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Case No: CO/1508/2016

IN THE HIGH COURT OF JUSTICE

QUEENS BENCH DIVISION

ADMINISTRATIVE COURT

Royal Courts of Justice

Strand, London, WC2A 2LL

Date: 02/11/2016

Before :

MR JUSTICE GARNHAM

- -

Between :

ClientEarth (No.2)	**Claimant**
- and -	
Secretary of State for the Environment, Food and Rural Affairs	**Defendant**
- and-	
Mayor of London	
Scottish Ministers	**Interested**
Welsh Ministers	**Parties**
Secretary of State for Transport	

Nathalie Lieven QC, Ben Jaffey and Ravi Mehta (instructed by **ClientEarth**) for the **Claimant**

Stephen Tromans QC and Rose Grogan (instructed by **Transport For London In-House Solicitors)** for the **Mayor of London**

Kassie Smith QC and Julianne Kerr Morrison (instructed by Government Legal Department) for the **Defendant**

Hearing dates: 18th & 19th October 2016

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Approved Judgment

Mr. Justice Garnham:

Introduction

1. Nitrogen dioxide is a gas produced by the combustion of fuel at high temperature in the presence of oxygen. Exposure to nitrogen dioxide in the air carries with it significant risks to human health. A recent analysis from Department for the Environment, Food and Rural Affairs ("DEFRA") estimates that the effects of exposure to nitrogen dioxide has "*an effect on mortality equivalent to 23,500 deaths annually in the UK*…"

2. Recognising those risks, EU law seeks to control that exposure by imposing limits on ambient nitrogen dioxide in the territories of Member States and, when limits are exceeded, requiring the publication of Air Quality Plans ("AQPs") aimed at reducing that exposure.

3. In previous proceedings between the parties, in which the claimant, ClientEarth, challenged previous AQPs produced by the United Kingdom Government, the Supreme Court made a declaration that the UK was in breach of Article 13 of the Air Quality Directive (2008/50/EC). In his judgment of April 2015 granting that declaration, Lord Carnwath, with whom the other members of the Court agreed, said (at paragraph 31), "*The new government, whatever its political complexion, should be left in no doubt as to the need for immediate action to address this issue*."

4. On 17 December 2015, in purported compliance with the order of the Supreme Court and the provisions of the Directive, DEFRA published the Government's 2015 Air Quality Plan which addressed the need to reduce nitrogen dioxide emissions.

5. Relying on EU law, and the domestic regulations which give effect to it, ClientEarth challenges the lawfulness of that plan. It seeks a declaration that this plan, like its predecessor, fails to comply with Article 23(1) of the Directive and Regulation 26(2) of the Air Quality Standards Regulations 2010, and an order quashing the plan. The defendant, the Secretary of State for Environment, Food and Rural Affairs, opposes the claim. The Mayor of London, an interested party, supports the position of ClientEarth.

The Legislative Scheme

6. The origin of the current EU legislation framework governing air quality was Council Directive 96/62/EC. The aim of that Directive was to define and establish objectives for ambient air quality, to facilitate the assessment of ambient air quality in Member States, to obtain information on ambient air quality and to maintain or improve ambient air quality. It introduced concepts, such as "*air quality plans*", "*limit value*, and "*target value*", devised for the measurement and management of air quality, which concepts were adopted in subsequent Directives.

7. In 1999 a second Council Directive, Directive 1999/30/EC, was introduced with the aim of imposing limit values for particular pollutants, including nitrogen dioxide (NO_2). In 2008 a third directive, Directive 2008/50/EC, repealed the two previous

directives, but reproduced some of the central features of those provisions. It is that Directive which is at the heart of the present challenge.

8. The preamble to the 2008 Directive included the following:

> *"Whereas:*
>
> *…..*
>
> *(2) In order to protect human health and the environment as a whole, it is particularly important to combat emissions of pollutants at source and to identify and implement the most effective emission reduction measures at local, national and Community level. Therefore, emissions of harmful air pollutants should be avoided, prevented or reduced and appropriate objectives set for ambient air quality taking into account the relevant World Health Organisation standards, guidelines and programmes…*
>
> *(3)[Previous Directives]…need to be substantially revised to incorporate the latest health and scientific developments and the experience of the Member States…*
>
> *(30) This Directive respects the fundamental rights and observes the principles recognised in particular by the Charter of Fundamental Rights of the European Union. In particular, this Directive seeks to promote the integration into the policies of the Union of a high level of environmental protection and the improvement of the quality of the environment in accordance with the principle of sustainable development as laid down in Article 37 of the Charter of Fundamental Rights of the European Union."*

9. The articles of the Directive relevant to the present proceedings include Article 2, which adopts definitions from earlier Directives, including the following:

> *"ambient air" shall mean outdoor air in the troposphere, excluding workplaces…*
>
> *"limit value" shall mean a level fixed on the basis of scientific knowledge, with the aim of avoiding, preventing or reducing harmful effects on human health and /or the environment as a whole, to be attained within a given period and not to be exceeded once attained;*
>
> *"air quality plans" shall mean plans that set out measures in order to attain the limit values or target values;*

