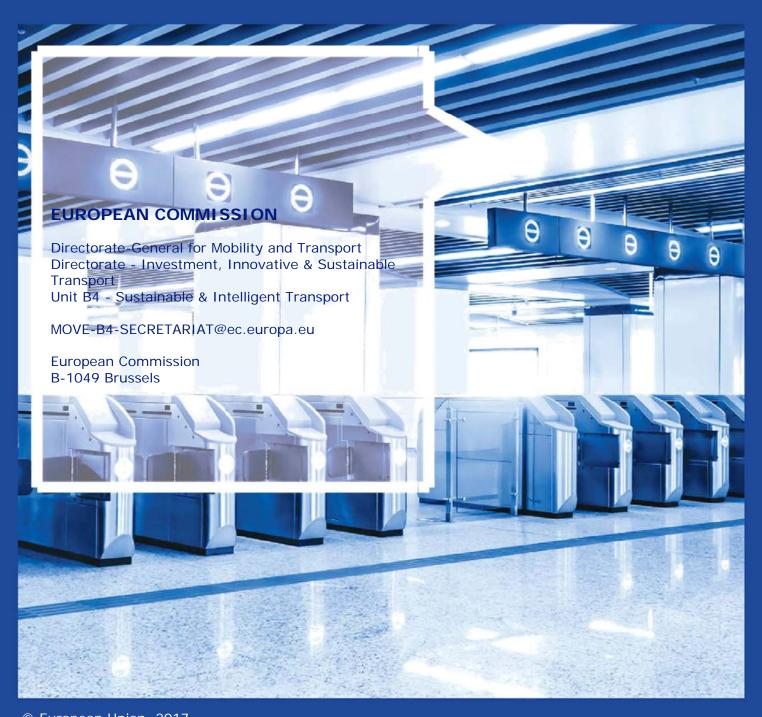






European Urban Mobility

Policy Context



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More information on the European Union is available on the Internet (http://www.europa.eu). Luxembourg: Publications Office of the European Union, 2017

Catalogue number MI-02-16-265-EN-N

ISBN 978-92-79-57527-3

DOI 10.2832/827766

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Introduction

Cities in Europe increasingly face problems caused by transport and traffic. At the same time, urban mobility is vital for European cities and is a major contributor to economic growth, jobs and competitiveness. The question of how to enhance mobility while at the same time reducing congestion, accidents and pollution is a common challenge to all major cities.

For decades the European Commission has been stimulating the development and application of new sustainable urban mobility planning approaches and innovative solutions through its policies, through the European Structural and Investment Funds and through its research and innovation funding programmes.

Europe has unique and widely respected experience on sustainable urban mobility. The European Commission would like to ensure that this experience is shared with stakeholders across the world.

This booklet presents a compact overview of the main features of the European Union's urban mobility policy, related policies, underlying trends, funding instruments and possibilities for cooperation.

It consists of the following sections:















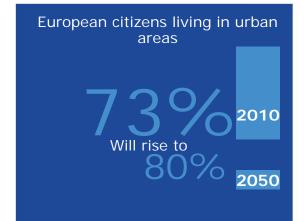
Trends, problems and challenges in urban mobility

In 2010, 73% of European citizens lived in urban areas. It is expected that this percentage will increase to over 80% by 2050. In some countries like Sweden, Belgium, the Netherlands, Denmark, Malta and Luxembourg the urbanization rate will rise to over 90%¹.

Urban areas are the "engine" to economic growth and employment, and the foremost producers of knowledge and innovation. Around 85% of the EU's GDP is generated in European cities². In short, towns and cities are the hubs and drivers of economic activity and welfare.

Urban transport systems are vital to the economic functioning of cities through their provision of accessibility for goods and commuters. Similarly, they are vital to the welfare of the population by providing accessibility for all social activities.

However, due to the extensive economic activity in urban areas, many European cities face several problems related to or caused by transport and traffic. Economic and social transformation has rapidly increased the levels of mobility. The growth of private car use has been accompanied by increased urban sprawl and commuting, whereas the expansion of public transport networks in many cases has not been developed at the same rate.





At the same time transport systems can generate negative external effects.

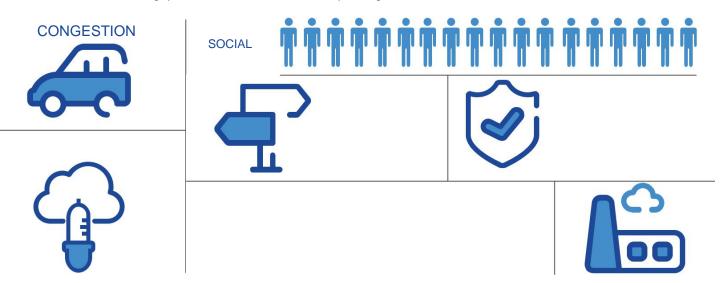
Congestion, air and noise pollution, and road safety are examples of commonly shared problems in European cities. Besides this direct impact, urban transport also affects social development, social inclusion and accessibility for people with reduced mobility. The need for sustainable (in three dimensions: economical, social and environmental) mobility has been receiving increasing attention. European cities face the challenge of how to enhance mobility, ensure accessibility, and create high quality and efficient transport systems while at the same time reducing congestion, pollution and accidents.

¹ United Nations, Department of Economic and Social Affairs, Population Division (2015). World Urbanization Prospects: The 2014 Revision, (ST/ESA/SER.A/366)

² COM(2009)490, Action Plan on Urban Mobility



The key problems related to transport systems are:



On all these issues the EU and other stakeholders have formulated active policies over the past years and for the near future.

Congestion

Congestion in urban environments is a complex phenomenon with many dimensions: demographic, social and economic characteristics, land use patterns, car-ownership, availability of public transport, availability of parking, and urban freight transport and goods delivery. These are all factors that influence the level of congestion. These factors determine where people live and work, where businesses locate, the location of different activities, and how people access these locations. These factors shape activity patterns, which in turn generate a demand for travel. This demand for travel results in traffic on the urban road network. When the volume of car traffic exceeds available capacity, congestion arises.

The average percentage delay in 2013 in percentages compared to the "free" flow" situation in a sample of 58 EU cities ranges from 14% in Malmö (Sweden) to 39% in Palermo (Italy). During peak hours the delays are substantially higher. In cities outside Europe the average delays can be often higher. For example in a sample of 22 Chinese cities these average delays in 2013 were between 23% and 56%; other average delays include cities like Rio de Janeiro 55%, Mexico city 54%, and Sao Paulo 46%³. This suggests that European action on reducing congestion is successful.

The cost of congestion in Europe is still high, estimated at around EUR 130 billion annually⁴, or just over one percent of the EU's GDP.





³ TomTom traffic index 2013

⁴ COM(2011) 144 final Impact Assessment of the White Paper



Social

Accessibility and social inclusion

Accessibility refers to people's ability to reach goods, services and activities, which is the ultimate goal of most transport activity. It is a precondition for people's ability to participate in society as well as for the economic development of cities, regions and countries.

