

AIR QUALITY: LEGAL AND POLICY ISSUES

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INTRODUCTION

1. The development of legislation controlling air pollution has been a gradual and incremental process, which initially addressed specific problems as they arose and more recently has formed part of a more integrated response to regulating the emission of pollutants.
2. Air pollution was acknowledged to be a problem as long ago as 13th century, when the burning of sea coal was banned in London. In the 17th century, Londoners petitioned Parliament to prohibit the importation of coal from Newcastle because of the health issues caused by the widespread burning of coal.
3. The Industrial Revolution substantially increased the severity of pollution in cities as a result both of industrial and domestic coal usage and the production of emissions from alkali works which caused acid rain. The first Alkali etc Works Act was passed in 1863, requiring that a proportion of acidic emissions be arrested. The second Act introduced the concept of best practicable means to prevent the escape of noxious or offensive gases and introduced the first statutory emission limit (for hydrogen chloride). The legislation was subsequently extended to all the major air polluting industries.
4. This legislation did not deal with the control of smoke. The Public Health (Smoke Abatement) Act 1926 extended the influence of the Alkali Inspectorate to include industrial smoke but the Public Health Acts 1875 and 1936, which sought to deal with smoke as a nuisance, were ineffective to deal with the other problem of domestic coal use.
5. The need for further legislation was recognised following the London smog of 1952, to which over 4000 additional deaths were attributed. This prompted the Clean Air Act 1956, which regulated pollution from domestic fires and processes not covered by the Alkali legislation. Following amendments, it is now the Clean Air Act 1993.¹ The Control of Pollution Act 1974 gathered together measures relating to water, waste and air, but nonetheless retained an unsatisfactory fragmented system of control.

¹ The Clean Air Act 1993 provides further control of pollution falling outside the permitting regime. It enables local authorities to prohibit dark smoke; control smoke, dust and grit emissions; designate smoke control areas; and publish information about air pollution.

6. Attention then turned to international concern with the pollution of the atmosphere. The 1979 Geneva Convention on Long-Range Transboundary Air Pollution included an obligation to endeavour to limit air pollution using best available technology where feasible and was followed by protocols on the reduction of specific pollutants which largely overlap with similar measures agreed within the EU. In 1985, the Vienna Convention for the Protection of the Ozone Layer (and the later Montreal Protocol) provided a framework for action against activities that were likely to modify the ozone layer.²
7. The EC did not see the protection of air quality as a priority until the mid 1980s (the main framework Directive on emissions from industrial plant³ was introduced in 1984, nearly 10 years after the framework Directives for waste and water pollution. Since then, however, European law has exerted a growing influence on domestic legislation, albeit that its techniques often borrow from concepts developed in the UK. The Environmental Protection Act 1990 replaced sector- and medium-specific regulation with largely integrated pollution control.⁴ This approach formed an important feature of the wider EU strategy to regulate air quality, which was set out in the Commission's Clean Air for Europe (CAFE) programme, adopted in May 2001,⁵ and more recently in its Thematic Strategy on Air Pollution,⁶ aspects of which are explained below.
8. Despite the increase in controls, air quality remains a significant environmental issue. Air pollution was regarded as being in decline in the 1990s, mainly due to reduction in heavy industry and switch to power stations that polluted less (from coal to gas). However, the downward trend has stalled and according to government, air pollution remains responsible for up to 24,000 premature deaths each year in the UK.⁷ Transport-related emissions are a major source of concern.
9. The importance of air quality regulation has been underlined by the emergence of climate change as a central concern for law and policy (within which air quality issues often appear to be subsumed). Air quality issues are also arising more frequently due to the evolution of techniques to deal with waste that have been prompted, in part, by the requirements to reduce landfill (eg incineration and composting).

² As fed into EU Regulation 2037/2000; and see too Environmental Protection (Controls on Ozone-Depleting Substances)(Amendment) Regulations 2008.

³ 84/360/EC.

⁴ See too Part III of the Environmental Protection Act (EPA) 1990, which allows for action to be taken by local authorities or individuals against a statutory nuisance that exists or is likely to occur or recur. Statutory nuisances include: (a) smoke, fumes or gas emitted from premises; (b) dust, steam, smell or other effluvia arising on industrial, trade or business premises, or (c) any accumulation or deposit which are "prejudicial to health or a nuisance". There is a defence available to industrial, trade or business premises that the "best practicable means" has been used to prevent the nuisance, or counteract its effect: see ss. 79(1) and 80(7). "Best practicable means" is defined in s. 79(9): "practicable" means "reasonably practicable having regard amongst other things to local conditions and circumstances, to the current state of technical knowledge and to the financial implications".

⁵ COM(2001)245.

⁶ COM(2005)446: part of the 6th Environmental Action Programme.

⁷ See <http://www.parliament.uk/post/pn188.pdf>.

10. The current system is an extremely wide-ranging subject covering variety of complex legal mechanisms. I do not therefore attempt to be comprehensive, but I give an overview of the main areas of control and the issues that have provoked legal and policy debate.

CONTROLS

Ambient Air Quality

11. Air Quality Framework Directive (96/62/EC)

- a. aimed to define principles of a common strategy to assess, and define objectives for, ambient air quality;⁸
- b. identified 13 ambient air pollutants in respect of which various forms of specific control were to be introduced under daughter directives, mainly in the form of
 - i. limit values (a pollutant concentration level fixed to avoid, prevent or reduce harm to human health or the environment, to be attained within a given period and not to be exceeded, subject to time-limited margins of tolerance);
 - ii. target values (a level fixed with the aim of avoiding more long-term harmful effects, to be attained where possible over a given period);
 - iii. alert thresholds (a level beyond which there is a risk to human health from brief exposure and at which immediate identified steps should be taken);⁹
- c. laid basis for techniques of measurement of air quality in “agglomerations” (a zone within a member state with a population concentration in excess of 250,000 inhabitants or a population density per sqkm which for the member states justifies the need for ambient air quality to be assessed and managed);¹⁰
- d. imposed general obligation on member states to ensure compliance with limit values; and to draw up action plans indicating measures to be taken where there is a risk of limit values and/or alert thresholds being exceeded in identified zones/agglomerations.¹¹

12. Daughter Directives

- a. 1999/30/EC (*the 1st Daughter Directive*) set concentration limit values for sulphur dioxide, nitrogen dioxide (NO₂) and oxides of nitrogen (NO_x), particulate matter (PM) and lead;
- b. 2000/69/EC (*the 2nd Daughter Directive*) set limit values for benzene and carbon monoxide;

⁸ Article 4.

⁹ Article 2.

¹⁰ Article 5-10.

¹¹ Articles 7-9.