> *"margin of tolerance" shall mean the percentage of the limit value by which that value may be exceeded subject to the conditions laid down in this Directive;*
>
> *"target value" shall mean a level fixed with the aim of avoiding preventing or reducing harmful effects on human health and/or the environment as a whole to be attained where possible over a given period;*
>
> *"zone" shall mean part of the territory of a member state, as delimited by that member states for the purposes of air quality assessment and management;*
>
> *"agglomeration" shall mean a zone that is a conurbation with a population concentration in excess of 250,00 inhabitants or, where the population concentration is 250,000 inhabitants or less, with a given population density per km^2 to be established by the Member States .*

10. Article 13 imposes limit values and alert thresholds for the protection of human health. It provides:

> *"1. Member States shall ensure that, throughout their zones and agglomerations, levels of sulphur dioxide, PM_{10}, lead and carbon monoxide in ambient air do not exceed the limit values laid down in Annex XI.*
>
> *In respect of nitrogen dioxide and benzene the limit values, specified in Annex XI may not be exceeded from the date specified therein."*

11. Article 22 provided for postponement of attainment deadlines and exemption from the obligation to apply certain limit values.

> *"1. Where, in a given zone or agglomeration, conformity with the limit values for nitrogen dioxide or benzene cannot be achieved by the deadlines specified in Annex XI, a Member State may postpone those deadlines by a maximum of five years for that particular zone or agglomeration, on condition that an air quality plan is established in accordance with Article 23 for the zone or agglomeration to which the postponement would apply; such air quality plan shall be supplemented by the information listed in Section B of Annex XV related to the pollutants concerned and shall demonstrate how conformity will be achieved with the limit values before the new deadline."*

12. Article 23, on which much of the present claim turns, provides for AQPs:

> *1. Where, in given zones or agglomerations, the levels of pollutants in ambient air exceed any limit value or target value, plus any relevant margin of tolerance in each case, Member States shall ensure that air quality plans are established for those zones and agglomerations in order to achieve the related limit value or target value specified in Annexes XI and XIV.*
>
> *In the event of exceedances of those limit values for which the attainment deadline is already expired, the air quality plans shall set out appropriate measures, so that the exceedance period can be kept as short as possible. The air quality plans may additionally include specific measures aiming at the protection of sensitive population groups, including children.*
>
> *…"*

13. Annex XI sets out limit values for the protection of human health. For nitrogen dioxide the limit value in any given hour is 200ug/m^3, which is not to be exceeded more than 18 times in a calendar year, and 40ug/m3 which applies to each calendar year.

14. Annex XV sets out information to be included in the local, regional or national air quality plans for improvement in ambient air quality. Amongst that information there is required to be detail of those measures or projects adopted with the view to reducing pollution which list and describe all the measures set out in the project, set out a timetable for implementation and provide an estimate of the improvement of air quality planned and the expected time required to obtain that objective.

15. The Directive was brought into domestic law in the UK by means of four sets of Regulations, one for each of the home nations. Those for England are the most pertinent for this case. Regulation 26 of the Air Quality Standards Regulations (2010/1001) requires the drawing up of AQPs. It provides, as is material:

> *"(1) Where the levels of sulphur dioxide, nitrogen dioxide, benzene, carbon monoxide, lead and PM_{10} in ambient air exceed any of the limit values in Schedule 2 or the level of $PM_{2.5}$ exceeds the target value in Schedule 3, the Secretary of State must draw up and implement an air quality plan so as to achieve that limit value or target value.*
>
> *(2) The air quality plan must include measures intended to ensure compliance with any relevant limit value within the shortest possible time…*
>
> *(4) Air quality plans must include the information listed in Schedule 8…"*

The Background

16. The United Kingdom is divided, for the purposes of the 2008 Directive and AQPs, into 43 zones and agglomerations. It is common ground that in 2010 40 of those zones and agglomerations were in breach of one or more of the limit values for nitrogen dioxide.

17. On 20 December 2010 the Secretary of State indicated that AQPs were being drawn up for all non-compliant zones. Plans were submitted to the European Commission in September 2011 including applications for time extensions under Article 22 in respect of 24 zones. The European Commission approved 9 of those applications unconditionally and 3 subject to conditions being fulfilled.

18. In July 2011, ClientEarth commenced judicial review proceedings seeking a declaration that the United Kingdom was in breach of its obligations to comply with the nitrogen dioxide limits provided for in Article 13 of the 2008 Directive. That application failed before this court and the Court of Appeal. As noted above, however, the Supreme Court was satisfied, "*the relevant breach of Article 13 having been clearly established*", that it ought to grant the declarations sought. On the other issues in the case, however, the Supreme Court decided to seek the guidance of the Court of Justice of the European Union ("CJEU") and questions were submitted to that Court.

