What lessons can be learned from cities, regions and Member States to finance public transport and shared mobility (examples of best practices, different instruments and legal frameworks, etc.) in order to deliver the EU urban mobility framework and ensure the long-term sustainability of the sector and that it remains the backbone of urban mobility, taking also into account alternative financing instruments.

EGUM – Public Transport and Shared Mobility Subgroup – Topic 1

Adopted by the EGUM Plenary on 04.07.2024

CONTENT

As defined in TOPICS 2 and 3, the definition of Public Transport must be understood in the report as the traditional, collective public transport complemented by shared mobility services.

Summary of recommendations

Many of the current mobility and climate challenges can be successfully addressed by sustainable local public transport, including walking, cycling and shared mobility. In the pre-COVID-19 era, buses, trams, metros and local rail in Europe carried almost 60 billion passengers (2018), [1]which translated into more than 40 billion car journeys avoided. The whole multimodal public transport ecosystem can lead to a sharp decrease in CO2 emissions across Europe if a modal shift away from private cars towards collective modes of travel is encouraged and accelerated. This is however not the fastest and most cost-efficient way to decarbonise people's daily mobility choices across the EU, particularly with 75% of the Europeans living, working and commuting in or around urban areas (projected to rise to 85% by 2050). Resilient public transport has a vital environmental role in the coming years and decades since it has the best capacity to move large numbers of people with low energy consumption, emissions and space use per capita. The mobility of tomorrow will be sustainable, inclusive, digital and safe. It is impossible to achieve this without strong public transport networks, infrastructures and fleets.

This being said, we can only address the European mobility challenges by prioritising a shift of travelling behaviour towards collective (local) mobility in everyday life. Modal shift to public transport is critical to phase out individual motorised traffic from cities and replace it with sustainable modes of collective local transportation. Modal shift requires an alternative, demand-side approach – the Avoid/Reduce, Shift/Maintain, and Improve (EASI) principle – that represents a holistic and efficient way in the fight against congestion and air pollution. For years, modal shift has been recognised as the most effective means towards decarbonisation and achieving liveable and green cities. Also, it ensures territorial cohesion and connectivity for regions and cross-border localities as well as for rural and low-density areas. Modal shift is linked with redefining public transport as a multimodal mobility ecosystem with collective passenger modes at its core.

Modal shift measures increase the network capacity and attractiveness of local public transport and prevent further increase of individual motorized traffic by means of low emission zones, congestion charging, sustainable mobility planning or integrated payment and ticketing solutions.

Finally, according to European Commission estimates[2], the additional private and public sustainable urban and rural mobility investment needs are estimated at nearly EUR230 billion per year for the current decade. Hence, it is worth reminding that every EUR1 of value created from local public transport is linked to a further value creation between EUR4 to EUR6 in the total economy. It does so by connecting people to their jobs, vacation and leisure activities. It also enables the clustering of activities and business development, supporting tourism, stabilising property values. Additionally, public transport is helping to regenerate cities and deprived areas through transport connections, accessibility and denying mobility poverty. Also, investments in public transport create 25% more jobs in the wider economy than the same level of investments in roads or highways would produce. Investing in public transport-oriented

[1] Relaunching transport and tourism in the EU after COVID-19 - Study requested by the TRAN committee Policy Department for Structural and Cohesion Policies Directorate-General for Internal Policies – European Parliament
[2] UITP policy paper 'EU Funds and Financing for Resilient Local Mobility' 2022

cities ensures a sustainable and resilient economic development path, making the decarbonisation of the transport sector cheaper and easier.

Moreover, in 2020, road transport contributed to 24% of the EU's total emissions of carbon dioxide (CO2), the main greenhouse gas. Public transport can help avoid at least twenty times the amount of CO2 it emits.[3]Increasing the usage of public transport is one of the solutions to comply with the ambitions of the Green Deal as well as the 2015 Paris Agreement. Achieving a high-performing public transport system, comprising traditional collective modes and newer shared mobility modes, requires strategic policies and financial support across all levels of governance. The authors of this report give the following recommendations:

1. **Prioritise public transport investments across all relevant EU funds and financing instruments**

2. **Set up a new EU grant scheme for greening local public transport fleets and for local public transport infrastructure and fleets**

3. **Earmarking tax revenue or charges for public transport**

4. **Dedicate substantial resources for maintenance and operations of assets and infrastructures**

5. **Involve local and regional authorities in co-deciding on EU funded investments**

6. **Transport-oriented funds and financing need better coordination and synergies**

7. **Restructuring of the Connecting Europe Facility**

8. **Streamline access to research and innovation funding for Public Transport**

9. **Creation of a long-term Transition and Resilience Fund**

10. **Leveraging the Social Climate Fund to Strengthen Public Transport**

11. **Better monitoring of spending on public transport**

12. **Leveraging private investment and enhancing funding mechanisms for shared mobility**

[3] Climate action report European Commission

1. Introduction

Public transport is a vital part of urban mobility in Europe, moving more than 50 billion passengers per year. It is the most sustainable, efficient, inclusive, democratic, and dependable mass-transit option for daily mobility and gives citizens access to jobs, education, care and culture. Collective transport is at the core of liveable and people-centred cities with cleaner air, less congestion, less noise, and more green spaces. For these reasons, most if not all European cities want to increase the patronage (support) of public transport.

Public transport also plays an important role for Europe's economy. Investments into public transport create a broader economic benefit, especially locally and regionally. Most transport companies are among the largest employers at the local level, employing staff from various professional and cultural backgrounds. Europe can proudly present some true champions both in the rolling stock industry and amongst public service operators, being home to many public and private companies whose know-how is recognised worldwide.

Public transport must remain the backbone of urban mobility if the transport ecosystem wants to achieve the goals of the European Green Deal and Sustainable and Smart Mobility Strategy. Public transport companies across Europe (from all types and sizes), have dedicated staff that are providing the best possible service to the citizens. But the high quality of public transport also requires committed funding, over a sufficient timescale, to enable revenue and capital expenditure to maintain (or even grow) the quality and coverage of public transport in each discrete urban area and its hinterland. Sources of revenue should include the European Union (EU), national and local government grants, local taxation (e.g. based on land values and private vehicle usage), and fares income.

Capital investment must include measures to increase operational efficiency to facilitate decarbonisation (grants for new EV purchase and depot infrastructure) and to improve the service offer to the public. Service development should include greater network coverage and increased frequencies, extended operational hours, better information provision, and more convenient fare payment options (such as contactless capping).

Shared Mobility Services differ in nature and do not fall under the above framework regulation. Today, different models co-exist in parallel (mainly concessions and service contracts). We recommend addressing these different market dynamics by creating mechanisms to ensure fair access to compensation for favourable but unprofitable services, for service contract holders and concessionaires alike.

Based on the comprehensive insights provided by the reports prepared by the Public Transport EGUM subgroup[4], there is a compelling case for increased political and financial support for the public transport sector. Funding is needed for an attractive offer, service acceleration, inclusivity, innovative solutions, and addressing workforce shortages. Here are the key points from other EGUM reports to consider:

- **Integrated and User-Centric Approach:** The evolving needs of urban populations and the imperative for sustainable mobility solutions demand an integrated approach to public transport. Funding should support the development of seamless, multimodal networks that prioritize user experience, from infrastructure design to digital information systems. Such an approach not only improves service quality but also encourages a

[4] TOPIC 2 on Public transport / TOPIC 3 on Public transport complementing with shared mobility / TOPIC 4 on Inclusiveness and workforce shortage

shift from inefficient use of motorized mobility to public transport and shared mobility, contributing to environmental goals.

- **Inclusivity as a Foundation:** The public transport system serves as the backbone of urban mobility, facilitating quality of life for citizens through access to employment, education, healthcare, and social interactions. However, its full potential is unrealized when significant portions of the population face barriers to access the system. Investments are necessary to ensure the system is universally accessible, accommodating people of all abilities, ages, and socio-economic backgrounds. This is particularly striking in areas which include older or historical networks such as metro stations in the city centres, which require lengthy and more expensive projects to ensure it abides with universal design principles. Enhanced inclusivity not only upholds the principles of social equity but also increases the system's user base and societal impact.
- **Workforce Development:** Addressing the sector's workforce challenges is critical for maintaining, enhancing and expanding public transport services. Staffing costs are the highest operational expenditure in most public transport companies. In addition to funding these increased operational costs, EU, national and local funding should support recruitment and retention initiatives, training programs, and measures to improve working conditions. A skilled motivated and well-resourced workforce is essential for delivering high-quality services that meet the needs of diverse urban populations.

To reach the abovementioned ambitions and secure attractive metropolitan public transport, funding is needed. **This report explores funding needs in juxtaposition with existing funding programs for urban public transport.**

Before embarking on these explorations, a brief overview of 2014-2020 EU grants and lending projects in local public transport and urban mobility[5] illustrates the reality of the low level of European funding for our sector.

- **European Structural and Investment Funds**: Cohesion Fund and European Regional Development Fund provided the biggest grant support to local public transport worth of EUR 17.3 billion.
- **Connecting Europe Facility-Transport (CEF):** only EUR 330 million worth of EU contributions were granted for local public transport projects, good for merely 1% of the whole CEF-Transport programme.
- **Horizon 2020:** utmost 0.8% (EUR 650 million) of this flagship EU research programme could be potentially dedicated to local public transport, majority of which under Shift2Rail actions.
- **Interreg V Programme:** cross-border local mobility was granted around EUR168 million (out of the total program budget of EUR 10.1 billion), with 73% average rate of EU co-financing.
- **LIFE Programme:** a surprisingly fractional support for local public transport might prove the programme’s very limited promotion at the urban level, or substantial admission complexities.

[5] Overview of 2014-2020 EU grants and lending projects in local public transport and urban mobility. Source. UITP Policy Paper, EU investments in the local public transport sector: Insights from the 2014-2020 financial programming, SePublic transportember 2023

- **European Investment Bank (EIB):** urban transport could count on gracious support of nearly EUR 24 billion of lending, good for nearly 30% of the EIB's total transport lending portfolio.
- **European Fund for Strategic Investments:** the central pillar of the Juncker's Investment Plan for Europe dedicated around 6% of its guarantee for transport projects, including nearly EUR 2 billion of direct EFSI financing for local and regional passenger transport.

Table 1. An overview of 2014-2020 EU grants and lending projects in local public transport and urban mobility

FUND/INSTRUMENT	TOTAL BUDGET	ALLOCATIONS TO LOCAL PUBLIC TRANSPORT AND URBAN MOBILITY	ALLOCATIONS VS. TOTAL BUDGET
Cohesion funds (ERDF + CF)	€248.4bn	€17.3bn	7%
CEF-Transport	€23.7bn	€330m	1.4%
Horizon 2020	€80bn	€650m	0.8%
Horizon 2020 Transport Challenge cluster	€6.3bn	€650m	10%
Interreg V Programme	€10.1bn	€167.5m	1.6%
LIFE Programme	€3.4bn	€25m	0.6%
EIB Transport lending	€84.3bn	€23.8bn	28.2%
European Fund for Strategic Investment	€134bn	€2bn	1.5%

Figure 1. Overview of 2014-2020 EU grants and lending projects in local public transport and urban mobility. Source. UITP Policy Paper, EU investments in the local public transport sector: Insights from the 2014-2020 financial programming, September 2023

NB: Public transport does not appear as a category in the dashboards, which makes it difficult to determine which funds have been allocated to public transport. The lack of visibility of public transport in the data only shows its neglect in EU programmes.

2. Definitions and Scope

The COVID-19 pandemic has highlighted the critical importance of preserving passenger transport as an essential and shared mobility option for citizens. Local public transport is in urgent need of robust and sustainable funding mechanisms in the post-pandemic era, as it is still experiencing revenue loss and decreased ridership whilst experiencing increased costs (energy, staff, decarbonisation, digitalisation, etc.) In parallel, private shared mobility services have gained traction and can be leveraged to fill gaps in the transport system through more flexible and multi-modal options. Adequate financing not only ensures the continuity and efficiency of traditional collective public transport services, but also facilitates the transition towards greener transit systems, including integrated multi-modal shared mobility services. With the local public transport sector annually facilitating 50 billion passenger journeys, contributing EUR 150 billion to the EU economy[6], and employing two million Europeans, EU funding has emerged as a transformative force with enduring significance.

In the face of strained local budgets and mounting national debts, the indispensable role of the EU in funding the public transport sector is undeniable. EU support remains pivotal in achieving the targets – partly set by the European Union itself – concerning e.g. sustainability and digitalization while simultaneously meeting the evolving expectations and demands of passengers. Furthermore, investments in local public transport (thereby promoting sustainable and efficient mobility) are essential for realizing the strategic objectives of initiatives like the European Green Deal, particularly concerning decarbonization and social equity. Given their deep interconnection with various sectors of the economy, collective, shared, and multimodal mobility will continue to underpin the socioeconomic prosperity of local communities across Europe.

The significance of EU funding for the local public transport sector is multi-faceted:

- Sustainable urban mobility financing must be viewed as a crucial climate investment, not merely routine financial support.
- Investing in public transport and pushing for modal shift is imperative for achieving the European Green Deal's objectives in the transport sector.
- Implementing investments in shared mobility, clean fleets, infrastructures, and user-friendly systems are essential for creating liveable, people-centric cities.
- Supporting local mobility initiatives serves as a catalyst for increased demand for shared, active, and collective modes of travel.
- Enhancing the climate change resilience of infrastructure and fleets requires more substantial and stable funding frameworks, alongside improved fund allocation for overall effectiveness.
- While EU funding is pivotal, a blend of subsidies, green bonds, financial guarantees, performance contracts, state aid, equity funds, and private investments is necessary to sustainably finance public transport endeavours.

Public transport plays a central role in facilitating urban mobility by providing diverse transportation options. It comprises buses, trams, metros, commuter trains, sometimes cable cars, ferries, taxis and private hired vehicles, complemented by shared bike, e-scooter and car fleets. Urban public transport fulfils the daily travel needs of urban residents and visitors, fosters economic development, alleviates traffic congestion, and mitigates environmental pollution by offering a sustainable alternative to private car usage.

[6] Relaunching transport and tourism in the EU after COVID-19 - Study requested by the TRAN committee - Policy Department for Structural and Cohesion Policies Directorate-General for Internal Policies – European Parliament

The EU has outlined several objectives for public transport aimed at promoting sustainability, efficiency, and inclusivity. These objectives are integral to broader efforts to support sustainable, intelligent, and inclusive mobility. Key objectives include: (1) reducing greenhouse gas emissions in transport; (2) promoting multimodal integration; (3) enhancing accessibility for all citizens (regardless of age, gender, physical ability); (4) improving the efficiency and reliability of public transport services; (5) increasing public transport usage to alleviate traffic congestion and environmental pollution; (6) ensuring safety and health standards; and (7) fostering innovation in the transport sector.

