EIT Urban Mobility and Abertis Mobility Services publish new study on Urban Vehicle Access Regulations and their role in achieving climate neutrality targets

- *The report examines the success of UVARs schemes in Barcelona and Milan identifying best practices for other cities*
- *UVARs are key to tackling cities' air pollution, traffic congestion or road safety*

October 6, 2022. EIT Urban Mobility, an initiative of the European Institute of Innovation & Technology (EIT), a body of the European Union publishes today a study on Urban Vehicle Access Regulations (UVARs) looking at the examples set by Milan, Barcelona and other cities across Europe. The report, which has been developed in collaboration with Abertis Mobility Services (AMS), a leader in sustainable mobility solutions, highlights the important role that UVARs schemes have in reducing emission levels and air pollution, and in improving road. UVARs schemes are also central to reducing traffic congestion and, as a result, encouraging populations to choose more sustainable means of transport. The report also demonstrates the need for EU and national level guidance to showcase best practices in order to meet climate neutrality targets by 2050, as set by the EU.

In Europe, 94% of the urban population is exposed to NO2 pollution levels above the WHO guidelines. While a recent study found that a clear majority of the population demands more space for clean mobility: 68% for public transport, 66% for pedestrians, 56% for cyclists. In this context, many European cities have introduced Urban Vehicle Access Regulations (UVARs) in order to tackle air pollution, limit traffic congestion, improve road safety, and redistribute public space. Currently, 73% of UVARs are low (and zero) emission zones.

However, access to UVARs and availability of information is often a subject of complaints from motorists who are not aware of local requirements. To improve the situation, the EU has focused on improving the provision of information, and on data sharing. According to Christian Barrientos, CEO of AMS, "*deployments of Low Emission Zones are a first step in reducing pollution and improving air quality in cities. However, once all cars have been renewed to electric and cleaner vehicles, traffic congestion will reappear."*

Mr. Barrientos calls for a holistic view: "*following the examples of Milan and London and integrating LEZ and Congestion Charge, can encourage a real change in behavior and convince citizens to leave their cars at home and use more sustainable and efficient ways of transportation" and emphasizes the need for clear communication*. *"Local authorities need to strive to communicate the benefits of these schemes well and ensure enforcement and acceptance, and also explain that funds raised will be allocated to guarantee de long-term sustainability of public transportation and active mobility*," he adds.

Maria Tsavachidis, CEO of EIT Urban Mobility: "Urban Vehicle Access Regulations are emerging as crucial for cities on their path to net zero mobility across Europe and beyond. The growing number of

diverse initiatives like low emission zones, congestion charging zones, and others, call for actively involving stakeholders and citizens, and to properly communicate these schemes' objectives. This best practice study, aims at highlighting the solutions that work, so that learning from neighbouring countries will lead to more acceptance and sustainable change for our cities."

UVAR increases cities' attractiveness

The main objectives of UVARs are to reduce CO2 emissions and air pollution, congestion, and to improve road safety but, beyond these considerations, UVARs can also increase the attractiveness of cities and improve liveability by managing public space.

Milan and Barcelona provide good examples of clear objective identification and impact measurement. Reducing private car ownership is often an adjacent objective to Low Emission Zone (LEZ), in which case it is sensible to move from LEZ to Congestion Charging to have a positive impact. **In the case of Milan, its congestion charging area has seen 38.5% less daily trips, more electric & hybrid models as well as significantly reduced exhaust emissions**. The city itself decides how much of the money collected is to be spent. In 2019, 75% of revenue was put back into enforcement and the remaining 25% allocated to fund sustainable urban mobility projects that year.

In Barcelona, the LEZ within the city's ring roads (ZBE Rondes de Barcelona) will gradually restrict the most polluting vehicles. The LEZ is applied to vehicles depending on their environmental label allocated by the Spanish ministry. Along with LEZ, the superblocks initiative ensures better air quality and guarantees the right to good health in the city.

UVAR Scheme Design

According to the study, differentiating between the different UVARs schemes and developing the most suitable approach is a key challenge to city regulators**. For example, Milan introduced the Ecopass in 2008 where users pay according to their vehicle's emission class but evolved into a congestion charge after a referendum in 2012. This contrasts with the experience of other cities where similar referendums led to negative outcomes for the suggested UVARs**. Being able to identify the type of vehicles responsible for high emission levels to adapt UVARs' design for this purpose enables a more granular regulation by vehicle type, or by vehicle dimension.

It is clear there is a need for comprehensive and accurate data to determine UVAR policy: what problem it should solve and what vehicles to target. It also helps anticipate the calls for exemptions that may arise from implementation. London demonstrated that proper planning and organisation is crucial – in implementing the LEZ, the regulatory trade bodies in Europe were notified and leaflets handed out to ensure maximum compliance for the HGVs that needed to register in advance. It is important to communicate to citizens and stakeholders that UVARs are not just about generating revenues, to avoid resistance. This needs to be coupled with the right exemptions being granted.