- c. 2002/3/EC (*the 3rd Daughter Directive*) established long-term objectives, target values, an alert threshold and an information threshold (requiring information to be made available to the public) for concentrations of ozone;
- d. 2004/107/EC (*the 4th Daughter Directive*) established a target value for the concentration of arsenic, cadmium, nickel and benzo(a)pyrene;

13. Janacek v. Freistaat Bayern¹²: ECJ held that where there was a risk of exceeding specified limits, a directly concerned individual can require the Member State to draw up an action plan. Also noted that Member States were not required to take measures to ensure that limit values were never exceeded. They were obliged, subject to challenge through national courts, only to take such measures in the short term as an action plan as were capable of reducing to a minimum the risk that values might be exceeded, and of ensuring a gradual return to a level below these values, taking into account all the circumstances.

14. Commission v. Austria (re Inn Valley Motorway):¹³ ECJ considered law banning large lorries carrying certain goods from using an identified section of motorway in order to improve air quality. Commission argued that Austria was breaching Treaty obligations to allow free movement of goods. ECJ agreed, given importance of route between south of Germany and north of Italy and failure to research possibility of less restrictive measures (eg alternative routes or modes of transportation), however considered in certain circumstances even free movement of goods could be prevented if needs of environment demanded it.

15. Air Quality Standards Regulations 2007

- a. replaced previous Air Quality Limit Values Regulations 2003 that transposed and implemented Air Quality Framework and 1st-3rd Daughter Directives; also give effect to the 4th Daughter Directive;
- b. issued pursuant to s. 87 of the Environment Act 1995, which provides for regulations to implement the Air Quality Strategy or EC obligations;
- c. *prescribe air quality standards*:¹⁴
 - i. limit values for benzene, carbon monoxide, lead, nitrogen dioxide and other nitrogen oxides, PM₁₀ and sulphur dioxide (Group A) (future attainment date of 1st January 2010 in cases of benzene, NO₂ and NO_x);¹⁵
 - ii. benzene and NO₂ subject to progressively tighter margins of tolerance, ending on 31st December this year;¹⁶
 - iii. target values for arsenic, benzo(a)pyrene, cadmium and nickel (Group B), to be attained by 31st December 2012;¹⁷
 - iv. target values (to be attained by 2010) and long-term objectives¹⁸ for ozone.¹⁹

¹² C-237/07.

¹³ C-320/03.

¹⁴ Reg. 6 and Schedule 1.

¹⁵ Schedule 1, Part 1.

¹⁶ Schedule 1, Part 2.

¹⁷ Schedule 1, Part 3.

- d. impose duty on SS to take “*necessary measures*” to ensure that standards are attained:²⁰
 - i. for Group B pollutants, necessary measures are those not entailing disproportionate costs and, in so far as arise from installations to which IPPC Directive applies, are the application of best available techniques (BAT)(see below);
 - ii. for ozone, necessary measures are measures SS considers to be proportionate and, in relation to long-term objectives, cost-effective.
- e. require territory to be divided into *zones*, defined as agglomerations of 250,000 or more inhabitants or where SS thinks population density justifies classification;²¹
- f. require preparation of *improvement plan* where, prior to attainment date, zone concentrations of benzene or nitrogen dioxide exceed a limit value and margin of tolerance, or where concentrations of ozone exceed a target value; plan must have the objective of attaining limit value or target value;²²
- g. require *maintenance of compliance with air quality standards* where concentrations of Group A and B pollutants are below relevant limit and target values respectively; and where ozone concentrations meet long-term objectives; must also endeavour to maintain lowest concentration compatible with sustainable development;²³
- h. require preparation and implementation of *action plans* for each zone where SS considers risk that limit value or alert threshold²⁴ for nitrogen dioxide, sulphur dioxide or ozone will be exceeded; plans are to set out short-term measures to reduce risk of exceedances or limit duration or severity of exceedance;²⁵
- i. require *assessment* of each pollutant in each zone²⁶ and *monitoring*;²⁷
- j. also provide for *public information* on zones, pollutant concentrations, breaches of alert or information thresholds, breach of air quality standards, improvement and action plans.²⁸

¹⁸ Defined as a maximum concentration to be achieved in the long term, in so far as possible through identified measures: see reg. 2(1) and reg. 7(3).

¹⁹ Schedule 1, Part 4.

²⁰ Reg. 7.

²¹ Reg. 5.

²² Reg. 8. See too reg. 9, which requires the SS to implement other improvement measures where concentrations of Group B pollutants exceed target value; or concentrations of ozone are at or below target values but exceed a long-term objective.

²³ Reg. 10.

²⁴ See Schedule 3.

²⁵ Reg. 11.

²⁶ Reg.s 12-16.

²⁷ Reg.s 17-20.

²⁸ Reg.s 21-7.

16. Stansted: proposals to relax limits on passenger throughput and flights: a main issue at the inquiry was the effect of increased air pollution from aircraft and surface traffic on Hatfield Forest and nearby woodlands. BAA and objectors disputed whether the limit value for NO_x, as set out in the first Daughter Directive and transposed into the 1997 Regulations, should apply when assessing the air quality of the Forest. The debate centred around the location of sampling points for measuring air quality for the purpose of assessing whether the limits were exceeded in any zone/agglomeration. The Directive and the 1997 Regulations provided for sampling points targeted at the protection of ecosystems or vegetation to be sited more than 20km from agglomerations or more than 5km from other built-up areas, industrial installations or motorways.²⁹ The Inspector and SSs accepted that a 5km exclusion zone applied so as to exclude the Forest and nearby woodlands (although they concluded that NO_x levels above the limit value were nonetheless a cause for concern, irrespective of whether the limit value applied there). The approach to the Directive/Regulations was not the subject of any legal challenge, although other aspects of the decision were.³⁰

17. Ambient Air Quality Directive (2008/50/EC)

- a. into force 11 June 2008 and consolidates existing legislation apart from the 4th Daughter Directive, which will be brought within the new Directive at a later date; must be implemented by 11 June 2011,³¹
- b. provides a new regulatory framework for PM_{2.5} (a national average exposure reduction target along with progressive target and limit values);³²
- c. however arguably weakens previous legislation in particular by:
 - i. disregarding natural contributions to pollution (previously only certain natural events such as the transboundary movement of Saharan sand particles were disregarded);
 - ii. making provision for Member States to postpone, in given zones/agglomerations, attainment deadlines for PM₁₀ (until 11 June 2011) and for NO₂ and benzene (until 1st January 2015 at the latest); postponement subject to strict conditions and assessment by the European Commission;³³
- d. Commission has set out approach it will take in assessing national notifications for extensions:³⁴ all appropriate measures must have been taken before initial attainment date; cause of exceedances must be due to transboundary air pollution, adverse climatic conditions or site-specific conditions affecting how pollution is

²⁹ See Schedule 6, para. 5 to the Regulations.

³⁰ Barbonne v. SST, SSCLG [2009] EWHC 463 (Admin).

³¹ Also brings in Decision 2004/224/EC [2004] OJ L68/27 by which Member States were required to provide the Commission with information on their national plans to restrict certain pollutants.