These objectives are enshrined in various EU policies and initiatives, such as the Sustainable and Smart Mobility Strategy[7], which seeks to enhance the resilience, sustainability, inclusivity, and intelligence of the EU's transport system. However, achieving these objectives requires substantial funding and financing, which is the focus of this paper.

3. Funding needs of Public Transport

The provision of traditional, collective public transport services requires huge long-term investments, in the form of capital expenditure for infrastructure and rolling stock, as well as the continued funding of the production of services (e.g. fuel, personnel, planning and procurement overhead costs). For instance, maintenance of shared mobility services typically comprises 80-90% operational costs, with large portions of variable costs.

Public transport is indispensable for many citizens, providing convenient, accessible, sustainable, and affordable transportation options. **Hence, investments in Public Transport are very relevant.** Cities can offer convenient, sustainable, and affordable transportation options to their citizens by expanding the public transportation offer and making public transport more attractive. This can be achieved by acquiring new vehicles, modernizing stations and stops, and introducing innovative services such as on-demand options or bike-sharing programs. Embracing technological innovations is another critical aspect. Intelligent transport systems (ITS systems), real-time information systems, electronic payment systems, and autonomous driving technologies can significantly enhance the efficiency, safety, and sustainability of urban transportation networks.

To ensure comprehensive services, attention must be paid to network coverage and operational hours. Expanding network coverage is imperative. Providing not only traditional radial services but also peripheral and orbital routes that connect communities and essential services, ensures equitable access to transportation for all citizens. Moreover, extending operational hours is important. Offering services early in the morning, late at night, and on Sundays, caters to the diverse needs of users, including shift workers, leisure travellers, and those with varying schedules.

3.1. Capital Expenditure for investment (network development)

Developing and modernizing urban transport infrastructure is crucial to meet the needs of a growing population and economy.

[7] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0789

This multifaceted endeavour involves several key areas of investment. Expanding the construction of transport routes is essential. Building new urban railways, and other infrastructure such as bike lanes and cycling networks (and if required also bridges, tunnels, etc.) not only expands the transport network but also alleviates congestion, laying the foundation for more efficient and sustainable urban mobility.

Infrastructure is often a bottleneck, preventing an expansion of services. Further, in many European cities there is a delay in investments towards maintenance and modernization of infrastructure, let alone into an expansion of the public transport networks. Investing in urban transport infrastructure is vital for creating sustainable, efficient, and inclusive cities. By addressing funding challenges and ensuring comprehensive public transport (PT) services, cities can enhance mobility for all citizens while fostering economic growth and environmental sustainability.

Key elements for network development include:

- Infrastructure development: road and rail infrastructure, but also the connection with other modes. Multimodal transport planning plays a pivotal role. Integrating various modes of transport including services provided by private investments creates a seamless and efficient system, facilitating connections to mobility hubs and park-and-ride facilities. This holistic approach ensures that urban transportation systems are accessible and adaptable to the diverse needs of city dwellers.

- Digital technologies for public transport, e.g. safety systems and road prioritisation systems/telematics, autonomous shuttles and services. Also, systems for timetabling, ticketing, and information management, which allow cities to enhance the user experience and optimize the utilization of public transportation services.

Despite the importance of these investments, securing adequate funding remains a challenge. Well established, public transport funding would include allocating resources for infrastructure projects, increasing budgets, and supporting demonstration projects to drive innovation and efficiency in urban transport systems.

Developing and adapting the network also means improving efficiency. Investment in capital expenditure aimed at enhancing efficiency in public transport is essential, particularly for road-based modes such as trams, trolleybuses, buses, and coaches. These modes share road infrastructure with a diverse array of vehicles, ranging from heavy goods vehicles to pedestrians. Consequently, they face unique challenges related to both dynamic and static aspects of traffic management, which are inherently interconnected.

Dynamic challenges arise from the competition for road space, leading to congestion, especially in urban areas. This congestion not only prolongs transit times but also introduces unpredictability, making public transport less attractive to potential passengers. Addressing these challenges requires strategic investment in dedicated bus and tram lanes, intelligent traffic control systems, and priority signalling for public transport vehicles.

Static challenges, on the other hand, stem from issues like kerbside parking, illegal stopping, and blockages at bus stops. These hindrances not only disrupt the flow of traffic but also impede access to public transport, particularly for passengers with reduced mobility. Solutions to these challenges include infrastructure modifications like raised kerbs at stops, designated "red routes"[8] with no stopping permitted, and reallocating parking to adjacent streets.

[8] https://tfl.gov.uk/modes/driving/red-routes/rules-of-red-routes/red-lines-and-no-stopping

In summary, investing in capital expenditure to improve public transport efficiency involves addressing both dynamic and static challenges, with a strong emphasis on enforcement to ensure effectiveness, reliability and maintain public trust in the system.

3.2. Operational expenditure

The long-term impact of COVID-19 has left passenger levels of collective transport modes below pre-pandemic rates in many regions, which in some cases affects the budget allocated to public transportation and resulting in the reduction of kilometres served and in some extreme cases the absorption of lines / services or their closure. Simultaneously, there is a surge in demand for social and care transport services catering to the elderly and disabled, further straining public budgets.

Operational expenditure refers to the costs associated with the provision of public transportation services. This includes energy costs for running vehicles, staff salaries and benefits, insurance premiums, maintenance and repair of vehicles and infrastructure, as well as other related expenses necessary for the daily functioning of the service.

Improving Public Transport Service attractiveness is imperative. Once the quality of the service has been hampered, the feedback effect is not only harmful but lengthy in time to recuperate the levels of passengers observed in the impact of the prior financial crisis which affected the public sector. Priorities include keeping, enhancing frequency, and dependable passenger information, alongside the implementation of high-capacity systems. All public transport should offer comfortable seating, smooth and safe driving, expedited boarding processes, and inclusive designs. Additionally, they should have dedicated lanes and priority at traffic signals to prevent delays caused by traffic congestion.

Addressing evolving skill requirements is crucial for enhancing service quality and efficiency. This requires upskilling and reskilling workers to meet the EU's goals for transport inclusiveness and accessibility. Tailored training programs should be developed by unions and employers to equip workers with the necessary expertise.

There is an overall wage inflation, paired with the pan-European shortage of public transport drivers and other staff, particularly those holding a category D license. This leads to increased staff costs on the side of public transport companies and makes the provision of public transport services more expensive. Staff costs are a large part of the regular operating costs, and their expected increase comes at a time where other costs are rising, too (decarbonisation, digitalisation, expansion of the network, etc.).

For road-based transport modes, the evolving Euro standards for diesel vehicles are further escalating operating costs, primarily due to the increased complexity of emissions treatments.

Although electric vehicles offer reduced operating costs compared to diesel counterparts, uncertainty remain regarding their whole life operating costs, especially concerning mid-life battery replacements. While recent innovations aim to mitigate these risks through lifetime guarantees and battery replacement strategies, the full extent of their cost-effectiveness remains uncertain.

Emerging insurance-related cost pressures, mainly for electric and hydrogen fuel cell vehicles, are imposing additional financial burdens. There are also expensive or non-existent offers for assets and data cybersecurity insurance. Unrealistic expectations from insurers, including

increased surface requirements for depots and additional fire prevention measures, are contributing to significantly higher premiums.

The operational budgets provided for public transport services need to be adequate to ensure they are financially sustainable and properly human-resourced to ensure a quality service for the public. This is particularly true for services tendered to private operators. These operating budgets must consider the current labour market challenges and consider other factors – including various leave policies, worker training, and security staffing requirements. All these aspects need to be considered for provided service, and for the full duration of the offer when tendered. Recent examples of regional bus transport in the Netherlands have shown a decline in the interest of companies providing public transport services, emphasizing the importance of maintaining social standards for all providers to ensure consistent quality service and fair treatment of workers, whether public or private operators.

Beyond collective transport services, it is important to point out that the bike sharing industry is not very healthy today. In the past years several companies were at risk of insolvency or had to be restructured, leading to business continuity risks for cities.

Three key challenges can be observed:

1. **Misalignment between policy and business objectives**

Funded bike-sharing services are managed like collective public transport service contracts, although they have a completely different business dynamic. In shared mobility, the majority of operational expenditure costs are variable costs (repair and maintenance, insurance, energy, etc.) directly proportional to the amount of usage. More trips mean more costs to the operator. However, compensation models are typically static (e.g. a flat amount / vehicle / month), disincentivizing any improvement in UX, system performance and operations. As revenue is not aligned with usage, policy and business objectives aren't aligned.

2. **Co-existence of privately and publicly funded services within the same ecosystem**

Over the last 5-10 years, several privately funded schemes started to offer their services on top of publicly subsidised mobility options, either other publicly funded bike share systems, or public transport. The fee structures of such services are not attractive and inclusive for all, as low-income people are excluded. Such private services, often managed by concessions, cannot unfold their full potential as they are constrained to operate within the boundaries of profitable operations (fees at market rate, limitations of the service area to central urban areas). Making funds available to compensate such private services for desirable trips could help leveraging their complementary benefits to the overall public transport system.

3. **Inappropriate funding mechanisms**

CapEx funding is much easier than operational expenditure funding, but 80-90% of total project costs of (e-)bike and e-scooter sharing operations are operational expenditure costs. Shared mobility is not an infrastructure but a service and requires funding mechanisms that can enable growth, innovation, and investments.

3.3. Capital Expenditure for maintenance

Modernizing existing transport networks and facilities is paramount for enhancing energy efficiency, safety, and passenger comfort. This multifaceted approach often entails a comprehensive overhaul, encompassing infrastructure renewal, the implementation of

advanced signalling and safety systems, and the modernization of stations and stops. By embracing these upgrades, public transport systems can retain and attract passengers, fostering sustainable mobility solutions.

Investing in predictive maintenance is essential by using data from exiting fixed assets to improve service reliability and to reduce maintenance cost and save money to taxpayers. Promoting repair work and ongoing maintenance/upgrades of existing public transport infrastructure alongside new construction initiatives is essential for optimising the value and resilience of existing and ageing infrastructure. Moreover, prioritizing the enhancement and upkeep of transport infrastructure, including initiatives such as the “greening” of car parks and tracks, should be deemed eligible for funding.

For instance, consider the substantial financial commitments required by Vienna's public transport operator, Wiener Linien[9], to cover the ongoing costs of repair and maintenance for transport vehicles, tracks, and surrounding infrastructure. In 2022, these expenditures accounted for a significant quarter of Wiener Linien's total outlay. Serving over 792 million passengers in 2023, equivalent to more than 2 million passengers per day, Wiener Linien sustains an extensive and environmentally friendly transport network. This network is instrumental in Vienna's recognition as the most liveable city in 2023, with its exceptional public transport system being a key contributing factor. However, the costs associated with maintaining this network pose a substantial financial burden for public transport providers, often overshadowing more conspicuous investments. For instance, the substantial expenditure of EUR 262.6 million in 2022 alone for the ongoing construction of the new subway line U5 in Vienna, pales in comparison to the ongoing maintenance costs.

To address these funding needs effectively, it is imperative to include upgrading, repairing, and maintenance costs alongside new constructions in eligible funding considerations. This holistic approach ensures the sustainability and resilience of public transport infrastructure while meeting the evolving needs of urban mobility.

3.4. Capital expenditure for innovation

Expenditure for innovation in public transport is essential for addressing challenges and staying competitive amidst evolving demands from various stakeholders. The term “innovation” includes digital innovations, transitioning to zero-emission fleets, and overcoming challenges such as data security. While operational costs and investment expenditure is the baseline, innovation requires diverse funding mechanisms, including European initiatives, to go one step further in improving the quality of the service.

<u>Investment in innovation is vital for several reasons</u>

Firstly, it addresses environmental challenges by transitioning to zero-emission vehicles and energy-efficient infrastructure, which helps reduce carbon footprints and aligns with sustainability goals such as the European Green Deal. Secondly, it adapts to technological shifts through the implementation of real-time tracking, mobile ticketing, and advanced data analytics, thereby improving efficiency and passenger experiences. Moreover, innovation meets changing transportation demands; for instance, on-demand transport services enable flexibility in urban mobility, accommodating evolving patterns exacerbated by factors like

[9] Case study 3 in annex

urbanization and the pandemic. Additionally, it enhances competitiveness by making public transport more attractive compared to private options, thus increasing ridership and reducing traffic congestion.

Furthermore, promoting accessibility and social inclusion is another crucial aspect. Developing accessible features and services ensures that public transport is usable by all, regardless of age, ability, or socioeconomic status. Innovation also stimulates economic growth in the broader transport industry, as the application and real use of innovative technologies indirectly promote economic growth in transport-related sectors.

Lastly, enhancing safety and security is achieved by implementing technologies such as CCTV surveillance, emergency response systems, and crowd management strategies, which improve the safety and security of passengers and staff.

Key areas for innovation

It is obvious that green technologies play a crucial role, including transitioning to electric, hydrogen, or alternative fuel vehicles, as well as investing in charging infrastructure and energy-efficient systems. In addition, digital and smart mobility solutions are vital. Mobility as a Service (MaaS), geolocation advancements, and smart ticketing are significantly enhanced by implementing data-based analytics and services for tasks such as service planning, vehicle charging, maintenance, safety, and overall efficiency. Moreover, these solutions can also reduce operational and maintenance costs through the use of artificial intelligence (AI) for predictive maintenance of assets.

We can also underline that the digitalization of companies and connectivity of infrastructure are essential. By harnessing the power of digitalization and data, companies and operators can become more cost-efficient, smarter in resource use, and better able to respond to evolving passenger needs. Additionally, innovation procurement supports this process by engaging with SMEs and startups to foster open innovation partnerships, providing seed funding, and adjusting procurement methods to prioritize innovation.

Moreover, fintech solutions play a crucial role in modernizing payment systems, providing real-time financial data, offering personalized services, and preventing fraud and chargebacks. In parallel, demand-responsive mobility is another innovative area, trialling concepts such as on-demand buses or Demand Responsive Transport (DRT) and automation to understand mobility patterns and effectiveness.

Finally, capacity building and stakeholder engagement are fundamental. By enhancing expertise through training and involving stakeholders in decision-making processes, we can ensure inclusiveness and public support, thereby strengthening the overall innovation framework in public transport.

Innovation in the shared mobility sector

Shared Mobility has witnessed strong innovation in terms of:

- Vehicle innovation - new form factors (e-bikes, e-cargo bikes, e-scooters) and technologies (IoTs with precise localisation technologies, vehicle telemetry, etc.);
- Process innovation - Feature-rich operating systems, data-driven operations, data standards, AI-based applications, sustainable operations;
- User experience - AI-based applications for highest customer satisfaction;
- Batter safety and compliance - safe charging installations, upskilling of labour force, etc.

This innovation has been predominantly fuelled by private investments. Since 2022, a slowdown of innovation and R&D spending was observed due to the changed macro-economic climate. A dedicated R&D budget available for the shared mobility sector could help overcome this shortage.