Accessibility can be looked at from two perspectives:

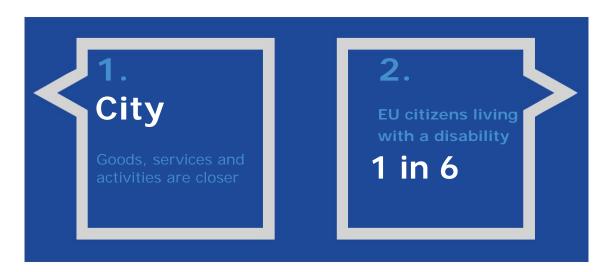
The first perspective is accessibility for people and goods of the urban transport network in the urban area and between local urban transport networks and regional, national and international transport networks, in the sense of "availability".

Generally, accessibility is higher in high-density areas (cities) than in low-density (rural) areas: in urban areas the distances to reach goods, services and activities are shorter, public transport is more frequent and the public transport (PT) network is more dense. However, there is little data available, which can be used to compare levels of accessibility and to show trends.

The second perspective, the main one to be considered, is accessibility of the urban transport system for senior citizens and people with disabilities or reduced mobility.

One in six people in the EU has a disability ranging from mild to severe, preventing around 80 million peole from fully participating in society and the economy because of physical, environmental and perceptional barriers. For people with disabilities, the poverty rate is 70% above average, partly due to limited access to employment. Over one third of people aged 75+ have disabilities that restrict them to some extent, and over 20% have disabilities that restrict them considerably⁵.

The population in most EU countries is aging. Senior citizens, 65+, are expected to account for 24% of the total population by 2020 and 29% by 2050 as opposed to 17% today⁶. Given the correlation between age and disability, the number of people with disabilities will also increase accordingly. Accessible transport for this group is an important precondition for participation in economic, social and political processes.



⁵ COM(2010) 636 final European Disability Strategy 2010-2020: A Renewed Commitment to a Barrier-Free Europe ⁶ SEC(2011) 358 final, Impact Assessment Accompanying document to the White Pape

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The EU therefore supports national activities for improving the accessibility of transport systems for all users. It also promotes adequate consideration to this topic at the local level. The annex to the EU urban mobility package 2013 states that a Sustainable Urban Mobility Plan (SUMP) should seek to contribute to the development of an urban transport system which is accessible and meets the basic mobility needs of all users⁷.

Traffic safety / road traffic accidents

Main causes of road accidents are:







Despite dedicated efforts to reduce road accidents, they still cause around 26,000 deaths annually within the EU. In 2008 external costs related to accidents for the EU plus Norway and Switzerland were estimated to be over EUR 200 billion⁸. Approximately 67% (over 750,000 in absolute figures) of all reported road traffic accidents in the EU take place in urban areas. For road traffic deaths, this is approximately 38% in urban areas.

The majority of fatal or serious road traffic accidents involving vulnerable road users take place within urban areas. In urban areas, 50% of fatalities involve a pedestrian or a cyclist and around two thirds of all pedestrian fatalities occur in EU urban areas. The elderly are particularly over-represented among urban road deaths. Furthermore, the share of road traffic crashes causing serious injury is proportionally higher inside urban areas than elsewhere⁹.

The number of fatalities in urban areas in the EU is still high, but since 2000 has been constantly dropping, from 20.300 in 2000 to 9.700 in 2015. However, urban fatalities still constitute a great part of all road fatalities: 38% in 2015¹⁰.





COM(2013) 913 final, Urban Mobility Package 2013, Annex A Concept For Sustainable Urban Mobility Plans
 CE Delft et al. 2011; "External Costs of Transport in Europe - Update Study for 2008"; Delft September 2011
 Source: European Road Safety Observatory - Care database
 https://ec.europa.eu/transport/facts-fundings/scoreboard_en



Environmental

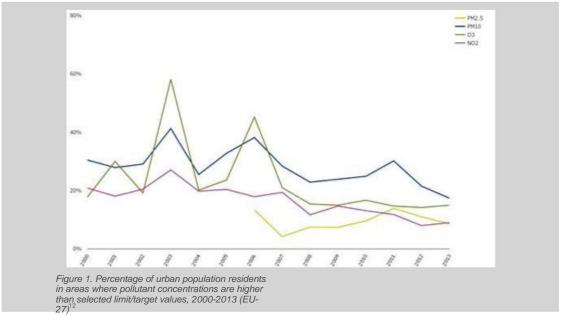
Air quality

Air quality is an important element in ensuring the sustainable development of a city. Transport, industry, power plants, agriculture, households and waste management all contribute to Europe's air pollution. Emissions of the main air pollutants in Europe have declined in recent decades, resulting in generally improved air quality. However, certain sectors have not reduced their emissions enough to meet airquality standards or have even increased emissions of some pollutants. For example, emissions of nitrogen oxides (NOx) from road transport have not decreased sufficiently to meet air-quality standards in many urban areas (Source: EEA Air quality Report 2016; http://www.eea.europa.eu//publications/air-quality-in-europe-2016). Particulate Matter (PM), nitrogen dioxide (NO2) and ground-level ozone (O), are now generally recognised as the three pollutants that most significantly affect human health. They can have adverse effects on both the environment and human health. The International Agency for Research on Cancer (IARC) has classified the particulate matter (PM) in outdoor air pollution as carcinogenic to humans. Therefore much attention is given to the negative effect of urban (car) traffic. The emission of air pollutants in cities is particularly linked to traffic exhaust emissions. The transport sector is the largest contributor to NOX emissions, accounting for 46% of total EU-28 emissions (and 47% of EEA-33 emissions) in 2014. Transport also contributed to 13% and 15% of total PM10 and PM2.5 primary emissions, respectively, in the EU-28 in 2014. (Source EEA Air Quality in Europe Report 2016). Effects on human health of air pollutants in ambient air (See also EEA Air Quality in Europe Report 2014):

- Nitrogen Dioxide: High levels of nitrogen dioxide exposure can lead to coughing and shortness of breath. People who have extensive exposure to NO2 for a long time have a higher risk of respiratory disease.
- PM2.5 and PM10: Particulate matter that is small enough can enter the lungs and cause health problems.
- Ozone: Ozone near the ground can cause a number of health problems. It can irritate the respiratory system, aggravate asthma and chronic lung diseases and may cause permanent lung damage.

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Noise

Noise pollution is caused by traffic, construction, industry and some recreational activities. The external costs of noise in the EU amount to at least 0.35% of its GDP and are mostly caused by road traffic This is equivalent to external costs of over 40 billion € per year¹³. Noise has direct as well as indirect health effects, and some thousands of lives are lost each year ¹⁴, mostly due to road traffic. Urbanization, a growing demand for motorised transport and inefficient urban planning are the main driving forces behind environmental noise exposure.