³² See Annex XIV.

³³ Article 22.

³⁴ COM(2008) 403.

dispersed; compliance must be achieved by expiry of exemption period and for each relevant zone an air quality plan must be prepared setting out the planned measures to ensure compliance.

- e. as with previous Directives, failure to achieve a limit value on the part of a Member State may render liable to Commission-instigated infraction proceedings;
- f. In January 2009, *infraction proceedings* launched against 10 Members States, including UK, for failure to submit notifications or notify Commission of all air quality zones exceeding the limit values for PM₁₀.
- g. UK has, with other Member States, sent a *notification to the European Commission* to secure additional time to meet the limit values for PM₁₀ identified areas across the UK; decision awaited; anticipated that notification will be sent later relating to nitrogen dioxide. On 2 July 2009 Commission decided that notifications in respect of 19 zones in Austria, Germany and Hungary met the conditions, but that others did not; Member States may re-notify for zones if new information can be provided to demonstrate compliance with conditions;
- h. has brought government into *dispute with Boris Johnson* following his decision in February to suspend the “senseless” third phase of the low emission zone³⁵ because of its detrimental impact on small businesses in the recession; Defra had assumed this would go ahead (with the western extension to the congestion charge zone) when submitting notification; it was reported in April that Defra was considering the use of powers under Air Quality Standards Regulations 2007³⁶ that would allow SS to direct Mayor to implement alternative measures to meet the air quality limits under the Directive and powers under the GLA Act³⁷ to give directions about the content of the Mayor’s air quality strategy. Boris has prepared evidence showing what steps are being taken to reduce emissions, in particular those of PM10s,³⁸ but it is unclear what steps are to follow;
- i. if Commission reached positive decision on notification, Defra anticipates that Air Quality Standards Regulations 2007 will be amended to reflect the new compliance deadline; transposition of Directive into national legislation anticipated by Defra by June 2010;³⁹

³⁵ Under the Road Traffic Regulation Act 1997.

³⁶ Regulation 30.

³⁷ Section 363.

³⁸ http://www.london.gov.uk/mayor/environment/air_quality/docs/evidence-28Nov08.pdf.

³⁹ See too the National Emissions Ceilings Directive (2001/81/EC). It is intended to deal with deposits of acidifying and eutrophying substances at levels which harm environment - WHO guidelines for protection of human health and vegetation from petrochemical pollution are exceeded in all Member States. The Directive sets upper limits for each member state for total emissions of sulphur dioxide, nitrogen oxides, volatile organic compounds and ammonia, taking 2010 and 2020 as benchmarks. It excludes emissions from international maritime traffic and aircraft emissions beyond landing and take-off cycle. Member States are required to draw up national programmes to demonstrate how they are going to meet the national emissions ceilings and report yearly their inventories to European Commission and European Environment Agency. The National Emissions Ceilings Regulations 2002 (SI 2002/3118) implement Directive 2001/81/EC.

- j. Third runway at Heathrow: has also placed emissions limits, for NO₂ in particular, in spotlight. DfT has acknowledged that the UK does not comply with this limit, but argues that other places in the UK are worse than Heathrow, and that it is committed to supporting actions, mainly in relation to motor vehicle emissions, to achieve the limits by an extended deadline of 2015. It has stated that its forecasts predict meeting the limits by 2020 in any event, even with the airport (assuming in part progressive reductions under current and planned EU vehicle standards). Remains to be seen exactly what will be done. Boris opposes expansion;

18. UK Air Quality Strategy⁴⁰

- a. Environment Act 1995⁴¹ required SS to “*prepare and publish a statement... (“the strategy”) containing policies with respect to the assessment or management of the quality of air*”, which must include statements with respect to “*standards*⁴² relating to the quality of air” and “*objectives*⁴³ for the restriction of the levels at which particular substances are present in the air”, along with measures to achieve the objectives;⁴⁴
- b. first published in 1997; *latest version published in July 2007*;
- c. sets out objectives for 10 pollutants for protection of human health: PM₁₀, PM_{2.5}, NO₂, ozone, sulphur dioxide, polycyclic aromatic hydrocarbons, benzene, 1,3-butadiene, carbon monoxide and lead;⁴⁵
- d. sets out objectives for NO_x, sulphur dioxide and ozone for protection of vegetation and ecosystems;⁴⁶
- e. PM_{2.5} objective included in recognition that human health effects more likely to be closely correlated with this smaller PM than with coarser PM₁₀; adopts general exposure reduction approach (see above) on basis that current requirement to meet

They place a duty on SS to ensure that in 2010, and in each year thereafter, total emissions within the UK of each relevant pollutant do not exceed stipulated amounts (reg. 3 and Schedule); require SS to prepare an inventory and projection of emissions (reg. 5); and a programme for progressive reduction in emissions, to which local authorities must have regard when exercising functions which significantly affect level of emissions in UK of relevant pollutants (reg. 4). The UK is currently meeting ceilings for ammonia and VOCs; close to meeting ceiling for sulphur dioxide but still some way to go with nitrogen oxides ceiling. Directive obligations could well be enforced with enthusiasm. Greece and Netherlands have already been censured for failing to notify Commission of programmes designed to meet national emissions ceilings: Commission v. Greece (Case C-68/04 2004/C94/46 p. 22) and Commission v. Netherlands (Case C-146/04 2004/C106/75 p. 44).

⁴⁰ 2007, Cm 7169.

⁴¹ S. 80(1).

⁴² Standards are “concentration of pollutants in the atmosphere which can broadly be taken to achieve a certain level of environmental quality. The standards are based on assessment of the effects of each pollutant on human health including the effects on sensitive subgroups or on ecosystems”: AQS, para. 17.

⁴³ Objectives are “policy targets often expressed as a maximum ambient concentration not to be exceeded, either without exception or with a permitted number of exceedances, within a specified timescale”; *ibid.*

⁴⁴ S. 80(5).

⁴⁵ Table 2.

⁴⁶ *Ibid.*

EU limit values focuses attention on pollution hotspots only, and a driver to improve air quality everywhere is necessary;⁴⁷

- f. introduces new objective for ozone for protection of vegetation and ecosystems;
- g. *statement of policy targets*, but:
 - i. objectives often mirror legally binding limit values in EU legislation, which have been brought forward into domestic legislation eg Air Quality Standards Regulations 2007;
 - ii. many objectives given separate statutory effect by Local Air Quality Management regime (see below);
 - iii. EA must have regard to it when exercising functions, primarily when carrying out environmental permitting functions (see below);⁴⁸
- h. Defra preliminary assessment of performance against the Air Quality Strategy objectives in 2007 indicates that objectives not met for PM₁₀, NO₂, and ozone in some of the UK's major urban areas and alongside busy roads.

