EUROPEAN CITIES AND REGIONS NETWORKING FOR INNOVATIVE TRANSPORT SOLUTIONS

POLICY PAPER:

DECARBONISING TRANSPORT

THE PERSPECTIVE OF EUROPEAN REGIONS AND CITIES

Scope – Low-carbon transport
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About Polis

Polis is the leading European network of cities and regions focusing on urban transport innovation. We cooperate to develop sustainable urban mobility solutions for the city of today and tomorrow. Polis draws its expertise from a network of decision makers, technicians and managers working in authorities at local and regional level across the European Union. Building on results developed in European projects and in thematic working groups that touch upon key transport challenges, we link innovation and public policy orientations on urban and regional mobility with European policy development.

Polis represents cities and regions in the European Road Transport Research Advisory Council[1], a European technology platform which brings together road transport stakeholders to develop a common vision for road transport research priorities in Europe. ERTRAC has recently constituted a High-Level Group to identify and assess measures that have the highest potential towards achieving decarbonisation in road transport. This process is also linked to the global Strategic Transport Research Innovation Agenda currently under development within the European Commission's services. Furthermore, Polis represents cities' interests within the Sustainable Transport Forum for the implementation of the Alternative Fuels Directive and leads the cities sub-group of the Forum.

In terms of international outreach, Polis is a member of the Partnership on Sustainable Low Carbon Transport (SLoCaT), which promotes the integration of sustainable transport in global policies on sustainable development and climate change. SLoCaT consists of a multi-stakeholder partnership of over 90 organizations and is actively involved in international development for transport, including the participation in the COP21/UNECE discussion and international targets toward the reduction of $C0_2$ emissions. Polis is also a partner of the International Transport Forum project on decarbonising transport which aims at achieving zero emission transport by 2050[2].

[1] http://www.ertrac.org/
[2] http://www.itf-oecd.org/decarbonising-transport

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Decarbonising the transport system, not only one component

Urban mobility is at a critical stage. By 2020, cities are expected to host around 80% of EU citizens[3], thus putting further pressure on urban transportation systems. The European Commission's Urban Mobility Package and the EP's own initiative report on Urban Mobility both state the urgency of addressing the challenges ahead.

Urban mobility systems are closely interlinked with long-distance transport systems, as recognised by the EC and its Member States in the approach towards urban nodes for passenger and freight within the TEN-T network. This recent, integrated approach will undoubtedly generate new and innovative methods for freight as well as passenger transport – with specific concepts for the last urban mile, and therefore should also reflect the decarbonisation/low-carbon principle. The EU has an important role to play in establishing a framework for low-carbon mobility, but inevitably most action will take place at national and local level.

Although the 2011 EU Transport White Paper sets out several aspirational goals for sustainable transport, this has so far not resulted in a comprehensive approach at EU level which integrates transport policy with air quality and climate policy and with vehicle emissions regulation. In this paper, Polis will explain that the remit of decarbonisation/low-carbon transport at urban level has to address all transport modes and be part of a new urban mobility culture and substantial paradigm shift. Polis invites the EC to support this view with a similarly comprehensive strategy that goes beyond the vehicle.

Decarbonisation and clean air: two problems with similar solutions

The solutions for decarbonisation in cities are often the same as the ones that cities deploy to tackle the challenge of air pollution. Cities are currently faced with unprecedented amounts of Particulate Matter and other harmful emissions. In April 2015, a study of the World Health Organization (WHO) revealed that around 600.000 EU citizens die prematurely every year, while hundreds of thousands of other people suffer from illness due to preventable causes, such as pollution from small particles that come from the exhausts of diesel vehicles, and nitrogen dioxide, a gas that can inhibit breathing with vulnerable people[4]. The same study showed that air pollution represents a net financial cost of €1.5tn every year, equating to about a 10% of the whole GDP of the continent. While EU rules do exist and regulate the level of harmful emissions of vehicles and other sectors[5], cities are struggling to comply with these limits, especially for Particulate Matter (PM10), Fine PM (PM2,5) and Ozone (O3)[6].