11

¹¹ Directive 2008/50/EC on ambient air quality and cleaner air for Europe

¹² Source: EEA, based on Urban Audit

¹³ Study To Support An Impact Assessment Of The Urban Mobility Package Activity 31 Sustainable Urban Mobility Plans, DG MOVE, 2013, October 2013

¹⁴ Disability Adjusted Life Years is a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death.



Often an Lden (day-evening-night noise indicator) value of 55dB is referred to as a reasonable target value. More than 100 million inhabitants in the urban agglomerations of over 100,000 people experience an average daily Lden noise level above 55 dB¹⁵.

Energy consumption and CO₂ emissions

The EU aims to reduce greenhouse gas emissions to 80-95% lower than the 1990 levels by 2050 and significantly reduce it's transport system's dependence on oil-based fuels without sacrificing its efficiency and compromising mobility¹⁶.

Energy consumption and CO₂ emissions from urban transport are caused by each km driven by motorised vehicles. The energy consumption and emission per km depends on the efficiency of the vehicles. From 1990 to 2010, energy efficiency in the EU transport sector increased by around 15%. This is mainly because of efficiency improvements in cars, due to measures related to new cars that have been enforced since 2007 (EU labelling for new cars and national fiscal measures¹⁷).

The steady increase in both passenger and freight traffic in the EU between 1990 and 2007 contributed to the constantly increasing energy consumption in the transport sector as a whole.

The energy consumption of the transport sector has, however, been decreasing quite rapidly since 2007. Around 40% of this reduction is due to the economic recession, with a decrease in freight traffic and the stability of passenger traffic. Almost 60% is due to improvements in energy efficiency, mostly for passenger cars. As a result of these trends, transport energy consumption in 2013 was almost the same as in 2000 at the FU level 18.

CO₂ emissions from road freight transport were 33% higher in 2012 than in 1990 and made up 35% of total transport emissions. Emissions from cars have been decreasing since 2000 because of the significant reduction in the specific emissions of new cars.

The transport sector therefore represented an increasing share of total CO₂ emissions of final consumers: 43% in 2012 compared to 32% in 1990¹⁹.

In 2016 the European Commission presented its strategy on lowemission mobility²⁰, setting the course for the development of EU-wide measures on low- and zero-emission vehicles and alternative lowemissions fuels.

The strategy sets clear and fair guiding principles to member states to prepare for the future, and ensure that Europe stays competitive and will be able to respond to the increasing mobility needs of people and goods.

¹⁵ Study To Support An Impact Assessment Of The Urban Mobility Package Activity 31 Sustainable Urban

Mobility Plans, DG MOVE, 2013, October 2013

16 COM(2011) 112 final, A Roadmap for moving to a competitive low carbon economy in 2050

17 ADEME, Energy Efficiency Trends in the EU – Lessons from the Odyssee-Mure project

18 Monitoring of Energy Efficiency Trends and policies in the EU, An Analysis Based on the ODYSSEE and MURE Databases, September 2015, ODYSSEE-MURE

¹⁹ Monitoring of Energy Efficiency Trends and policies in the EU, An Analysis Based on the ODYSSEE and MURE Databases, September 2015, ODYSSEE-MURE

²⁰ A European Strategy for Low-Emission Mobility, {SWD(2016) 244 final}



The main elements of the strategy include:

- increasing the efficiency of the transport system by making the most of digital technologies, smart pricing and further encouraging the shift to lower emission transport modes;
- speeding up the deployment of low-emission alternative energy for transport, such as advanced biofuels, renewable electricity and renewable synthetic fuels and removing obstacles to the electrification of transport;
- moving towards zero-emission vehicles. While further improvements to the internal combustion engine will be needed, Europe needs to accelerate the transition towards low- and zero-emission vehicles.





EU policies from the Green Paper "Towards a new culture for urban mobility", 2007 to the Paris agreement 2015

The development of the current EU urban transport policy has a long history: challenges and options for intervention in urban transport are discussed in a number of EU policy papers. In this section a brief overview is presented starting with the Green Paper "Towards a new culture for urban mobility" (2007) setting a new European agenda for urban mobility to the Paris agreement (2015).

Green Paper "Towards a new culture for urban mobility", 2007

With the Green Paper "Towards a new culture for urban mobility" (adopted in 2007) a new European agenda for urban mobility was set, aiming at stimulating discussion on urban mobility at the European level. All relevant stakeholders were invited to participate in a consultation process and debate. Best practice on sustainable urban mobility was shared across the European Union to search for appropriate solutions.

Five main challenges were defined:

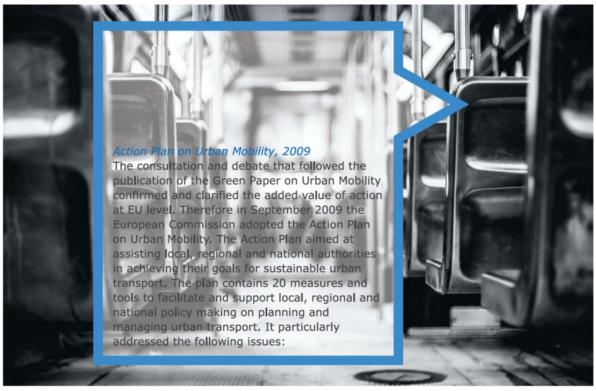
























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White Paper "Roadmap to a Single European Transport Area", 201121

The 2011 Transport White Paper presented a vision for a competitive and sustainable transport system including clean urban transport and commuting. The European Commission adopted a road map of 40 concrete initiatives for the next decade to build a competitive transport system that will increase mobility. At the same time the proposals will dramatically reduce Europe's dependence on imported oil and cut transport carbon emissions by 60% by 2050. This is why all EU urban transport policies will contribute to achieving the two specific urban goals of the 2011 Transport White Paper: halving the use of conventionally-fuelled cars in cities by 2030 and achieving essentially CO2 free logistics in major urban centres by 2030.

Urban Mobility Package 2013²²

In December 2013, the Commission adopted the Urban Mobility Package, setting out proposals for relevant action at local, Member State and EU level. It recognises that urban mobility is primarily a responsibility of the relevant actors at local level. They are encouraged to develop new, integrated strategies for sustainable urban mobility as well as transport plans that can underpin their successful implementation. In this context the Commission put forward a concept for Sustainable Urban Mobility Plans (SUMPs) and also focussed on the following areas: city logistics, access regulation, urban ITS and urban safety. The Urban Mobility Package also reflects the important role that Member States play in providing the right framework conditions for local action, as well as for ensuring that action across the Union and across the different levels of government within their territories is coordinated, complementary and mutually reinforcing. Therefore, the Commission invites Member States to conduct an assessment of the current and future performance of urban transport systems in their urban areas; to develop a (national) approach in the field of urban mobility; to review the set of current tools and instruments that are available for local actors and to complement and modify this set where appropriate.