19. The CJEU, in providing its answer to the Supreme Court, reformulated the four questions into three and answered them as follows:

> *"1. Article 22(1) of Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe must be interpreted as meaning that, in order to be able to postpone by a maximum of five years the deadline specified by the Directive for achieving conformity with the limit values for nitrogen dioxide specified in annex XI thereto, a Member State is required to make an application for postponement and to establish an air quality plan when it is objectively apparent, having regard to existing data, and notwithstanding the implementation by that Member State of appropriate pollution abatement measures, that conformity with those values cannot be achieved in a given zone or agglomeration by the specified deadline. Directive 2008/50 does not contain any exception to the obligation flowing from article 22(1)."*
>
> *2. Where it is apparent that conformity with the limit values for nitrogen dioxide established in annex XI to Directive 2008/50 cannot be achieved in a given zone or agglomeration of a*

> *member state by 1 January 2010, the date specified in that annex, and that Member State has not applied for postponement of that deadline under article 22(1) of Directive 2008/50 ,the fact that an air quality plan which complies with the second subparagraph of article 23(1) of the Directive has been drawn up, does not, in itself, permit the view to be taken that that Member State has nevertheless met its obligations under article 13 of the Directive.*
>
> *3. Where a Member State has failed to comply with the requirements of the second subparagraph of article 13(1) of Directive 2008/50 and has not applied for a postponement of the deadline as provided for by article 22 of the Directive, it is for the national court having jurisdiction, should a case be brought before it, to take, with regard to the national authority, any necessary measure, such as an order in the appropriate terms, so that the authority establishes the plan required by the Directive in accordance with the conditions laid down by the latter."*

20. The Supreme Court considered that answer in its judgment of April 2015, [2015] UKSC 28. I have already quoted from Lord Carnwath's judgment in that case. It is convenient to note at this stage the following additional passages:

> *"27. Before this court, both counsel have bravely attempted their own linguistic analysis of the reasoning [of the CJEU] to persuade us that the answer is clearer than it seems at first sight. I am unpersuaded by either. Understandably neither party wanted us to make a new reference, although that might be difficult to avoid if it were really necessary for us to reach a determination of the issues before us. If I were required to decide the issue for myself, I would see considerable force in the reasoning of the Commission, which treats article 22 as an optional derogation, but makes clear that failure to apply, far from strengthening the position of the state, rather reinforces its essential obligation to act urgently under article 23(1), in order to remedy a real and continuing danger to public health as soon as possible. For the reasons I have given I find it unnecessary to reach a concluded view.*
>
> *28. The remaining issue, which follows from the answers to the third and fourth questions, is what if any orders the court should now make in order to compel compliance. In the High Court, Mitting J considered that compliance was a matter for the Commission:*
>
> *"If a state would otherwise be in breach of its obligations under article 13 and wishes to postpone the time for*

compliance with that obligation, then the machinery provided by article 22(1) is available to it, but it is not obliged to use that machinery. It can, as the United Kingdom Government has done, simply admit its breach and leave it to the Commission to take whatever action the Commission thinks right by way of enforcement under article 258 of the Treaty on the Functioning of the European Union .” (para 12)

The Court of Appeal adopted the same view. That position is clearly untenable in the light of the CJEU's answer to the fourth question. That makes clear that, regardless of any action taken by the Commission, enforcement is the responsibility of the national courts.

29. Notwithstanding that clear statement, Miss Smith initially submitted that, in the absence of any allegation or finding that the 2011 plans were as such affected by error of law (apart from the interpretation of article 22), there is no basis for an order to quash them, nor in consequence for a mandatory order to replace them. I have no hesitation in rejecting this submission. The critical breach is of article 13, not of article 22 or 23, which are supplementary in nature. The CJEU judgment, supported by the Commission's observations, leaves no doubt as to the seriousness of the breach, which has been continuing for more than five years, nor as to the responsibility of the national court for securing compliance. As the CJEU commented at para 31:

“Member states must take all the measures necessary to secure compliance with that requirement [in article 13(1)] and cannot consider that the power to postpone the deadline, which they are afforded by article 22(1) of Directive 2008/50 , allows them to defer, as they wish, implementation of those measures.”

30. Furthermore, during the five years of breach the prospects of early compliance have become worse, not better. It is rightly accepted by the Secretary of State that new measures have to be considered and a new plan prepared. In those circumstances, we clearly have jurisdiction to make an order. Further, without doubting the good faith of the Secretary of State's intentions, we would in my view be failing in our duty if we simply accepted her assurances without any legal underpinning. It may be said that such additional relief was not spelled out in the original application for judicial review. But the delay and the consequent change of circumstances are not the fault of the claimant. That is at most a pleading point which cannot debar the claimant from seeking the appropriate remedy

> *in the circumstances as they now are, nor relieve the court of its own responsibility in the public interest to provide it."*

21. The Supreme Court decision established, as had been accepted by the Secretary of State, that the Government had failed to meet the obligations set out in Article 13 in relation to non-compliant zones. The Government accepted that it was obliged to devise a new AQP in accordance with Article 23 and that that plan should be published by December 2015. The Government did indeed publish its plan, which was entitled "*Improving Air Quality in the UK-Tackling Nitrogen Dioxide in our Towns and Cities*", on 17 December 2015.

22. That AQP comprised a UK overview document, a technical report, a list of UK and national measures and individual zone plans for the 38 air quality zones which were still to meet the nitrogen dioxide limits. It may be helpful to say something here about the process by which the plan was drawn up.