To tackle the air quality challenge, a paradigm shift is required toward cleaner urban mobility systems in all modes of transport. For urban areas, this will translate into a shift in public transport fleets from diesel-based engines to fuel cell or electricity for all sizes and types of vehicles, depending on the latest technologies available on the market. Some transport systems might use new forms of renewable gas-based energy in the middle run, buses for example. Others vehicles have already moved toward a full electrification process, for example last-mile delivery vans. Public transport and

[3] Source: Eurostat (forecast of online data code: urb_cpop1)

[4] http://www.euro.who.int/en/media-centre/sections/press-releases/2015/04/air-pollution-costs-european-economies-us$-1.6-trillion-a-year-in-diseases-and-deaths,-new-who-study-says

[5] National Emission Ceiling Directive and its sister Directive, the Ambient Air Quality Directive; Euro 6 and Euro V standards for cars, vans and trucks, EU Type-Approval Directive for CO2 emission for light vehicles; potentially in the near future CO2 emission for trucks

[6] According to latest report from the European Environment Agency: http://www.eea.europa.eu/data-and-maps/indicators/exceedance-of-air-quality-limit-3/assessment-1

other captive fleets should be a priority, integrating clean electric vehicles in a multimodal transport systems approach.

Furthermore, cities do require safe and secure European Standards and tools that can accurately assess and measure vehicle pollution emissions to allow them to better manage their city centres with the various policy tools at their disposal, such as Low/Ultra-Low/Zero Emission Zones or access restriction tolls. In that regard, cities need the assurance that diesel Euro 6 vehicles will meet the required emission standards in real driving conditions.

Cleaner transport: a 15 year plan

At the present stage, urban transport is responsible for up to 25 % of all CO_2 emissions in the EU[7] and for some 70 % of all other harmful emissions from transport[8]. By 2020, CO_2 and some other harmful emissions are expected to rise consequently, further affecting citizens' health and hindering economic development due to social and environmental challenges. The adequate response given by the COP21 in Paris in 2015, the future ratification process at an international level to tackle the 2°C goal across parties to the convention, together with the Energy Union Packages have all already sent a strong message to address oil dependency and better achieve energy-efficient services. However, in order to realise a future where decarbonised/low-carbon transport systems offer a long-term and viable solution to climate change, **a fundamental shift is required** at the local, regional and national level.

First and foremost, as part of an **integrated approach through sustainable urban mobility planning**, further emphasis should be put on modal shift to **active travel (cycling and walking), public transport and/or shared mobility schemes**, i.e. bike- and car-sharing and car-pooling, to reduce congestion and pollution in cities. These modes offer long lasting solution to the decarbonisation/low-carbon transport challenge, and walking and cycling in addition offer an important health bonus to society.

To further tackle oil dependency, cities need a shift away from fossil-fuel based engines towards **electromobility,** renewable or alternative fuels such as fuel cells or electricity for all sizes and types of vehicles, depending on the latest technologies available on the market. Existing urban electric transport systems such as metro, tram and trolley bus can form the back-bone for electromobility strategies and support charging infrastructure. Incentives or other policy measures may be required to achieve progress in private or business fleets, including in the freight sector.

Intelligent Transport Systems (ITS) can enhance more seamless transport and reduce congestion by optimising traffic flows and prioritising certain (sustainable) modes. It should not be forgotten however that ITS should be an enabler to enhance the efficiency and sustainability of a multimodal urban transport system and thus serve as a means to reach public policy goals, and should not be seen as an end in itself.

Cities also have various **social and economic policy tools** at their disposal to better manage their inner centres. These are the most effective when combined with other mobility options in an integrated approach. In any case, EU policy should reflect the current major air quality challenge in cities and ensure the EU decarbonisation strategy also contributes to it.

Each of the aforementioned approaches and solutions will be addressed in the following pages of this document, complemented with key recommendations and best practices from Polis members.

[7] European Environment Agency 2013 Report: A closer look at urban transport. EEA 2013 Report
[8] European Commission DG Move website, urban mobility page

Transversal recommendations

Redefine current document as low-emission mobility strategy to include air quality challenges and measures.

Assurances that diesel Euro 6 vehicles will meet the required emission standards in real driving conditions together

A secure environment in terms of public accountability for budget consolidation of PPPs under Eurostat rules.