Paris agreement 2015

At the Paris climate conference (COP21) in December 2015, 195 countries adopted the first-ever universal, legally-binding global climate deal. The agreement sets out a global action plan to put the world on track to avoid dangerous climate change by limiting global warming to well below 2°C. The agreement recognises the role of non-Party stakeholders in addressing climate change, including cities, other subnational authorities, civil society, the private sector and others. They are invited to:

- · scale up their efforts and support actions to reduce emissions;
- build resilience and decrease vulnerability to the adverse effects of climate change;
- · uphold and promote regional and international cooperation.

The EU legislation and policies page on the Eltis website provides detailed information on current EU policies and funding sources²³.

 $^{^{21}\,}http://ec.europa.eu/transport/themes/strategies/2011_white_paper_en.htm$

²² http://ec.europa.eu/transport/themes/urban/urban_mobility/ump_en.htm

²³ See also: http://www.eltis.org/discover/legislation-polices



Urban mobility and related policies

Urban mobility is closely related to other EU policies such as energy, climate change, air quality, economy, social equity and accessibility, innovation, IT deployment and smart cities. This section provides a concise overview of these related policies.

Energy

Being linked to climate change, and facing the decreasing availability of fossil fuels, energy is not a topic that stands on its own. Furthermore, due to the relation with global climate change and imports from outside the EU, energy is an important topic on the international agenda of the European Commission.

The first principles for a European energy policy were laid down in the 2006 green paper entitled "A European Strategy for Sustainable, Competitive and Secure Energy²⁴". As the name suggests, the paper focussed on the ability of the EU to ensure sustainable, competitive and secure energy supplies. It addressed specific topics such as a growing dependence on energy imports, volatile oil and gas prices, climate change, increasing demand, and obstacles to a fully competitive internal energy market.

In 2007 the European Commission proposed a set of measures, aimed at committing the EU to a low energy consumption economy, in the "An energy policy for Europe" communication²⁵. Besides aiming at a sustainable, competitive and secure supply of energy, a smooth functioning of the internal market and the EU's ability to speak with a single voice on the international stage, the communication also describes objectives for the reduction in greenhouse gas emissions caused by the production or consumption of energy. These objectives were further detailed and expanded in the 2010 Communication from the EU Commission "Energy 2020: A strategy for competitive, sustainable and secure energy". A target was set to reach 20% of energy savings by 2020 (compared to 1990 levels). It explicitly addresses the transport and building sector, for which it defines five necessary measures, of which two are directly related to transport policies: improvement of the sustainability of transport and reduction of oil dependence.

In 2014 EU Member States agreed on a new 2030 Framework for climate and energy (COM(2014) 15 final), including EU-wide targets and policy objectives for the period between 2020 and 2030. Targets for 2030 are a 40% cut in greenhouse gas emissions compared to 1990 levels, at least a 27% share of renewable energy consumption and at least 27% energy savings compared with the business-as-usual scenario.

To meet the targets, the European Commission proposed:

- · A reformed EU emissions trading scheme (ETS)
- · New indicators for the competitiveness and security of the energy system, such as price differences with major trading partners, diversification of supply, and interconnection capacity between EU countries
- · First ideas on a new governance system based on national plans for competitive, secure, and sustainable energy.

 $^{^{24}}$ COM(2006) 105 final, Green Paper, A European Strategy for Sustainable, Competitive and Secure Energy 25 COM(2007) 1 final, An Energy Policy For Europe



Climate change

Following the Kyoto protocol from 1997 and the European Climate Change Programme (ECCP) in 2000, the European Union formulated an extensive climate change strategy advocating practical actions to prevent global temperature rise. In the 2005 Communication entitled "Winning the battle against global climate change"; the Commission laid out the elements that should be included in the EU strategy with regard to climate change. The overall aim of the strategy should, according to the Communication, limit the temperature rise by the year 2100 to a maximum of 2°Celsius globally, compared to 1990 temperatures (pre-industrial level)²⁶.

Achieving this objective requires the reduction of greenhouse gases, as specified in the 2007 Communication "Limiting Global Climate Change to 2° Celsius - The way ahead for 2020 and beyond"²⁷. In this Communication, the EU commits itself to immediate action aimed at a 20% decrease by 2020. This target was backed by the Council and the Member States and formalised in 2009 by a Decision of the European Parliament and the Council (406/2009/EC)²⁸.

EU leaders in 2007 also made a conditional commitment to scale up the EU's GHG emissions reduction for 2020 from 20% to 30% if other developed countries commit themselves to comparable emission reductions and if economically more advanced developing countries contribute adequately to a global effort according to their responsibilities and respective capabilities. These conditions have not yet been met and therefore the Communication does not currently propose that the EU should move to a 30% target.

In July 2016 the European Commission adopted its Strategy for low-emission mobility (COM(2016) 501 final) which should make an important contribution towards modernising the EU economy, helping to reduce emissions from the transport sector and meeting the EU's commitments under the Paris agreement.

The ambition of the EU as stated in this strategy is that "by midcentury greenhouse gas emissions from transport will need to be at least 60% lower than in 1990 and be firmly on the path towards zero".

Community's greenhouse gas emission reduction commitments up to 2020

²⁶ COM(2005) 35 final, Winning the Battle Against Global Climate Change

²⁷ COM(2007) 2 final, Limiting Global Climate Change to 2 degrees Celsius, The way ahead for 2020 and beyond
²⁸ DECISION No 406/2009/EC on the effort of Member States to reduce their greenhouse gas emissions to meet the



Transport

The 2007 communication also discusses several specific sectors including the transport sector. The Commission asked the Council and Parliament to adopt proposals such as to include aviation in the EU Emissions Trading System (ETS) and to link taxes on tourism vehicles to their $\rm CO_2$ emissions. Furthermore, the Communication stresses the importance of mobilising funds for research on the environment, energy and transport.

In later European transport communications, programmes and policies, climate change is often referred to as (one of) the main reason(s) for taking action. Examples are the 2010 White paper on European transport and related EU funded programmes on enhancing multimodality and energy efficient urban transport.

Air quality

Clean air is essential for our health, our environment, even our economy. And yet, poor air quality remains the number one environmental cause of premature deaths: estimates point to more than 400,000 premature deaths in the EU each year as a consequence of poor air quality. This is often particularly pronounced in our urban areas, where on average nine out of ten people are exposed to concentrations of at least one air pollutant above the recommendations of the World Health Organisation.

To counter this, the EU has set itself the goal to achieve levels of air quality that do not give rise to significant negative impacts on, and risks to, human health and the environment. Since the early 1970s, the EU has been tackling air pollution by reducing national emissions of harmful substances into the air (via Directive 2001/81/EC), by improving fuel quality, and by reducing emissions at source from industry, transport and energy – as well as setting air quality standards via two air quality Directives.

The aim of these two Directives (Directives 2008/50/EC and 2004/107/EC) is twofold: reducing pollution to levels which minimise harmful effects on human health and on the environment and improving information to the public on the risks involved. These Directives require Member States to assess and manage the air quality, including thresholds for a range of pollutants. Furthermore, Member States are to publish data on all pollutants and implement penalties for infringements.