Production of the AQP

23. The plan was produced as a result of a detailed piece of work across Whitehall involving, in particular, DEFRA, the Department for Transport ("DfT") and Her Majesty's Treasury. In response to the present challenge, the Secretary of State has disclosed a substantial quantity of documentation in relation to the development of that plan which includes minutes of many inter-departmental meetings addressing the issues, the resolution of which shaped the plan ultimately produced.

24. The process adopted by DEFRA, in association with other government departments, is well described in the witness statement of Ms Natasha Smith, an experienced policy advisor at DEFRA.[1] What follows is a brief summary of the detailed account provided in her first witness statement.

25. There was first an initial evidence gathering exercise. This began in 2014. Air quality projections were revised using the data for 2013 as the baseline with updated projections becoming available in April 2013. Those projections indicated that 34 out of the 43 zones were expected to meet the limit values by 2020. Nine zones were not expected to meet the limit value by that date without additional measures. Future projections of emissions were modelled at five-yearly intervals and therefore, as Ms Smith puts it, "*it is not possible to demonstrate in the projections when within that 5 year period a measure would take effect*."

26. The next step in the process of preparing the AQP was the identification of potential measures and an initial analysis. An external research project entitled "*Exploring and Appraising Proposed Measures to Tackle Air Quality*" (known as the "*Levers Project*") was commissioned to investigate possible policy levers or measures to reduce nitrogen dioxide concentrations. That project was carried out by a firm of

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[1] I will include reference to Ms Natasha Smith's first name on each occasion I refer to her, in order to distinguish her from Ms Kassie Smith, counsel for the Defendant, to whom I shall refer as "Ms Smith"

consultants called "Ricardo Energy and Environment" ("Ricardo"). Numerous academic papers were reviewed and the potential impact of potential policy measures considered.

27. In modelling future air quality, DEFRA relied on a model called the Pollution Climate Mapping model which had been developed by Ricardo. That model, in turn, relied upon estimates generated by the "computer programme to calculate emissions from road transport" or "COPERT", a software tool used to calculate air pollutant emissions from road transport.

28. Next, an exercise was carried out to prioritise what appeared to be the most appropriate potential measures for further analysis. Those measures included mandatory low emissions zones ("LEZs") and ultra-low emission zones (ULEZs), nationally targeted retro-fit schemes for buses, scrappage schemes for diesel cars, retro-fit schemes for HGVs, voluntary LEZs and ULEZs and nationally targeted scrappage schemes for HGVs. Further analysis was carried out in respect of those prioritised measures.

29. Of particular note, is the fact that mandatory low emission zones were ranked first amongst the priority measures. The use of the word "mandatory", as opposed to "voluntary", indicates whether or not local authorities are to be required by statutory instrument to introduce the relevant zone. Ms Natasha Smith said in her statement that the policy was "*technically feasible to implement and effects will be significant from the start of the policy, meaning that it will reduce emissions quickly in those areas*…." Voluntary LEZ schemes were included on the priority list but were ranked lower because it was recognised that a voluntary scheme

> *"could have much less impact than a mandatory one and on its own could not give the same degree of certainty of achieving compliance because there was no guarantee that the local authority with an exceedance would implement a voluntary LEZ".*

30. Ms Natasha Smith explains that this analysis indicated that to meet the requirements of the Directive *"LEZs would be needed in a minimum of 5 new zones in England*", namely Leeds, Southampton, Derby, Birmingham and Nottingham. It also demonstrated that "*additional action would be required to tighten the requirements in the existing LEZ operating in London, as well as the ultra-low emissions zone in 2020*."

31. Low emission or clean air zones of different classes were considered. Class A included buses, coaches and taxis only. Class B included those vehicles together with heavy goods vehicles. Class C added light goods vehicles. Class D included all the classes mentioned above and cars. The zones would operate by charging all vehicles in the identified classes, which do not meet specified emissions standards a fee to enter the zone. As Ms Smith explained in argument, charges were to be set at such a level as would discourage use of the zones by a sufficient number of vehicles of the relevant classes as to ensure the ambient nitrogen dioxides levels were below the target level.

32. There was also analysis of the effectiveness of non-targeted national scrappage schemes, targeted scrappage schemes for incentivizing the purchase of cleaner second-hand cars, locally targeted scrappage schemes and retro-fit schemes, amongst other proposals.

33. Immediately following the general election in May 2015, DEFRA began the preparation of the draft AQP, a process that involved much inter-departmental consultation. A formal public consultation exercise was commenced on 12 September 2015 and ran until 6 November 2015. The draft AQP put out for consultation proposed that voluntary CAZs would be set up in the five cities referred to above. It also identified the measures to be taken in London. The consultation received a total of 729 responses, including one from the claimant.