3.5. Capital Expenditure for decarbonisation

Clean and zero-emission vehicles powered by renewable energy are a cornerstone of sustainable public transport systems. The transition to zero-emission fleets in local and regional passenger transport is crucial to achieving ambitions in terms of energy consumption, and reduction of local pollutants and noise. Clean bus systems enable cities and regions to offer their citizens public transport services without harming the environment. Efforts to expand urban transport must prioritize not only the adoption of zero-emission vehicles but also the access to renewable energy sources needed to power these modes of transport. Despite their proven contribution to significantly reduce CO_2 emissions and mitigate the impacts of climate change, certain clean modes of public transport such as trams, regional trains, metros, and other zero-emission vehicles have often been overlooked in both EU and national funding schemes. This gap in funding, particularly within programs such as CEF Transport, has impeded progress toward the widespread adoption of greener transportation options.

Concerning buses and other road vehicles, European legislation paves the way for the technological transition. Through the deployment of clean buses, local and regional authorities have fully complied with the objectives of the Clean Vehicles Directive, and they will need to comply with the new targets for reducing CO_2 emissions. As the targets become more and more ambitious, the funding gets reduced at EU level and in some Member States. The CEF2 via Alternative fuels infrastructures Facility (AFIF) and programmes of the Multiannual Financial Framework (MFF) 2021-2027 portfolio no longer support this policy promoted by the European Commission itself in its Clean Bus Deployment Initiative. This is problematic for local and regional governments and the transport authorities managing public transport in these territories, as purchasing clean buses requires a very significant financial effort of around EUR 250,000 to 350,000 per vehicle on top of the price of a EURO 6 diesel bus.

Clean transport infrastructure is in many cases purchased as a ‘system’ – combining vehicles, batteries, charging infrastructure and depots into integrated projects. An artificial deconstruction of these integrated projects into segments, seeking support from different financial instruments for various parts of the system (e.g. “only” the buses, or “only” the depot construction), adds coordination costs and financial risks.

With the new CO_2 emission targets for heavy-duty vehicles and the Euro 7 Regulation, the urgency to start the transformation has increased sharply: in 2030, 90% of city buses sold in the EU must be zero-emission, and the remaining ones must comply with the Euro 7 regulation, which hardly any bus manufacturer will develop. The planning and construction process for the infrastructure, depots and procurement of buses takes approximately five years and requires public funding. Considering this, the much-needed funding schemes must be in place and operational by 2025. Without such funding schemes, the public transport sector will not be able to reach the political targets.

Besides public grants, collaborative endeavours between public and private sectors are crucial, since they are innovative financing mechanisms such as long-term loans and financial leases. These can accelerate the deployment of electric bus fleets the EV uptake among

shared mobility options (taxis, private hired vehicles, car sharing, car-pooling) and other sustainable transport solutions.

In summary, cities, regions, and transport authorities need the perspective of a long-term financial instrument, that helps them accelerate fleet renewal and charging/fuelling station deployment. Such instruments must be operational in 2025 and last for the full duration of the MFF period and improve the life cost cycle of their fleets.

4. Common Instruments for Funding Public Transport in Europe

Public transportation systems rely on a multifaceted approach to funding, drawing revenue from a variety of sources. Firstly, passenger fares constitute a key funding source of the income stream[10], with commuters purchasing tickets or passes for their journeys. Additionally, government subsidies have played an increasingly role post-pandemic, as local, regional, or national authorities allocate funds to support operations, infrastructure upgrades, and service expansions. There is also the EU that supports public transport through specific investments. The next section of the report will also address specific taxation mechanisms and non-fare revenue sources.

4.1. European Union support

The European Union supports specific investments in the field of public transport through its funding grants. These investments aim to improve the sustainability, efficiency and accessibility of public transport. The following EU funding programmes exist in the period 2021-2027[11]:

- **CEF-Transport** funds infrastructure projects to expand the trans-European network (TEN-T) including urban nodes. The facility does not address urban public transport though – in particular urban rail and works for multimodal hubs are excluded so far. CEF is particularly interesting for urban public transport regarding the charging and refuelling infrastructure with the Alternative Fuels Infrastructure Facility funding. This scheme plays an important role in the rolling out of hydrogen fuelling and e-charging infrastructure. However, due to the legal issues surrounding the obtaining of private financing for public transport providers, the EGUM call for an easing (or ideally removal) of this basic requirement when applying for AFIF funding. It should be stressed that an end to CEF also means the end to the Alternative Fuels Infrastructure Facility (AFIF), i.e. the funding of infrastructure development for the supply of alternative fuels, which is essential for the decarbonization of transport along the TEN-T network.

- **EIB:** The EIB has been providing long-term finance, mainly in loans and guarantees, to support the development of urban and regional transport networks across and beyond Europe. Its Transport Lending Policy puts forward the guiding principles and selection criteria that drive EIB's financing and lending strategy towards the mobility sector, including support for urban public transport. The EIB also supports projects

[10] The Future of Public Transport Funding – International transport forum – research report 2024
[11] https://commission.europa.eu/strategy-and-policy/eu-budget/long-term-eu-budget/2021-2027_en

through a wide variety of financial instruments and financial and technical advisory via different initiatives and organisations.

The transport sector constitutes a significant part of EIB investments. From 2016 to 2020, the EIB invested close to EUR 20 billion in transport modes – EUR4 billion a year on average. EIB loans can cover up to 50% (75% in the case of TEN-T projects) of the total investment cost. Furthermore, indirect loans, innovative financial instruments and private equity funds are used to stimulate and catalyse private capital through investments funds devoted to transport infrastructure. EIB can also support priority projects (up to EUR 300 million) with a high-risk profile under its Structured Finance Facility.

The promotion of sustainable urban mobility (including active modes like walking and cycling) is extensively supported by the EIB in coherence with EU policy. Projects are expected to help in reducing congestion and negative environmental externalities whilst also delivering wider social and economic benefits. This is to be done through either the promotion of a modal shift from private cars to more sustainable transport modes and/or improvements in transport efficiency, including intramodality, automation, digitalization and conversion to zero-emission vehicles. The Bank offers also advisory support through JASPERS, ELENA and the EIAH to tackle investment barriers in the sector and to improve the quality and soundness of projects.

ELENA (EIB) supports the preparation costs of investment projects in urban transport as well as energy efficiency measures that also affect public transport. However, there is **no subsequent funding for the actual investment**. Even though the application process is manageable, applying for funding is a real challenge for PTOs when the financing of the actual investments is not secured and depends on the approval of the Public Transport Authority (PTA).

- **LIFE** addresses emission-free mobility in two subprogrammes - Quality of Life and Circular Economy as well as Climate Change and Climate Change Adaptation. Recurring priorities and bottom-up approaches are very helpful to match internal project development timelines with calls. However, while pilot and demonstration projects are being funded, large infrastructure projects are not within the scope of the LIFE programme.

- **The Innovation Fund** is now open to mobility project but focusses on fuels. The extension of the EU Innovation Fund to finance innovation in zero and low carbon technologies and processes that concern collective forms of transport such as public transport, is very positive development. However, a level playing field ought to be established and it should be ensured that public transport projects can compete whilst not being jeopardised by application rules favouring other fields.

- **Horizon Europe** is the framework programme for research and innovation (R&I) for the period 2021-2027. It aims to strengthen the EU's scientific and technological base, including by developing solutions to policy priorities such as the green and digital transitions. The programme also contributes to the achievement of the Sustainable Development Goals (SDGs) and supports competitiveness and growth. Mobility is represented in particular in Cluster 5, which covers a very broad range of topics related to urban mobility. Demonstration sites are eligible but cover only few objects and are not suitable for the large deployment of technologies.

- **European Partnerships**, such as the **Clean Energy Transition (CET) and Driving Urban Transition (DUT) Partnerships**, co-funded by Member States and the European Commission, provide funding via joint calls. The purpose is to support transnational research and/or innovation projects addressing urban challenges to help cities in their transition towards a more sustainable economy and functioning. Urban mobility is one of the thematic priorities, but the programmes focus on research and development, and less so on demonstration and infrastructure projects.

- **The European Regional Development Funds (ERDF)** is one of the few programmes supporting urban transport infrastructure and is designed on a local level. However, the allocation of funds from the ERDF depends on the degree of development of the regions, their economic performance and specific socio-economic challenges. The funding rate also varies depending on the category of region. Typically, less developed regions receive a higher funding rate, which can cover up to 85% of the total cost of a project. Transition regions receive a slightly lower funding rate, while more developed regions receive the lowest percentage of support. This staggering of funding rates aims to equalise regional development within the EU and address specific challenges in the respective regions. Conversely, however, this also means that ERDF is not an instrument that is fully accessible and common to all transport operators. For example, in Germany[12] the federal states decide in which goals of the EU-ERDF directive the funding is spent. Only a few federal states in Germany support PT under the ERDF scheme.

- **Interreg Programmes** cover urban mobility projects in several priorities, such as "a greener, low-carbon transition to a carbon-neutral economy and a resilient Europe by promoting clean energy and a fair energy transition, green and blue investments, the circular economy, climate protection and adaptation climate change, risk prevention and risk management as well as sustainable urban mobility". Interreg aims at fostering cooperation between regions in Europe, however, and is not meant as an infrastructure programme. Addressing large infrastructure projects and the purchase of vehicles are possible to a limited extent only.

- In the past, **the European Urban initiative** called for projects proposals encompassing i.e. urban mobility. Infrastructure costs would be eligible, which makes the initiative very attractive. The problem is that city administrations are exclusively eligible as Lead Partners, which represent a huge challenge for Public Transport Operators (PTO), if they are private companies depending on the will of city administration to submit a proposal.

- **NextGenerationEU:** in most Member States, investments supported via RRF and RePowerEU across Europe were used for urban railway investments (rolling stock, infrastructure) and purchase of zero emissions vehicles including charging infrastructure (electric buses, tramways etc). Sustainable mobility represents a third of the climate expenditure in the current Recovery and Resilience Plans (at least EUR 78,9 billion), out of which about EUR 14 billion were dedicated to urban transport infrastructure[13]. For example, in Latvia[14], the RRF supports improvements of the public transport system in Riga including its cycling infrastructure. It also supports the

[12] Case 7: Financing of Public Transport in Germany
[13] The figures are from a presentation by the EC RRF Task Force
[14]https://www.esfondi.lv/en/about-eu-funds/news/valdiba-apstiprina-24-27-miljonu-eiro-pieskirsanu-rigas-sabiedriska-transporta-zalinasanai-no-atveselosanas-fonda

purchase of battery-electric (BEV) buses, trams, and battery electric trains (EUR 280 million). In Spain, the RRF is used to fund autonomous communities and municipalities for sustainable urban mobility (e.g. for clean vehicles), investments in railways infrastructure and its digitalisation (EUR 11.65 billion).[15] However, the funding instrument kicked-off by NextGenerationEU in public transport will end by 2025/2026.

In various members states, there are also several national and regional funding programmes for companies to support public transport, its expansion and decarbonisation. In the following section, a selection of these programmes is summarised.

4.2. National initiatives

Most EU Member States have tailored national financing schemes to support local and regional passenger transport. These schemes typically focus on infrastructure development, operational subsidies, and incentives for greening mobility. National financing schemes for local passenger transport are characterized by their diversity, reflecting the unique needs, priorities, and governance structures of each Member State. Many countries employ decentralized approaches, allocating funds to regional or local governments, which have the autonomy to manage and distribute resources according to local needs. For example, Germany's Regionalization Act allocates federal funds to the states (Länder) for regional public transport. Moreover, available financing schemes often combine national budget allocations, EU funds, and local government contributions. This approach ensures a diversified funding base and mitigates the risks associated with reliance on a single funding source. Here, long-term planning and multi-year budgets are of importance, allowing for better project planning and execution. One of a good example includes France's *Contrats de Plan État-Région* (CPER)[16], which are multi-year contracts between the state and regions. Worth mentioning is that many countries utilize public-private partnerships (PPPs) to finance and operate regional transport projects. These partnerships leverage private sector investment and expertise, reducing the financial burden on the public sector. Some examples include the UK's London Underground, where PPPs are designed for regional rail services and urban transport projects. But also, in Portugal, where PPPs have been implemented for the expansion of Lisbon's metro and other urban transport projects.

National public compensation constitutes a crucial pillar of funding for most of public transportation networks. Consequently, the nature of these subsidies significantly impacts the stability and predictability of operators' revenue streams. This becomes particularly critical in scenarios requiring substantial capital investment for the introduction or enhancement of services. Direct grants, while common, present a challenge due to their discretionary nature, rendering them susceptible to shifts in political and policy landscapes, and susceptible to diversion towards competing policy priorities. In contrast, dedicated taxes, and cross-subsidies, entrenched through legislative frameworks, offer a more dependable source of funding, providing greater stability and assurance for long-term planning and investment in public transit infrastructure and services. This specific point will be developed in the next section.

[15] Further details and a map of projects supported by the Recovery and Resilience Facility in the different EU Member States is available here: Recovery and Resilience Facility - European Commission (europa.eu)
[16] https://www.ecologie.gouv.fr/politiques-publiques/contrats-plan-etat-region

- **Mobility Promotion Measures**

These encompass a wide range of initiatives such as investing in cycling infrastructure, supporting soft mobility projects for leisure and tourism, and implementing mobility management strategies at the company, municipal, and regional levels.

- **Fleet Conversion Programs**

These programs aim to accelerate the transition of bus fleets to zero-emission buses. They typically offer substantial financial support for the purchase of zero-emission buses and related infrastructure such as charging stations, overhead lines, and hydrogen fuelling stations.

- **City Logistics Support**

Funding programs under this category are designed to facilitate the implementation of innovative logistics concepts involving various modes of transport, with active participation from the public sector. The aim is to enhance the competitiveness and sustainability of freight transport and logistics operations.

4.3. Regional and local opportunities

Varied Funding by European Regions: Funding opportunities at the regional level differ across federal states or regions. Examples include support for enhancing road safety, expanding railway infrastructure, and implementing sustainable transport concepts tailored to the specific needs and priorities of each region. (eg case studies in annex)

5. Alternative Instruments with potential for Funding Public Transport

As outlined in the Letta Report "Much More than a Market" of April 2024, the current funding mechanisms, while substantial, are not sufficient for achieving the transformative changes envisioned for sustainable urban mobility[17]. The urgency of scaling up our efforts cannot be overstated, especially considering escalating environmental challenges and the pressing need for resilient infrastructure. According to the Letta Report, EUR 500 billion are missing to realize the TEN-T core network by 2030.

The following chapter will focus on identifying and proposing alternative financing and funding mechanisms for local public transport. These alternatives are crucial for bridging the financial gap and ensuring sustainable urban mobility solutions that align with our environmental and social targets.

Whilst public funding alone will not cover all projects needed to achieve EU climate goals, EGUM advise caution when deciding on and developing blended financing schemes. It is sometimes not possible for municipal companies such as PTOs to receive private investment such as loans and equity funds. This should be considered when developing new Programmes and should be applied only in very limited cases.