More resources in terms of R&I and investment for cities to redesign their public transport infrastructure, rolling stock and fleets. The creation of a true EU single market for low carbon urban mobility technologies, including joint procurement programmes, is crucial in this aspect.

Detailed interim targets/milestones to achieve the Transport White Paper targets of halving the use of 'conventionally-fuelled' cars in urban transport and achieving carbon neutral logistics in cities. This timeframe would include a preparatory framework by the end of the current MFF period, to fully support, upscale and deploy measures in the period 2020-2026 – leaving margin for final fine-tuning and optimisation in the years before the 2030 deadline.

1- Better integrated urban transport systems for seamless transport

European regions and cities have already initiated a shift toward a more integrated urban transport system. This has translated into substantial reforms of local and regional transport governance. For urban areas, Sustainable Urban Mobility Plans (SUMPs) have been developed over the last decades in major cities across the EU. This tool allows to incorporate all modes of transport into one global and multimodal strategic planning approach for the mobility of people and goods, taking account of energy-efficiency and sustainability concerns. Also the smart cities concept has led to more integrated approaches with positive impacts on energy use and quality of life.

In 2013, the European Commission presented its guidelines for SUMPs together with the Urban Mobility Package[9]. These guidelines are currently under review by the EC and should be updated in 2017. In that perspective, the communication on the decarbonisation of transport should include an urban component where additional elements for these SUMP guidelines could be suggested in terms of fully integrating alternative fuels and related infrastructure, and especially electromobility, as an essential component of future Sustainable Urban Mobility Plans, with clear links to Sustainable Energy Action Plans[10]. This would include a strong focus on electric public transport and other captive fleets such as freight and service vehicles, taxis and car sharing schemes, as well as all types of vehicles, from L to N category types[11].

Furthermore, SUMPs could benefit from comprehensive guidelines on modelling and monitoring. Currently, several indicator sets are around, trying to capture an urban mobility system's energy footprint. It is of high importance that the EU works towards a unique understanding and common approach to monitor and measure the carbon-intensity of urban mobility, and establishes this as a specific element of focus within the Covenant of Mayors. At the moment, DG ENER and DG MOVE are supporting different indicators and evaluation approaches, and this is not productive.

[9] http://ec.europa.eu/transport/themes/urban/urban_mobility/ump_en.htm
[10] According to cities' commitment under the Covenant of Mayors
[11] According to the EU 2007/46 type-approval framework directive

Recommended EU Actions:

- Coherence and clear links between SUMPs and SEAPs, with inter alia SUMP energy efficiency modules and guidelines.
- Single energy footprint assessment methodology and KPIs.
- Clear and reliable indicators under the SUMP guidelines review expected for 2017.

Exemplary measures: Dresden's SUMP "Transport Development Plan 2025plus"

Adopted in 2014, the City of Dresden's SUMP fits the European requirements of a modern, integrated and innovative plan. It was elaborated with broad participation of citizens, stakeholders, institutional and regional partners, scientists and politicians. It is constantly monitored and actively evaluated every three years, as a living document committed to CO2 and other harmful emissions reduction. Dresden's SUMP includes 146 different measures which focus on integrated urban development, sustainable and low carbon urban mobility for better quality of life in Dresden. It was awarded the second best European SUMP in 2014.

Exemplary measure: London car sharing scheme

London has nearly 200,000 members of car sharing schemes and car clubs, making this the biggest participation in the world after Manhattan, with a target of 1 million users by 2025, equivalent to almost 20% of the city's drivers. The evidence so far shows that each car club car on the road results in 10.5 cars being removed as owners dispose of them, not including deferred purchases. Whereas, on average, 54% of adult Londoners do not own a car, 78% of car club members do not own a car. On becoming car club members, on average people drive more than 1,000km a year less than previously, while increasing their use of public transport, walking and cycling. This results in a reduction of all harmful emissions, while also reducing congestion and overnight parking problems and improving health.