19. Local Air Quality Management (LAQM)

- a. duty on local authorities to conduct reviews of present and future air quality within its area; includes assessment of whether air quality standards and objectives are or are likely to be achieved;⁴⁹
- b. where appears that any air quality standards or objectives are not being achieved, or are not likely to be, authority must designate an *air quality management area* ("AQMA");⁵⁰
- c. must prepare further assessment of air quality with report as well as an *action plan* for AQMA setting out how authority intends to exercise its powers to achieve objectives;⁵¹
- d. *air quality objectives* for human health for benzene, 1,3-butadiene, carbon monoxide, lead, NO₂, PM₁₀ and sulphur dioxide, reflecting those set out in AQS, prescribed by Air Quality (England) Regulations 2000;⁵²

⁴⁷ Does not appear to reflect requirements of Directive 2008/50/EC.

⁴⁸ S. 81(1).

⁴⁹ EA 1995, s. 82.

⁵⁰ S. 83(1).

⁵¹ S. 84(1)-(3).

⁵² SI 2000/928; see reg.s 3-4 and Schedule, as amended by SI 2002/3043. PM2.5, polycyclic hydrocarbons and ozone objectives for human health (as appear in AQS) excluded, along with objectives for protection of vegetation and ecosystems.

- e. AQMAs mainly designated in relation to PM₁₀ and NO₂, caused by road traffic;
- f. authorities not obliged to achieve objectives, because not in position to control sources which might give rise to breach;
- g. authorities required to have regard to guidance issued by SS when exercising functions:⁵³
 - i. policy guidance LAQM.PG(09)(February 2009): sets out procedures for carrying out reviews and designations, identifies powers that can be used to meet objectives and encourages the use of air quality strategies even where no AQMP in place;
 - ii. technical guidance LAQM.TG(09)(February 2009): advises on methodology for carrying out reviews and assessments, including monitoring and modelling;
- h. Defra has also produced non-statutory guidance on some specific ways to improve air quality, which cover topics including low emission zones and encouraging the uptake of low emissions vehicles,⁵⁴ range of powers available, including planning powers and road traffic regulation powers.⁵⁵

20. Mayor's Air Quality Strategy

- a. GLA Act 1999 requires Mayor to publish the London Air Quality Strategy, which must contain policies for the implementation of the policies and standards and objectives of the national air quality strategy;⁵⁶
- b. strategy estimates that 1,600 accelerated deaths and 1,500 respiratory hospital admissions per year occur in London as a result of air pollution;
- c. sets out range of policies designed to improve air quality, particularly in relation to NO₂ and PM₁₀, and primarily directed at reducing emissions from individual vehicles, considering low emission zones, providing incentives for the purchase of cleaner road vehicles and enabling the expansion of refuelling infrastructure for alternative fuels;
- d. planning policy closely linked with implementation of Strategy (see below).

Industrial emissions

21. Context

⁵³ S. 88(2).

⁵⁴ <http://www.defra.gov.uk/environment/quality/air/airquality/local/guidance/index.htm>.

⁵⁵ Eg Traffic Regulation Orders under the Road Traffic Regulation Act 1984.

⁵⁶ Ss. 362(1)(2).

- a. Environmental Protection Act 1990 Part I introduced:
 - i. Integrated Pollution Control (IPC) which regulated releases to air, water and land generally from larger or more complex activities (regulated by HMIP, later EA); and
 - ii. Local Air Pollution Control (LAPC) for releases to air for other generally smaller activities (regulated by local authorities);
- b. Integrated Pollution Prevention and Control Directive⁵⁷ relied upon UK regulatory experience for integrated approach but broadened scope; passed 3 days before Air Quality Framework Directive; sought to “*prevent emissions into air, water or soil wherever this is practicable,...and, where it is not, to minimise them in order to achieve a high level of protection for the environment as a whole*”;⁵⁸
- c. Pollution Prevention and Control Act 1999: framework legislation which continued process of ensuring integrated system by providing for replacement of EPA 1990 Part I and transposition of the IPPC Directive, through Pollution Prevention and Control Regulations 2000;
- d. Environmental Permitting (England and Wales) Regulations 2007⁵⁹ (EP Regulations) replaced 2000 Regulations as from 6 April 2008;
- e. IPPC Directive subject to several amendments since 1996, which were “codified” by new Directive 2008/1/EC without introducing substantive changes to the law.

22. Legislative scheme

- a. EP Regulations bring series of controls together, in particular PPC and waste management licensing, but with no major change in substance;
- b. provide *single procedural framework* for making applications and granting permits, as well as for monitoring and enforcement;
- c. prohibit operation of a “regulated facility” except as authorised by an environmental permit;⁶⁰
- d. requires regulators to *exercise permit-related functions to deliver obligations in various Directives*, including IPPC Directive;⁶¹

⁵⁷ 96/61/EC.

⁵⁸ Recital 8; see too Article 1.

⁵⁹ SI 2007/3538.

⁶⁰ Reg. 12; see too reg. 8.

⁶¹ European Directives implemented through the EP scheme: IPPC Directive (96/61/EC), Large Combustion Plant Directive (2001/80/EC), Solvent Emissions Directive (1999/13/EC), Titanium Dioxide Directive (1992/11/EC), Waste Framework Directive (2006/12/EC), Waste Incineration Directive (2000/76/EC), End-of Life Vehicles Directive (2000/53/EC), Waste

- e. “regulated facilities” defined to include “installations,” and “mobile plant”⁶² which are then defined⁶³ by reference to activities including fuel combustion, gasification, liquefaction and refining activity, minerals and chemical production, production and processing of metals, waste incineration, treatment of animal and vegetable matter;⁶⁴
- f. aspects referable to IPPC Directive comprise *3 separate schemes of control*, differentiated broadly according to size, complexity and potential to pollute:⁶⁵
 - i. Part A(1) activities – regulated by EA (known as IPPC);
 - ii. Part A(2) activities – regulated by local authorities (known as LA-IPPC);
 - iii. Part B activity - regulated by local authorities (known as LAPPC);
- g. operators of plant generating these activities must apply to regulator for permit, which may be granted on such conditions as regulator thinks fit;⁶⁶
- h. regulator must refuse application if it considers operator will not operate the facility in accordance with the permit;⁶⁷
- i. regulators of all Part A activities must exercise their functions based on requirements of IPPC Directive,⁶⁸ including:
 - i. ensuring that all appropriate preventative measures are taken against pollution, in particular through the application of Best Available Techniques (BAT);⁶⁹
 - ii. BAT means the “*most effective and advanced stage in the development of activities and their methods of operation which indicate the practical suitability of particular techniques for providing in principle the basis for*

Electrical and Electronic Equipment Directive (2002/96/EC), Landfill Directive (1999/31/EC), Asbestos Directive (87/217/EEC) and Petrol Vapour Recovery Directive (94/63/EC): see reg. 35.

⁶² See reg. 8(1).

