borrowing a vehicle or a service (public transport tickets, cars, taxis, bikes and e-bikes, or any other form of transport) by using computer or smartphone. Ride pooling and taxi sharing are new mobility options that may supplement public mass transport systems, specifically in times or areas with low demand for transport.

Private mobility companies can provide urban public transport services as part of service contracts. Under these agreements, the private partner receives performance-based payments for the provision of the service. Cities can stipulate tariffs, network, quality standards and other criteria such as the location of stations close to public transport stations in their mass transit plans and formulate tender documents accordingly. Standards may also address negative impacts such as blocked sidewalks, poorly maintained bicycles, appropriate insurance, and safety standards for bicycles. More information on bike-sharing funding mechanisms can be accessed at: <http://www.konsult.leeds.ac.uk/pg/59/>.

Integrating private sharing systems into the public transport system

Car- and bike-sharing systems are increasingly operated by private companies, most often independent of municipal transport planning and thus not managed through a contract or legal agreement with the city.



To secure their contribution to a sustainable urban transport system, cities need to develop management and licensing structures. The National Association of City Transportation Officials (NACTO) has issued 'Guidelines for the Regulation and Management of Shared Active Transportation'. While the Guidelines focus on the United States, they may also serve as a reference for European cities.

9.2. Public private partnerships in infrastructure development

PPPs can be a means of leveraging of private funds for transport infrastructure projects. Private sector companies are repaid either by contractual repayments or they are entitled to future user charges through a long-term concession arrangement, usually following a "Design-Build-Finance-Maintain-Operate" approach (European Court of Auditors 2018). Typical projects that are delivered by PPP include ports and airports, motorways, bridges, tunnels, or parking facilities. While PPPs are relatively common in large-scale infrastructure projects, they may also be explored for urban projects such as the development of tramlines.

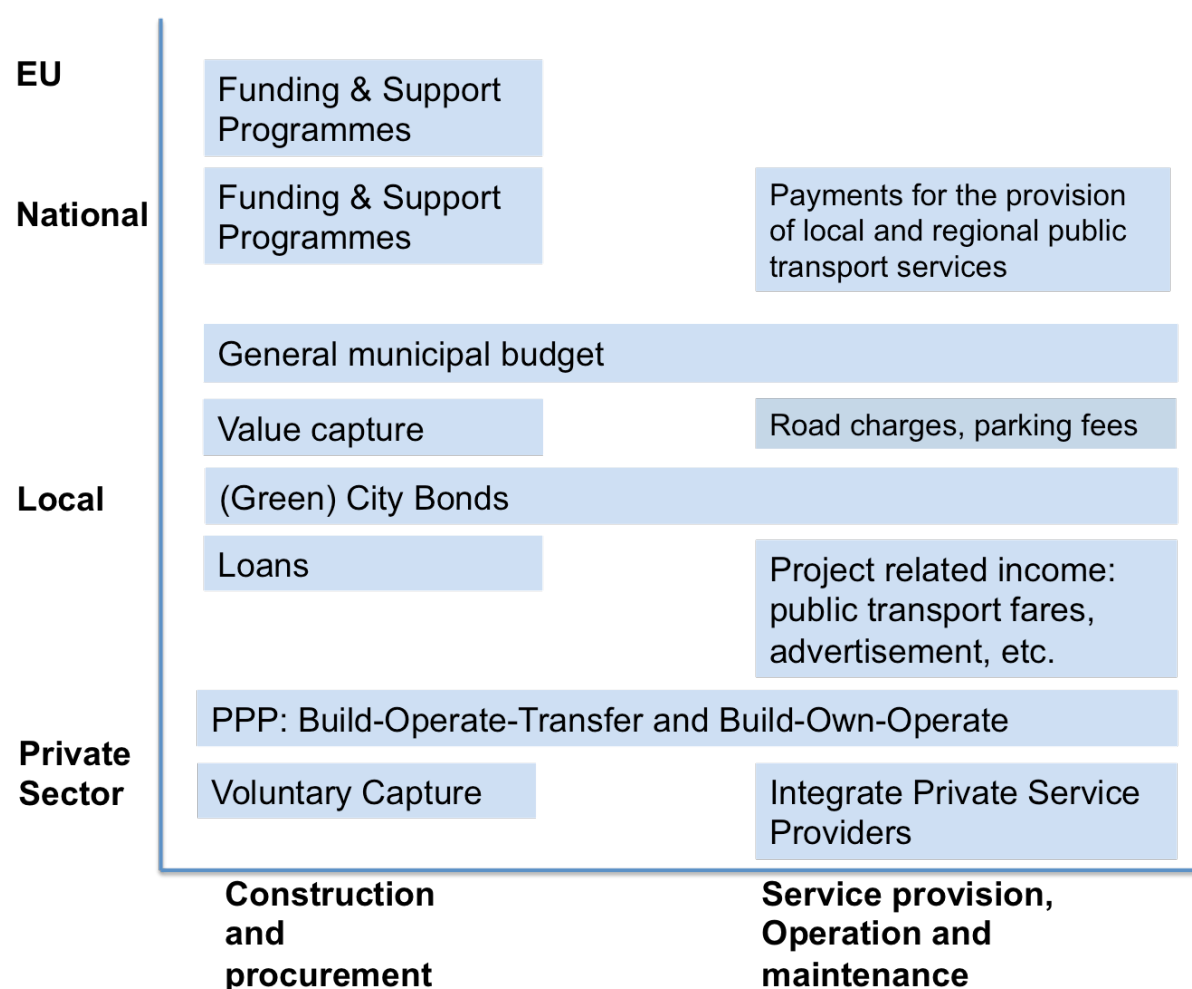
Build-Operate-Transfer (BOT) and Build-Own-Operate (BOO) are two arrangements for the provision of infrastructures and services:

- BOT means that a private sector enterprise builds and operates the infrastructure for a defined period of time (e.g. 20 years). After that time the asset is reverted to the public sector.
- Under BOO arrangements, the private enterprise develops and operates the project for a defined period. The public sector buys the asset at a predefined price or market price.

While PPPs are often considered an effective and efficient way to realise infrastructure projects, the European Court of Auditors points to shortcomings and potential risks associated with the engagement of the private sector in the public realm: Implementing successful PPP projects requires a high degree of administrative capability and expertise, time, and negotiation skills from the sides of the local authority, well beyond expertise needed for conventional procurement processes. Moreover, the Court highlights the risk that private partners may withdraw from a project if the anticipated revenues from future concessions are reduced and the financial viability of a project is threatened. For private enterprises, the public procurement system is extremely effortful what might result in a low competition and put local authorities into a weak negotiation position.

10. Overview of funding and financing instruments

The following figure provides an overview of the instruments which were discussed in this Topic Guide.



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