EU air policy has rendered some success, with emissions of air pollutants declining over the past decades. It has brought about significant reductions in concentrations of harmful pollutants such as particulate matter, sulphur dioxide (the main cause of acid rain), lead, nitrogen oxides, carbon monoxide and benzene. Still, major problems remain: in several Member States air quality standards continue to be exceeded. For example, more than 130 cities across the EU report nitrogen dioxide concentrations above limit values.

Therefore the EC adopted in 2013 the Clean Air Policy Package²⁹. This package was the result of an in-depth review of the EU's air quality policy.

²⁹ See also: http://ec.europa.eu/environment/air/clean_air_policy.htm

Measures supporting sustainable urban mobility were seen as important to help target localised transport problems. This Clean Air Policy package includes:

- A new Clean Air Programme for Europe with measures to ensure that existing air quality standards are met as soon as possible, and new air pollution reduction objectives are set for the period up to 2030.
- Support measures to help cut air pollution, with a focus on improving air quality in cities, supporting research and innovation, and promoting international cooperation

 including setting up a bespoke Clean Air Forum.
- A revised National Emission Ceilings Directive with stricter national emission ceilings for five main pollutants: particulate matter, sulphur dioxide, nitrogen oxides, volatile organic compounds, and ammonia (Directive 2016/2284/EU).
- A new Directive to reduce pollution from medium-sized combustion installations, such as energy plants for street blocks or large buildings, and small industry installations (Directive 2015/2193/EU).

Full implementation of this package is expected to result in a reduction of the current number of premature deaths in the EU caused by air pollution by about half by 2030.



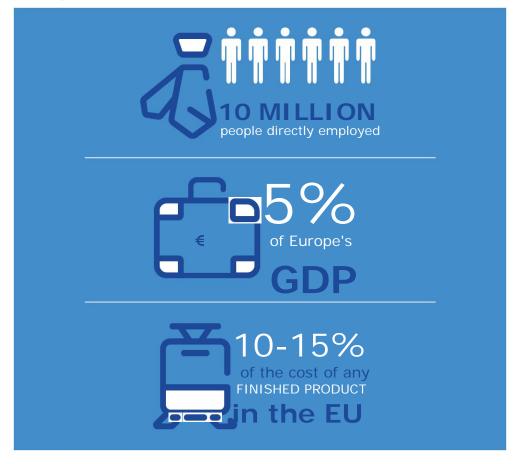
Economy

Transport contributes strongly to the economy of the European Union: it directly employs around 10 million people and accounts for some five percent of Europe's GDP. Furthermore, logistics, such as transport and storage, account on average for 10-15% of the cost of any finished product in the EU³⁰. Within the EU, economic policy is mainly a national responsibility: the role of the EC is mainly one of governance and coordination.

Coordination of economic policies is performed at EU level by monitoring economic developments in all member states, which also functions as a control mechanism to see if national policies are consistent with the EU roadmap for growth and jobs, as described in the Guidelines³¹. The impact of transport on EU economic growth and jobs is significant: costs for transport of goods and services account on average for 13% of household spending within the EU. The contribution of transport to the greenhouse gases emitted also links to economic growth: shifting towards an environmentally friendly and decarbonised economy requires major shifts in the transport sector³².

Social equity and accessibility

The majority of passenger trips within the EU are made by car. Allthough not everybody is able to travel by car nor would choose to do so. It's neither desirable nor efficient to have the car as the dominant means of transport in densely populated areas, where road and parking capacity is limited and external effects are substantial.



³⁰ http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/index_en.htm

Thtp://ec.europa.eu/europezzzzzeuropezzzzzeuroana. Tom(2006) 336 final, Freight Transport Logistics in Europe – the key to sustainable mobility thtp://ec.europa.eu/transport/strategies/facts-and-figures/all-themes/index_en.htm



Passenger rights

In more recent EU policy documents, there is increased emphasis on the protection of passenger rights across all modes of transport through EU passenger rights legislation and the quality of access that people and businesses have to the urban mobility system. The European Commission's Action Plan on Urban Mobility reiterates, "High quality and affordable public transport is the backbone of a sustainable urban transport system. Reliability, information, safety and ease of access are vital for attractive bus, metro, tram and trolleybus services, rail or ships. Ensuring a high level of protection of passenger rights, including of passengers with reduced mobility, is also high on the Commission's agenda^{34 35}".

The Sustainable Urban Mobility Plan (SUMP) approach aims to include all relevant stakeholders, thereby creating sustainable, affordable, accessible and frequent transport for everyone.

³³ Green Paper - Towards a new culture for urban mobility {SEC(2007) 1209},

http://ec.europa.eu/transport/themes/urban/ urban_mobility/green_paper/index_en.htm

Brussels, 30.9.2009 COM(2009) 490 final, Action Plan on Urban Mobility
 Air Transport: Regulation (EC) 1107/2006 concerning the rights of disabled persons and persons with reduced mobility when travelling by air, OJ L204/1 of 26.7.2006

Rail Transport: Regulation (EC) 1371/2007 on rail passengers' rights and obligations, OJ L315/14 of 3.12.2007 Waterborne Transport: Regulation (EU) 1177/2010 concerning the rights of passengers when travelling by sea and inland waterway, OJ L334/1 of

Road Transport (bus and coach): Regulation (EU) 181/2011 concerning the rights of passengers in bus and coach transport, OJ L55/1 of 28.2.2011



Innovation, IT deployment and Smart Cities³⁶

Cities are the major source of economic activity and innovation. Smart technologies and services at the intersection of urban transport, energy and ICT offer vast prospects and business opportunities to make urban environments cleaner and healthier to live in, to render them more sustainable and to foster city competitiveness, economic growth and employment.

In June 2011, the European Commission launched the Smart Cities & Communities Industrial Initiative. The initiative aims at accelerating the transition towards a low-carbon economy by investing in clean, efficient and low-carbon technologies. The initiative is a supportive action to the 20/20/20 climate action goals of the EU and contributes to economic growth as well as providing new jobs. At the time of introduction, the initiative focussed on transport and energy. Funding was provided to city initiatives under the EU research programme which had a budget of €75 million.

In July 2012, the ICT sector was included in the successor of the initiative, the European Innovation Partnership (EIP) for Smart Cities and Communities collaboration. A second call for proposals was launched that same month under the European Research programme, with a total budget of €375 million. The EIP aims to overcome bottlenecks faced in creating smart cities, by co-funding demonstration projects in the field of ICT, energy management and transport management. The funding is meant for innovative solutions to the major environmental, societal and health challenges faced by European cities. The EIP looks to establish strategic partnerships between industry and European cities to develop the urban systems and infrastructures of tomorrow.

Non-EU partners can join initiatives and consortia that apply for funding, but an organisation from an EU Member State has to be in charge.