2- Active mobility – Healthy lifestyles outside the fossil fuel box

Most cities aspire to create more people-friendly places and move away from car-oriented planning, aiming to attract hard-to-reach groups and mobilise investments to boost the local economy. Transport planning policies and inclusive street design encourage walking and cycling by establishing new services to cater for pedestrians and cyclists (i.e. wayfinding, real-time multimodal information, shared and multimodal mobility solutions) and by designing suitable infrastructure to make walking and cycling safer and more comfortable.

Walking and cycling are thus becoming easier, safer and more enjoyable. Besides that, increasing the share of active travel and consequently reducing car traffic provides an important contribution to reducing GHG-emissions and primary energy consumption, with walking and cycling being the cleanest modes of transport.

Moreover, a wealth of knowledge has become available on the health benefits of active travel through increased physical activity, which provides powerful tools to further boost and promote these modes not only because of their decarbonisation potential but also to fight other major societal challenges such as obesity and sedentary lifestyles. The World Health Organisation has estimated that the lack of daily physical activity is the fourth leading cause of premature deaths in the EU, and that this generates a huge cost to society as a whole. Economic analysis in transport planning of the health benefits of active travel can be measured through the Health Economic

Assessment Tool (HEAT) for cycling and walking which was developed by the WHO[12]. The tool estimates reduced mortality costs as a result of changes in travel behaviour.

In parallel, EU funded H2020 research projects such as TRACE[13] and FLOW[14] are working on capturing cycling and walking data for use in personalised travel planning and system-level urban transport modelling, thus adding to the accountability of sustainable urban transport in general and active travel modes in particular. Results of these projects are expected in 2018 and can be upscaled and exploited.

Recommended EU Actions:

- Systematic analysis of existing SUMPs with the WHO Health Economic Assessment Tool.
- Study from the European Commission on EU cycling card on all TEN-T urban nodes by 2025 in line with the current EU roadmap for cycling.
- Cross-institutional cooperation between transport, energy, climate and health

Exemplary measure: Barcelona superblock concept

Local studies show that walking is the first mode of transport in Barcelona. Since 2013, Barcelona has used the superblock concept, a street and land use planning hierarchy approach, to redesign its urban mobility grid and further embrace active mobility, with an ambitious cycling increase of 67% and a massive +30 Mio infrastructure deployment to further enhance the efficiency of its Sustainable Urban Mobility Plan. Using the endomundo application, data has been collected since 2013, and the sample is now sufficient to give a clear picture of the relative daily use (high-medium-low) of the city's streets and to act accordingly from a spatial planning point of view in terms of active mobility, clean logistics and public transport routes as well as car traffic management.

Exemplary measure: Cycling highways

Cycle Super Highways, also known as cycling highways, are high-standard and continuous paved bicycle routes reserved for fast and direct commuting by (e-)bike over longer distances (5-20 km). They connect communities and major destinations, including residential areas and areas with concentrations of jobs, schools and public transport. People who commute 5 km or more to their destinations constitute the primary target group. Especially when combined with the use of electric bicycles, Cycle Super Highways can substantially increase the distance people are willing to ride, thus offering significant potential reductions in car use.

The concept is spreading fast across the EU, notably in the Netherlands, Denmark, Germany, Sweden and the UK. Transport for London estimated that in one year, cycling levels have grown by 46% and 83% on two of their fast routes (TfL, 2011). Since 2010, as part of the Aalborg Cycling City project, Aalborg has focussed on providing high quality cycle commuter infrastructure. To ensure the cycling network's accessibility and ease cyclists' journeys, shortcuts between the superior network (the "feeder" routes) and the premium commuter routes are being created. A high-quality commuter cycling route between the city centre and university was created following 3 principles: free-flow conditions for cyclists, traffic safety and visibility, and services, such as lane lights for cyclists at intersections or positioning bicycle racks for parking near the cycle lane. The number of cyclists using the route increased by 20 to 30 % in two years. Counts from 2012 indicate that the increase is stable,

[12] http://www.heatwalkingcycling.org/
[13] http://trace-project.eu/
[14] http://www.h2020-flow.eu/

and historic trends and counts from other areas in the city indicate that the increase is related to the implementation of this measure.

