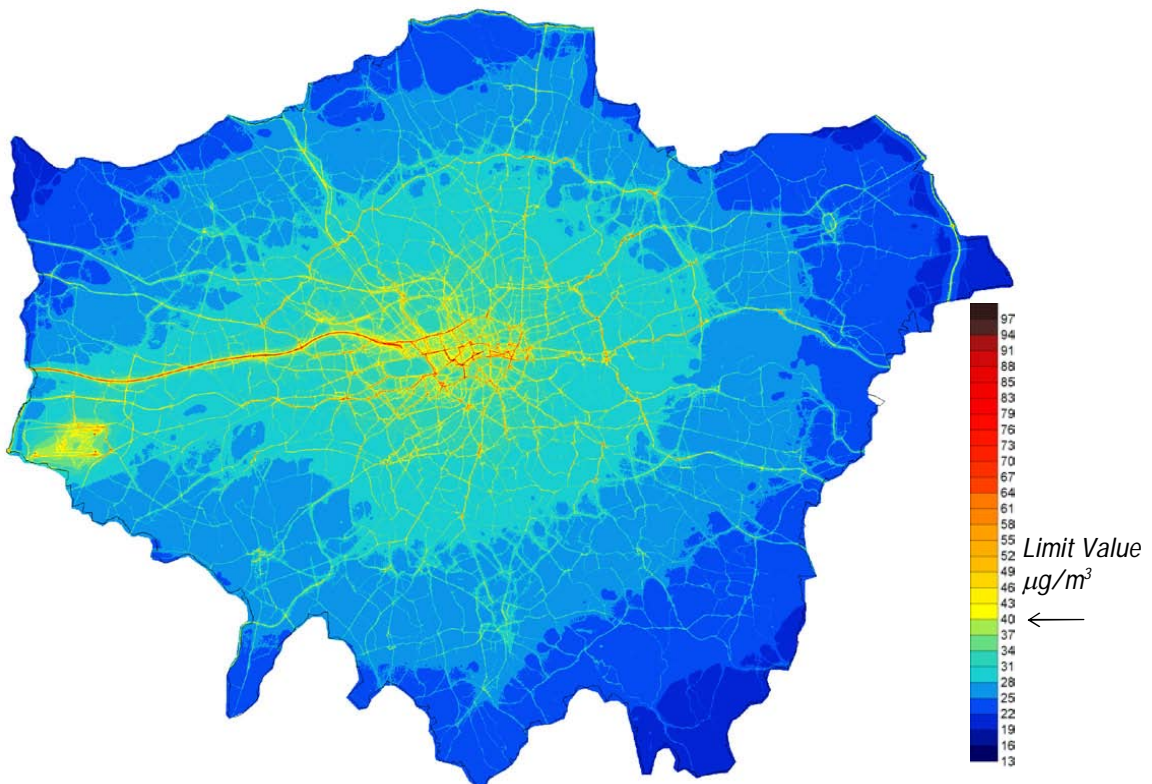


Figure 2.10: Modelled NO₂ annual mean concentrations⁸ (µg/m³) for the year 2015 (baseline)



2.5. Focus on sources of emissions in London

2.5.1. London's air quality is affected by sources of pollution from inside and outside London. This section focuses on the projected sources of emissions within London if no further action to improve air quality is taken beyond that which has already been announced or is underway.

Particulate Matter (PM₁₀) Emissions

2.5.2. The areas identified as being at most risk of exceeding the PM₁₀ EU limit value in 2011 are within central London, so this section focuses on PM₁₀ emissions in that area, although problems are recognised close to some waste sites (see policies 3 and 10).

2.5.3. Road transport is the dominant source of PM₁₀ emissions within central London, contributing around 79 per cent in 2008, 80 per cent in 2011 and 75 per cent in 2015.

The contribution to PM₁₀ emissions of different vehicle types also varies significantly at different locations in London, according to variations in the composition of traffic using the roads. Figures 2.11 and 2.12 show the contributions from all sources to PM₁₀ emissions in central London.

2.5.4. Significant sources of PM₁₀ within central London include cars (responsible for 23 per cent of central London emissions, growing to 27 per cent in 2015), taxis (responsible for 25 per cent in 2008 and largely unchanged by 2015) and LGVs (responsible for 10 to 20 per cent). Considerable efforts have been made to reduce the emissions from buses (through the Bus Emissions Programme for London's buses and LEZ) and bus emissions now contribute less than 10 percent to PM₁₀ in central London. Proposals for reducing emissions from these sources are set out in Chapter 3.

