



Guide to minimising the local air quality impact of standby diesel generators in the City of London

Standby generators are used to provide power supply if the standard electricity supply is interrupted. Standby generators are only used in an emergency but are tested periodically. In the City of London they tend to be fuelled by diesel. Fuel cell systems are commercially available but they are relatively small compared to diesel generators and are not considered here.

Diesel combustion gives rise to air pollutants, particularly oxides of nitrogen (NO_x), which convert to nitrogen dioxide (NO₂) in the air, and small particles (PM₁₀). At high levels, both nitrogen dioxide and small diesel particles can have a negative impact on health. The City has been declared an Air Quality Management Area for nitrogen dioxide and PM₁₀ as concentrations do not meet health based standards.

The City is implementing a wide range of measures to reduce the amount of NO_x and PM₁₀ emitted in the City, which should in turn improve local air quality. Some of the measures relate to controlling emissions through the planning process, for example developers are encouraged to install low NO_x boilers and low NO_x Combined Heat and Power plant. Further details can be found in the City of London Air Quality Strategy www.cityoflondon.gov.uk/air

This guidance outlines the City of London Corporation's expectations for standby generators with a view to minimising impact on local air quality. If fuels other than diesel are to be used, please contact the Port Health and Public Protection department at the City of London on 0207 332 1162.

Standby generators in the City should not be used to feed electricity into the utility grid. They should be used in emergencies only.

How can the impact on local air quality be minimised?

The impact on local air quality from a standby generator can be addressed via:

- The dispersion of emissions from the chimney
- Emissions abatement equipment

The dispersion of emissions from the chimney

Consideration should be given to the location and height of a chimney serving a standby generator **when the building layout is being designed**. The building should be designed so the chimney is as high as possible to aid dispersion. In some parts of the City, heights of buildings are restricted in order to protect views of important landmarks. If an adequate chimney height cannot be achieved, additional emissions abatement equipment will be required.

Standby generators that burn liquid at a rate of 336.4 kW or more per hour will require formal chimney height approval from the City of London Corporation under the Clean Air Act 1993. Further information can be found on the City of London web site www.cityoflondon.gov.uk/air

Emissions Abatement Equipment

Particulate traps can be used to reduce emissions of PM₁₀ from standby generators. As standby generators are used infrequently, **non regenerative particle traps** are likely to be the most suitable. Particle traps will generally be required for very large generators and if the proposed chimney height is not adequate to disperse emissions.

Selective catalytic reduction can be used to reduce NO_x emissions from diesel generators. This involves injecting urea into the exhaust stream. Selective catalytic reduction will be required for very large standby generators and in situations where the chimney height is not adequate to disperse emissions.