3- Electromobility as part of the decarbonisation solution

European cities and regions have a key role to play in the deployment of alternative fuels technologies, by including them as key measures within their sustainable urban mobility strategies, plans and activities. In particular for electric mobility, it has been recognised that local and regional authorities are an essential partner for setting up the necessary recharging infrastructure to support electric vehicles market uptake and the full deployment of clean public transport solutions for daily commuting. Several Polis members are leaders in the alternative fuels area, e.g. Amsterdam, Rotterdam, London, Barcelona, and Ile de France.

At a time of economic crisis, public investment is scarce and cities are faced with multiple challenges in order to follow the European System of Account rules as well as to limit their impact on the Growth and Stability Pact. The European Union can further support European cities with implementing measures in terms of charging infrastructure and procurement of clean vehicles.

Recent achievements in several European Research and Innovation Projects focusing on alternative fuels including electric mobility (CIVITAS, ZeEUS, FREVUE, …) have shown that new forms of cooperation between local public authorities, energy distributors, operators and service providers are needed to achieve a fair, accessible and efficient multimodal transport system in which alternative fuelled vehicles, their refuelling infrastructure and their associated services, contribute to achieving a city's integrated SUMP policy objectives. As an example, enabling cities and public transport companies to resell energy would be a critical point in the future in order to secure a balance between locally subcontracting electric charging infrastructure deployment to a third party and publicly owned and/or managed charging infrastructure. In addition, new schemes and support from current Programmes (ERDF/H2020/CEF/EIB Financial Instruments) would greatly improve R&D activities as well as the deployment of alternative infrastructures in order to meet the new EU targets[15].

Further EU financing instruments should be envisaged in order to support cities with the renewal of their public fleets and the deployment of charging/refuelling infrastructure. This could take the form of an EU Joint Undertaking Initiative, a dedicated financial scheme, or an EU portal offering joint public procurement for cities[16].

In terms of policy tools, the upcoming revision of the Clean Vehicle Directive[17] in 2017 provides an excellent opportunity to support public authorities wishing to procure alternative fuelled vehicles (including electric ones) if an advanced and clear definition of what a clean vehicle actually constitutes, is considered. Furthermore, this directive should be applied more broadly, taking into account all transport related goods and services procured by public authorities (e.g. waste management).

Recommended EU Actions:

- Ability for cities and Public Transport Authorities and operators to resell energy.

[15] Art 3 of the Directive 2014/94/EU on the deployment of alternative fuels infrastructure
[16] According to new rules under the EU Public Procurement Directive
[17] Directive 2009/33/EC on the promotion of clean and energy-efficient road transport vehicles

- Further amending EU investment agenda and instruments to allow for low-carbon urban transport solutions to take ground, including further investments in the deployment of alternative fuels vehicles for public transport systems.
- Urban chapter to the National Framework for Alternative Fuels Infrastructures due for the end of 2016 as part of the Directive on the deployment of alternative fuels infrastructure.
- An EU wide common portal for joint public procurement and applicability of clean procurement conditions under the Clean Vehicle Directive to subcontracting parties as well as services with transport as main component.

Exemplary measure: Rotterdam global strategy toward electromobility

In 2007, Rotterdam established an ambitious programme on sustainability and climate change in order to reduce carbon emissions by 50%. To that end, the municipality invested 26 million euros in 10 key tasks, one of which was to stimulate sustainable mobility and transport. This generated 400 million Euros of private and public sustainable investments in the city. Within this framework, the 'Rotterdam electric' initiative was launched with an aim to ensure that at least 25% of the city's fleet is composed of electric or hybrid vehicles and to further support the construction of charging infrastructure by co-financing the first 1000 charging points. These two last objectives have been met and even exceeded: at the end of 2014, 1367 charging points were established in the greater Rotterdam area and 27% of the city's fleet was electric. The City of Rotterdam has now established clear ambitions to improve air quality and reduce emissions. To achieve this, further developments on their electric mobility policies and measures will be key.