[17] Letta Report, 2024

Where blended financing schemes are developed and a loan from a private bank is needed to complement the public funding, we would like to stress the need for a quick decision of the banks. We would also like to see more national banks assuming the role of an implementing partner, e.g. in the Alternative Fuels Infrastructure Facility scheme or the Invest EU Programme.

- **Social climate fund**

The Social Climate Fund (SCF) was created alongside the ETS2 for emissions from fuel combustion in buildings, road transport and additional sectors. With an implementation period from 2026 to 2032 and a budget of EUR 65 billion, it will provide Member States with dedicated funding so that the most affected vulnerable groups, such as households in energy or transport poverty, are directly supported, and not left behind during the green transition. In the current framework, those affected by Transport Poverty are among the most vulnerable to the economic impacts of the energy transition. The SCF must be invested in a way that makes the energy transition socially viable. This means tackling transport poverty in various ways, including the provision of more public transport, rather than simply supporting the energy transition of an unaltered, car-based system with all its shortcomings.

Mobility remains one of the main levers for decarbonisation and the reduction of greenhouse gas emissions (GHGs), through the electrification of engines and the development of alternative fuels, but also through the potential for the massification of flows enabled by public transport solutions.

To soften the blow of the transition costs, the SCF should be used to fund the expansion of public transport services as EU's mobility backbone. This would ensure that public transport, sustainable mobility on demand, shared mobility services and active mobility options are available to everyone and are an option for vulnerable citizens. Investing significant parts of the SCF in public transport and shared mobility services will support a just transition and enable sustainable and affordable mobility for all.

- **Earmarking taxes or charges for public transport financing**

Land value capture

Land value capture mechanisms involve leveraging the increase in property values resulting from public infrastructure investments, such as transportation projects, to fund further public transport development or maintenance. By capturing a portion of the enhanced land values through taxes, fees, or special assessments, authorities can recover part of the investment in public transportation infrastructure. This approach ensures that those who benefit most from improved public transport accessibility contribute to its funding, thus creating an equitable financing model.

Residents' taxes

Levying taxes on residents, such as property taxes, income taxes, or local sales taxes, already represents a traditional and essential source of funding for public transportation. These tax revenues can be dedicated to supporting transit operations, capital investments, or maintenance activities, ensuring that the costs of providing essential mobility services are distributed among the community members who benefit from them.

Business taxes

Imposing taxes on businesses, such as corporate taxes or payroll taxes, can also contribute to financing public transportation. Since businesses rely on efficient transportation networks to access markets, customers, and employees, they have a personal stake in supporting robust public transit systems. By allocating a portion of business tax revenues to transit funding, authorities can secure additional resources to expand services, enhance connectivity, and promote economic development.

Tourist taxes

Tourist taxes, also known as hotel taxes, occupancy taxes, or tourism levies, are imposed on visitors to a destination and can be earmarked for funding public transportation infrastructure and services. Since tourists often rely on public transit for sightseeing, commuting, or accessing attractions, levying a small tax on accommodations can generate substantial revenues for supporting transit operations, improving visitor mobility, and reducing the financial burden on local residents. In some cities, in return the tourists get a free public transport pass for the duration of their stay.

Third-party income from electric charging contributions from property developers

Encouraging developers to contribute to electric charging infrastructure can create a sustainable revenue stream for public transportation. By mandating or incentivizing developers to install electric vehicle charging stations in new developments or retrofit existing ones, municipalities can support the transition to electric mobility and promote sustainable urban development. Additionally, public transport operators and authorities could generate commercial revenue by selling excess energy from their own energy plants back to the grid, considering the high energy demands of their operations. To make this approach effective, municipalities could establish partnerships or agreements with developers, where developers provide the necessary infrastructure in exchange for benefits such as zoning incentives or expedited permits. This not only aids in financing public transit initiatives but also reduces greenhouse gas emissions. By aligning the interests of developers with sustainability goals, municipalities can foster a collaborative environment that benefits both public transportation and urban development.

Road user charging (for long-distance road charging and local schemes)

Road user charging mechanisms, such as tolls, congestion pricing, or mileage-based fees, directly link transportation costs to usage, promoting more sustainable travel behaviour. While the income generated through such systems on highways and long-distance connections is mostly not used for the development of public transport, it can generate important revenue for public transit investments in cities. By pricing road use based on factors like distance travelled, vehicle emissions, or peak travel times, authorities can manage traffic congestion, reduce environmental impacts, and raise funds to improve public transportation accessibility, reliability, and affordability. Anticipating a future where all vehicles will drive autonomously and with electric motors, road charging schemes will be the most efficient way to influence traffic, as all other factors that would limit the number of hours a vehicle spends driving around (staff costs, energy costs) will be close to zero.

Parking charges

Implementing parking charges, including metered parking, parking permits, or parking fees, helps manage urban parking demand, discourage private vehicle use, and generate revenue for public transportation initiatives. By pricing parking according to demand, proximity to transit hubs, or time of day, municipalities can incentivize alternative modes of transportation, reduce traffic congestion, and fund transit services that provide viable alternatives to car ownership and driving.

Employer parking taxation

Taxing employer-provided parking spaces, either through direct levies or fringe benefit taxes, encourages employers to reconsider parking subsidies and promote sustainable commuting options for their employees. By reducing the tax incentives for employer-provided parking and reallocating revenues to public transportation investments or commuter benefits programs, authorities can foster transit ridership, reduce single-occupancy vehicle trips, and alleviate parking demand in urban areas.

UVAR charges

Urban Vehicle Access Regulations (UVARs) play a crucial role in managing access to urban areas, typically through measures like congestion pricing, low emission zones (LEZ) and in the future zero-emission zones (ZEZ), or restricted access zones. These regulations not only contribute to controlling traffic flow and reducing congestion but also serve broader urban planning goals by promoting sustainable transport modes and influencing land use patterns. Sustainable Urban Mobility Plans (SUMPs) provide a wider framework for UVARs, as they integrate various transportation modes with land use and development planning. By aligning transport policies with urban development objectives, SUMPs help create more efficient and liveable cities while providing a strategic foundation for funding public transportation projects. UVAR charges, as mentioned earlier, encompass various fees or levies imposed on vehicles entering restricted zones or subject to access regulations in urban areas. These charges can take the form of congestion pricing, emission-based fees, or zone-specific tolls, designed to manage traffic flow, reduce air pollution, and generate revenue for public transportation improvements. By implementing UVAR charges, authorities can address several mobility challenges, promote sustainable transport choices, and fund transit projects aligned with urban policy goals. These schemes seem to be attractive for cities: recent reports have shown that the number of LEZs in Europe has increased by 40% since 2019, and 500 more are in the process of being set up.[18]

Under public service contracts, cross-subsidy by route or time of day

Public transportation operators often enter service contracts with authorities to provide essential transit services in exchange for subsidies or payments. Cross-subsidization strategies within these contracts allow for the redistribution of revenues or subsidies across different routes or times of day to ensure equitable access and service provision. By reallocating resources based on demand patterns, cost structures, or social equity considerations, transit agencies can optimize service delivery, enhance network efficiency, and sustainably finance operations in line with public policy objectives.

[18] EUROCITIES Low emission zones: challenges and solutions – Octobre 2021

Depending on the local context and the legislative frameworks, some of these alternative funding mechanisms can offer new approaches to fund public transportation, and advance sustainable urban mobility goals. Provided that the possibility exists in the legal frameworks of the EU Member States; by leveraging a combination of revenue sources, authorities can create resilient funding frameworks that prioritize equitable access, environmental stewardship, and economic vitality in urban transportation systems. In Member States where authorities cannot take such measures, the legal framework should be revised to give more power and independence to local authorities.

For shared mobility services, the increased willingness to pay for improved services such as e-bike and e-scooter sharing services can also be used to cross-subsidise a public-private ecosystem of services. Ensuring private investors' viable businesses within the guardrails of defined and desirable outcomes can reduce the dependencies on public funding. Streamlined opportunities for both public and private services to tap into additional revenue opportunities, e.g. compensations for trips realised in low-income households, peripheral or otherwise challenging areas, this can overcome current challenges of the sector.

6. Recommendations: Policy Measures to ensure long-term sustainability of Public Transport Funding

The proposed recommendations are based primarily on the experiences of the best practices outlined in the section 8 (case studies) of the report. Achieving a high-performing public transport system requires coherent policies and strategic planning. Financial incentives and regulatory frameworks should encourage local innovation while aligning with broader environmental and social objectives. Support for research and development can drive the adoption of best practices and innovative solutions across the sector.

Recommendation n°1: Prioritise public transport investments across all relevant EU funds and financing instruments / Simplify access to EU funding programmes

Level of action: European
Priority: High

It is crucial to prioritise local public transport and urban mobility investments across EU funding and financing programmes. Sustainable urban mobility with public transport at its core is essential for the optimal working of the trans-European transport networks (urban nodes; multimodal hubs; first and last mile connections), as well as for the achievement of the European Green Deal's major political and climate objectives. Investing resources both in areas (urban, regional), as well as in modes (local passenger transport) that generate the majority of European passenger traffic and trips is the most cost-effective and environmentally sound strategy to address the triple mobility challenge that EU transport policy is current facing: decarbonisation, decongestion and economic growth.

The absorption of EU-funds can further be improved by simplifying eligibilities, application processes, implementation procedures, and reporting red tape, with the latter being one of the main hurdles for local administrations managing EU funding.

Recommendation n°2: Secure long-term financing and funding flows for greening local public transport fleets and for local public transport infrastructure and fleets

Level of action: European, national
Priority: High

To ensure the sustainability and effectiveness of public transportation systems, it is crucial to secure long-term financing and funding flows. Member States should consider implementing a variety of funding instruments, tailored to meet the evolving demands and challenges of public transport. Based on the EGUM sub-group on public transport and Shared mobility analysis, two "key success criteria" have been identified:

- Long-term availability of funds: establishing stable and predictable funding sources is essential for planning and implementing long-term projects. This could involve dedicated public transport funds, long-term government grants, or public-private partnerships that provide financial security over extended periods.

- Steady increase in funding: to counteract inflation and meet the rising demand for public transportation, funding must not only be stable but also increase steadily over time. This ensures that the transportation network can expand and improve to accommodate growing populations and changing urban landscapes.

By focusing on these success criteria, Member States can create a robust and resilient funding ecosystem that supports the long-term viability and growth of public transportation systems, ultimately contributing to more sustainable and efficient urban mobility.

As of today, the biggest investment gap in the EU funds architecture available to the local public transport sector is related to scarcity of direct grants for greening local transport fleets and rolling stock. Especially in the road transport, as of 2030 (entry into force of the Euro 7 norm) and 2035 (100% target for zero-emission city busses in the EU's CO2 standards for HDVs), transport operators must purchase zero-emission city buses. By then, they must have already set up the infrastructure in their operating area and in their depots. Despite this urgency, there are currently not enough national funding programmes available at national level, slowing down the transformation process. The EU should step in and provide funding that covers the charging infrastructure and the price difference between conventional and zero-emission buses, so that bus operators across Europe can reach their zero-emission vehicle targets. Such a scheme should be easily accessible, even for small operators. In addition, the EU should support the initiative that will facilitate the attainment of clean vehicle targets in a transparent and accessible manner.

By providing financial support through this grant scheme, the EU can expedite the transition to cleaner and more environmentally friendly modes of public transportation. This not only contributes to mitigating the adverse effects of carbon emissions but also fosters a more sustainable and resilient urban transportation ecosystem.

Recommendation n°3: Earmark tax revenue or charges for public transport

Level of action: National, regional, local
Priority: High

To finance the transition to modern, efficient, and environmentally friendly mobility systems, EGUM recommend establishing a framework for earmarking a share of certain taxes

specifically for this purpose. Earmarking taxes involve allocating a portion of tax revenue collected from certain sources (such as congestion charges) to fund initiatives aimed at building and maintaining public transport infrastructure, ensuring and expanding the public transport offer, promoting sustainable modes of transportation, and reducing carbon emissions.

By theoretically leveraging carbon taxes, public transport authorities could finance the costs associated with the transition to sustainable transport. Although this approach aligns with the transport ecosystem commitment towards a low-carbon future, it remains complex as carbon taxes are collected at the national level, and local transport authorities do not necessarily have easy access to these funds.

Recommendation n°4: Dedicate substantial resources for maintenance and operations of assets and infrastructures

Level of action: National, regional, local, public transport authorities, public transport operators
Priority: High

Prioritising investment in maintenance, modernisation, and asset replacement is crucial for optimising the value and resilience of existing and ageing infrastructure. Maintenance costs make up a significant proportion of the total costs of public transport. This is shown by the example of Wiener Linien, where in 2022 a quarter of its expenditure had to be spent on ongoing repair and maintenance costs, significantly higher than the investment costs for the construction of the new U5 underground line.
The analysis of existing EU funding programmes has shown that maintenance and asset replacement is not covered by this and that a significant portion of EU funds often prioritise capital expenditures. It is therefore even more important to rebalance focus towards operational expenditures. While capital investments are certainly vital for initial development, neglecting ongoing maintenance can lead to diminishing returns and compromise the longevity of infrastructure assets.

Adopting a proactive approach to addressing maintenance needs and adapting to future mobility demands is key to ensuring the long-term sustainability and effectiveness of public transport systems.

Recommendation n°5: Involve local and regional authorities in co-deciding on EU funded investments and transform state aid contribution mechanism

Level of action: European, national, regional, local
Priority: high

Regarding improving and modernising urban mobility systems, local and regional governments are best placed to support the most efficient investments planning and implementation. This can ultimately lead to maximising the effectiveness and added value of EU-sponsored local transport projects. For this reason, they should be better involved in the decision-making related to planning and allocation of dedicated European funding programmes and instruments.

One option proposed by the Letta Report (2014) is to transform state aid from a predominantly national tool into a more European instrument: “Specifically, we could envision a state aid contribution mechanism, requiring Member States to allocate a portion of their national funding to financing pan-European initiatives and investments.”[19] This change aims to support investments crucial for achieving climate neutrality and enhancing Europe's industrial competitiveness against global challenges. By channelling national funds into pan-European initiatives, the EU can foster a unified approach to green investment. This is crucial for reaching environmental goals and securing economic growth.

Recommendation n°7: Transport-oriented funds and financing need better coordination and synergies

Level of action: European, national, regional, local
Priority: High

There is a pressing need for improved coordination and synergies among transport-oriented funding and financing mechanisms. This will foster more effective coordination among EU funds, ensuring their interoperability amidst the growing funding fragmentation and overlap across various programmes and instruments.