For more information please visit

³⁶ See also: http://eu-smartcities.eu/



Supportive EU actions for sustainable urban mobility

Introduction

For decades the European Commission has actively supported and initiated cooperative projects in the field of sustainable urban mobility ranging from research, development of tools, demonstrations, training, dissemination and other means of knowledge sharing. These activities were carried out within the EU research programme which started in 1984 and organized an increasing number of activities. Throughout its duration, this programme showed a continuous increase in the available budget, from several hundred million euros up to seven billion euros. Many topics were covered within the programme. Urban Mobility was one of these topics, which gained a more prominent role as the programme progressed. It was followed by the Horizon 2020 programme which runs from 2014 till 2020 (more about this in the next chapter).

Many of the activities funded by the Commission in the last two decades substantially contributed to the development of innovative approaches, new solutions and in-depth knowledge of urban mobility as well as the take up of sustainable urban mobility policies and solutions in many cities across Europe.

Two important urban mobility initiatives which started under the framework programme are *Civitas* and *Eltis* The urban mobility observatory. Many other research, innovation, demonstration and dissemination projects (focusing on one or more urban mobility topics) were also funded over the last two decades by the EU framework programme for research and technological development.



CIVITAS37

CIVITAS (City, Vitality and Sustainability) -funded by the European Union's research and development programmes- was launched in 2002 to redefine transport measures and policies in order to create cleaner, better transport in cities. More specifically, CIVITAS has helped to introduce numerous innovations and measures that have already made transport more eco-friendly in over 60 European metropolitan areas, dubbed "demonstration cities". Thanks to an EU-funded investment of more than EUR 200 million, the project has guided cities to introduce improvements in four phases, each building on the success of the previous one. Examples include a public transport ticketing system in Tallinn, Estonia, a 100% clean bus fleet in Toulouse, France, waterborne goods transport in Bremen, Germany and a new traffic control system in Bologna, Italy. Over the last ten years CIVITAS has managed to test over 800 measures and urban transport solutions, supported by an intensive exchange of good practice in the field. This project is a key EU-project, creating more opportunities for other cities to follow.

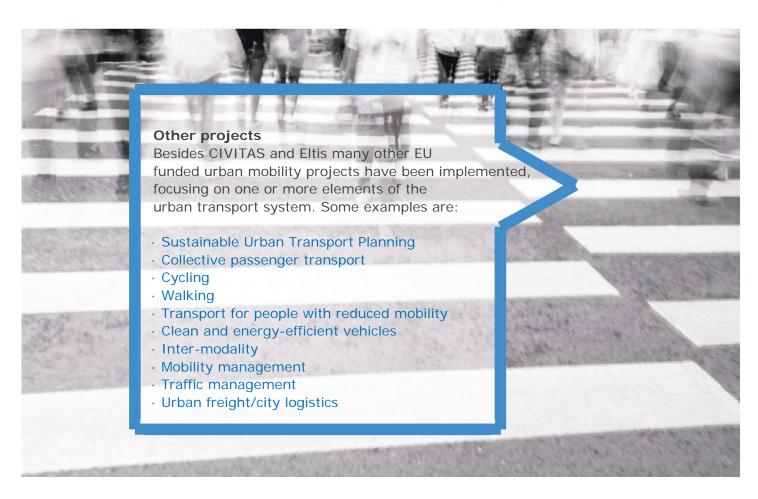
³⁷ See also: http://www.civitas.eu/



Eltis The urban mobility observatory³⁸

The urban mobility portal Eltis was launched in 2000. This portal developed into a central platform for all urban mobility-related issues. Eltis facilitates the exchange of information, knowledge and experience in the field of sustainable urban mobility in Europe. It targets individuals working in transport and related disciplines, including urban and regional development, health, energy and the environmental sciences. Eltis is now Europe's main observatory on urban mobility. Eltis provides the information, good practice, tools and communication channels needed to help cities adopt models of sustainable urban mobility. The dedicated MOBILITY PLANS section offers a hub of information on how to develop and implement Sustainable Urban Mobility Plans (SUMPs) as the need grows for more sustainable and integrated planning processes in Europe.





³⁸ See also: http://www.eltis.org/



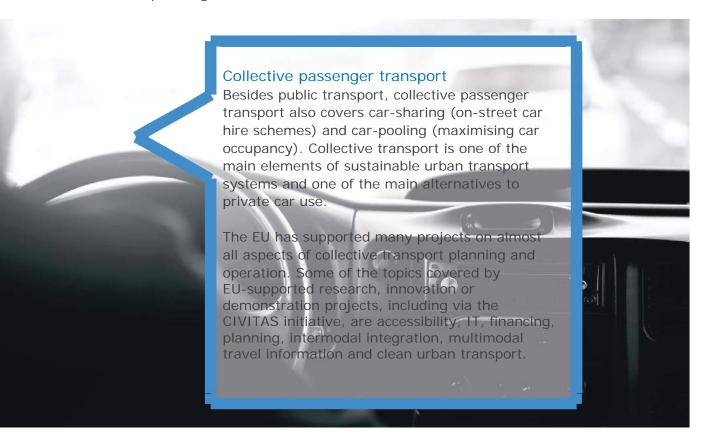
Sustainable urban mobility planning

New approaches to transport in mobility planning are emerging as local authorities seek to develop integrated strategies that can stimulate a shift towards cleaner and more sustainable transport modes, such as walking, cycling, public transport, and new patterns for car use and car ownership. Many cities across the EU have experimented with innovative solutions for urban mobility and shared their experience through various city networks.

The Commission has actively promoted the concept of sustainable urban mobility planning for several years. EU-funded initiatives have brought together stakeholders and experts to analyse current approaches, discuss problem areas and identify best planning practices.

With Commission support, guidelines for the development and implementation of Sustainable Urban Mobility Plans were developed³⁹. These provide local authorities with specific suggestions on how to implement strategies for urban mobility that build on a thorough analysis of the current situation, as well as a clear vision for a sustainable development of their urban area.

There is much interest in this concept and many cities within and outside Europe are developing or are planning to develop a sustainable urban mobility plan following the current guidelines. The European approach is currently viewed as state of the art in urban mobility planning.



³⁹ http://ec.europa.eu/transport/themes/urban/doc/ump/com(2013)913-annex_en.pdf



Cycling and walking

Cycling and walking are clean and efficient modes of transportation. They are particularly suited for relatively short distance trips within urban areas. Cycling and walking provide numerous benefits, such as health benefits; they do not produce air or noise pollution, and help to reduce congestion.

Many cycling and walking projects have been supported within the EU framework programme for research and technological development, and specifically the CIVITAS demonstration initiative. These range from the planning of cycling and pedestrian infrastructure, bikesharing systems, audit schemes to campaigns aimed at increasing bicycle use or an accessible pedestrian infrastructure as a precondition for the use of public transport by disabled people.



Clean and energy-efficient vehicles

Clean and energy-efficient vehicles play an important role in achieving the EU policy objectives of reducing energy consumption, CO_2 emissions, and pollutants.

Clean Transport Systems can fully meet the energy demand of the transport sector. Alternative low-carbon fuels for transport propulsion should gradually substitute fossil fuels in the long term.

A large number of policy measures have been adopted at EU, national and regional level in order to support the development and supply of clean vehicles, for example through regulatory initiatives and funding for research, innovation and demonstration.

