



Charge based on emission standards (pollution 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



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Definition of the building block

High-polluting vehicles are charged when they enter or circulate within the designated area.

Timing, phasing, scaling and replication

Phasing is often used to tighten regulations based on new car technologies. All planned phases of the measure should be announced at the beginning to allow users to make informed decisions about their long-term options.

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
- Having no time differentiated vehicle access
- Triggered access restrictions (e.g., by pollution levels)

Enforcement options

- Cameras with automated number plate recognition (ANPR)
- Radio frequency identification (RFID)
- Manual enforcement through visual inspection

Gender and equity

There are no specific concerns to be aware of.

Future considerations

In a future where non-polluting vehicles are the norm, this type of ban will become less effective at reducing the overall volume of vehicles travelling in the area. To maintain this positive (side) effect, a charge based on emission standards would have to be adjusted over time, depending on the changes in average pollution levels of vehicles.

Further guidance

- Signage to communicate UVARs
- Financial or in-kind incentives
- Managing permits (and exemptions)
- Enforcement options

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)

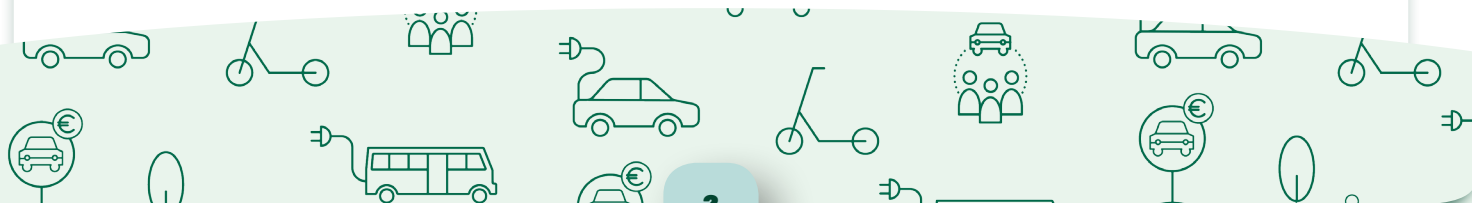
Financial incentives

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.

Organisational support

This can include logistical, administrative, promotional or other support provided by the city. This might include supporting alternative business models (e.g., for car parks that have no/fewer customers), facilitating changes and working on individual solutions to resolve issues.



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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 pavementReallocating road space for cycling:

- Cycle lane
- Cycling street

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

Pricing Aspects

Parking charge:

- Charge based on emission standards (pollution charge)
- From on-street to off-street parking

Regulatory Measures

Regulation by emissions:

- EURO standard
- Zero-emission vehicles

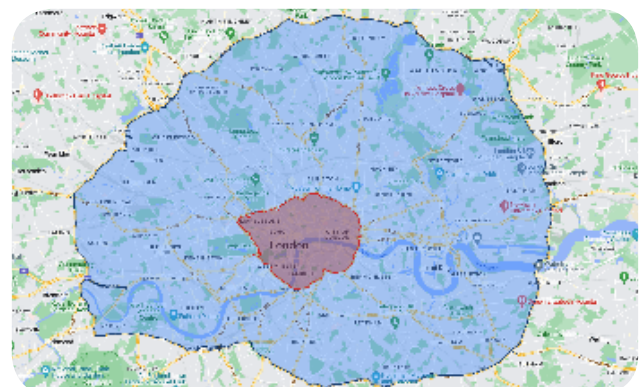
Regulation by vehicle type and dimensions:

- Vehicle type
- Dimensions

Regulation by permit: Parking permit

A road charge based on emission standards is generally combined with regulation by emissions. Alternately, such a charge can replace regulation by emission; i.e., instead of regulating (banning) 'undesirable' vehicles, these vehicles are charged a fee at the level of a fine. 'Compliant' vehicles are charged no fee.

On the right, the map of London, with the extent of the ULEZ in blue (Transport for London, 2022)



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*Example: Ultra-low-emission zone, Greater London, United Kingdom*Description

The ultra-low-emission zone (ULEZ) is one of three different emission schemes in Greater London. The ULEZ extends beyond Central London to the North and South Circular roads. Vehicles entering the area must either meet the emission standards or pay a daily fee in advance. In some cases, the cost of the different emission schemes will be added together.

Payment methods

£12.50 if emission standard is not met.

Minimum standards are:

- Euro 3 for motorcycles, motor tricycles, and quadricycles
- Euro 4 (petrol), Euro 6 (diesel) for cars, private hire vehicles and small vans
- Euro 4 (petrol), Euro 6 (diesel) for larger vans and minibuses

Enforcement methods

Fixed and mobile cameras with automatic number plate recognition (ANPR)

Time windows

In effect at all times

Phasing and upscaling

Until 25 October 2021, ULEZ residents and residents of certain areas next to the boundary could register for a 100% discount from the ULEZ. For vehicles not meeting the emissions standards, they paid 90% of the charge



Ultra low emission ULEZ zone sign, by Tim Sheerman-Chase, 2019. Flickr. CC BY 2.0.



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ULEZ, Greater London, United Kingdom

Other building blocks put in place

Spatial Interventions

Traffic filter: Recirculation of traffic

Reallocating parking space:

- Parklet
- Drop-off zone shared mobility

Reallocating road space for pedestrians:

- Widen pavement
- Pedestrian priority street or zone

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

Pricing Aspects

Road charges/tolls:

Charge applied to a perimeter or an area

Regulatory Measures

Regulation by emissions: EURO standard

Regulation by vehicle type and dimensions:

- Vehicle type
- Dimensions

Regulation by permit: Permit to travel

Complementary measures

Exemptions

- Taxis
- Vehicles for people with disabilities
- Private hire vehicles (PHVs) that are designated wheelchair-accessible
- Electric vehicles or cars and vans that emit 75g/km or less of CO₂ and meet the Euro 5 emission standard for air quality.

References

- Sadler Consultant Europe GmbH (2022). *London*. <https://urbanaccessregulations.eu/countries-mainmenu-147/united-kingdom-mainmenu-205/london>
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- Transport for London. (2022). *ULEZ: Where and when*. <https://tfl.gov.uk/modes/driving/ultra-low-emission-zone>