The issues related to complexity, fragmentation, and lack of synergies between different EU funds and funding programmes dedicated to sustainable mobility and transport are multifaceted and can be broken down into several key points. Firstly, it is related to the very complexity of funding structures and multiple funding instruments available. The EU offers numerous funding instruments aimed at sustainable mobility and transport, such as the Connecting Europe Facility (CEF), Horizon Europe, the European Regional Development Fund (ERDF), or the Cohesion Fund, to name just a few. Each of these funds has its own rules, eligibility criteria, application processes, and reporting requirements. The complexity of these individual programs creates a significant administrative burden for applicants. Navigating different application processes and adhering to varying compliance and reporting standards can be daunting, especially for smaller organizations or municipalities with limited administrative capacities. Secondly, while these funds aim to support sustainable mobility, their overlapping objectives can lead to fragmented or duplicated efforts or compete for similar resources. Thirdly, there has often been insufficient coordination observed between different funding programs. This lack of alignment can result in missed opportunities for synergies where projects funded by different programs could have complemented each other, leading to more comprehensive and impactful outcomes. Finally, the implementation of EU funds often varies significantly at the national and regional levels due to differing administrative capacities and priorities. This can lead to inconsistencies in how funds are utilised, and the outcomes achieved, further exacerbating fragmentation.

EGUM, therefore, strongly recommend simplifying and harmonizing application and reporting processes across different funding programs. This could reduce administrative burdens and make it easier for applicants to access funds. Also, improved coordination and strategic alignment between EU funding programs are essential. This could involve establishing a central coordinating body or framework, to ensure that different funds complement rather than compete, whilst delivering on sustainable passenger mobility objectives. Moreover, encouraging collaborative projects that span multiple funding programs can potentially foster

[19] Letta Report “Much More than a Market”, April 2024, page 11

synergies. Joint calls for proposals or integrated funding streams could support more holistic and impactful initiatives. What is equally important, building administrative and strategic planning capacities at the national and regional levels can ensure more consistent and effective implementation of EU funds. This includes training, resources, and support for local authorities and organizations. This is where initiative such as JASPERS could play a significant and greater role. The final recommendation is to develop standardized metrics and evaluation frameworks regarding urban mobility progress and the very evolution of the modal shift across EU cities. This can help in a better impact assessment of EU funded projects and ensuring alignment with broader EU strategies for sustainable and smart mobility.

In addition, EGUM recommend that **ELENA** (EIB) is better linked to other financial instruments and loans: The ELENA programme (EIB) supports the preparation of major investments in urban transport and energy-efficient measures. It is meant to serve as a lever. However, a follow-up funding instrument is currently missing for the actual investment in sustainable urban transport and mobility.

Recommendation n°8: Restructure the Connecting Europe Facility

Level of action: European, national
Priority: High

To address the massive investment needs caused by climate change and to meet the needs of public transport, the CEF needs to be reformed and reinforced. To meet the new challenges that Europe will increasingly face in the coming years - ensuring the resilience of infrastructure under severe threat from climate change and building an infrastructure for a safer Europe, capable of meeting the needs of its citizens - the successor to the CEF will need to fund projects aimed at enhancing urban mobility within Urban Nodes. Not only should studies be funded, but the implementation of projects also (e.g. works are currently not eligible under the topic “multimodal hubs”).

Urban (Mobility) CEF: It should be considered to establish an "Urban Mobility CEF" specifically dedicated to financing urban transportation infrastructure and mobility solutions. Here, special attention should be given to strengthening the link between the long-distance network and urban centres, as well as cross border urban and regional functional areas as essential for the overall corridor performance. Companies constricted by contracts with the city administration (for example public transport operators) face budget cuts if they acquire funding, and they are not legally able to take out loans and receive private financing directly. This should be reflected in the funding rates of programmes dedicated to these kinds of beneficiaries.

Enhancing Synergy between CEF Sectors: Better synergy between the Energy, Digital, and Transport sectors within CEF is essential to improve collaboration and integration of **Transport-Energy-Digital projects.** Regulation (EU) 2021/1153 establishing the Connecting Europe Facility already supports synergies between the transport, energy and digital sectors. Actions to achieve objectives in at least two of these sectors can receive a higher co-funding rate in compliance with a work programme**. This provision has never been used by public transport and shared mobility stakeholders due to the complexity of implementation. Financing integrated projects would enable the three funds to be pooled and increase the CEF's financing capacity.**

Direct Access for Urban Nodes: Currently, the agreement by the concerned Member States (benefitting from the project) is required for all applications. Unfortunately, currently, Urban Nodes are sometimes blocked by their national government from deploying strategic projects. This requirement should be lifted: Urban Nodes should have direct access to funding from CEF and other European programs for TEN-T Urban Nodes projects, streamlining the process and enabling them to implement necessary projects efficiently. In this context, it is important to ensure that not only public authorities are eligible for funding, but also municipal companies (e.g. PTO) that implement the investments in infrastructure. Financial instruments should be adapted to smaller public sector organisations.

Recommendation n°9: Streamline access to research and innovation funding for Public Transport

Level of action: European, national, regional, local
Priority: High

Horizon Europe is essential for research and innovation in transport and vital for fuelling solutions of the future. However, there is plenty of room for simplification and synergies. It should be considered that some Horizon Europe clusters could also better integrate the needs of public transport and shared mobility into their work programme.

The Innovation Fund should remain a key instrument for the development of Green Deal innovation technologies. Functioning as a bridge between Horizon Europe and the successor of CEF, research and development into new alternative fuels is particularly relevant in the field of transport. An extension of its scope to other European Green Deal transport priorities such as urban mobility and public transport should be explored. A reflection is also needed on the extent to which the Innovation Fund could become a partner for blended approaches.

Fostering innovation in public transport requires robust funding and streamlined access for public authorities. Encouraging partnerships between public authorities, academia, and industry, including SMEs and start-ups, through open innovation projects, as well as prioritising innovation procurement practices, are necessary elements for driving significant advancements. Innovation should address concrete needs, define clear challenges, and facilitate access to potential solution providers.

To enhance the systematic scaling up of effective innovative solutions and ensure that public transport authorities can quickly access and effectively use funding for innovation, simplification of the process is needed in the following areas:

- *Create legislative sandboxes***:** allow for testing innovative solutions outside existing regulations (relevant EU funding instruments: Horizon Europe, Innovation Fund).
- *Streamline administrative requirements***:** reduce bureaucratic burdens and support agile processes for short-term budgeting and staffing needs in innovation projects (Horizon Europe, ELENA).
- *Increase direct funding to PTAs and PTOs***:** allocate resources directly to local PTAs and PTOs rather than through national or regional bodies for quicker and more efficient distribution (Connecting Europe Facility, Cleaner Transport Facility).
- *Facilitate innovation-friendly procurement***:** simplify procurement processes to support efficiency, enable contracting with start-ups, connect pilot projects to long-term tenders, and provide support to test innovative business models for public-private partnerships (Big Buyers Working Together, Innovation Fund).

- *Provide incentives for private sector participation*: encourage private sector participation in public transport innovation through tax breaks, subsidies, or co-investment schemes.

Moreover, blending different (EU) funding instruments to support various phases of innovation – from idea generation to market implementation – is crucial. Easily accessible, clear, and transparent one-stop-shops for EU funding would help public authorities efficiently navigate and use these resources.

Recommendation n°10: Create a long-term Transition and Resilience Fund

Level of action: European
Priority: High

The NextGenerationEU fund is currently providing funding for sectors that are not covered by CEF, such as cycling infrastructure and public transport. In some Members States, the Fund has been of value in vehicle systems such as the renewal of bus systems. The investments supported via the Resilience and Recovery Fund and RePowerEU across Europe give evidence that there is huge need of funding in two critical investment areas: urban railway investments (rolling stock, infrastructure) and purchase of zero emissions vehicles including charging infrastructure (electric buses, tramways etc). Consideration should be given to establishing long-term fund focused on supporting transition and resilience efforts. Future funding instruments must fill the gap left after the end of NextgenerationEU.
This future Transition and Resilience Fund should:

- Address needs with regards to green and digital transition, as well as **climate adaptation and resilience** – by allowing projects that cover green, blue and transport investments in synergy.
- Support sectors where **European manufacturing** faces strong challenges from global competition, such as heavy-duty electric (bus and truck) vehicles and e-bikes.
- Require **local and regional level involvement** in the definition of funding priorities and procedures.

Recommendation n°11: Leverage the Social Climate Fund to Strengthen Public Transport

Level of action: European, national
Priority: High

The SCF should be utilized to fund the enlargement of public transport as EU's mobility backbone. Given its accessibility to all citizens, particularly vulnerable populations, public transport serves as a pivotal option for sustainable mobility. By directing substantial portions of the SCF towards public transport (collective and shared modes) initiatives, EGUM can foster a just transition and ensure equitable access to sustainable and affordable mobility solutions for all residents.

Recommendation n° 12: Better monitoring of spending on public transport

Level of action: National, regional, local
Priority: High

One recommendation for enhancing the visibility and support for public transport within funding frameworks is to establish a dedicated category specifically tailored to public transportation initiatives. By creating a standalone classification within funding structures, policymakers can underscore the importance of public transport as a key component of sustainable mobility strategies. This distinct category would not only provide clarity and transparency in budget allocations but also signal a clear commitment to prioritizing investments in public transport infrastructure, services, and innovations. Moreover, a dedicated funding category can facilitate streamlined access to financial resources for public transport projects, thereby accelerating their implementation and impact. By elevating the status of public transport within funding classifications, decision-makers can underscore its pivotal role in advancing broader objectives such as reducing carbon emissions, enhancing urban mobility, and promoting social equity across European communities.

Recommendation n°13: Leverage private investment, innovative financing mechanisms and enhance funding for shared mobility

Level of action: European, National, regional, local
Priority: High

To address the unique market dynamics within the shared mobility segment, EGUM recommend leveraging private investments into high-quality shared mobility assets and services by strategically aligning business interests with policy goals.

In shared mobility, a significant portion of operational expenditure (OpEx) consists of variable costs, which are proportional to the number of trips realized. More trips lead to higher costs but also greater business opportunities if contractual models are well-designed. Operators should own the revenues from the utilization of their services, and public authorities, where appropriate, can provide financial compensation for unprofitable yet desirable shared micro-mobility (bikes & e-scooters) and car-sharing trips. Local impact funds, supported by budgets from the SCF, could incentivize services that meet specific criteria, such as generating trips in underserved areas or making trips more affordable to users.

EGUM recommend integrating affordable e-bike and bike-sharing schemes into mobility networks and recognizing bike-sharing as a vital solution for first and last-mile connectivity in Urban Nodes. This approach ensures accessibility to cycling for people with reduced mobility and affordability for vulnerable groups, thereby alleviating transport poverty by supporting access to bike-sharing services.

EGUM also recommend simplifying processes and removing barriers for cities to access funding, ensuring that bike-sharing is systematically financed throughout its entire service life cycle (e.g., X euros per capita per year) to de-risk operations. Developing funding mechanisms that ensure operational support (OpEx funding) is crucial, as bike-sharing is not just infrastructure but an ongoing service, with 80-90% of its total project costs dedicated to operations.

Finally, EGUM recommend making shared mobility a mandatory component of Sustainable Urban Mobility Plans (SUMP), utilizing relevant subsets of the Sustainable Urban Mobility Indicators (SUMI) to measure impact and allocate funding to operators (private or public) delivering this impact. This can be supplementary to existing service contracts and concessions for shared mobility operations in cities.

7. Conclusion

Sustainable transport investments have long functioned as key accelerators of a carbon-neutral economy. In the context of continuous climate change, the on-going war in Ukraine with the related geopolitical and energy supply insecurity and the long-term effects of the pandemic, adequate EU policy actions are required to take transport financing into a future where it also fulfils the role of recovery assistance. Substantial EU funds and financing are critical not only to reach at least the pre-pandemic level of passengers, but also to deliver on the promise of a green and digital mobility transition. Local public transport remains an essential precondition for resilient recovery, accessibility, connectivity, green growth and inclusivity of all citizens.

The recent COVID-19 pandemic caused severe degradation of financial capacity at the local level due to the substantial drop in passenger numbers. Although some local recovery plans have attempted to support public transport to get through the crisis. Given a resource-constrained environment in which local and regional authorities currently operate, it remains critical to prioritise investments in sectors that provide good social, economic and climate benefits. All European cities, towns and villages aspire to offer a more liveable and healthier living environment. Yet, local, and regional governments struggle to balance their budget with decreasing tax incomes and mounting operational expenditures in the post-lockdown context. Financing new capital investments and operations has already begun to form a severe challenge for many municipalities and transport operators alike. The only way for sustainable mobility to remain a local priority is targeted and sufficient financial assistance from the EU.

Increasing the usage of public transport is one of the solutions to comply with the ambitions of the Green Deal as well as the 2015 Paris Agreement. Therefore, a substantial portfolio of EU funds for local mobility and public transport must become a priority if the EU wants to deliver the long-run sustainability ambitions foreseen by the European Green Deal. The climate benefits are profound – by getting more users onboard, the transport sector emissions can be cut by over 50% in the next decade. The ongoing EU budget for the 2021-2027 period, together with a temporary recovery instrument NextGenerationEU, have made a substantial difference to many policy reforms and investments projects around local passenger transport in Europe. Now it is time to shape the future of public transport funding for the post-pandemic and post-crisis era.

8. ANNEX: best practices

Case 1: Adapt timelines of EU calls for proposals to local governance

PTOs plan measures, which are then to be approved by the PTA within the framework of pluriannual budget planning and backed by financial coverage in accordance with the public transport financing agreement. This means that to apply for EU funding, a commitment by the PTA is required in advance for the share of its funds and the implementation. This is associated with each lead times (to be considered in connection with submission deadlines).

The reoccurrence of funding topics (as with the EU LIFE Programme), and few changes being made to annual calls (as with the Innovation Fund and CEF Transport), help public transport operators to plan funding applications and to develop quality, low-risk, large-scale projects.

As a worst-practice example, the 2023 and 2024 HORIZON Work Programmes were published in December 2022. It was disappointing to find that many Innovation Actions including demonstration projects had deadlines in March and April 2023. A time plan of 3-4 months is not realistic to submit a serious project of this type. EGUM recommends that the European Commission should refrain from this practice in the future.

Case 2: Urban public (collective) transport financing in France

1- **Financing of public transport in Ile-de-France**

2024 - Operating section balances forecast

In 2024, Ile-de-France Mobilité's actual operating revenues are expecting to reach EUR 12.3 billion. The main resources are:

- the mobility tax (formerly known as VT for "versement transport"- transport tax) = EUR 6,031 billion in 2024
- and fare revenues: EUR 4,115 million in 2024

Other:

- Tourist tax: EUR 200 million Statutory contributions and other subsidies (school transportation and social fares): EUR 1,816 million
- Other: EUR 103 million
-

The mobility tax: Companies with more than eleven employees pay a payroll tax that goes directly into the transport authority's budget. There should be European Guidance on what taxation tools are available and compatible with the single market.