Exemplary measure: the electromobility and diesel exit in the City of Paris

By 2020, Paris aims at delivering a zero emission public transport system. To that end, Paris will invest in various measures under its SUMP. In terms of e-car and e-bike sharing, Paris will reinforce its electric charging points infrastructure and further deploy a massive number of charging stations equipped with smart grid technologies to balance the grid network demand. For clean logistics, Paris will develop its offer on inland waterways and railway stations and network. Following up on the Charter adopted in 2013, Paris will promote the use of clean last mile delivery vehicles by creating a new clean logistics platform with a capacity of 30 electric vehicles as well as a railway interchange of 42.000 m2 connecting railways with the urban network.

4- Intelligent Transport Systems: enabler of efficient transport solutions

In recent years, the main topics for discussion in this sector have been cooperative Intelligent Transport systems (ITS), open/access to data, traffic management incorporating active modes (pedestrian and cyclists), overcoming silos in ITS, information services, and open specifications and standards for ITS. More recently, automation has become a new topic of interest. ITS can encourage users to shift to sustainable modes (walking, cycling and public transport) through real-time and integrated information and services, e.g. multimodal journey planners, real-time bus/tram countdown information, integrated and contactless payment (Smartcards), etc.

Intelligent traffic management systems should be designed to ensure smoother road traffic flow and thereby reduce stop and start (especially for heavy duty vehicles), through for instance, adaptive traffic management (optimising throughput at junctions) and real-time traffic information. Cooperative ITS and increasing levels of automation are expected to optimise traffic flow even further. However, it should be noted that facilitating vehicle use through optimising the operational capacity of a road network or through new services (Mobility-as-a-Service) could increase demand on the road network and lead to more congestion and energy use. Additional operational capacity

offered by traffic optimisation could instead be used to provide cycle lanes, footpaths, bus lanes or other public space.

Vehicle automation developments should not be confined to cars or trucks. Automating collective passenger transport vehicles can enhance the public transport network as a first/last mile feeder service and generally in areas of low and dispersed demand where conventional manually driven public transport is not economically viable. This form of transport has huge potential in urban and rural environments, as has been demonstrated by the CityMobil2 project, which has attracted significant interest among city authorities as well as decentralised authorities in rural areas. These systems offer environmental, societal and social benefits as they are electric, operate at low-speed and can offer access to public transport in those areas which currently have none or very little. Increasing connectivity, and eventually automation, of cars needs to be managed as part of an integrated approach including public transport systems, in order to avoid further congestion and inefficiency as mentioned above.

Recommended EU Actions:

- Additional EU research on emission reduction potential of ITS use from a long-term perspective.
- Additional EU research on how Intelligent Transport Systems can impact on travel behaviour in terms of modal shift in sectors such as smart ticketing, open-data, journey planner, real-time travel information).

Exemplary measures: ICT emission reduction: Stuttgart and Helmond best practices

Through the CIVITAS 2MOVE2 project, the Region of Stuttgart has implemented dynamic speed limits and other ITS-based traffic measures to reduce air pollution. These measures have proven to work and the results will be presented at the 2016 Polis conference on 1-2 December in Rotterdam.

Helmond, as part of the FREILOT pilot project, managed to achieve 13% fuel savings and 13% CO2 reduction on equipped trucks with the Energy Efficient Intersection Service. This combines a time-to-green and speed advice to the truck driver with priority at intersections. Helmond also sees a large scale deployment following the Compass4D project, which involved 7 cities, 600 vehicles and 1200 drivers to deploy automated vehicles at a large scale. The consortium decided to continue the services after the project's lifetime as a next step towards a sustainable and self-sustaining deployment of ITS.

Exemplary measures: ITS in its social dimension: Aalborg and La Rochelle expertise

Aalborg is planning to implement an automated passenger transport shuttle in a deprived neighourhood of the city, which is functionally segregated and has no public transport within the area due to low and dispersed demand and where unemployment levels are relatively high and car ownership is below 50%. The fully automated transport service is expected to provide easier access to the different functional areas of the city, thereby leading to regeneration and social inclusion.

Through the CityMobil2 project, La Rochelle Urban Community implemented a large-scale five-month demonstration of an Automated Road Transport System in an open and urban environment, which is considered as a good practice for further technical and process-related improvements and integration of automated vehicles in cities. Beyond the technical challenges, the emphasis was placed on public acceptance, involvement of stakeholders and on the interaction of this system with other road users in the public space.

