



## Low Emission Zone Fact Sheet No 1: Vehicle Emission Criteria

This factsheet is one of a series of briefings on issues relating to the design and implementation of low emission zones (LEZs). LEZs are one of the management options available to local authorities declaring air quality management areas (AQMs). More detailed reports are available from the NSCA Cleaner Transport Forum 01273 878770 / [www.nasca.org.uk](http://www.nasca.org.uk)

### Banding structure

Local authorities may establish LEZs which admit or exclude vehicles on the basis of their emissions characteristics. The Cleaner Transport Forum has recommended that local authorities should adopt a common set of emissions criteria for LEZs so that transport operators and fleet managers can anticipate likely future requirements.

It is proposed that the current legislated emissions limits (known as Euro standards) be used as a basis for LEZ vehicle banding structure. The Euro standards are well understood, have a basis in legislation and can be related to many vehicles by their model and registration date. Euro standards can also be used to judge the performance of 'clean' alternative fuelled or retrofit vehicles. It is suggested they form a good basis for a national testing and certification programme and could form a banding structure for choosing the emission criteria of a LEZ.

Four basic standards of emission performance could apply to vehicles operating in a Low Emission Zone, each being progressively more stringent. The standards mirror those agreed under European legislation for cars, vans and trucks/buses. When the next standard (Euro 5) comes into force this can be added as a new LEZ Class. The ultimate aim might be a Zero Emission Zone.

Proposed LEZ vehicle banding structure

Low Emission Zone Vehicle Banding	Cars	Vans	Trucks/Buses
Class 1	EU stage 1	EU stage 1	EU stage 1
Class 2	EU stage 2	EU stage 2	EU stage 2
Class 3	EU stage 3	EU stage 3	EU stage 3
Class 4	EU stage 4	EU stage 4	EU Stage 4
Class n	ZEV <sup>(1)</sup>	ZEV	ZEV

Note: 1) Zero emission vehicle, at point of use

Some vehicles meet, or exceed the limits in advance of the date the relevant legislation comes into force. However, a date is also agreed (sometimes up to a year later) by which time all new vehicles must comply with the legislation. It is sensible to consider the age of vehicles against the time when the various Euro standards came into effective force for the *majority* of vehicles. These are based on the *entry into service* dates, which varies slightly for different vehicle types, but for practicable purposes can be considered as:

- Pre Euro 1 – up to the end of 1992
- Euro 1 – 1993

- Euro 2 – 1996
- Euro 3 – 2000
- Euro 4 – 2005

The next standard that vehicle manufacturers will meet by 2009 is Euro 5. New conventional vehicles will meet the LEZ emissions criteria from the date when the corresponding EU emissions standard comes into effective force. However, many older vehicles that do not meet the LEZ Class 1 criteria threshold, equivalent to the Euro 1 standard, will remain on the road in the immediate future.

### **Using the emission banding structure**

A banding structure that combines four levels of emission performance and all major vehicle types allows a flexible and responsive approach to implementing a LEZ. Local authorities may consider various ways of applying the criteria:

- a staged approach - starting off with less stringent criteria and then increasing them over time.
- a geographically mixed approach - applying different criteria in different areas. With this approach one may consider a zero emission and pedestrian core to the zone with less stringent zones outside this.
- a mixed vehicle approach - which is based on different criteria for each vehicle type. For example, it may be straightforward, if there has been a recent investment in new vehicles, for a bus operator to maintain higher minimum standards in a LEZ than a delivery company.
- a combination of the above may be appropriate

The application of different criteria to different vehicle types is likely to be an important consideration when implementing a LEZ that requires enforcement to operate successfully. In most cases, due to ease of control, it is more practical to look first at applying vehicle standards to fleet vehicles operating in the LEZ. This may leave other types of vehicle free to enter the zone, or alternatively denied entry. There may be benefits in common criteria between neighbouring areas for certain types of vehicles (e.g. delivery/freight).

It is important that local authorities have flexibility in applying the LEZ standards, because:

- Local conditions of geography, economic activity and fleet composition will influence to a large degree what constitutes a workable LEZ; and
- The air quality problems posed by vehicle emissions in an air quality management area may have a well-identified source that can be addressed by a specific design of LEZ and the application of locally relevant standards.

### **Setting objectives**

If a local authority applies and enforces even the lowest threshold criteria for a LEZ (Class 1) a significant proportion of the most polluting vehicles could be excluded from the area. Existing factors are stimulating the upward trend of engine and fuel technology standards all the time however – conventional Euro 2 vehicles have now been available for a number of years. The objective of a LEZ might be to push new vehicle standards and the use of these vehicles at a

faster rate. If so, a local authority should look to set some of its LEZ criteria at, or above, the currently legislated standard.

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[ttr@globalnet.co.uk](mailto:ttr@globalnet.co.uk) [www.ttr-ltd.com](http://www.ttr-ltd.com) It is a summary of a larger report entitled *Low Emission Zones Vehicle Banding Structure*, available from the address below.

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