Fares:

- One fare for an **all-zone Navigo pass** since 2015 (annual, monthly, weekly, daily): EUR **84,10 per month**
- **A variety of tickets and fares to suit different needs**
    - The "fare shield": maximum fare of EUR4 for any ticket sold in books of ten (and EUR5 for each ticket) Navigo Liberté Pass and Navigo Easy Pass
    - For seniors: annual senior ticket, Améthyste ticket

- For young people: Imagine R junior (under 11), pupil and student ticket, Navigo weekend youth fare
- For tourists: Paris Visit ticket, Paris Region Pass
- Social fares: free travel for young people on occupational integration programmes, Navigo Solidarity 75% weekly ticket, Solidarity Free ticket, 50% discount for recipients of AME (State Medical Assistance), Anti-pollution ticket, 50% discount on the Navigo pass for civic service and European voluntary service volunteers
- *Forfait Navigo Culture*: reduced rate in more than 300 cultural partners on presentation of the Navigo Pass

Operating section balances forecast

In 2024, Ile-de-France Mobilité's actual **operating expenditures are expected to reach EUR 11.5 billon**, and actual **investment expenditures are expected to reach EUR 3.8 billion**. The Minister of Transport's signing of a financing agreement on September 26, 2023 is based on a fair and shared effort between all the funding parties, aimed at maintaining the current funding balance for public transport in the Paris region for the current decade. The 2024 budget therefore includes the additional resources set out in the protocol:

Taxation:

- Mobility taxes:
  - Taxes increased by 0.25 points in central and inner suburbs (+EUR 400 million)
  - Tourist tax - Regional additional tax (TAR) increased by 200% (+EUR 200 million)

- Users: Rates to rise in line with inflation in 2024. Increase in line with inflation +1 point thereafter
- Local authorities: Rate increases in line with inflation +2 points from 2024 to 2028. Inflation thereafter

Concerning capital expenditure,

- The new State- Ile-de-France Region Contract 2023-2027 is expected to provide 8.4 billion euros, including EUR 3.7 billion from the Ile-de-France Region.
- The IDF Region's annual investment budget for transport is EUR 1.125 billion for the 2024 financial year.

2- Out of Ile-de-France region

Article L.1221-12 of the French Transport Code states[20] that urban public transport may be funded by a number of different parties: "*users, public local authorities where applicable and (…) other public and private beneficiaries who, while not users of the service, gain a direct or indirect advantage from the service*".

In 2021, urban transport networks (operation and investment) in France were funded as follows:

- Employers, via the Mobility tax (45%) – EUR 9.3 billion

[20] https://www.legifrance.gouv.fr/loda/id/LEGISCTA000023085001

- Local authorities, via their own tax impositions (18%) and loans (13.5%) – EUR 6.5 billion
- Passengers, via fare revenues (18%) – EUR 3.8 billion
- Central government (5.5%) – EUR 1.1 billion

Public Mobility Partners Committee

This committee is created by the PTA and includes employers' representatives, public transport passengers' associations and inhabitants drawn by lot. It is consulted on the PTA mobility policies such as planning and the financing of urban mobility services, especially the introduction or the evolution of the mobility tax rate.

Passenger financing: fare policy and fare revenues

Urban public transport users fund the service through the purchase of transport tickets. In 2022, the average price of a bus ticket was EUR 1.40, and the average price of a monthly subscription was almost EUR 30, outside of the Paris region. Subscription fees for public transports for employees must be reimbursed by their employers, by 50%.

The fares policy reflects the urban transport authority's political, social, technical and financial aspirations. It must comply with the general principles that govern public service delivery and public accounting: mobility for all, equal access to transport, equal treatment of public service users and budgetary balance.

The urban authority therefore decides the transport tickets that will be available on its public transport networks and sets the price at which these are sold to users. The operator may offer technical expertise in terms of fares and ticketing and submit proposals to the urban PTA. However, the urban PTA has the final say on the fares policy that will be implemented within its network (e.g. the introduction of multimodal pricing arrangements).

Several urban PTAs are tempted to establish free public transport, but it deprives of financial resources that could be substantial. Free public transport is not enough to increase public transport use. Urban PTAs are required by the law to reduce fares (prices reduced by 50% for the poorest social groups). Many PTAs have introduced social fare rates based on social status (for people with reduced mobility, unemployed, the elderly, the youth) or, in a few cases, based on the different income groups. The urban PTAs compensate the operators for the loss of revenue caused by these reduced or zero-rate fares.

Currently, around twenty local transport networks, especially small ones, have set up complete or partial free public transport (Dunkerque, Montpellier, etc.). Several urban PTAs are tempted to establish free public transport, but this would mean a deprivation of financial resources which could be substantial. Free public transport is not sufficient to increase public transport use.

Employer financing

The French urban public transport system is also funded through a specific tax, known as the Mobility Tax ('*versement mobilité'* – VM). This tax is raised on public and private employers with more than eleven employees working within public transport area with a population of more than 10,000. It's a payroll tax. The maximum rate can be fixed for dedicated-lane transport projects (bus, tramway, subway). The revenue collected from the tax can be used to

fund all mobility services (regular public transport, demand-responsive transport, shared mobility services such as car-sharing and car-pooling, active mobility, solidarity-based mobility), **operating and investment budget**.

Public funding

Both local and central government contribute to urban public transport network.

The French government decides to contribute to local investment on the infrastructure of urban public transport under national mobility “calls for projects”. In 2020, a total of EUR 900 million has been allocated to projects of own site transport and multimodal exchange hubs. The Government also provides public funding for multi-year joint government/region project contracts: EUR 8.6 billion for 2023-2027 schemes.

Evolutions in the funding framework

In 2021, urban transport networks (operation and investment) outside of the Paris region were funded as follows:

- Employers, via the Mobility tax (51%) – EUR 4.4 billion
- Local authorities, via their own tax impositions (26%) and loans (7%) – EUR 2.8 billion
- Passengers, via fare revenues (14%) – EUR 1.2 billion
- Central government (2%) – EUR 0.2 billion

Urban transport authorities play a key role in funding their networks, setting the Mobility Tax and deciding on passenger fare levels and rises, which, in turn, affect fare revenues. They also guarantee the financial balance of the urban public transport services by making their own contributions. The level of urban transport authority participation has stabilised or risen in recent years, whereas fare revenue tends to decline. Decreasing value added tax (VAT) on public transport does not lower public transport fare and does not lead to more passengers using public transport services.

Nowadays, the funding of public transport is faced with many challenges, especially for developing complementary services for peri-urban and rural areas and for decarbonising public transport. In June 2024, the French Government intends to organise a national congress on public transport funding, with the PTA representatives, to examine possible solutions to ensure a sustainable funding system.

In 2021, urban transport networks (operation and investment) inside the Paris region were funded as follows:

- Employers, via the Mobility tax (40%) – EUR 4.9 billion
- Local authorities, via their own tax impositions (12%) and loans (18%) – EUR 3.6 billion
- Passengers, via fare revenues (22%) – EUR 2.6 billion
- Central government (8%) – EUR 0.9 billion

There are also specific taxes for the capital region PTA and the “Société du Grand Paris” (new “Société des Grands Projets”) for “Grand Paris Express” infrastructure.

Case 3: National and regional funding programmes in Austria

There are several national and regional funding programmes for companies in Austria to support public transport, its expansion and decarbonisation. The following programmes are a selection of these:

“klima: aktiv" is an initiative of the Federal Ministry of Climate, together with the Climate and Energy Fund. It promotes numerous mobility measures: ranging from the conversion of vehicle fleets to alternative vehicles and electric mobility, investments in cycling, soft mobility projects for leisure and tourism; to company, municipal and regional mobility management with mobility centres, municipal buses and innovative mobility services. Priority is given to measures that contribute to the reduction of CO2 emissions and thus to the decarbonisation of the public transport sector. One of these programmes is "Digital Transformation in Mobility 2023”[21], which supports research and development at the interface between mobility and digitalisation. The programme has a budget of EUR 3.2 million and the deadline for applications is mid-April 2024.

The EBIN (and ENIN) support programme was launched as part of the EU's Next Generation programme in Austria and co-funded by the Austrian Ministry of Climate. There are currently discussions about the continuation of these programmes on national level. The programme's overall objective is to accelerate the conversion of the Austrian bus fleet to zero-emission buses. By 2022, ten projects and 289 zero-emission buses had already been approved in Austria, saving an estimated 16,000 tonnes of CO2 per year. The third call for proposals will continue this path, funding 80% of the additional investment costs for the purchase of zero-emission buses in public transport and 40% of the net acquisition costs for the charging, overhead line and hydrogen fuelling infrastructure as well as related third-party services.

To also include city logistics, the logistics support programme ("Logistikförderung") administered by SCHIG should be mentioned. The focus of support is on the (pilot) implementation of innovative logistics concepts for all modes of transport with the participation of the public sector. This is to be done to increase the competitiveness of the Austrian freight transport and logistics sector, and to enhance the attractiveness of the location and to ensure social and ecological sustainability. Feasibility studies with a maximum duration of one year, and implementation projects with a maximum duration of three years will be funded.

In addition to these national funding programmes, there are also regional opportunities available, which differ depending on the federal state or region. Examples of this are the funding of road safety, the extension of the railway infrastructure or the funding of sustainable transport concepts.

Looking at the current funding landscape at EU and national level, there is duplication in certain areas and gaps in others. It is essential that a comprehensive mapping of funding topics at national and EU-level is undertaken to identify eligible funding activities currently not covered by any funding schemes, and to identify topics which are adequately covered by multiple funding schemes.

It should also be noted here that the above-mentioned funding programmes do not foresee blending schemes, such as AFIF. Most Austrian transport companies can therefore currently only utilise these national funds about e-charging infrastructure. This is based on the decision of the PTA that no external funding may be utilised. Funding programmes that prescribe such blended financing as a mandatory element therefore exclude them from the application process.

[21] https://www.bmk.gv.at/en/topics/mobility/alternative_transport/its/action-plan-digital-transformation.html

Case 4: Financing of Public Transport in Spain

According to data from the Association of Urban Collective Transport Management Companies (Atuc)[22], state contributions to local entities (PTOs/PTAs), although increasing in recent years, are still insufficient to cover the minimum costs required for system growth. Atuc is an organization, which includes all metropolitan transport operators—buses, subways, trams, regional trains, and commuter trains. It reports that state subsidies cover only about 6% of the total system cost, estimated at around EUR 7 billion per year, and calls for increased funding.

To quantify the actual cost of urban transportation in Spanish metropolises, Atuc commissioned the consultancy Afi to calculate the costs of various transportation systems in cities benefiting from this new funding. These include all provincial capitals, cities with more than 50,000 inhabitants, and those with more than 20,000 inhabitants and 36,000 registered residences, which results in 97 eligible cities in Spain.

The capitals, which have supramunicipal authorities (Public Transport Authorities or PTA) to manage their transportation networks, absorb the most resources. Excluding the commuter services operated by Renfe, the transportation services provided in Madrid through its Regional Transport Consortium of Madrid (CRTM) have a total cost of EUR 2.468 billion. In Barcelona, the services of the Metropolitan Transport Authority (ATM)—excluding Rodalies—cost about EUR 1.394 billion annually. In Valencia, they amount to EUR 335 million; and in the Canary Islands, they cost EUR 301 million.

Adding these EUR 4.498 billion euros to the EUR 1.626 billion allocated by municipalities to their urban bus networks and other modes, the operating cost of the urban collective passenger service amounted to EUR 6.124 billion in 2021. This amount has surged in the last three years due to rampant inflation, and it is expected to exceed EUR 7 billion by 2025.

Currently, the central government finances 6.1% of the service cost (as of 2021). Therefore, the approximate distribution of the funding for local public transport in Spain would be:

- National Funding: 6 %
- Regional Funding / Public Transport Authorities: 68%
- Local Funding: 26%

We can say that the Spanish government is only allocating EUR 17,32 per inhabitant. If we include commuter trains this figure can reach EUR 31 per inhabitant, but these amounts are clearly insufficient.

There is a new Sustainable Mobility Law proposal from the Central Government that is expected to be approved this year. The draft states that the state must cover a maximum of 25% of public transport costs, so the 6.1% is still far from that threshold established in the Draft Law. On the other hand, the Draft of the Sustainable Mobility Law stipulates that user fees must cover at least 25% of operating costs. This threshold was met in the period 2019-2021 for services provided by the CRTM and the ATM, according to approximations made.
The analysis indicates that the maximum amount the State Fund for Contribution to Sustainable Mobility should allocate to cover the operating costs of the urban public passenger transport service must be significantly higher than current aid levels. In 2021, state contributions were EUR 373 million, only 6.1% of approximate costs. The estimated costs for 2025 indicate that 25% of the costs will be around EUR 1.7 billion.

[22] https://www.atuc.es/

Thus, the next General State Budgets for 2024 should not reduce public transport spending compared to the 2023 budget, which includes fare aid to users. This approach will facilitate progress towards new financing mechanisms. The tariff policy must ensure a minimum coverage of a quarter of the costs, contrasting with its conservative and static development in recent years.

Unlike the current state aid system, which primarily finances bus transportation, except for PTAs, the Draft Law includes cost coverage for metros, trams, railways, etc. If the new financing system includes railways, they would be treated uniformly with other modes. Currently, as railways are the state's responsibility, they receive specific funds separate from general aid.

The Draft Sustainable Mobility Law proposes the creation of a State Fund for Contribution to Sustainable Mobility to manage government subsidies aimed at financing collective public transport. These subsidies will partially cover operating costs, without exceeding a quarter of the total costs. Additionally, the Fund will support investments aimed at improving sustainability, digitalization, and universal accessibility of urban mobility.

There are not too many specific earmark taxes for public transport, and the different levels of public administrations distribute the grants according to their existing resources.

As public transport plays a significant role in society and the territory, providing accessibility to all citizens and visitors and connectivity for them to all daily life places (schools, hospitals, offices, factories, shops, leisure facilities and others), and it helps in decarbonising cities and regions, so the weight in the public administrations' budgets will be growing.

Case 5: Financing of Public Transport in Belgium

Urban/regional transport is a responsibility of the three federated entities (specifically the Flemish Region, the Walloon Region, and the Brussels-Capital Region), and the funding is specific to each of them. Below are recent details concerning the financing of the Walloon Region.

1- Walloon Region – Public operator of Wallonie (OTW)

<u>Financing of OTW Activities</u>

For 2023, the various missions of OTW and the associated funding are defined in the Public Service Contract 2019-2023[23]. In addition to OTW's revenues, it provides, on the one hand, financial compensation for the mission of establishing and operating regular public transport services (including covering social commitments – pensions – and operational investments) and, on the other hand, financing for missions delegated by the Region.

OTW's investments are divided into various categories, mainly:

- Infrastructure investments: stations, stops, dedicated lanes, busway-related works, etc.
- Operational investments: buses, trains, on-board equipment, ticketing, operational buildings, digitization, etc.

[23]https://mobilite.wallonie.be/files/eDocsMobilite/politiques%20de%20mobilit%C3%A9/transport%20public/contrat-service-public-otw-2019-2023.pdf

- Investments related to development, establishment, renovation, and extension of major infrastructures (such as the Charleroi Light Metro, the Liège tramway via a public-private partnership, the multimodal station in Namur), which are subject to specific financing.