The EU Directive on the Promotion of Clean and Energy-Efficient Road Transport Vehicles (2009/33/EC)⁴⁰ requires that the environmental impact linked to the operation of vehicles over their lifetime is taken into account in public procurement purchase decisions. This Directive is expected to accelerate the broad market introduction of clean and energy-efficient road transport. Increased sales will help reduce costs through economies of scale, resulting in the progressive improvement in the energy and environmental performance of the whole vehicle fleet. The European Commission will propose a revision in 2017.

⁴⁰ Directive 2009/33/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009 on the promotion of clean and energy-efficient road transport vehicles



With the EU Directive on the deployment of alternative fuels infrastructure (2014/94/EU)⁴¹, Member States have to plan the deployment of alternative fuels infrastructure for alternative fuels such as electricity, hydrogen and natural gas to ensure circulation of alternative fuel vehicles in the EU, as well as common EU-wide standards for related equipment and user information. Access to liquefied natural gas (LNG) for inland barges and maritime ships will provide a realistic option to meet challenges on lower emissions, in particular stricter sulphur emission limits in sensitive areas.

There are many EU supported projects focusing for example, on the development, promotion or demonstration of clean vehicle technologies, providing a wealth of experience and knowledge and substantially contributing to innovation and the uptake of clean vehicle technologies.



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 $^{^{41}}$ DIRECTIVE 2014/94/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 22 October 2014 on the deployment of alternative fuels infrastructure

⁴² See also: http://www.nodes-interchanges.eu or http://www.closer-project.eu/



Mobility management

Mobility management aims to promote the use of sustainable transport modes. Mobility management consists of "soft" measures like awareness-raising, information, communication and marketing campaigns. Through EU funded projects like MAX⁴³ (Successful Travel Awareness Campaigns and Mobility Management Strategies) and demonstration projects within the CIVITAS initiative, the EU actively supported the development and uptake of this relatively low cost measure instigated by cities and organisations.



Traffic and demand management

Traffic and demand management refers to measures to improve the flow and efficiency of traffic such as parking management, reallocating urban space in favour of sustainable modes (including shared space), access controls, road pricing, traffic guidance and signal control strategies. On all of these aspects there is much expertise in the EU when it comes to planning, technical solutions and implementation. Intelligent Transportation Systems (ITS)⁴⁴ are increasingly deployed in urban areas⁴⁵. ITS services range from traffic control through public transport information/integrated ticketing to travel demand management. In the future, connected, cooperative and automated mobility will play a big role in enhancing traffic management in urban areas. EU supported projects like CONDUITES (intelligent transportation systems) and NICHES+ (innovative urban transport concepts) are worth mentioning in this respect as well as several CIVITAS demonstration projects and many examples of best practice and tools which can be found on Eltis The urban mobility observatory.

Transport for people with reduced mobility

Planners, policy makers and transport providers need to ensure accessibility for passengers with specific needs, such as people with disabilities or reduced mobility or senior citizens. This may include measures to ensure the accessibility of public transport or specific services, such as "dial-a-ride". Through EU funded projects like ACCESS2ALL (mobility schemes ensuring accessibility of public transport for all users), MEDIATE (methodology for describing the accessibility of transport in Europe), CIVITAS demonstration projects and the best practices and tools available on Eltis The urban mobility observatory, substantial knowledge and expertise has been developed, which can be directly applied by cities across Europe and abroad. People with disabilities or reduced mobility are also entitled to assistance to use transport under EU passenger rights legislation.

 $^{^{43}\,}http://www.epomm.eu/old_website/index.phtml?ID=2182\&id=2183,\%20Civitas,\%202012$

⁴⁴ See also: http://ec.europa.eu/transport/themes/its/road/action_plan_en

⁴⁵ See also: https://ec.europa.eu/transport/themes/its/road/action_plan/its_for_urban_areas_en



Urban freight / city logistics

Urban logistics are essential to the efficient functioning of cities. This comprises transportation methods, the handling and storage of goods, the management of inventory, waste and returns, as well as home delivery services. The European Commission substantially contributes to the development of knowledge, expertise and uptake of sustainable urban logistics concepts.

SMARTFUSION (Smart Urban Freight Solutions), TURBLOG-WW (Transferability of Urban Logistics Concepts and Practices from a World Wide Perspective), BESTFACT (Best Practice Factory for Freight Transport)⁴⁶, CIVITAS demonstration projects, and the best practice and tools to be found via Eltis The urban mobility observatory are some examples of this.



⁴⁶ See also http://www.smartfusion.eu/; http://www.turblog.eu/; http://www.bestfact.net/



EU funding and possibilities for cooperation

There are several programmes and funding schemes that allow non-EU parties to cooperate in EU-funded projects and acquire funding for urban mobility projects and initiatives.

This section provides a short overview of some of these initiatives, including possibilities for cooperation on urban transport related themes. For more detailed information on funding of urban mobility projects and initiatives, please visit Eltis The urban mobility observatory (www.eltis.org) or submit questions related to funding to the Eltis Helpdesk.

Funding and cooperation options for non-EU stakeholders are provided by programmes managed by:

- The European Commission: Directorate-General for International Cooperation and Development (DG DEVCO) and Directorate-General for Neighbourhood and Enlargement Negotiations (DG NEAR)
- · The European Investment Bank (EIB)
- · The European Bank for Reconstruction and Development (EBRD)

Furthermore, there are several specific funding schemes for which non-EU stakeholders are eligible, such as the Horizon2020 programme.

EU Framework Programme for Research and Innovation:

Horizon 2020⁴⁷

The Horizon 2020 programme is the largest EU research and innovation programme, with total funding of nearly €80 billion from 2014 to 2020. It is part of the Innovation Union, the European strategy to create an innovation-friendly environment that makes it easier for innovations to be turned into products and services. The Horizon 2020 programme aims to support economic growth from research and innovation, with an emphasis on three pillars: excellent science, industrial leadership and tackling societal challenges. The objective of the programme "is to ensure Europe produces world-class science, removes barriers to innovation and makes it easier for the public and private sectors to work together in delivering innovation".

Organisations (public, private, NGOs etc.) based in non-EU countries can also participate in the Horizon 2020 programme, and this commonly happens when they join EU-based consortia. For the sections of the programme flagged as being particularly suitable for international cooperation, consortia are encouraged to include third country partners. Participants from third countries however, are not always automatically eligible for funding. For specific rules on third country participation, please refer to the Guide to Participation by non-EU countries⁴⁸. Parties seeking partnership are invited to seek contact with partner search services, such as the National Contact Points or entities like *CORDIS*⁴⁹. For questions with regard to urban mobility, the Eltis Helpdesk⁵⁰ can also be contacted.

⁴⁷ See also: https://ec.europa.eu/programmes/horizon2020/

⁴⁸ See also: http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/3cpart/h2020-hi-3cpart_en.pdf

⁴⁹ See also: http://cordis.europa.eu/ (CORDIS: the European Commission's public repository and portal to disseminate information on all EU-funded research projects and their results).