34. In parallel to the development of the plan, the Treasury was carrying out its annual spending review, a process designed to determine departmental budgets for the period from 2016-17 to 2020-21. On 22 September 2015 DEFRA had submitted evidence to HM Treasury on the proposed AQP and both DEFRA and DfT were bidding for elements of the funding necessary for the plan. Of particular relevance, in this context, was a submission to HM Treasury ministers from Treasury officials dated 16 October 2015. This submission sought ministers' "*steer on your preferred package of measures for the UK's Air Quality Plan to feed into Defra and DfT's* (spending review) *bilaterals*". The summary to that submission includes the following:

> *"we have pushed Defra and DfT to provide the least cost pathway to compliance. This involves first defining the minimum set of actions required to meet compliance (and so the overall cost envelope), and then establishing how the costs are most effectively distributed across governments and wider society."*

35. In March 2016 the DfT issued the Mayor of London with a spending review funding agreement which recorded specific measures which the Mayor was expected to take forward, from within Transport for London's own resources. The settlement letter was said by Ms Natasha Smith to reflect "*the commitment by Government to ensure the London Air Quality Plan, as part of the national plan, would be delivered*". That plan set out that an ultra-low emission zone would be implemented in London in 2020 and that national modelling had shown that the current London-wide low emission zone would need to be tightened to a Class C CAZ by 2025 to deliver compliance. Ms Smith goes on to assert that "*with the previous mayor's proposed measures alongside the ULEZ and the London-wide LEZ being tightened to a Class B CAZ in 2020, the AQP acknowledges the same outcome could be delivered within the same timescale*."

36. The final decisions on the plans were made in November 2015. It was decided that the plan would mandate the implementation of CAZ's in the five cities, together with the arrangements discussed above for London.

The Competing Arguments

37. This case came on for hearing before me on 18 October 2016. The hearing occupied two full days. I was provided with a very substantial volume of documentation. I also had the benefit of thorough and detailed skeleton arguments from the claimant, the Mayor of London and the defendant. The claimant's skeleton, with its associated annexes, ran to some 59 pages, the Mayor's skeleton, with its annex, ran to 32 pages and the defendant's skeleton, with its annex, ran to 49 pages. No short summary of the arguments advanced, orally and in writing, by the three parties who took part in these proceedings would do them justice. I set out here only the barest outline of their respective positions and I address the detailed points they made in the discussion section of this judgment which follows. I record my thanks for the high quality of the arguments I heard.

38. Ms Nathalie Lieven QC, who appeared for the claimant, argued that the AQP was flawed by two errors of law. First, she said that the Secretary of State erred in law in her approach to the requirement of Article 23 that periods of exceedance should be kept "*as short as possible*". Second, she said that the Secretary of State gave disproportionate weight to considerations of cost, political sensitivity and administrative difficulties which were "*of secondary importance to the Directive's primary purpose of protecting human health through the achievement of limit values*". She also argued that the Secretary of State failed to carry out a proper assessment of measures other than mandatory CAZs which were likely to be effective in ensuring compliance with the directive in "*as short as possible*" a time. She referred, in particular, to locally targeted scrappage schemes, a targeted vehicle retrofit scheme, fiscal incentives and measures specifically targeting diesel cars.

39. The Mayor of London, who was represented by Stephen Tromans QC, supported the submissions of Ms Lieven. He argued that the 2015 AQP was inadequate to achieve compliance with Article 13 in London in as short a timescale as possible. He said that there remained serious questions over the adequacy of funding and suggested that the adopted measures required further support by way of monies from central government and by way of a grant of additional powers to the Mayor.

40. The Secretary of State was represented by Kassie Smith QC and Julianne Kerr Morrison. They argued that the court should dismiss the challenge. Ms Smith said that the Secretary of State did not misconstrue Article 23 and that the AQP contained "*proportionate feasible and effective measures*" to address the anticipated non-compliance in particular zones. She said that the assessment of which measures should be included in the plan had been based on a thorough and comprehensive analysis of the best available evidence and "*extensive internal and external consultation*".

41. It was her case that the plan would achieve compliance in the shortest possible time. She said that all potentially relevant measures were carefully considered in drawing up the plan, that the correct weight was attached to the relevant considerations and that any measure which was not included in the plan was excluded from it for legitimate reasons. "*Those reasons included, in particular"*, she said "*that the*

introduction of the potential policy measures would not speed up the timeframe for achieving compliance if introduced alongside other planned measures."

Discussion

42. The first step in addressing this claim has to be determining the proper construction of Article 23.

43. On its face, the first sub-paragraph of that Article requires that Member States "*shall ensure*" that AQPs are established so as to achieve the relevant limit values. The second sub-paragraph requires that the plan identifies measures "*so that the exceedance period can be kept as short as possible*". Paragraphs 1 and 2 of Regulation 26 are no less prescriptive; the Secretary of State "*must*" draw up "*and implement*" an AQP "*so as to achieve*" the relevant value; and the plan "*must*" include measures "*intended to ensure*" compliance "*within the shortest possible time*".

44. Ms Lieven argued that those provisions meant that the Secretary of State must aim to achieve compliance by the soonest date possible and must choose measures which maximise the prospect of achieving that target. Mr Tromans added that implicit in Article 23 is an additional requirement that the Secretary of State must choose a route to the target which reduces exposure as quickly as possible.

