



# A Changing Climate for Air Quality

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The NSCA does not owe its 110-year history to bets and speculation, however we would place a hefty wager that we are not the only ones talking about climate change in this year's EIC Guide. Climate change is now the biggest game in town, and with it comes the need for all players in the environmental sphere to consider how climate change affects their operations, and the opportunities its pre-eminence may provide.

The draft Climate Change Bill, released in March of this year, places added emphasis on the subject. Despite the argument around the lack of annual targets, the fact remains that the Bill will for the first time, place legal obligations on the Government to reduce emissions and ensure that three successive five-year 'carbon budgets' are always in legislation. These measures will help to reassure industry that climate change is not a flash in the pan issue, but one that needs to be addressed and planned for.

Air quality and climate change are inextricably linked. After all, combustion of fossil fuels are the main source of both CO<sub>2</sub> and local air pollutants. This relationship has recently been explored by the Air Quality Experts Group's (AQEG) report, *Air Quality and Climate Change: a UK perspective*, which we hope will feed into upcoming UK and EU policy. Co-management of emissions brings a new set of challenges, for example energy-intensive end-of-pipe solutions may have to be

re-examined. However, it also presents a new set of opportunities for environmental industries.

### Air Quality Counts

Away from climate policy (or not, as we may see) developments in air quality continues apace. Whilst we wait for the final release of the revised UK Air Quality Strategy (now expected during the summer), negotiations continue in Europe on a new Air Quality Directive and revised National Emission Ceilings (NEC) for key pollutants. Whilst it's difficult to second-guess the results of the latter two, it is likely that standards will be tightened.

What we can be sure of is that EU and UK policy will move towards a framework of exposure reduction for pollutants such as particles that currently have no 'safe' level. This moves away from the hotspot concept of only addressing these pollutants where levels breach objectives and limit values, forcing a re-think of traditional pollution control.

At the same time, a better understanding of trans-boundary pollution and non-traditional sources of air pollutants are squeezing our 'room for manoeuvre' around air-quality objectives. Exchange of air pollutants between continental Europe and even North America is an acknowledged problem. For example, our recent ARMO project concluded that the Sussex coast received significant quantities of ozone from northern

France. These elevated levels of background pollution leave less room to add 'our own' before breaches occur, as highlighted by the smog seen in London and the South East during March.

Non-traditional sources include dust and emissions from construction and demolition, which look likely to increase significantly in the South East as the rate of development increases. London has started to address this with new guidance, which we will look at later on.

Climate change adds a new dimension to improving air quality. As the hot summer of 2003 demonstrated, a warmer climate will have a marked effect on summer air quality, again heightening the challenges of meeting those Air Quality Strategy objectives. With all these factors in mind, co-management of atmospheric emissions and an innovative approach to air-quality improvement looks set to be key in meeting our climate and air-quality targets.

### Recommendations for Change

The aforementioned AQEG report on air quality and climate change made a number of recommendations. Chief amongst these are that proper lifecycle impact studies on measures to address climate change and/ or air quality should be carried out to ensure that the intended effects are actually produced, and benefits in one area do not cause problems in the other. The report also states that measures that deliver win/win ►

## Air Quality

- ▶ benefits on both air quality and CO<sub>2</sub> emissions should be strongly prioritised; these include measures to encourage energy efficiency, fuel switching, demand management and behavioural change.

So what does this all mean for our environmental industries? Well, the phrase 'where there's muck there's brass' has perhaps never been so apt, and companies that can deliver innovative win/win solutions on a cost effective basis should find themselves prospering.

Nowhere is this perhaps more apparent than in the car-manufacturing industry and its related suppliers, who are now under twin legislative pressures to reduce local air emissions and (shortly) average new car CO<sub>2</sub> emissions. In the past perhaps these two areas have been looked at separately, with technologies to clean up emissions, such as catalytic converters, having a negative effect on fuel economy and CO<sub>2</sub> emissions.

Despite this, average new car CO<sub>2</sub> emissions have been driven down, Euro 4 emission standards compliance achieved, and new cars made more comfortable and appealing for drivers. There is no doubting though the significant challenges in meeting the new Euro 5 (2009) and 6 (2014) standards alongside proposed average new car CO<sub>2</sub> emission limits of 130 g/km by 2012. One result will be increased cost and complexity in vehicle drivetrains, and the challenge is therefore paralleled by opportunity for the suppliers of systems and components that can help meet these limits.

However, despite continuing technical advances, it is unlikely that 'traditional' air-pollution control measures alone (eg: regulations on new car and industrial emissions) can allow us to meet our air-quality strategy objectives. In the UK, London suffers from the worst air-quality problems, and it is here that we are starting to see innovative air-pollution control measures applied.

### Looking to London

The Mayor's Taxi Emission Strategy is one, and by the end of this year, all licensed taxis will have to meet Euro 3 standards. Another sector that's being addressed is construction plant, and under the *Best Practice Guidance: the Control of Dust and Emissions from Construction and Demolition* (produced by the GLA and London Councils) planning authorities are urged to set conditions on sites including the use of ultra-low sulphur diesel and exhaust treatment on plant over 37kW.

The big event to watch, however, is the start of the London Low Emission Zone (LEZ). Covering the whole of Greater London, the LEZ will restrict entry to heavy goods vehicles that meet Euro III for PM10 after 2008 and Euro IV after 2012. Vehicles that do not meet the standards will face hefty charges.

Other cities are watching these schemes with interest, and several are seriously looking at Low Emission Zones and/or congestion charging. The impact on the environmental industries is likely to be twofold. Firstly the market for aftermarket emissions treatment systems, such as diesel particulate filters and selective catalytic reduction systems, is expanding and is likely to continue to do so. Secondly, there is a renewed interest in new models of freight distribution, for example, the case for electric vehicles in city freight distribution is becoming stronger, backed by new battery and motor technologies that lend greater practicalities.

Although transport is perhaps subject to the most headline policy actions to reduce air pollution and greenhouse gases, a great deal is also going on in other sectors. In the domestic sector, the Government has announced a commitment to zero-carbon homes, in effect a tightening of planning controls and building regulations to make all new homes carbon neutral by

2016. At the same time, stricter vehicle regulations and greater housing density means that the Greater London Authority expect boilers to overtake road vehicles as the greatest source of NO<sub>x</sub> in the capital by 2010, focusing attention to reduce emissions onto the domestic sector.

These changing situations suggest a move away from end-of-pipe solutions, such as more loft insulation and higher efficiency boilers, towards a fundamental review of how we design new homes. Do we really need gas boilers (with their associated NO<sub>x</sub> emissions) in new homes, when instead very high efficiency homes could use renewable power for hot water and their very limited heating requirements? Innovative developments such as BedZED in South London have already demonstrated that this approach works.

As part of the zero-carbon homes pledge, late in 2006 the Government consulted on a supplement to Planning Policy Statement 1 (PPS1) entitled *Planning and Climate Change*. In NSCA's response to the consultation, we commented that the policy linkages between climate change and air quality had largely been ignored. Without these the housing construction industry will lack incentive to address both climate change and air quality holistically and real innovation will only happen piecemeal where local authorities choose to link the two themselves.

The current pre-eminence of climate change provides a real opportunity to reduce emissions of both local air pollutants and greenhouse gases, but only if the opportunity is recognised by Governments and the policy linkages made. Bodies such as NSCA and AQEG will continue to push for these linkages to be implemented using a realistic, tested, yet innovative approach. A robust, joined up policy framework will allow the environmental industries to plan ahead and provide measures to reduce both types of air emissions. ●

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