



Distance-based charge

This ReVeAL building block fact sheet is one of a series of 33, each describing one Urban Vehicle Access Regulation (UVAR) building block and providing an example of its use in a city. The ReVeAL building blocks can be combined with one another to create a structured UVAR package for a city. Try out the ReVeAL online tool, www.AccessRegulationsForYourCity.eu, to receive suggestions of appropriate UVAR building blocks for your city as well as guidance in their implementation.

The EU-funded research and innovation project, CIVITAS ReVeAL, aims to add Urban Vehicle Access Regulations and associated policies and technologies to the standard range of urban mobility measures in cities across Europe. The project mission is to enable cities to optimise urban space and transport networks use to improve urban accessibility, sustainability, and liveability.

For more information, please visit: www.civitas-reveal.eu.

Spatial Interventions

Spatial interventions are where the road layout has been altered to favor more sustainable mobility and prevent vehicles entering. Examples of these are removing road and parking space taken for vehicles and using the space for sustainable mobility or amenities (bus lanes, logistics hubs, parklets, restaurants and more)

Speed reduction

Traffic filter:

- Recirculation of traffic
- Road block
- Capacity restraint

Reallocating parking space:

- Parklet
- Drop-off zone shared mobility
- Logistics bay (mini-hub)
- Kiss & Ride (K&R)

Reallocating road space for pedestrians:

- Widen pavement
- Pedestrian priority street or zone

Reallocating road space for cycling:

- Cycle lane
- Cycling street

Reallocating road space for public transport:

- Bus or tram priority lane

Pricing Aspects

Pricing aspects are when the entry to an area or to the entirety of the city is given a price tag to encourage more sustainable transport. Pricing aspects also include the (differential) levels of penalty fees to encourage (and enforce) compliance.

Road charges / tolls:

- Charge applied to a perimeter or an area (congestion charge)
- Charge applied to specific points
- Distance-based charge
- Time-based charge
- Permit charge
- Charge based on emission standards (pollution charge)

Parking charge:

- Dynamic price (real time)
- Fixed price
- Charge based on emission standards (pollution charge)
- Workplace levy
- From on-street to off-street parking

Regulatory Measures

Regulatory measures are those where there is a legal instrument that states who can and cannot enter an area. They could often also be called "bans" and include Zero Emission Zones, Low Emission Zones, and Limited Traffic Zones.

Regulation by emissions:

- Euro standard
- Zero-emission vehicles

Regulation by vehicle type and dimensions:

- Vehicle type
- Dimensions

Regulation by trip purpose:

- Delivery and logistics
- Through traffic ban

Regulation by permit:

- Permit to travel
- Parking permit
- Planning permit conditions



Distance-based charge

Definition of the building block

Distance based road charges are proportional to the distance travelled.

Timing, phasing, scaling and replication

This building block has no-timing related issues requiring specific attention.

Time windows

- Allowing vehicle access at particular times of day
- Allowing vehicle access on given days of the week (e.g., weekends)

Allowing seasonal vehicle access

Enforcement options

- Radio frequency identification (RFID)
- Dedicated short-range communication (DSRC)
- Global navigation satellite system (GNSS)-based tolling

Gender and equity

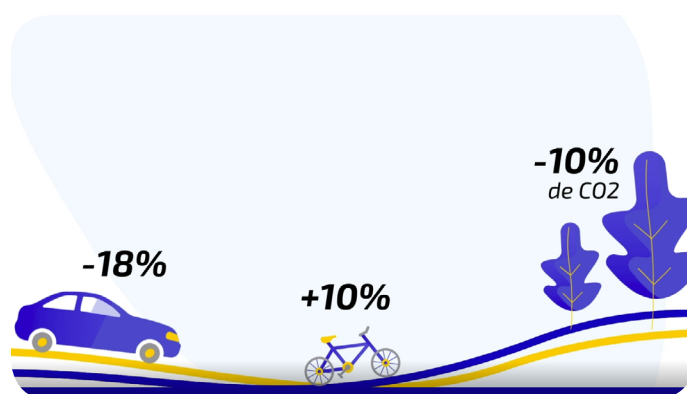
There are no specific concerns to be aware of.

Future considerations

No specific effects are foreseen for this building block from future technologies.

Further guidance

- Communicating the aim of the scheme
- Signage to communicate UVARs
- Complementary sustainable mobility measures
- Legal framework
- Enforcement options
- Camera enforcement and privacy issues



The smart congestion charge SmartMove in Brussels includes a distance-based charge. The goals of the project are an 18% reduction in car trips, a 10% increase in bicycle trips and a 10% reduction in CO2 emissions (Screenshot from an explanatory video. SmartMove, 2022).