45. Ms Smith accepts that the duty in Article 23 was expressed in mandatory language. She says, and I accept, that Article 23 assumes the continuing breach of Article 13. As she says, the AQP does not prevent or negate the breach but is a free-standing obligation on the Member State. Ms Smith emphasizes that what Article 23 requires is "*appropriate*" measures. That, she says, incorporates a discretion in the Member States to select the necessary measures. Article 23, says Ms Smith, reflects reality; even where a Member State is in breach, it only has to do what is possible, and that, she says, involves an element of judgement and discretion.

46. Although I accept Ms Smith's arguments that Article 23 gives some discretion to the Member State, it is plain on the face of the Article, in my judgement, that that discretion is narrow and greatly constrained.

47. In their observations to the CJEU in the first ClientEarth case, the Commission said, citing the second sub-paragraph of Article 23(1), that a "*Member State is therefore bound not only to adopt an air quality plan, but also to foresee in that plan measures appropriate to keep the exceedance period as short as possible. As has been stressed above, this is an obligation of result.*" I respectfully agree. It is plain from the words of the Article that the Member State is obliged to ensure that the plans are devised in such a way as to meet the limit value in the shortest possible time.

48. The Commission went on at paragraph 63 of those observations to say this:

> *"The second sub-paragraph of Article 23(1) requires a Member State, therefore, to foresee in its plans effective, proportionate and scientifically feasible measures to address the specific emissions problems in the relevant zone as swiftly*

> *as possible. In other words, a Member State does not have the full discretion to take into account and balance economic, social and political considerations in its choice of the measures to be foreseen (see mutatis mutandis para 15 and 46 of Janecek), as in so doing it would further prolong the period of non-compliance with Article 13 beyond that which is inevitable. Rather, it may do so only within the limits of the objective prescribed in the Directive, and its margin of discretion is heavily circumscribed."*

49. Again, I agree with that conclusion. In *Dieter Janecek v Freistaat Bayern* [2008] ECR I-6221, the CJEU concluded, when considering Directive 96/62, that "*while the Member States thus have a discretion*, [the] *Directive includes limits on the exercise of that discretion which may be relied upon before the national courts*"(p.194 at [46]). It is to be noted that that case addressed the question of whether an individual could require the competent national authorities to draw up an action plan where there was a risk that the limit values or alert thresholds (in that case, for PM_{10}) might be exceeded, rather than whether an AQP already drawn up met the requirements of a Directive. But in my view the terms of Article 23 require precisely the same limits on the discretion of the Member State. Whilst the Member State can determine the measures it is to adopt it must select measures which will be effective in achieving the object in view. That means, inevitably, that they must be scientifically feasible, but effective.

50. There was some debate in the course of the hearing as to the Commission's use of the word "proportionate" and the relevance of cost. Ms Smith sought to argue that by that expression the Commission was intending to suggest that the Member State was entitled to have regard to the cost effectiveness of any contemplated measure. In my judgement, there can be no objection to a Member State having regard to cost when choosing between two equally effective measures, or when deciding which organ of government (whether a department of central government or a local government authority) should pay. But I reject any suggestion that the state can have any regard to cost in fixing the target date for compliance or in determining the route by which the compliance can be achieved where one route produces results quicker than another. In those respects the determining consideration has to be the efficacy of the measure in question and not their cost. That, it seems to me, flows inevitably from the requirements in the Article to keep the exceedance period as short as possible.

51. In my view, the measures a Member State may adopt should indeed be "proportionate", but they must be proportionate in the sense of being no more than is required to meet the target. To do more than is required, especially in the field of environmental protection, may well impact adversely on other, entirely proper and reasonable interests. So, for example, compliance with the nitrogen dioxide limits might well be achieved by denying access to all vehicles in all city centres forthwith. But such a measure would have wholly undesirable economic consequences for the public in general. And such extreme measures would be unnecessary when better targeted efforts would equally well achieve compliance with the requirements of the Directive. That is the sense in which, I apprehend, the Commission used the word "proportionate" in this context and that is the sense in which, in my judgement, the concept is properly applicable here.

52. It follows that I accept Ms Lieven's first submission that the Secretary of State must aim to achieve compliance by the soonest date possible and Mr Tromans' submission that she must choose a route to that objective which reduces exposure as quickly as possible.

53. As to Mr Lieven's second submission, that the Secretary of State must choose measures which maximise the prospect of achieving the target, I substantially agree. There is no obligation in the Article, express or implied, that a Member State must take all imaginable steps aimed at reducing exposure. In fact, in my judgment, that would be disproportionate in the sense articulated above. But implicit in the obligation "*to ensure*" is an obligation to take steps which mean meeting the value limits is not just possible, but likely.

54. Similarly, the 2010 regulations require that the plan must include measures "*intended to ensure*" compliance within the shortest possible time. The identified measures cannot intend to ensure an outcome that is anything less than likely.

Criticism of the plan

55. Ms Lieven advances three primary criticisms of the air quality plan. First, she says that the adoption of five yearly intervals for the projection of nitrogen dioxide emissions was arbitrary and the date chosen for the compliance of 2020 (and 2025 for London) was too far distant. Second, she says the particular modelling method chosen, and in particular reliance on the COPERT emission factors, was mistaken. Third, she says the decision to rely entirely on Clean Air Zones (and the ULEZ in London) as the means of achieving compliance with the obligations set out in the directive was flawed. Insufficient use, she says, was made of different classes of CAZs and other measures that would have reduced nitrogen dioxide emissions.