Exemplary measure: Budapest multimodal journey planner

BKK Centre for Budapest Transport has launched its online journey planner application in 2014, the so-called FUTÁR app, available also for smartphones and tablets. The application gives detailed information on schedules of each stop and also is able to show the real-time position of the public transportation vehicles in operation. The app also shows the public bike sharing (MOL Bubi) stations on the map, and the number of available bikes as well. This app offers both "door to door" trip planner services and accessible route options. The launch of the FUTÁR Journey Planner was the last step in connecting and tracking all surface public transport operations via the satellite system. Since 2014 the real-time information of trams, buses and trolleybuses is available for both the operators in the control room and all passengers and everyone who has internet connection. The FUTÁR app has been downloaded by already more than a hundred thousand users who have their own public information screen in their pockets.

5- Social & economic challenges of decarbonised urban transport systems

Urban mobility has an important impact on the socio-economic performance of a city. Cities use economic policies to put transport objectives in operation: the city's own procurement policies can incite the energy-efficient vehicle market, polluter and user pays policies can help to manage transport demand, can combat congestion and create a modal shift. At the same time, measures should be fair and not decrease equity of access to the transport system. Polis welcomes in this regard the process towards Non-Binding Guidelines on Urban Access Regulations.

Cities face the challenge to invest for the future in a time with scarce financial resources. Polis welcomes the broad range of initiatives taken to build capacity, unlock investment, to provide technical assistance, financial instruments, grants and loans to help cities address these challenges. However, there are two issues that play here for cities. Firstly, not all instruments are adapted to smaller scale investments. Secondly, there is the need for better coordination between capacity building, market creation and investment programmes. Synergies between Smart Cities, CEF and CIVITAS should be developed.

Polis is part of the European Citizen's Mobility Forum that seeks to double the collective land transport by 2025. Strategies should create real opportunities for citizens to live a multimodal lifestyle, focusing both on mass transit (with e.g. Bus Rapid Transit) and individual flexible modes (bike sharing, demand responsive transport). This should be supported by seamless transport information and ticketing services.

Among a range of policy tools, polluter and user-pays strategies for urban mobility can help to reduce the energy footprint of the transport system, by reducing congestion and improving flow, by reducing unnecessary traffic (such as parking search traffic), and last but not least by creating the momentum for modal shift. However, their ultimate deployment and use is a matter for cities themselves. While they have been successful in some cities, background factors mean they are not always transferable.

Finally, the accessibility of the urban transport system can help to keep people moving independently (and without the use of private car).

Recommended EU Actions:

- Establish synergies between Smart-cities, CEF and CIVITAS to enable combined integrated planning, large scale implementation and capacity building, starting with specific exchanges

on ELENA-T, for example during CIVITAS Forum Conferences or the European Innovation Platform on Smart Cities and Communities events.

- Additional research and measures to understand the potential of Urban Vehicle Access Regulation schemes to enhance decarbonisation and enhance public and political acceptance – as follow up to the Non-Binding Guidelines on Urban Vehicle Access Regulations.

Exemplary measures for congestion charging: Gothenburg's example

The West Swedish Agreement is a congestion charge system that was introduced in 2013 in Gothenburg. It is designed to use a time-of-day dependent cordon pricing congestion charge system in combination with an investment package to make traffic more fluid and strengthen public transport multimodality. Scheduled until 2027, the West Swedish Agreement will lead to further initiatives for trains, buses, trams, bicycles and car stretching. The overall goal is to make more attractive public transport, more reliable transport for business and industry and expanded commuting services for daily commuters.

Exemplary measure for clean public procurement: Rijkswaterstaat's CO2 performance ladder

Contractors replying to a call for tender that can prove to do their best to reduce CO2 emissions throughout project implementation get an advantage in the award. Rijkswaterstaat uses a tool called the CO2 performance ladder to assess this. In a bid that includes energy-efficient performance, the provider indicates the level of ambition he will aspire to. Five ambition levels are identified in the so-called CO2 performance ladder: the higher the step, the higher the effort to reduce CO2 emissions. The higher the ambition, the higher the notional deduction of the subscription price, thus increasing the chance of winning the contract.

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