In general, as stipulated by the Public Service Contract, these funds evolve according to inflation +1 percent to cover OTW's rising costs, but also to allow for the development and improvement of public transport services.

Besides the funding provided by the Public Service Contract, OTW benefited from additional funding in 2023 under various national and regional plans, particularly for Recovery and Resilience. OTW also received additional funding in 2023 to cover the impact on its financial balance due to rising energy prices. This additional amount is in addition to the amount granted to OTW at the end of 2022 to cover the operating loss. In total, the financial resources granted by the Region to OTW in 2023 amounted to EUR 853 million.

Revenue

This item corresponds to traffic-related revenue for the 2023 fiscal year, totalling EUR 122,090 million. Since September 2022, monthly revenue has gradually returned to its pre-pandemic state due to the return of passengers to the buses. Revenue consists of single tickets and multi-journey cards (EUR 25,315 million), subscriptions (EUR 45,398 million), special services, and other income (EUR 4,945 million), and regional compensation to cover near free and non-indexed fares (EUR 46, 432 million).

Funding

Funding for the execution of the internal transport operator mission:

- Compensation funding for the establishment and operation of regular public transport services: EUR 474,185 million
- Conditional financial intervention: EUR 4 million
- Compensation funding for the evolution and development of the service: EUR 29,889 million
- Funding for flexible local mobility solutions in 2023: EUR 447 thousand
- Regional participation in OTW's operational investment program: EUR 46,022 million
- Financial compensation to cover the costs of measures promoting fleet greening: EUR 5,298 million
- Participation in the Walloon Recovery Plan for the purchase of less polluting buses: EUR 48,766 million
- Participation in the Walloon Recovery Plan for the acceleration of the OTW free fare trajectory: EUR 31,164 million
- OTW social commitments: EUR 33,986 million

Total for internal operator mission: approximately million **673,757 million euros**

Funding for the execution of delegated missions:

- Funding for the execution of the delegated mission of establishing and organizing school transport services / transport for children with disabilities: EUR 50,521 million
- Funding to cover exceptional indexation for school transport service providers: EUR 11,770 million
- Subsidy for the transport of people with reduced mobility: EUR 4,969 million
- Funding for the execution of the delegated mission related to public transport infrastructure: EUR 11,083 million
- Funding for major infrastructure projects: EUR 86,464,802
- Funding under various national and regional plans (Recovery and Resilience, etc.): EUR 14,428 million

Total for delegated missions: approximately EUR 179,348 million

Total for both missions: EUR 853,105 million

Evolution of funding

The public service contract 2024-2028 was signed on 18 January 2024 between the Walloon Region and OTW. The contract follows the continuity of the previous one, in a collaborative logic between regional actors with the common objective of increasing modal transfer. It is in line with the priorities and general orientations of the Walloon Government, including the Regional Mobility Strategy and the Air Climate Energy Plan.

The Walloon Government intends for the modal share of public transport to increase by the end of the contract, from 4% in 2017 to 9% in 2028, reaching 10% by 2030.

One of the main changes compared to the previous Public Service Contract 2019-2023 is the extension of the public service obligations entrusted to OTW. In addition to the task of establishing and operating regular public transport services and the operational investments necessary to provide these services, it now also includes the establishment and implementation of demand-responsive transport services on the territory of the Region and the provision of public transport expertise to the Region.

For 2024, OTW continues to receive support from the Walloon Region for public transport and major regional projects. In total, the planned funding for OTW in the initial Walloon Region budget amounts to EUR 933 million for the year 2024.

Case 6: Hampshire

In Hampshire, UK, the Eclipse dedicated busway has been built on a disused railway track bed, eliminating the impact of traffic congestion and reducing journey times by 25%. Services are purely commercial in nature, operating without local authority support. Patronage increased by 60% in the first year alone. The entire operation was improved with high-quality bus stops with raised kerbs to allow level boarding, shelters, CCTV, real-time information, and a help point contact system. A new bus fleet with leather seats, wood effect flooring, and mood lighting was launched. It has been replaced every five years, with zero-emissions vehicles having been introduced to the route in 2024. Investment has been maintained in technology, infrastructure, and vehicles to sustain growth for a ten-year period. Eclipse runs on an innovative profit-sharing arrangement. Provided that consistent and reduced journey times are achieved, and passenger growth maintained, First Bus UK annually reinvests a proportion of

route profits into local authority facilities. This ensures ongoing investment in the service while maintaining its efficiency and reliability.

Case 7: Financing of Public Transport in Germany

Germany is a federal republic and consists of 16 federal states (Bundesländer). It is the responsibility of the federal states to exercise state powers and fulfilling state tasks unless the Basic Law (Grundgesetz) makes or permits any other regulation. There are no special regulations in the Basic Law for public transport; therefore, it is the responsibility of each federal state. The regulations for financing are set in a special public transport law in each federal state. This makes the financing of public transport unique in each state and complex in a nationwide context. The federal railway network is financed by Deutsche Bahn InfraGO AG as a federally owned railway infrastructure company. InfraGO gets funding from the federal republic. In addition, smaller and specific projects at the federal railway network (additional railway stops or modernization of stations/stops etc.) are financed by the federal states and communes.

In two areas nationwide financing and the founding of public transport is allowed through the federal government in Berlin. Since 1996 after the railway reform (transformation of Bundesbahn in Deutsche Bahn AG), the responsibility for regional rail operation has been transferred from the federal government to the states. The financing is set through the Regionalisierungsgesetz (federal regional transport act). To finance the responsibility, the federal government pays EUR 11.2 billion in 2024 to the federal states. The states order and finance regional rail operation services in their own responsibility. It is a long-term regulation until 2031. The amount is dynamized with 3% per year and increases up to EUR 13.8 billion in 2031. The problem is the sharp increase of public transportation operation costs in the last three years (staff costs, materials, energy, etc.). The amount is sufficient and available funds have not been increased accordingly. If the federal government will not increase the amount promptly, there is a risk of reducing regional rail operation services between 10% and 20% in each federal state. A report commissioned by the federal government quantified that there should be an increase in total about EUR 16 billion in the period between 2026 and 2031. The states receive federal funding primarily dedicated to finance regional rail operations. Smaller amounts of these funds are also used by states to finance local or urban public transport. The vehicles for regional rail operations are financed though PSO contracts for regional rail and/or directly financed by the federal states through the fund of federal regional transport act.

The second source of funding through the federal government is for local public transport infrastructure. Since 1971 the federal state has supported the municipalities in larger projects (starting at EUR 30 million minimum) in the extension of lines etc. However, starting from 2020 in the renewal of local public transport infrastructure will also include projects starting at EUR 10 million minimum. The funding is set through the Gemeindeverkehrsfinanzierungsgesetz (GVFG – Communal Transport Financing Act). The federal funding increased from EUR 333 million per year up to currently EUR 1 billion annually. It will increase again, starting in 2025, up to EUR 2 billion annually. Due to the improvement of the funding conditions starting in 2020, there are now up to 500 projects in the nationwide GVFG program with large and expensive subway projects. Thus, there is a need for increase the amount of funding; EUR 3 billion will be needed annually.

Smaller infrastructure projects are financed by the federal states and communes. Due to the responsibility of the federal states in financing public transport, there are different funding schemes in the states: some have funding programs, others do not. The schemes vary

between the subjects of funding (infrastructure and vehicles for local and urban rail), the funding rate and the amount of public funding. In some cases, vehicles (local and regional buses, light rail vehicles) and local/regional infrastructure (e.g. depots, electric charging infrastructure, bus interchange stations, barrier-free bus stops) are proportionally financed by the states and in some cases completely by the communal level. In case there is no funding regulation in the state, the communal level will oversee the complete financing and funding of infrastructure and vehicles. In short, in the last two decades, a smaller amount of PT infrastructure is founded by the state and a larger amount by the municipalities. The federal government oversees providing more money to fulfil its responsibility in financing and founding public transport infrastructure and vehicles.

In 2018, the NOx limits were exceeded in many cities. Since then, the nationwide government sees greater responsibility in public transport and supports local municipalities and public transportation companies with financial funding for selected projects. One important funding scheme by the federal republic is for emission-free buses. Due to the ban on new debts, this funding scheme at the federal level ended abruptly in 2024. Therefore, the financing of emission-free buses is now a huge problem in Germany. Only some states have a special funding scheme for emission-free buses and the associated charging infrastructure. The communal level can't finance the transition to emission-free buses on their budget and needs more support from the federal level. For the complete transition to emission-free buses and charging infrastructure there is a financing need of about EUR 26 billion.

Apart from farebox revenues, the operation costs for public transport are financed by different schemes by the federal states, too. In Germany, we see a dramatic decrease in farebox revenues through the introduction of low-fare policies and products such as Deutschland Ticket. The federal government and the states spend together EUR 3 billion annually in 2023, 2024, and 2025 of the Deutschland Ticket, which is designed only for three years. The operation of PT is financed by the municipalities and to a smaller amount by the states (e.g. high quality Regiobuses with similar quality than regional rail). There are some special funding schemes by the federal states for reduced fares for pupils and students (approximately EUR 1 billion annually) and reduced fares for severely disabled people. In the last two decades, there is an ever-increasing shift in funding and financing for public transport in Germany (for vehicles, infrastructure, and operation costs) from the federal-state level to the local municipalities.

Case 8: UPPER project - Funding public transport improvements with R&I funds (HE)

Utilizing research and innovation funds for public transport presents a unique opportunity to drive advancements in sustainable mobility, enhance service quality, and address emerging challenges. By allocating resources to research projects focused on public transport, authorities can explore innovative technologies, operational strategies, and policy interventions to improve system efficiency, accessibility, and sustainability.

As an example, the UPPER project is a Cities Mission project funded with Horizon Europe. The project aims to improve public transport user satisfaction as well as enable modal shift from individual motorized vehicles, whilst following the principle of Mobility as a Right. The project serves to showcase how R&I can help funding the public transport of the future.

- **Measures related to innovative network management strategies based on social optimum**

  UPPER will implement novel network management strategies, in cooperation with City authorities and Public Transport Operators to implement the concept of the social optimum in the city network management. This is based on multi-criteria algorithms that allow considering for example the reduction of travel times for priority vehicles (i.e. Public Transport) considering their efficiency in people /vehicle or considering the level of emissions of this vehicle/person. This allows the minimisation of the total costs of the city also in terms of health and liveability. In summary, the new strategies will effectively and optimally balance the diverse needs and objectives of individual users (specific types of vehicles, vehicle fleets etc.) versus societal and system optimum operations.

- **Measures related to MDMS solutions guaranteeing Mobility as a Right**

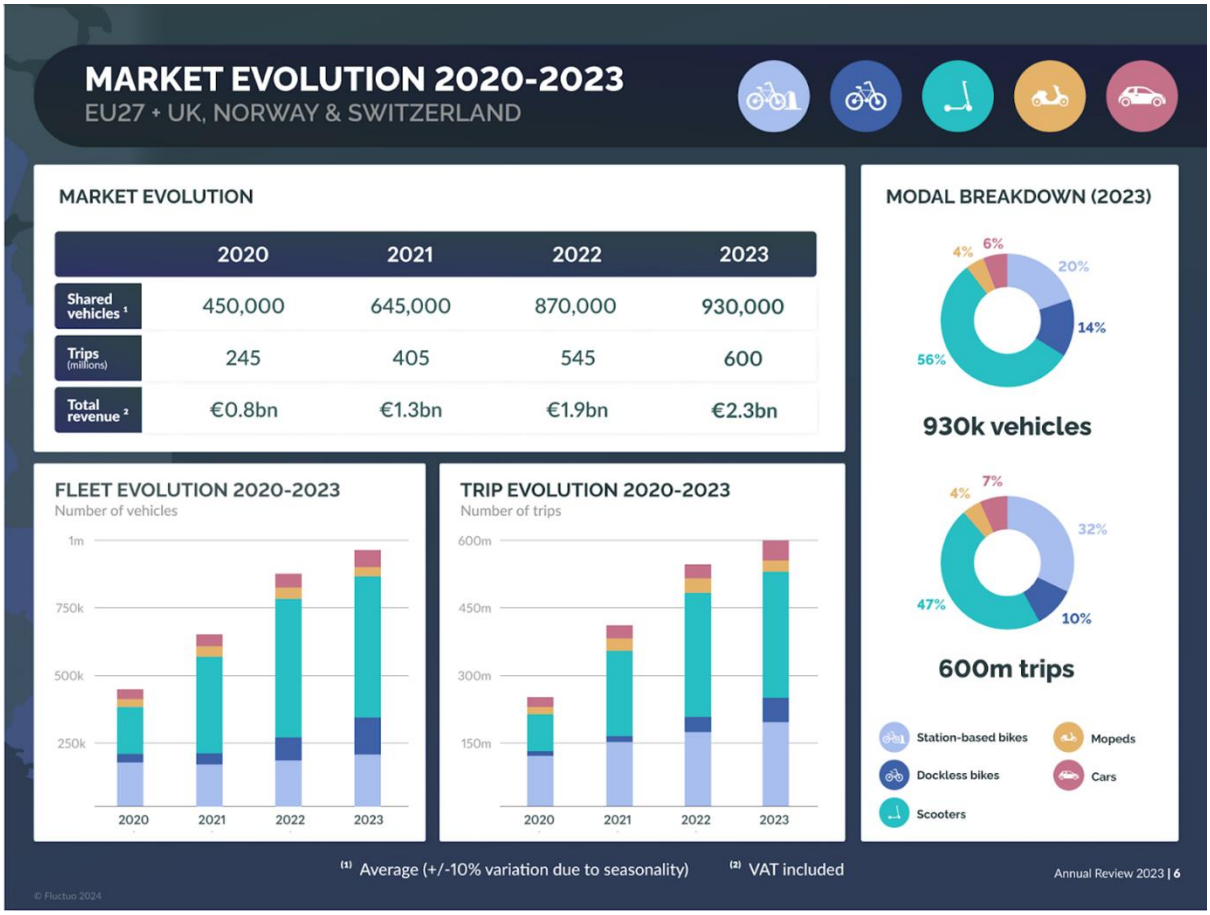
  UPPER will experiment with improvements of MDMS related activities over the different demo sites, with a special focus on the user needs and expectations, considering the different users' groups, in line with the principles of the Mobility as a Right (MaaR). These will be done both in MDMS already in place (e.g., Ile-de-France Mobilités app) or new solutions (e.g. Lisbon), implemented by PT authorities. Through UPPER, the MDMS new modules that will be developed will start from the analysis of the existing gaps in the current mobility applications. These will enhance the accessibility, convenience, and inclusion-related features such as the integration of more MSPs, easy-to-use modes for the elderly, mobility credits as a mean of payment, incentives or experimentation with gamification, and the exploitation of existing data to improve the information for the user.