2.5.5. Around 35 per cent of PM₁₀ emissions in 2008 from road transport in central London come from tyre and brake wear, and this is projected to increase to around 40 per cent in 2011, and 55 per cent in 2015 as exhaust emissions of PM₁₀ are expected to reduce. Emissions of PM₁₀ from car tyre and brake wear are now greater than those from car exhaust emissions and over the next five years, this is also expected to become the case with heavier vehicles such as HGVs and buses. This reflects the fact that measures have been taken to reduce emissions from exhausts but similar reductions have not been achieved for tyre and brake wear emissions, largely because there are no technical improvements affecting tyre and brake wear on the market.

Figure 2.11: PM₁₀ emissions from all sources⁸ in central London in 2008

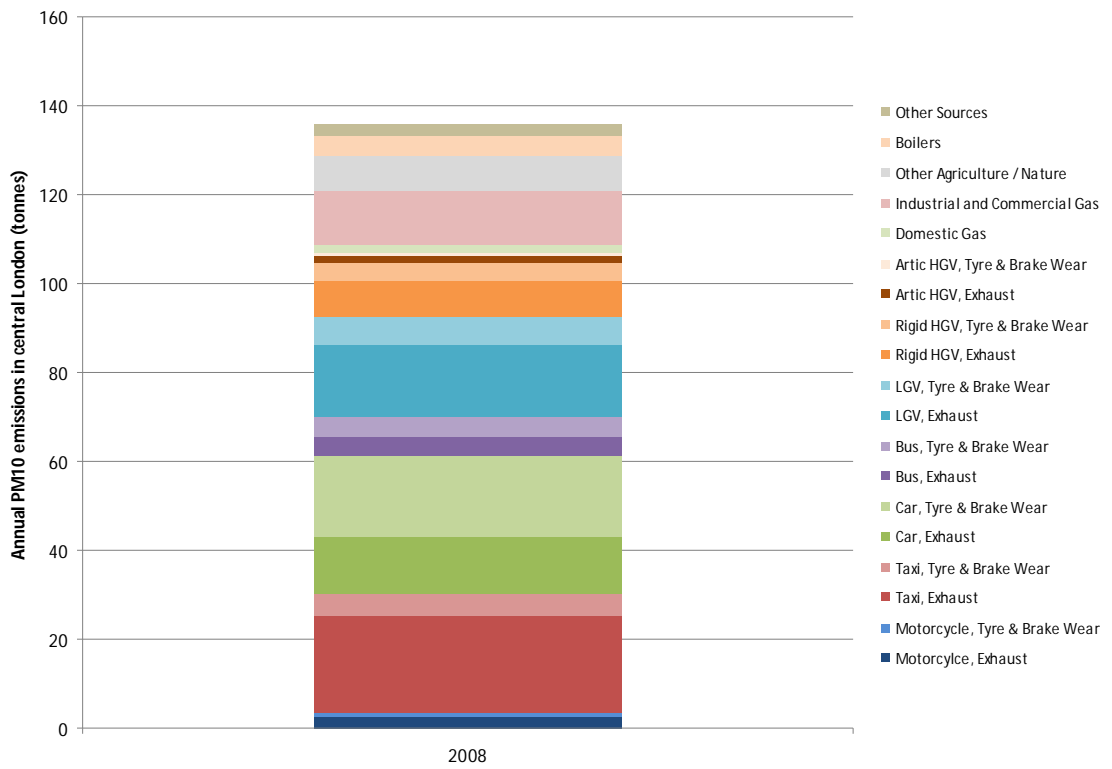
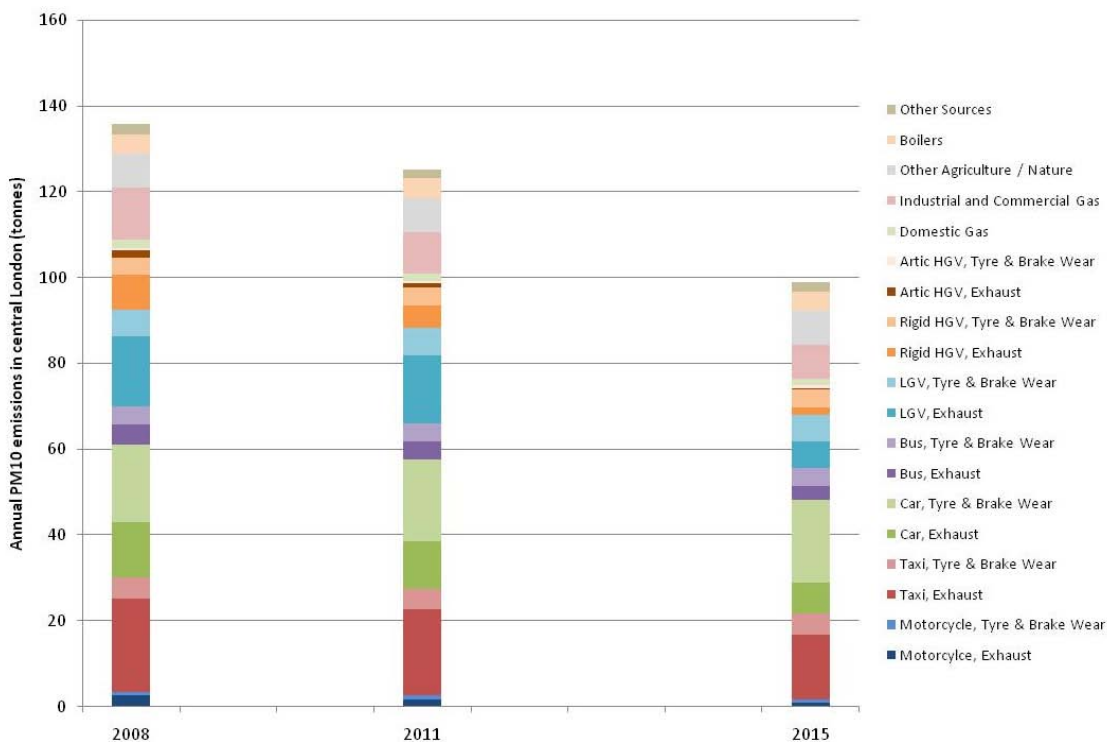