Complementary measures

Exemptions

The types of exemptions will be different depending on the scheme type, but some examples are:

- Key exemptions for police, fire department, waste collection, etc.
- User needs exemptions, e.g. for people with disabilities with forced car dependency, taxis, classic car owners, residents, deliveries
- Exemptions for adapted vehicles (e.g., retrofitted or converted electric or hybrid vehicles)
- Limited numbers of purchased exemptions for entry (e.g., per day/month/year) to a specific zone
- Specified maximum amount of kilometre “credits” allocated to individuals or businesses

Increased mobility options

The types of increased mobility options will be different depending on the scheme type, but some examples are:

- Creation of mobility hubs
- Increasing/improving walking or cycling facilities
- Increasing/improving public transport
- Facilitating vehicle hire and/or car sharing
- Providing parking spaces in alternative locations (e.g., Park & Ride)

Financial incentives

These will differ depending on the planned UVAR measures, but some options include:

- Financial incentives for fleet renewal, e.g., for the purchase, renting or leasing of greener vehicles (including tax exemption)
- Membership or vouchers for sustainable mobility options (e.g., public transport and shared mobility services) such as discount cards, free rides or annual passes for public transport or consolidation centres
- Monetary incentives for cycling trips (e.g., for bike-to-work) or for (e-)cycle or (e-)cargobike purchases
- Grants towards retrofits (e.g., diesel particulate filters, new engine or fuel conversion)
- Compensation for scrapping an old vehicle (either financial or through a voucher), often differentiated by emission standards, vehicle type or owner income.



Distance-based charge

Consider combining with:

Spatial Interventions

Speed reduction

Traffic filter:

- Recirculation of traffic
- Road block

Reallocating parking space:
Logistics bay (mini-hub)

Reallocating road space for pedestrians:
Widen pavement

Reallocating road space for cycling:
• Cycle lane
• Cycling street

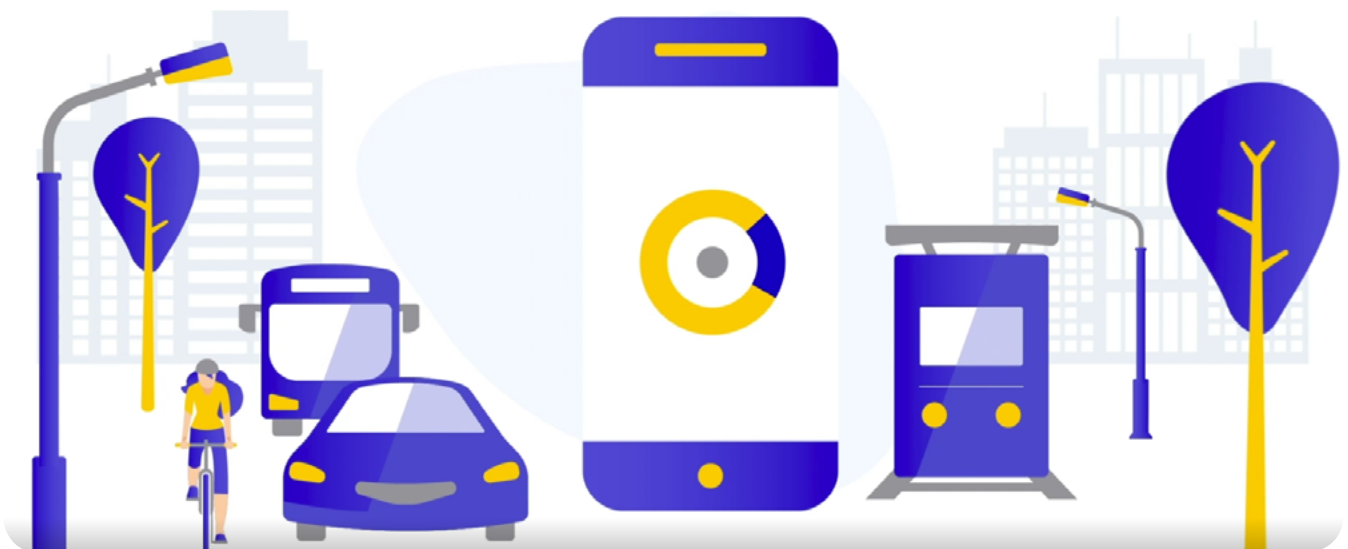
Reallocating road space for public
transport: Bus or tram priority lane

Pricing Aspects

Parking charge:
From on-street to off-street parking

Regulatory Measures

Regulation by vehicle type and
dimensions:
• Vehicle type
• Dimensions



Costs and exemptions of the smart congestion charge SmartMove in Brussels can be checked via a mobile application (Screenshot from an explanatory video. SmartMove, 2022).

Distance-based charge

Example: SmartMove, Brussels, Belgium

Description

Brussels plans to launch a smart congestion charge in 2022 within its SmartMove programme. This decision dates back to 2020 when the Minister for Mobility, and the departments for Environment and Taxation entrusted the switch from the taxes for possession and circulation. SmartMove applies to all passenger and delivery vehicles in the city's low emission zone (LEZ) which covers the 19 municipalities of the Brussels Capital Region. The charge is calculated based on trip distance, time of day (off peak/peak time) and engine size. Costs and exemptions can be checked via a mobile application. Compliance is checked through the same network of 191 ANPR cameras used to monitor the access to the low-emission zone.