⁶³ See reg. 2(1). An installation is a “stationary technical unit where one or more activities are carried on” or “any other location on the same site where other directly associated activities are carried on”. For a case illustrating the difficulty in interpreting these definitions, see *United Utilities v. EA* [2006] EWCA Civ 633.

⁶⁴ See Schedule 1, Part 2; see too eg Schedules 13 (waste incineration), 14 (solvent emissions), 15 (large combustion plants)].

⁶⁵ See reg. 32 and reg. 3(2); see too Schedules 7 and 8.

⁶⁶ Reg. 13 and Schedule 5, para. 12(1)-(2).

⁶⁷ Schedule 5, para. 13(2). The test is not whether it is possible in theory to comply, but whether the operator will in fact be able to comply: *R v. SSE and RJ Compton ex p. West Wiltshire DC* [1996] Env LR 312. REg.s 20-5 of the EP Regulations deals with the variation, transfer and surrender of a permit; reg. 31 deals with appeals against decision on permits; reg.s 36-44 deal with enforcement.

⁶⁸ Schedule 7, para. 5.

⁶⁹ See Directive Article 3.

*emission limit values designed to prevent and, where this is not practicable, generally to reduce emissions and impact on the environment as a whole”;*⁷⁰

- iii. “available techniques” mean “those developed on a scale which allows implementation under economically and technically viable conditions, taking into consideration the costs and the advantages”;⁷¹
 - iv. “best” means “most effective in achieving a high general level of protection of the environment as a whole”;⁷²
 - v. permits are to stipulate emission limit values (“ELVs”) for polluting substances, “in particular” (but not limited to) the 13 substances referred to at Annex III to the Directive, including sulphur dioxide, nitrogen oxides, carbon monoxide, VOCs, dust and asbestos;⁷³
 - vi. exclusion where greenhouse gas emissions from installation covered by emissions trading scheme: no ELVs to be included in permit unless to ensure that no significant local pollution is caused;⁷⁴
 - vii. where appropriate, ELVs may be supplemented or replaced by equivalent parameters or technical measures;⁷⁵
 - viii. ELVs (or equivalent parameters or technical measures) are to be based on BAT, but;⁷⁶
 - ix. where an environmental quality standard (“EQS”) requires stricter conditions than those achievable by the use of BAT, additional measures shall be included in the permit;⁷⁷
 - x. an EQS is a requirement set out in other Community legislation,⁷⁸ including the Ambient Air Quality Directive;
- j. regulators of Part B have similar requirements adapted to acknowledge their regulatory role in relation to air quality only;⁷⁹
- k. *standard rules:*
- i. attempt to speed up and reduce cost of permitting process;

⁷⁰Article 2(12); see too Annex IV, which requires consideration to be given to matters including the use of less hazardous substances and the commissioning dates for new installations.

⁷¹Article 2(12)(b).

⁷²Article 2(12)(c).

⁷³See Directive Article 9(3).

⁷⁴Ibid.

⁷⁵Ibid.

⁷⁶Article 9(4).

⁷⁷See Directive Article 10.

⁷⁸Article 2(7):

⁷⁹Regulations Schedule 8 para. 5; cf Schedule 7 para. 5.

- ii. EA or local authority⁸⁰ may prepare (following consultation) standard rules for the regulated activities that are described in the rules (“standard facilities”);⁸¹
 - iii. standard rules cover range of activities;⁸²
 - iv. operator may request that permit includes the relevant rules as conditions of the permit, with no right of appeal;⁸³
- l. new less prescriptive *consultation* requirements:
- i. regulator must “take the steps it considers appropriate to inform the public consultees⁸⁴ of the application and place and times its public register can be inspected” and invite representations;⁸⁵
 - ii. consultation requirements do not apply to applications for permits for standard facilities (except where relate to Part A installations) or to applications for permits for mobile plant;⁸⁶
 - iii. requirements only apply to applications to vary permits where substantial changes entailed or regulator determines they should apply;⁸⁷
- m. *public register*: relevant regulator must maintain a public register including copies of applications, notices requiring further information, representations and decisions in relation to permits.⁸⁸

23. Guidance

- a. EP Regulations allow SS to issue guidance to regulators on exercise of functions under Regulations;⁸⁹
- b. Guidance on environmental permitting:
 - i. Core Guidance (February 2009): expands on formal requirements of Schedule 5 to the EP Regulations on application procedure;

⁸⁰ See the definition of “rule-making authority” in reg. 2(1).

⁸¹ Reg. 26(1)-(2).

⁸² www.environment-agency.gov.uk/business/topics/permitting/32334.aspx

⁸³ Reg. 27(3).

⁸⁴ Defined as “a person who in the regulator’s opinion is affected by, is likely to be affected by, or has an interest in, the application”: Schedule 5, Part 1 para. 1.

⁸⁵ Schedule 5 para. 6(1).

⁸⁶ Schedule 5 para. 5(1).

⁸⁷ Schedule 5 para. 5(2).

⁸⁸ Reg. 46 and Schedule 19, para. 1. See too provisions relating to exclusions on grounds of national security, and confidentiality: reg.s 47-56.

⁸⁹ Reg. 64.

- ii. other guidance on application of Directives referred to in Schedules to Regulations;⁹⁰
- iii. General Guidance Manual for Part A(2) and Part B activities⁹¹ (February 2009);
- iv. Sector Guidance Notes (Part A activities)⁹² and Process Guidance Notes (Part B activities)⁹³ specific to particular industrial sectors, which are used to determine BAT including emissions limits for those sectors;
- v. additional Air Quality Notes⁹⁴ provide information on any issue that the requires clarification in writing by Defra; and other ad-hoc guidance or information in form of eg letters to local authorities and operators on a particular issue.⁹⁵

24. Challenges to determination of permit applications: approach of courts

a. Levy v. EA [2002] EWHC 1663 (Admin):

- i. challenge to variation to IPC authorisation under old EPA 1990, claiming that EA had failed to ensure emissions would be minimised by applying BATNEEC (earlier incarnation of BAT) and that had failed to consider whether in light of cost savings associated with the variation, a more expensive but potentially cleaner technology might be BATNEEC;
- ii. challenge rejected: margin of appreciation would be wider than normal where decision-maker was a body entrusted by Parliament to make technical judgments and where the decision involved a balance of considerations;⁹⁶
- iii. cautious approach generally taken by courts, but some challenges have been successful, raising following issues:

⁹⁰ See <http://www.defra.gov.uk/environment/epp/guidance.htm> eg Environmental Permitting Guidance The IPPC Directive Part A(1) Installations and Part A(1) Mobile Plant, which deals further with the practical application of BAT at para.s 3.17-3.22 and 3.32. Two key aspects to the availability test are identified: “what is the balance of costs and advantages? This means that a technique may be rejected as BAT if its costs would far outweigh its environmental benefits; and can the operator obtain the technique? This does not mean that the technique has to be in general use. It would only need to have been developed or proven as a pilot, provided that the industry could then confidently introduce it. Nor does there need to be a competitive market for it. It does not matter whether the technique is from outside the UK or even the EU” para. 3.18..

