

The estimated effect of the London Congestion Charging Scheme on PM₁₀ concentrations

1. Chapter 4 summarised the estimated emissions changes of the London Congestion Charging Scheme (CCS), which started in February 2003. Overall it was estimated that road transport PM₁₀ emissions within the charging zone decreased by 11.9%, based on 2002 vehicle age profiles through the introduction of the CCS. The 11.9% reduction only includes the reductions brought about by the CCS and not the effects as the result of the ongoing penetration of newer vehicle technologies that have reduced emissions further throughout 2003.
2. It was also stressed in Chapter 4 that the benefits brought by the reductions in road traffic only accounted for exhaust emissions of PM₁₀. Based on recent estimates of non-exhaust PM₁₀ emissions considered in Chapters 4 and 6, it is likely that the estimated reductions in total PM₁₀ emissions have been underestimated. Two principal non-exhaust PM₁₀ sources (tyre and brake wear and resuspension) might be expected to reduce because the CCS has brought about a reduction in the vehicle flows of both light and heavy vehicles. Further work is therefore required to estimate the additional benefits of decreases in the non-exhaust PM₁₀ emissions from vehicles. Figure A6.1 shows the predicted change in annual mean PM₁₀ concentration brought about by the introduction of the CCS (Barratt *et al.*, 2004). Typically, the change in annual mean PM₁₀ is small across the zone but greater reductions are predicted close to roadside locations where PM₁₀ concentrations are highest and there is most risk of exceedences of air quality limits.

Figure A9.1 Estimated change in annual mean PM₁₀ concentration ($\mu\text{g m}^{-3}$) brought about by the CCS based on 2002 vehicle stock assuming 2001 meteorology using the ERG model.