- **Measures related to the share, storage, and exploitation of static and dynamic mobility data**

  UPPER will provide a common and harmonized approach to data sharing and storage to enable seamless and continuous operation by many actors at the same time. This will allow the reconciliation between "real-time" and "deferred time" data. A duality emerges naturally in those coupling approaches: data will be used to serve models via methods of dynamic recalibration of modelling parameters or via methods of supplementing existing static databases (e.g., dynamic mobility data can supplement static survey information by specifying reported travel times with observations, or even adding route information for reported trips). Conversely, models will be made to serve the data via methods of enriching measured data with modelled observations (e.g., generating travel data via virtual agents in the model).

Case 9: Shared Micromobility Funding in Europe

According to latest research conducted by Fluctuo[24] the shared mobility landscape in the EU27+ UK, Norway and Switzerland have evolved as follows:



Generally, it can be stated that station-based bike-sharing services are typically funded by public budgets under service contracts, with variations of different governance and compensation models. Typically, these services offer subsidised rides, often managed in conjunction with and integrated into collective public transport offerings.

Most of the other modes (dockless bikes, scooters, mopeds and cars) have been invested privately, with user fees typically at market rates. Sometimes, local authorities have stimulated usage by compensating operators to adjust their services (extended service areas, cheaper usage fees, etc).

The shared micro mobility sector is very dynamic, innovative and heterogeneous, with different business and operating models, sometimes working in parallel in the same cities. Shared micro mobility service scope varies with demand; unlike bus and rail services, where the service quantity is defined by timetables and operational coverage areas and service lines, irrespective of the number of passengers using the services. While traditional public transport has relatively low variable costs, a large portion of bike and scooter sharing costs are variable costs, which are directly proportional to the number of trips realised. These variable costs comprise staff for rebalancing, maintenance and repairs, costs for service vehicles, battery

[24] Fluctuo Annual Shared Mobility Report 2023, see image below

charging for e-bikes, etc. and can easily make up more than 50% of the total project cost over the lifetime.

Evolution of bike sharing contractual models

2002- ca. 2012: Private investments as part of Out-of-Home advertising contracts

Initially bike sharing systems were implemented by private investments by large multinational companies specialised in OoH advertising, like JCDecaux or Clear Channel. While they came at no immediate costs to public budgets, cities lost the chance to commercialise their valuable public assets. The real commercial value of such advertising contracts is hard to quantify but it has to be assumed that they outweigh the investment and operating costs of the bike sharing systems. Examples of such contracts include Paris' Velib 1.0 system (2007-2017), Barcelona Bicing 1.0 (2007-2019), Oslo Bysykkel (2002 - today), Stockholm City Bike (2006-2018), CityBike Vienna (2003-2022), Lyon Velo'V (2005-today), Valencia Valenbisi (2010-today) or Sevilla Sevici (2007-today).

Immanent to these systems is that the operators do not have an intrinsic business motivation to achieve more rides or invest into a better service, beyond contractually fixed obligations. As Bike Share is a cost not a revenue driver for the businesses, they need to be micromanaged by strict Service Level Agreements.

2010s - today: Publicly funded systems, integrated into public transport operations

With the realisation that bike sharing is a form of public transport and not an advertising asset, bike sharing systems became more and more included in public transport or stand-alone public service contracts. Public Transport operators – like Keolis or Transdev in France, Arriva in the Netherlands and Slovakia, Nomago in Slovenia or large public service companies like Serco in the UK or Ferrovial in Spain – developed or licensed hardware and software to operate bike sharing systems within their existing service portfolios to cities.

Typically, bike sharing contributes only a very small portion to large service companies' revenues, therefore their strategic value is relatively low. The contractual structure is like those embedded within advertising contracts. Each ride is an incremental cost, which is not compensated for beyond the contractually defined service payments. For operators, it is more lucrative to realise low utilisation rates to save variable costs to service more rides. As a result, Public Authorities need to supervise and control performance of such operations to ensure contract delivery and service level compliance. Moreover, given the need to ensure accountability against the taxpayer, these contracts can be quite complex in nature, like those of much larger public transport operations, yet with a much smaller business scope.

Moreover, specialised bike sharing operators have emerged to deliver their services to cities, often without the in-depth expertise of and resources for complex public service contract management required for these types of contracts. For them, despite best efforts, it can be challenging to comply with all complex expectations from Public Authorities.

From 2017 - today: Stand-alone concession businesses with private investments

From 2017 onwards, private investments started to float into new start-ups specialising in bike (and e-scooter) sharing operations. Fuelled by the megatrends of digitalisation, decarbonisation and individualisation, more than EUR 5 billion have been invested globally in fleet innovation, IT systems, operational processes and user experience. Initially, the market has witnessed inflated expectations by investors. However, since 2022 trends of rightsizing and market consolidation can be seen.

Generally, these services are not subsidised and purely rely on user revenues. Given their business purpose of delivering shared mobility services, these companies are intrinsically motivated to generate more rides, as more rides means more revenues and more profit for the business. This is typically aligned with cities objectives for their bike sharing systems, which is to amplify the modal split from motorised individual transport to active modes and public transport.

Typically, we see combinations of #1 or #2 with #3 in European cities, making up for a public/private bike sharing ecosystem, serving similar objectives. In some markets we have witnessed different business models by local companies. It can be stated that this trial-and-error approach has not shown scalability and lacks strategic opportunity to deliver against the European Cycling Declarations goals.

Three different general funding streams

Bike sharing funding sources can be generally divided into three different buckets, some systems only rely on one or two of them.

1. User revenues

These are often quite low, especially if the systems are subsidised or managed by cities, as one important public goal is to offer affordable access to everyone. While only very few projects publish data on this, we estimate an average revenue per trip of below EUR 0,50-1,00. Since the introduction of e-bikes and heavy investments into the user experience by private shared mobility operators, we have witnessed an increase of the users' willingness to pay, with an average revenue per trip of EUR 2.00-2.50 for dockless private bike sharing. This, of course, comes with the trade-off of exclusion of less wealthy parts of society for whom such pricing would be hard to afford.

2. Revenues from private sources

These can be broken down into three sub-categories:

a. Sponsorship: These are limited to certain cities where big companies have a specific interest for brand visibility and/or political goodwill. It cannot be taken for granted as a reliable source of revenue, as it is generally very hard to secure. In many cases the sponsor is found by the city itself.
b. Advertising on bikes and/or stations: This requires dedicated sales efforts and can conflict with restrictions from cities OoH advertising contracts with exclusivity clauses. It can complement other funding sources to a certain extent but is subject to volatile market conditions.
c. B2B deals: Some operators have the contractual freedom to commercialise their assets to local businesses, with packages comprising usage for employees or customers, vehicle branding or other services. It is quite a sales heavy and low margin business effort, difficult to scale and automate.

3. Public funding

Public funding comes from a variety of sources from EU and national governments, always co-funded by local city budgets. Some member states have access to European cohesion funds, which can cover a large portion of the CapEx costs. National funding programs comprise Green Transition Funds, (Cycling) Infrastructure and Environment Funds. EU Cohesion funds are also relevant funding sources for bike sharing in some EU Member States.

In many cases, these available funds are restricted to CapEx investments. Looking at the total project costs of bike sharing systems, comprising CapEx investments and OpEx over five to ten years, the OpEx costs typically represent 80-90% of the total project costs. That said, EU and national funding instruments are typically not well-designed to ensure long-term project success. Also, they typically require lengthy and complex procurement processes.

Case 10: Brussels: Subsidy Programme for micromobility in neighborhoods with limited public transport access[25]

- Overview: Brussels initiated a twelve-week subsidy pilot in collaboration with Dott and Molière, targeting lower-income neighbourhoods with limited public transport access.
- Financial Approach: Subsidies reduced trip prices, increasing access to micromobility services in underserved areas.
- Results: The pilot saw up to a 10% increase in trips, demonstrating subsidies' effectiveness in making services affordable and directing provider resources to underserved areas.
- Model benefits: Subsidies can strategically enhance service equity and impact by encouraging providers to serve areas they might otherwise overlook, resulting in a more inclusive micromobility network.

Case 11: Public Procurement of Innovation (PPI) for Urban Mobility in Barcelona background

Transports Metropolitans de Barcelona (TMB), the leading public transport operator in Barcelona and its metropolitan area, faces significant challenges due to increasing urbanization and the imperative of addressing climate change. Recognizing the need for innovation to ensure a sustainable and efficient public transportation system, TMB embarked on its first Public Procurement of Innovation (PPI) process under the European Union's Horizon Europe Programme InnoBuyer.

TMBINNOVA: TMB's innovation strategy

TMB's innovation strategy, branded TMBINNOVA, aligns with the TMB Strategic Plan 2025, emphasising sustainability, new mobility services, travel experience enhancement, and efficiency. This user-centric innovation approach leverages technology and digital transformation as key drivers.

Key Goals:

- *Ecosystem Integration***:** Encouraging collaboration with key institutions to foster market innovation.
- *Public-Private Collaboration***:** Developing innovative solutions to improve services and accessibility.

Initial Challenges of TMB's PPI Programme

On June 16, 2023, the initial challenges were presented and evaluated, and approved under the InnoBuyer Programme, funded by the Horizon Europe Programme with a budget of EUR2

[25] Source: https://cities-today.com/knowledge-hub/micromobility-a-longer-term-perspective/

million. InnoBuyer aims to co-create innovative solutions by bringing together public and private organisations and SMEs.

Project Objectives:

- Foster a collaborative innovation ecosystem among top European public and private entities.
- Launch and validate a support programme for co-creating innovations.
- Demonstrate increased efficiency of public services by piloting fifteen innovative solutions.

Challenge 1: Platform gap in curved metro stations

The primary challenge identified by TMB was the gap between the train and the platform at nine of its metro stations. This gap creates significant accessibility issues:

- For people with reduced mobility, the gap can make it impossible to access the train.
- Other passengers may trip, fall, or suffer injuries when getting on or off the train, leading to potential delays in train schedules.

A successful solution would not only benefit Barcelona's metro but also address a common issue faced by similar railway operators globally.

Challenge 2: New information supports for metro and bus

The second challenge aims to improve information supports in metro and bus systems. The current setup uses cross-sectional screens for service information, corporate content, and advertisements. The new objective is to develop ultra-panoramic screens above all doors in new trains and explore using train and bus windows to display dynamic information while maintaining transparency. This includes real-time route information, connections, exits, service disruptions, and promotional content.

Preliminary market consultation procedure

TMB invited proposals to address these challenges, asking participants to submit ideas and complete forms detailing their solutions. Proposals were subject to individual reviews, with the potential for participants to present demonstrations.

Participating in this process offers several benefits, including applicability beyond Barcelona's metro/bus network to similar infrastructures worldwide, scalable solutions deployable across entire fleets, opportunities for future collaborations within the sector, and direct technical engagement with TMB.[26]

[26] https://www.eiturbanmobility.eu/tmb-public-procurement-of-innovation-gap-of-curved-platforms/; https://www.tmb.cat/documents/20182/862576/Presentacio_event_compra_publica.pdf/ec755c2c-3512-4179-94ec-437b799deb35?t=1693813381000

Case 12: The taxi sector rendering public transport safer and more accessible

Accessibility: Taxi 4 Smart Mobility (T4SM) German member Bundesverband provides a more accessible transportation option for the elderly, disabled, and ill. By collaborating with 93 German insurance companies, BVT ensures safe and swift transport to and from hospitals and medical centres. The taxi sector plays a crucial role in ensuring access to transport for the most vulnerable users, with 38 million medical trips made by taxis annually.

Safety: The Danish member of T4SM, Dansk Person Transport, has found that taxis have become the preferred mode of public transport at nighttime in Denmark. DPT taxis ensure safety through several measures: all drivers undergo criminal record checks by the authorities, surveillance is mandatory in every taxi, and passengers can share their route through the app for safety reasons.

Modal shift: German T4SM-Member, Bundesverband Taxi und Mietwagen e.V., together with Taxi Deutschlnd is operating Germany's largest services for pooled mobility in small vehicles in cooperation with the German railway company Deutsche Bahn. Using the taxi fleet to provide ad-hoc mobility solutions to customers of rail when their service is interrupted is supporting the shift from road to rail and embracing the reliability of transport by rail. Taxi helps rail.

Reliability and Affordability: In rural areas in Germany, bus lines often do not operate 24/7. But to ensure access to mobility at an affordable cost, a lot of municipalities offer on-demand-devices (phone call or app) operated by taxi companies. The taxis pick you up at the bus stop and follow the same route as the bus service for a small additional cost of 1 euro to a regular bus ticket. These on demand taxi services called Anruf-Sammel-Taxi, Taxibus or Anruf-Linien-Taxi enable public transport to operate 24/7 in rural areas at an affordable price.

In Austria, Anruf-Sammel-Taxi (Call-Shared-Taxi) is a service by CC Taxicenter GmbH in collaboration with the local public transport Linz AG Linien. At a fixed price, it allows customers to book a taxi following a schedule that you share with other passengers. The automatic GPS positioning determines the location, and the customer can then select the preferred departure point. Before you place your order and after the departure time and destination are selected, the AST fare, journey time, and distance are displayed. This service is offered during both day and nighttime.

Inclusion: In Hamburg, Germany, taxi industry is moving towards zero-emission-vehicles while including vulnerable users. Among this large effort, wheelchair-accessible vehicles get a special support. In Hamburg, the taxi industry operates 10 zero emission wheelchair accessible vehicles, more than in any other city in the country. This is of special importance, as the switch to zero emission in some cases contradicts inclusion for reasons of car availability, the weight of the car and the possibility to install ramps and other systems needed to make a car wheelchair accessible. This example shows how taxis can combine clean mobility and social inclusion of vulnerable users.

a. List of organisations participating to the subgroup

Subgroup leaders
Ile-de-France Region
UITP - International Association of Public Transport
Cities and Regions
Barcelona Metropolitan Area
Braga Municipality
Budapest
Central Slovenia Statistical Region (w. Ljubljana)
Oradea
Toulouse Métropole
Member States
Belgium
Czechia
Finland
France
Italy
Latvia
Lithuania
Luxembourg
The Netherlands
Poland
Portugal
Organisations
ACEA – European Automobile Manufacturers Association
AVERE - The European Association For Electromobility
Community of European Railway and Infrastructure Companies - CER aisbl
Council of European Municipalities and Regions - CEMR
Cycling industries Europe aisbl (CIE)
EIT Urban Mobility
ERTICO
European Cyclist Federation asbl (ECF)
European Passenger Transport Operators - EPTO
European Transport Workers Federation - ETF-Europe
Eurocities
International Road Transport Union - IRU
LEVA-EU
MaaS Alliance
Micro-Mobility for Europe
MOVE EU - The European Association of On-Demand Mobility
POLIS
Taxis 4 Smart Mobility - T4SM
Observers
CoR – Committee of the Regions
JRC – Joint Research Centre of the European Commission
Ad-hoc expertise
EMTA – European Metropolitan Transport Authorities