⁹¹ See too [CIEH Management Guide Sept 2004: Industrial Pollution Control by Local Authorities – a management guide.](#)

⁹² <http://www.defra.gov.uk/environment/ppc/localauth/pubs/guidance/notes/sgnotes/index.htm>

⁹³ <http://www.defra.gov.uk/environment/ppc/localauth/pubs/guidance/notes/pgnotes/index.htm>

⁹⁴ <http://www.defra.gov.uk/environment/ppc/localauth/pubs/guidance/notes/aqnotes/index.htm>

⁹⁵ <http://www.defra.gov.uk/environment/ppc/localauth/pubs/guidance/index.htm>

⁹⁶ Para.s 76-81.

25. Relationship between PPC regime and ambient air quality standards

- a. R (on the application of Rockware Glass Ltd) v. Chester CC [2005] EWHC 2250
- i. judicial review of grant of permit for glassware manufacturing installation under PPC Regulations;
 - ii. largest glassworks in Europe but built without planning permission;
 - iii. one of issues raised in challenge was that nitrogen oxide emissions levels stipulated on a reducing scale in permit did not have to go so far, because initial levels would avoid exceedance of EQS under Air Quality Directive;⁹⁷
 - iv. Court of Appeal drew clear distinction between Air Quality Directive and PPC regimes:
 1. *“To put it bluntly, those who for their commercial purposes introduce potentially polluting operations have to be closely controlled, and cannot freeload on non-polluting local citizens by simply claiming that the EQS to which we all contribute has not been damaged”* ;⁹⁸
 2. draftsman of IPPC Directive would have been *“largely wasting his time if all that matters is the EQS”*;⁹⁹
 3. requirements of IPPC are different and generally more stringent than the meeting of EQS;¹⁰⁰
 - v. result is that just because installation achieves EQS, does not follow that BAT will be achieved in its operation, because BAT connotes “most effective and advanced stage” in development of activities to reduce emissions and environmental impact;
 - vi. note too current guidance¹⁰¹ that:
 1. if installation would make only minor contribution to breach of an EQS, normally more desirable for regulator to work to control other main sources of pollution;

⁹⁷ Other findings of Gilbert J at first instance were undisturbed by the CA: the Council failed to consider whether an alternative configuration, size or design to that proposed would have produced lower emissions (including the use of a different process with a different number and size of furnaces); misinterpreted a statutory guidance note when considering the date at which a recommended emission limit was to be applied; and took into account an immaterial consideration, namely the emissions levels set at other existing plants. It was also held that the Council’s Chief Executive did not have the authority to make a determination as to the issue of a permit.

⁹⁸ At 34 per Buxton LJ.

⁹⁹ At. 37.

¹⁰⁰ At 38.

¹⁰¹ Environmental Guidance on IPPC Directive; see para.s 3.51-2 and 3.56-7 and para.s 3.46-59 generally.

2. if EQS already being breached in a particular area, permit should not be issued to any installation that would cause anything beyond a negligible increase in the exceedance;
3. some domestic air quality standards do not have the same legal force as EQS¹⁰², so there is no obligation to impose conditions to meet those standards, however they should still be taken into account as a major factor in determining emission limits and BAT.

26. Guidance notes and BAT

- a. R v. Daventry DC ex p. Thornby Farms Ltd [2003] QB 503:
 - i. judicial review by resident of grant of authorisation under old Part I of the EPA 1990 for animal incinerators;
 - ii. argued successfully that Council acted unlawfully by treating transcription into authorisation of emission levels in a guidance note as ensuring BATNEEC met, when there was evidence that incinerators could operate at emissions levels lower than authorised; authority must address itself to what is best available technique to reduce releases to a minimum;¹⁰³

27. Public information on permit application

- a. R (on the application of Edwards) v. EA [2008] Env LR 34
 - i. challenge to grant of permit for cement works;
 - ii. EA did not disclose internal reports on air quality to consultation process;
 - iii. argued that failure to consult on internal reports breached the IPPC Directive, the PPC Regulations and the common law duty of fairness;
 - iv. HL ultimately found:
 1. any consultation requirements under Directive could only have applied where applications were made for new installations or substantial changes to existing installations, neither of which were relevant on facts;
 2. publicity requirements under old PPC regulations went further than Directive (eg in requiring publication not just of requests for further

¹⁰² See the Air Quality Strategy, Table 2 for those which do not correspond exactly with EQSs.

¹⁰³ At 55-63.

information but also any responses – cf EP regulations Schedule 19 para. 1) and no reason to imply further requirement to consult upon internal documents, because would be “extremely inhibiting” to EA operations;¹⁰⁴

3. although courts below held failure to consult amounted to breach of common law duty of fairness, and that finding had not been challenged, would not have reached same conclusion because not for the courts to impose a duty to consult beyond what laid down in legislation;

4. however unnecessary to reach finding because agreed with lower courts that reports had later been overtaken by later material and no reason to require consultation upon earlier data;

v. case highlights difficulties that have been caused by approach to consultation in the past and more flexible approach in EP Regulations leaves room for further debate over adequacy of public participation in individual cases.

28. Other issues

a. changes to IPPC Directive requiring that permits for installations emitting greenhouse gases are not to contain ELVs for those gases (see above);

b. purpose of change: not to distort market in emissions trading;

c. however there are some areas of uncertainty: if an installation is covered by emissions trading regime, does there remain any scope to control emissions applying BAT other than through ELVs?

d. BAT is intended to provide “in principle the basis” for ELVs,¹⁰⁵ so clearly a close correlation that would suggest that if greenhouse emissions are to be taken out of ELVs, possible that no real scope left in BAT to control them;

e. but arguable that:

i. there is more to BAT than provision of ELVs; and

ii. there is still the requirement in the Directive¹⁰⁶ which requires Member States to take all necessary measures to ensure installations operated so that all appropriate preventive measures are taken against pollution, “in particular” through the application of BAT;

¹⁰⁴ Per Lord Hoffman at 42; cf Lord Mance at 79-81.

¹⁰⁵ Article 2(1) of IPPC Directive

¹⁰⁶ Article 3(1)(a).

iii. regulators can impose whatever conditions they see fit;¹⁰⁷

f. may be scope then to use techniques beyond ELVs to limit greenhouse gas emissions eg carbon capture and storage, notwithstanding that conditions requiring carbon capture and storage could be imposed under separate regimes;¹⁰⁸ however debatable whether carbon capture and storage is an “available technique” for BAT purposes.