Figure 2.12: PM₁₀ emissions from all sources⁸ in 2008, 2011 and 2015 in central London



Fine Particulate Matter (PM_{2.5}) Emissions

2.5.6. Road transport is the main source of PM_{2.5} emissions in London, contributing around 80 per cent in 2008, with a slightly lower proportion in 2015 (see Figure 2.13 and 2.14). The remaining 20 per cent comes from non-transport emissions, with industrial and commercial gas combustion contributing the biggest proportion in central London. LGVs, cars and taxis each contribute around 20 per cent of PM_{2.5} emissions in central London in 2008, whilst buses contribute about five per cent. Cars and taxis contribute around 25 per cent of road transport emissions in 2015, with the contribution of LGVs reducing to less than 15 per cent. Tyre and brake wear are important sources of PM_{2.5}, contributing around a quarter of road traffic PM_{2.5} emissions in 2008, and this proportion is estimated to be larger at about 40 per cent by 2015.

Figure 2.13: PM_{2.5} emissions⁸ from all sources in central London in 2008

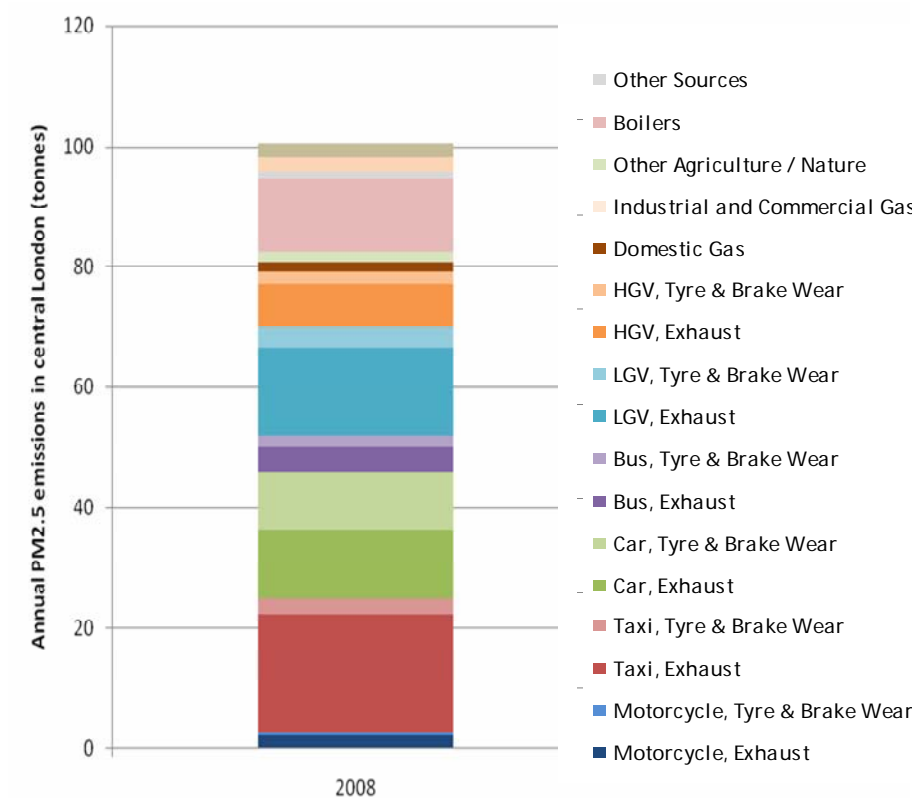
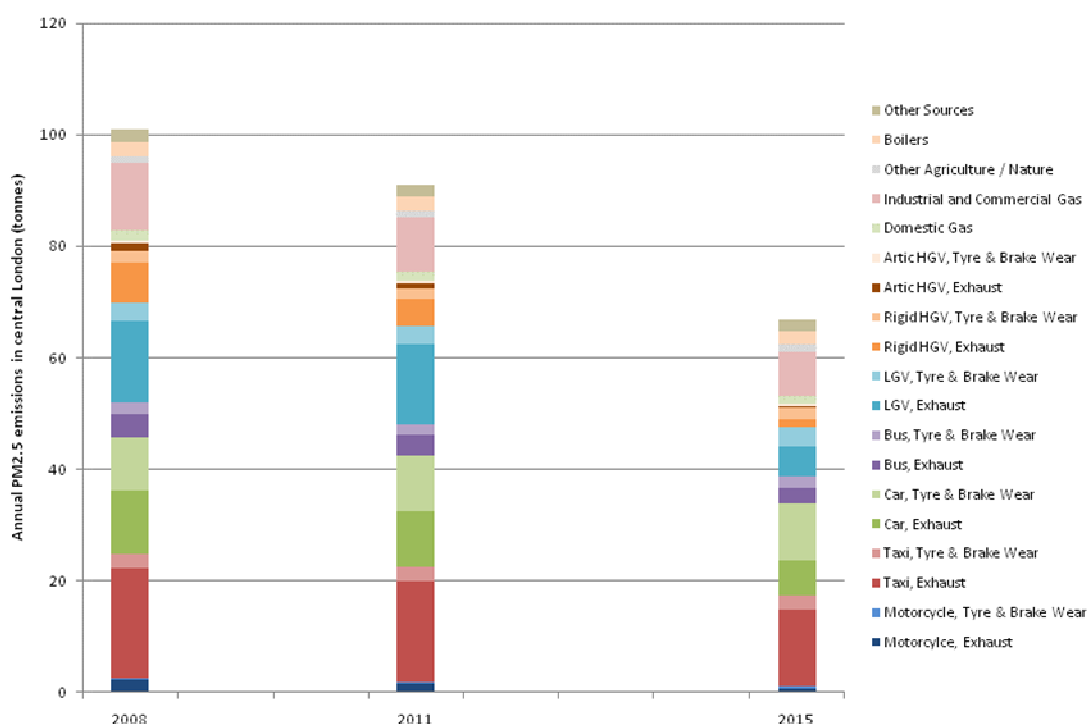


Figure 2.14: PM_{2.5} emissions from all sources⁸ in 2008, 2011 and 2015 in central London.



Nitrogen Oxides (NO_x) emissions

2.5.7. Emissions from road transport and domestic gas dominated Greater London's NO_x emissions in 2008, contributing 46 per cent and 22 per cent respectively (as shown in Figures 2.15 and 2.16). By 2015, road transport is expected to contribute around 30 per cent to NO_x emissions in Greater London, whilst the proportion of domestic gas is expected to be greater (about 27 per cent). NO_x emissions from commercial gas, industry, airports, and rail are all estimated to contribute around seven to eight per cent of emissions in 2008, growing to around 10-11 per cent by 2015.

2.5.8. The contribution to NO_x emissions from these different sources varies significantly in different parts of London. Emissions from domestic gas are of increasing significance in inner and outer London but contribute less than 10 per cent in Central London. Gas use from workplaces is more significant in central London, contributing around 30 per cent in 2008 and 2015. Emissions from airports and rail in central London are negligible overall (about one per cent or less respectively). Road transport