56. I deal with each point in turn.

Five year intervals in 2020

57. Mr Roald Dickens, a senior economic adviser at DEFRA, explains in his written statement how future projections of nitrogen dioxide emissions are calculated. He says that DEFRA "*has calculated projections for five year intervals as a matter of routine for a number of years*." He says that that approach is consistent with the practice adopted when producing previous AQPs. It is also the time intervals used by the European Commission whose emission projections are produced by the International Institute for Applied Systems Analysis.

58. He explains that there are several reasons for adopting the five yearly approach. He says that future predictions are inherently uncertain and the use of five year intervals is a pragmatic response. He says the "*government has to balance the additional cost of producing additional projections and the value of that data.*" In Mr Dickens' view, the cost of moving to fifteen annual projections for the period from 2015 to 2030 would be £50,000 (although he does not explain whether that is £50,000 for total additional projections or £50,000 for each additional annual projection). Mr Dickens says that, in addition, moving to more regular projections would delay production of

the plan. He says that calculating a full set of projections takes about three months and production of the plan would have been delayed in consequence.

59. Ms Smith also points to the evidence to the effect that the approach adopted by the UK to air quality modelling has been reviewed by experts in the field. She points out that the approach was considered by an expert committee called the "Air Quality Expert Group" which provides independent scientific advice to DEFRA. That review concluded that the UK's current approach to assessing air quality was fit for purpose. The technical report refers to a review by Hartley McMaster Ltd which found that the approaches adopted in building the model used by DEFRA "*compared relatively well against three independent sets of best practice guidelines*".

60. In the light of that evidence, I do not doubt that use of five yearly emission forecasts is entirely reasonable for routine air quality monitoring. What is notable by its absence, however, is any evidence supporting the suggestion that five yearly cycles are sufficient when a Member State is faced with the urgent task of bringing its nitrogen dioxide readings back within the limits imposed by the Directive.

61. In such a case, I reject the suggestion that the relatively modest cost of the modelling work can be a relevant factor weighing against the taking of that step. I reject too the suggestion that the delay of three months justifies not performing an additional projection. Proper planning of the work involved in preparing the AQP ought readily to have encompassed the time necessary to carry out the necessary projections.

62. There is evidence that it was the routine practice of using five yearly intervals which was the driving factor in setting the 2020 compliance date, rather than any independent focus on achieving the earliest possible date. Thus there is an email exchange between officials on 20 July 2015 which includes the following observations:

> "*We had to model a fixed point in time (2020) for practical reasons, but if we get too attached aiming for that date, I think there are significant risks around how we are seen to interpret shortest possible time*."

That email prompted the response:

> "*I would also push back… on the assumption that 2020 has to be the date. The challenge for the courts is for us (government) to set out what the earliest date is. I think we are wiser to do that based on what we think is achievable, having taken into account all the risks, than to argue our case… but that's just me!"*

63. That last email was from a Ms Rosalind Wall Deputy Director of Environmental Strategy (DfT). In my judgement she was entirely correct. In my view, what Mr Dickens calls "*a matter of routine*" and a "*pragmatic approach*" was allowed to become the determinative factor in selecting the date by which the AQP would aim to achieve compliance. That was inconsistent with the need to achieve compliance in the shortest possible time.

64. What the department should have been doing, to meet the demands of the Directive, was not working backwards from what happened to be the next routine date for the modelling exercise. Instead, they should have been identifying what measures most quickly effected the necessary reductions in nitrogen dioxide emissions, calculating when they could first be introduced and then modelling the likely reduction that introducing such measures would have so as to assess what more needed to be done. That would have enabled them to assess whether compliance earlier than 2020 (and 2025 in London) was possible. In my judgement that was a flaw in the department's approach which tainted the whole exercise.

65. The evidence demonstrates clearly that Clean Air Zones, the measure identified in the plan as the primary means of reducing nitrogen dioxide emissions, could be introduced more quickly than 2020. Birmingham and Nottingham are aiming to introduce their clean air zones in 2018 and 2019 respectively. There is no evidence to suggest that other cities could not have been required to match those plans.

66. There is some evidence that 2020 had other attractions for Government. In a submission to the Secretary of State dated 14 May 2015 seeking ministers' views on the type of measures to include in the AQPs, Ms Natasha Smith said this: "*In developing potential measures for the plans we have used projected exceedances in 2020 as the basis for defining the worst areas. This is based on our understanding that 2020 is likely to be the earliest the EU will move to fines. Are you content with this approach on timing?"* It appears the minister was so content. That observation certainly suggests that a principal driving factor in selecting 2020 was not the obligation to remedy the problem as soon as possible but to remedy it in time to avoid EU infraction proceedings.