29. Future changes

- a. Commission has issued proposals for a new Industrial Emissions Directive to recast several existing Directives related to industrial emissions into single document, to include the IPPC Directive and others covered by the EP Regulations. UK government has consulted upon recast,¹⁰⁹ which:
 - i. clarifies BAT to make clear that it is to be used not just to determine ELVs but also other permit conditions;
 - ii. tightens the minimum emission limit values for large combustion plant;
 - iii. requires more of regulators by way of inspection, review and enforcement;
- b. EP Regulations will need to be amended to cover new Directive.

Planning

30. Development control policy:

- a. advice in PPS23 on relationship between determination of planning applications and pollution control:

8. Any consideration of the quality of land, air or water and potential impacts arising from development, possibly leading to an impact on health, is capable of being a material planning consideration, in so far as it arises or may arise from any land use.

9...In considering proposals for development, local planning authorities should take account of the risks of and from pollution and land contamination, and how these can be managed or reduced.

10. The planning and pollution control systems are separate but complementary. Pollution control is concerned with preventing pollution through the use of measures

¹⁰⁷ EP Regulations, Schedule 5, para. 12(2).

¹⁰⁸ Already imposed on consents for gas-fuelled power stations under section 36 of the Electricity Act 1989.

¹⁰⁹ <http://www.defra.gov.uk/corporate/consult/emissions-greybits/index.htm>.

*to prohibit or limit the release of substances to the environment from different sources to the lowest practicable level. It also ensures that ambient air and water quality meet standards that guard against impacts to the environment and human health. The planning system controls the development and use of land in the public interest. It plays an important role in determining the location of development which may give rise to pollution, either directly or from traffic generated, and in ensuring that other developments are, as far as possible, not affected by major existing, or potential sources of pollution. The planning system should focus on whether the development itself is an acceptable use of the land, and the impacts of those uses, rather than the control of processes or emissions themselves. Planning authorities should work on the assumption that the relevant pollution control regime will be properly applied and enforced. They should act to complement but not seek to duplicate it.*¹¹⁰

Further guidance in Annex 1 to PPS23:

- i. air pollution may be an important consideration, whether or not levels of air pollution are already high enough to justify the designation of an AQMA;¹¹¹
 - ii. more weight is likely to be given to air quality considerations where a proposed development would have a significant impact on air quality inside, or adjacent to, an AQMA,¹¹² although not the case that all such planning applications should be refused if the developments would result in a deterioration of local air quality;¹¹³
 - iii. air quality also likely to be particularly important where the development could in itself result in the designation of an AQMA or where to grant planning permission would conflict with, or render unworkable, elements of a LA's air quality action plan.¹¹⁴
- b. London Plan policy: seeks to ensure implementation of Air Quality Strategy and preparation of formal air quality assessments, particularly in AQMAs;¹¹⁵

¹¹⁰ PPS23 Appendix A lists matters for consideration in determining planning applications (and preparing Local Development Documents), including: impact of potentially polluting development on land use, including effects on health, the natural environment or general amenity; sensitivity of the area to adverse effects from pollution; need to separate necessary but potentially polluting and other land uses so as to reduce conflicts; the existing, and likely future, air quality in an area, including any AQMAs or other areas where air quality is likely to be poor; need for compliance with any statutory environmental quality standards or objectives; need to limit greenhouse gas emissions; and the possibility that (whether or not some aspects of the development are subject to pollution control), emissions might nevertheless be seriously detrimental to amenity.

¹¹¹ Para.s 1.13, 1.29.

¹¹² See para. 1.29.

¹¹³ IG.2.

¹¹⁴ IG.1. Further guidance is provided on assessing impact on air quality: air quality within AQMAs is subject to local variation so assessment at the proposed development site should clarify the exact position within the AQMA; important to detail link with traffic generation; even if no EIA required, may well remain need to consider air quality issues, including design of proposals: location and footprints of buildings; movements at entrances and exits; placement of windows and doors; and may need to consider the effects of multiple developments on the air quality of an area: IG.4.

¹¹⁵ Policy 4A.19.

31. Approach of courts to relationship with pollution control

a. Gateshead MBC v. SSE [1995] Env LR 37

- i. application for planning permission for incinerator to dispose of clinical waste;
- ii. authorisation also required from HMIP under old IPC system;
- iii. refusal of permission recommended because impact on air quality and agriculture in proposal's semi-rural location was insufficiently defined;
- iv. SS concluded when granting planning permission that emissions controls under IPC regime would be adequate to deal with emissions from proposed plant and risk of harm to human health;
- v. held by CA that:
 1. extent to which discharges from a proposed plant will pollute the atmosphere or create unacceptable risk of harm to humans was a material consideration, but so too was the existence of a stringent IPC regime for preventing or mitigating the impact;¹¹⁶
 2. had it become clear that some of the discharges were bound to be unacceptable so that a refusal by HMIP to grant an authorisation would be the only proper course, the SS should have refused permission;
 3. however there was no clear evidence about air quality in the vicinity of the site; once the necessary information was obtained it was a matter of judgment what emissions were acceptable and whether best available techniques etc would ensure that discharges were kept within acceptable limits; and these issues were clearly within the competence of HMIP;
 4. SS therefore justified in concluding that areas of concern which led Inspector and assessor to recommend refusal could properly be dealt with by HMIP;¹¹⁷

b. R v. Bolton MBC ex p Kirkman [1998] Env LR 560:

¹¹⁶ At 44.

¹¹⁷ At 49.

- i. decision to grant planning permission for waste recovery system and replacement flue gas cleaning equipment;
- ii. argued that authority failed to discharge duties under Waste Framework Directive¹¹⁸ which require authorities to determine planning applications “with the relevant objectives”, which include “ensuring that waste is recovered or disposed of without endangering human health and without using processes or methods which could harm the environment and in particular without risk to...air.”;
- iii. held that:
 1. Directive added nothing of substance to the case, as the objectives were fully reflected in the planning and environmental controls applicable to the case;
 2. in circumstances where the EA had no objection to the proposal and had concluded that available technology would ensure that the processes satisfied requirements of domestic and EU legislation, the case was indistinguishable from Gateshead - the Council was entitled to rely on regulatory control provided by EA and to take view that refusal on air quality grounds was not therefore justified;
 3. “unless it appears on the material before the planning authority that the discharges will, or will probably, be unacceptable to the EA, it is a proper course to leave that matter to be dealt with under the IPC system”;¹¹⁹
- iv. decision upheld by CA:
 1. “the question that faces the court...is whether the local planning authority arguably failed to have in mind the...objectives or...failed to have regard to them in a legally permissible manner...I am satisfied that the Applicant would not be able to show that the relevant objectives were not considered by the local planning authority”;
 2. “while the dual system of control permits an LPA to exercise a greater control and conduct a greater degree of investigation than this LPA sought fit to do, it does not render this legally obligatory”;¹²⁰
- c. Hopkins Developments Ltd v. FSS [2006] EWHC 2823:
 - i. a case going the other way;

¹¹⁸ Article 4, as applied by Waste Management Licensing Regulations 1994, Schedule 4, para.s 2 and 4.