⁵⁰ See also: www.eltis.org



External cooperation

Directorate-General for International Cooperation and Development: EuropeAid⁵¹

The role of *DG Devco*, known as *EuropeAid*, is to design the EU's development policies and deliver aid throughout the world. Responsibility for implementing the funds lies with the DG's headquarters in Brussels, or with the EU delegations and representation offices⁵²: EU representations in partner countries. EU delegations and representation offices (about 140 in total) can be found all over the world and are grouped by the following regions:

- · Africa, Caribbean and the Pacific (e.g. South Africa, Malawi and Tahiti)
- · Asia & Central Asia
- Latin America
- · The Gulf Region
- · EU neighbourhood and other Non-EU European Countries

EuropeAid also has several worldwide thematic instruments and programmes, such as the nuclear safety cooperation instrument and the migration and asylum programme. The reservation of funds for regional and country-based external cooperation programmes and for the implementation of thematic programmes is based on Annual Action Programmes (AAPs). These specify the objectives, the fields of intervention, the expected results, the management procedures and the total amount of financing. The grants which are awarded on an annual basis are identified through Annual Work Programmes for Grants (AWP). Topics eligible for grant support can be found on EuropeAid's "calls for proposal & procurement notices" webpage⁵³.

Directorate-General for Neighbourhood and Enlargement Negotiations (DG NEAR)⁵⁴

Aside from its development funds, the EU manages the Instrument for Pre-accession Assistance (IPA) to support reforms in the "enlargement countries" with financial and technical assistance⁵⁵. For other neighbouring countries, the European Neighbourhood Instrument (ENI) covering the period 2014-2020 is the main financial instrument for implementing the European Neighbourhood Policy (ENP). The ENI provides the bulk of EU funding to the ENP partner countries in different areas, including transport.



⁵¹ See also: http://ec.europa.eu/europeaid/

⁵² See also https://eeas.europa.eu/headquarters/headquarters-homepage/area/geo_en

⁵³ See also: https://webgate.ec.europa.eu/europeaid/online-services/

⁵⁴ See also: https://ec.europa.eu/neighbourhood-enlargement/

⁵⁵ See also: https://ec.europa.eu/neighbourhood-enlargement/instruments/overview_en



European Investment Bank (EIB)⁵⁶

The EIB supports the EU's action outside the EU mainly through loans. Although mainly active within the EU, 10% of the bank's loans go to projects outside the European Union. Lending is managed by means of external mandates for activities in different regions of the world:

· Enlargement countries:

Candidate and potential candidate countries to become members of the EU in the Western Balkans, as well as Turkey

- European Free Trade Association countries:
 Norway, Iceland, Liechtenstein (also part of the European Economic Area) and Switzerland
- Neighbouring countries:
 Countries adjacent to the EU in the Southern Mediterranean
 basin (including Maghreb and Middle Eastern countries) to the
 eastern borders of the EU
- · Central Asia:

Countries include Kazakhstan, Tajikistan and Kyrgyzstan

- · Development and cooperation countries:
 - Africa, the Caribbean and the Pacific (e.g. South Africa, Malawi and Tahiti)
 - Asia and Latin America (ALA): lending is currently managed under the ALA IV mandate of the EIB (for countries such as China and Brazil)

For Asia and Latin American countries, the EIB gives priority to the following type of project:

- Climate change mitigation and adaptation (e.g. renewable energy, energy efficiency, urban transport and other projects that reduce CO₂ emissions);
- The development of a social and economic infrastructure, including water and sanitation;
- · Local private sector development, in particular support to SMEs.

⁵⁶ See also: http://www.eib.org/





The European Bank for Reconstruction and Development (EBRD)⁵⁷

The EBRD is an international financial institution that invests in projects, engages in policy dialogue, and provides technical advice that builds open and democratic market economies. The bank mainly invests in and cooperates with private sector/commercial companies, providing project financing for the financial sector and the real economy, including new ventures and also investments.

Ownership of the EBRD is spread across 65 countries and two intergovernmental institutions: the European Union and the European Investment Bank. In order to promote its goals, the EBRD maintains close political dialogue with governments, authorities and representatives of civil society, and cooperates with international organisations such as the OECD, the IMF, the World Bank and UN agencies.

Apart from EU funding, there are multiple other possibilities for third countries and cities to acquire funding, via organisations like the World Bank, the Asian Development Bank and the Inter-American Development Bank. Each of these has specific programmes in place for urban mobility, or related topics such as transport, sustainability and urban development. For more information please visit these organisations' websites (to be found in the following section: sources for further information).

⁵⁷ See also: http://www.ebrd.com/



Sources for further information

EU Directorates General (DG)

DIRECTORATE GENERAL	WEBSITE
DG MOVE (Mobility and Transport)	ec.europa.eu/transport/
DG CLIMA (Climate Action)	ec.europa.eu/clima/
DG DEVCO - EuropeAid	ec.europa.eu/europeaid/
DG ENER (Energy)	ec.europa.eu/energy/
DG ENV (Environment)	ec.europa.eu/environment/index_en.htm
DG NEAR (European Neighbourhood Policy and Enlargement Negotiations)	ec.europa.eu/neighbourhood- enlargement/
DG REGIO (Regional and Urban Policy)	ec.europa.eu/regional_policy/en/
DG RTD - EU research and innovation funding	ec.europa.eu/research/

Organisations / programmes for cooperation and funding

ORGANISATION / PROGRAMME	WEBSITE
CORDIS	cordis.europa.eu/
European Bank for Reconstruction and Development (EBRD)	ebrd.com/
European Investment Bank (EIB)	eib.org/
Horizon2020	ec.europa.eu/programmes/horizon2020/

City networks

ORGANISATION	WEBSITE
European mobility week	mobilityweek.eu/
Eurocities	eurocities.eu/
ICLEI	iclei.org/
Polis	polis-online.org/

EU Urban mobility portals

ORGANISATION	TOPIC	WEBSITE
CIVITAS	Urban mobility demonstration projects, all topics	civitas.eu/
Eltis The urban mobility	Urban mobility, all topics: Case studies, Facts & figures,	eltis.org/
observatory	EU legislation & policies, Topics & areas, EU funding,	
	Tools & resources, Events, Forum, helpdesk,	
	Sustainable Urban Mobility Plans (SUMPs)	

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EU Platforms on sustainable urban transport tools

ORGANISATION	TOPIC	WEBSITE
ELA, the European Logistics Association	Logistics	elalog.eu/
EPOMM, European Platform on Mobility Management	Mobility management	epomm.eu/
European Cyclists Federation	Cycling	ecf.com/
European Parking Association (EPA)	Parking	europeanparking.eu/
Federation of European Pedestrian Associations	Walking	pedestrians-europe.org/
UITP - Advancing Public Transport	Public Transport	uitp.org/
Urban Access regulation in Europe	Urban access regulation	urbanaccessregulations.eu/



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