Payment methods

- Drivers can pay on their smartphones via a mobile application for a daily basic amount, based on the vehicle's engine size and the time of day of the travel (off-peak/peak time), plus a variable kilometre charge based on the length of the journey and the time of day of travel (off-peak/peak time).
- Drivers without the mobile application on their smart phones can buy a fixed daily pass, the cost of which is calculated based on the vehicle's engine size.

Enforcement methods

Automatic number plate recognition (ANPR)

Time windows

In effect Monday to Friday from 7:00 to 19:00

Phasing and upscaling

- 2018. Official enactment of the LEZ by Brussels-Capital Region
- 2020. Official decision for setting up SmartMove by Brussels-Capital Region
- 2022. Expected launch of SmartMove over the course of the year

Other building blocks put in place

Pricing Aspects

Road charges / tolls:

- Charge applied to a perimeter or an area (congestion charge)
- Time-based charge

Regulatory Measures

Regulation by emissions:
EURO standard

Complementary measures

Exemptions

Exemptions by road types:

- Access roads to some Park & Ride facilities
- Access roads to the Brussels ring road

Exemptions by vehicle types:

- Trucks are exempt because they pay through another programme (Viapass)
- Two-wheeled mopeds of class A (max. 25 km/h) and B (max. 45 km/h) are exempt
- Electric vehicles and small vehicles (engine less than 1300 cc) or less than 7 fiscal horsepower) only pay the amount per kilometre and not the daily basic amount
- Hybrid vehicles are taxed based on the engine size ('fiscal horsepower') of their combustion engine

Increased mobility options

Parking: Park & Ride facilities

Sharing:

- Car sharing
- Car pooling
- Micro-mobility
- Bikes

Leasing: Bikes

Mobility for people with disabilities:

- Door-to-door shuttles
- Taxis (also with a system of vouchers)

Financial Incentives

Subsidy for utility vehicles:

Self-employed, micro, small and medium-sized businesses operating in Brussels can obtain up to €15,000 for the purchase or lease of a new utility vehicle to replace ones that can no longer be driven in the region.

Cargo bike or bike trailer:

Micro, small and medium-sized companies can receive up to €4,000 for the purchase of a cargo bike or bike trailer (maximum of €12,000 per calendar year, and a cumulative support of €20,000 over the period of the "Cairgo Bike" project).

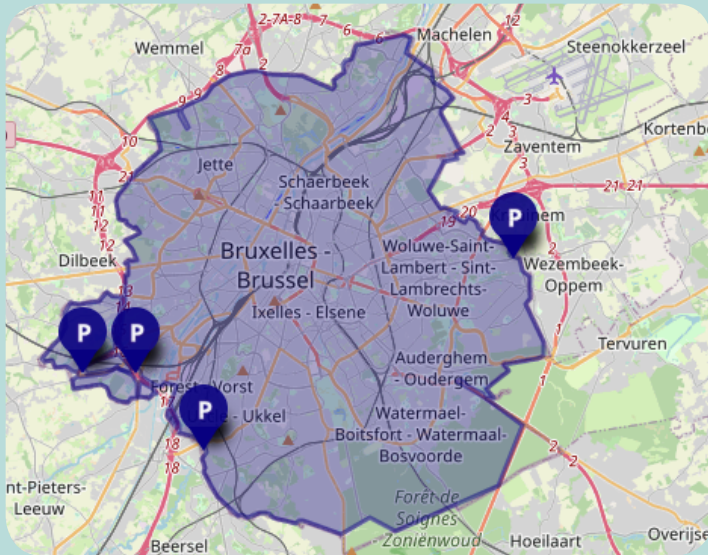
Residents:

Residents can get an income-based bonus “Bruxell’Air premium” for deregistering their vehicles and can benefit from different mobility alternatives, such as car sharing or public transport passes.



Distance-based charge

SmartMove, Brussels, Belgium



SmartMove covers all 19 municipalities of the Brussels-Capital Region but excludes the Brussels ring road and the access roads of certain Park & Ride locations (SmartMove, 2022).

Additional information

The Brussels-Capital Region is considering removing the LEZ for local Brussels drivers when adding the road charge, but this would still mean those coming from the surrounding area would be charged twice. The implementation has been delayed politically because this hasn't been clarified but the technical component (the app) is still in progress. The Brussels Regional Public Service offers a webpage that collects links and useful information about smart mobility. A Mobility Coach programme helps users navigate through the different mobility options for the region and there is a training programme for young and adult cyclists called BikeExperience.

References

Brussels Low Emission Zone. (n.d.). *In practice: Everything you need to know about the LEZ in the Brussels-Capital Region*. Retrieved June 4, 2022, from <https://lez.brussels/mytax/en/practical?tab=Controls>

SmartMove. (2022). *Discover the mobility alternatives and the kilometre charge with the SmartMove app*. <https://www.smartmove.brussels/en/project>



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