¹¹⁹ At 573-5.

¹²⁰ [1998] Env LR 719 at 724-5.

- ii. Inspector refused to grant permission for concrete plant;
 - iii. concluded that whereas regulatory controls might enable proposal to comply with the pollution prevention regime, air quality would suffer to the extent that the amenities of the area would be harmed;
 - iv. argued on challenge to decision that:
 - 1. Inspector had had misunderstood how pollution control regime would provide sufficient protection against impacts caused by dust; and;
 - 2. his conclusion that dust would cause serious harm was unreasonable given existence of pollution control regime;
 - v. held:
 - 1. application had described mitigation measures that had satisfied regulator; Inspector could assume that these would be applied under pollution control regime; and was then entitled to take view that amenities would be harmed by resulting emissions;
 - 2. the argument that it was not open to conclude amenity would be harmed was dependent upon the misplaced assumption that primacy had to be accorded to the regulator above that of the planning authority – otherwise it would effectively mean that unless it was clear that the plant could never achieve a permit, the potential impact of pollutants could not be regarded as a material consideration.¹²¹
- d. relationship with Directive “objectives”: R v. Leicester CC ex p. Blackfordby & Boothcorpe Action Group Ltd [2001] Env LR 2:
- i. challenge to grant of planning permission for coal and clay extraction and disposal of putrescible waste;
 - ii. argued that not sufficient to take Waste Framework Directive “objectives” into account as material considerations – authority had to go further and minimise environmental impacts and risks;
 - iii. challenge rejected: *“what matters is that the objectives should be taken into consideration...as objectives, as ends at which to aim. If a local planning authority understands their status as objectives and takes them into account*

¹²¹ At 15.

*when reaching its decision, then it seems to me that the authority can properly be said to have reached the decision “with” those objectives. The decision does not cease to have been reached with those objectives merely because a large number of other considerations have also been taken into account in reaching the decision and some of those considerations militate against the achievement of those objectives”;*¹²²

- iv. likely that a similar approach would be taken to any argument that when determining planning application, local planning authority in law has to act in accordance with IPPC principle of taking all appropriate preventive measures against pollution

e. Gateshead principle in context of EIA cases: Smith v. SSETR [2003] EWCA Civ 262:

- i. *“when consideration is being given to the impact on the environment in the context of a planning decision, it is permissible for the decision maker to contemplate the likely decisions that others will take in relation to details where those others have the interests of the environment as one of their objectives. The decision maker however is not entitled to leave the assessment of likely impact to a future occasion simply because he contemplates that the future decision maker will act competently. Constraints must be placed on the planning permission within which future details can be worked out, and the decision maker must form a view about the likely details and their impact on the environment”;*¹²³
- ii. need to assess “likely significant impacts” on environment cannot therefore be postponed simply by saying that impacts will be assessed under the IPPC regime;

32. EIA: air quality assessments:

- a. need for air quality assessment: matter of professional judgment, but usually based on proposals:
 - i. causing material changes levels of traffic flow, eg change of 5-10% on annual average daily flows or peak traffic flows, depending on local circumstances;
 - ii. causing significant alterations in traffic composition in an area (eg introduction of HGVs);

¹²² At 48.

¹²³ At 33.

- iii. affecting sensitive areas eg sites of ecological value or of poor air quality (AQMAS);
 - iv. introducing new exposure close to existing sources of pollution;
 - v. significant potential for dust and odour emissions.
- b. because of close relationship between traffic assessment and air quality some authorities use thresholds for TAs as trigger for AQ assessments;
- c. content of air quality assessment:
- i. starting point: agree methodology with authority, including pollutants to be covered (PM10 and NO2 more often than not), and relevant datasets (local authority may have own air quality review and assessment reports);
 - ii. clarify steps in analysis:
 - 1. assess existing air quality in identified study area;
 - 2. predict future air quality without the development;
 - 3. predict future air quality with the development;
 - 4. predict future air quality with the development and other cumulative development;
 - 5. assess potential mitigation;
 - iii. modelling methodology: wide range of methods available, but broadly 3 types:
 - 1. screening methods: generic approaches intended to assess whether an air quality problem exists and if more detailed assessment required: Design Manual for Roads and Bridges applied for road-related impacts; others available from commercial sources;
 - 2. local scale dispersion models: local road network or specific industrial source used in the model, which adds to background pollutant concentrations the calculated values to predict total concentrations at each location - variety of models available;
 - 3. regional scale dispersion models: rarer; include pollution sources over a wide area;
- d. checklist for assessments:
- i. description of proposals:
 - 1. pollutant sources;

2. expected generation of traffic, emissions (check against TA and energy strategy);
 3. locations of receptors;
- ii. clear methodology including use of identified modelling;
 - iii. adequacy of input data:
 - a. background concentrations;
 - b. relevant meteorological data;
 - c. traffic and emissions data;
 - iv. monitoring: baseline information: monitoring locations provided and relevant concentrations considered;
 - v. modelling:
 - a. verification (comparison of modelled results against any local monitoring data);
 - b. appropriate modelling scenarios and projections;
 - vi. analysis:
 - a. appropriate pollutants and objectives considered;
 - b. correct units;
 - c. changes in emissions (source, pollutants, time periods) and likely concentrations as a result of development;
 - d. impact in relation to air quality objectives/EU limit values; also impact on AQAP;
 - e. significance of impact described;
 - f. cumulative impacts considered: not necessarily unrelated developments elsewhere; and check all aspects of overall project covered
 - vii. mitigation: details of proposals and assessment of effects
- e. assessments of significance:

- i. considerable uncertainty remains over proper approach: no specific and widely used guidance, but UK air quality objectives and EU limit values play important role;
- ii. common approach has been to devise significance criteria which:
 1. apply descriptions to different magnitudes of change in concentrations as a result of the scheme (eg increase or decrease in annual mean NO₂ of less than 1% is extremely small, whereas change of more than 25% is very large);
 2. assess significance by applying the magnitudes of change to different potential situations in the no scheme world (eg already above standard without scheme, marginally below standard without scheme, well below standard without scheme);
 3. ascribe different descriptions of significance depending on the combination of the two (eg extremely small change to situation where existing concentrations are eg 25% below a relevant objective could be slight adverse, whereas a small change where existing concentrations are already above a relevant objective could be substantial adverse).
- iii. difficult when come to detail of setting out criteria to reach a universally accepted approach eg development in AQMAs where standards already breached: should small changes to an existing situation be described as insignificant, or because standards already breached, should even a small change be regarded as significant?

CONCLUSION

33. Whilst the history of environmental law demonstrates attempts to move from specific to more integrated forms of regulation, air quality remains a complex and technical subject, covered by several strands of related legal controls. There is little prospect of controls becoming simpler; and the wider issues of climate change will ensure that air quality takes its place at the forefront of developments in environmental law.

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