Technology & Enforcement

The report identifies the different technological options available to implement these schemes including automatic number plate recognition (ANPR), dedicated short range communication (DSCR) and Global Navigation Satellite System/cellular networks (GNSS), among others. What to apply differs

depending on the type of UVAR project, size of the city, UVAR main objective, type of vehicles and type of restrictions.

Abertis Mobility Services (AMS) shows that **an integrated solution based on the principles of the "polluter pays" and "user pays" is beneficial.** In this respect, combining ANPR and Optical Character Recognition (OCR) technologies with Global Navigation Satellite systems (GNSS) technologies allows for an UVAR design to contribute to improving air quality and reducing traffic. Drivers' fees and tariffs can depend on the time of day (rush hour), the vehicle type, the distance travelled, and the CO2 emission level of the vehicle or the power / horsepower of the vehicle.

In the US, AMS subsidiary Emovis is operating pay per use schemes in some states through cloud-based solutions using satellite technologies and location services. This enforcement approach is good for deployment and implementation speed, scalability, ubiquitous access, as well as data security and privacy (GDPR compliant). In short, this helps guarantee the financing and long-term sustainability of the road network.

Standardized criteria for UVAR enforcement technologies – for instance through the adoption of a national framework – would help cities implement congestion charges and low and zero emission zones.

Equity & Citizen Engagement

Wider approach to UVAR, and in particular to LEZ requires full appreciation of the equity issue. Participatory processes can foster creative and innovative solutions, facilitating the development of the most appropriate interventions according to the characteristics of each initiative, context, and user case. Full access and equality of participatory conditions for all citizens are essential to guarantee that all voices are represented.

Results from participatory processes are not binding for the administration but the city needs to explain how they have been taken into account in the final decision. According to the Citizen Participation Regulation, the City Council has the duty to promote participatory processes when it wishes to carry out some actions that have specific impacts – which is the case for the LEZ.

Mr. Barrientos explains, "*there cannot be a uniform approach advised by EU since there are national regulatory frameworks which affect elements like camera enforcement and monitoring*." He explains that UVAR designs should be aligned with objectives such as pollution levels or reducing traffic, and the local authorities need to strive to communicate these well to people to ensure acceptance and efficiency.

New technologies provide cities with options for seamless enforcement. A progressive rollout of UVAR, as in the example of London or Milan, with a combination between different schemes (e.g., LEZ, Congestion charge, pedestrian areas) turns out to be an important success factor in UVAR deployment. Residents and users have time to adapt to the new rules, while UVARs are gradually monitored. Ensuring equity, including exemptions to specific users and at specific times of the day or week, affects perceived fairness and acceptance of UVARs. Anticipation and considering stakeholders' early in the process, looking at needs of public and private user groups is recommended. Participatory processes that engage the residents are crucial, be it personal, businesses or public transport authorities to consider different perspectives.

ENDS

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Notes to Editors

Relevant regulations include:

- The Single Digital Gateway since December 2020 public authorities have to provide information to road users – including on UVAR - through a Gateway.
- Real time traffic information (RTTI) requires Member States to give access to a broad range of static and dynamic information. (From January 2025 on to include UVAR).
- The SUMP topic guide on UVAR.
- The 'UVARbox'project aims to help cities develop a user-friendly tool to provide data in a standardised format on urban and regional UVAR schemes.
- The 'UVARexchange' project aims to improve communication of UVAR zones and to improve the local authorities' access to information, especially for foreign vehicles and drivers, for seamless travel and enforcement of UVARs by local authorities.

About Abertis Mobility Services

Abertis Mobility Services (AMS) is the competence center of the Abertis group, experts in the implementation of state-of-the-art technological platforms and operation services for the management of infrastructures and intelligent mobility in urban and interurban environments. It concentrates the free flow toll activities and the implementation of the technological ecosystem for the management of urban traffic through Low Emission Zones and other systems, such as charging for the use of infrastructure. It has a presence in 10 countries, which allows them to also provide experience in multiple regulatory frameworks and solutions. With more than 400 employees dedicated to customer service, AMS has extensive experience in managing digital communication channels with citizens and handling queries.

The solutions proposed by AMS are comprehensive solutions that address the entire value chain, from the implementation of technological platforms and the initial management of the client to operation and maintenance. AMS has extensive knowledge of vehicle detection systems, a long history and proven experience, as well as value-added services aimed at improving customer experience and regulatory compliance.

About EIT Urban Mobility

EIT Urban Mobility, an initiative of the European Institute of Innovation and Technology (EIT), a body of the European Union, aims to accelerate solutions and the transition towards a user-centric, integrated and truly multimodal transport system. As the leading European innovation community for urban mobility, EIT Urban Mobility works to avoid fragmentation by facilitating collaboration between cities, industry, academia, research and innovation to solve the most pressing mobility challenges of cities. Using cities as living labs, its industry, research and university partners will demonstrate how new technologies can work to solve real problems in real cities by transporting people, goods and waste in smarter ways.