67. Similarly, it appears it was thought in Government that it would be helpful to spread the costs over five years. In an email dated 24 June 2015 officials recorded a conversation between ministers, during the course of which officials "*explained that there is flexibility over when the financial impacts might fall, but we should look to implement these actions over the next five years*". I have also seen a document setting out questions for DEFRA from HM Treasury dated 18 August 2015; one question asks why the money required "*needs to be spent over two years*?" The answer given is "*spend does not have to be over two years; nine years is more realistic given that London does not need to be in compliance until 2025*".

68. I am acutely conscious of the danger of reviewing individual documents, generated during the process of devising a plan of this scope and scale across Government, and ascribing to them too great an importance; civil servants and ministers have to be able to debate proposals freely and concluded views often evolve which are very different from individual expressions of opinion. But these comments, like those of Ms Natasha Smith and Ms Wall noted above, seem fairly to reflect both the process and the outcome.

69. Whatever the reason for selecting 2020 may have been, however, I am satisfied that the department erred in law in selecting so distant a date. The problem of reducing nitrogen dioxide levels was urgent and the plan to do so should have been aimed at

achieving compliance in the shortest possible time, regardless of administrative inconvenience or the costs of making the necessary investigations.

70. It was argued by Ms Smith on behalf of DEFRA that the current plans accommodated earlier achievement of the necessary reduction in emissions. She emphasised the number of occasions on which the AQP refers to achieving compliance "*by 2020*" and argued that the "*longstop dates of 2020 and 2025…reflected what was considered to be a realistic assessment of what was achievable…*" She said that the department was pressing ahead with all speed at introducing Clean Air Zones, that draft statutory instruments to introduce them had already been produced, and that what matters is not just the end date by which the reductions would have been achieved but whether the measures taken, viewed collectively, achieved the objective of making the reductions as soon as possible. As she put it in a short note on the issue "*the timeframe for taking action in the AQP is not driven by the output of the modelling*". She said that the Secretary of State judged that "*by 2020*" was the earliest point "*at which it could be assumed that all mandated CAZs would be in place*".

71. In my judgement, however, the failure to model concentrations of nitrogen dioxide at a date prior to 2020 had two adverse consequences. First, it deprived the Secretary of State of the evidence she needed in order to identify the measures required to ensure compliance by any earlier date. Had the Secretary of State built her plan around an ambition of introducing CAZs by 2018, and had she run the modelling exercise for 2018, she would have discovered the extent to which the CAZs were likely to be effective and whether other measures, whether in the identified cities or elsewhere, were required to achieve compliance by that date.

72. Second, nitrogen dioxide emissions are expected to decline over time, without any efforts from Government, as less polluting motor cars are introduced. That has the consequence that fixing a more distant target date for compliance with the Directive means that less substantial measures have to be adopted by Government to achieve the objective. But that also means that the Government is in breach of the obligation which I have ruled above is implicit in the Directive, namely that the state must choose a route to the target which reduces exposure as quickly as possible.

73. In other words the Secretary of State fell into error in fixing, for what was little more than administrative convenience, on a projected compliance date of 2020 (and 2025 for London) and thereby deprived herself of the opportunity to discover what was necessary to effect compliance by some earlier date and whether a faster route to lower emissions might be devised.

Choice of modelling method

74. Ms Lieven concentrated her fire, in her criticism of the modelling method adopted by DEFRA, on its use of COPERT as the means of calculating vehicle emissions. The COPERT calculation is based on the assumption that diesel cars subject to Euro 6 standards would emit 2.8 times the emission standard. That, argues Ms Lieven is a highly optimistic assumption.

75. The Claimant's skeleton argument explains the issue concisely:

> "*The main source of health damaging NO_2 in urban areas is diesel vehicles…For the last decade, government policy has been to encourage the purchase, and hence use of, diesel cars as they were traditionally considered to release fewer greenhouse gas emissions…than petrol cars.*
>
> *Transport emissions of air pollutants including NOx are regulated by standards established by EU legislation (so called 'Euro standards')…*
>
> *To date there have been six Euro standards…which have become increasingly strict over time…For cars, the latest Euro 6 standard is being introduced in several phases…*
>
> *To date, Euro standards have failed to have the hoped-for real world effect on reducing pollution from diesel vehicles. The failure of successive Euro standards to deliver expected emissions reductions has been well established for several years…"*

76. The claimants rely on the witness statement of Dr Claire Holman, the current chair of the Institute of Air Quality Management. That statement provides a powerful critique of the 2015 AQP. She explains how EU regulations have set "*progressively more stringent emission limits for NOx*" [2]. But she says that the "*imposition of Euro standards have failed to deliver reductions in NOx emissions from diesel vehicles in real-world driving conditions in the last 20 years*." She says that the Euro 6 standard for cars "*became mandatory for new models from September 2014 and for all new vehicles for September 2015"*. However, she says, "*the emission limit is currently based purely on laboratory testing. Various real-world tests carried out on Euro 6 cars have shown that they exceed the emission limit by a very large margin*."

77. Ms Lieven's case is that a conformity factor of 2.8 substantially underestimates the rate of emissions, and that, if the correct conformity factor is adopted, the emissions are hugely higher. In June 2015 Ricardo carried out a sensitivity analysis which assumes that Euro 6 diesel cars emit 5 times the legal emissions limit. On that basis the number of zones with exceedances in 2020 would be 30 rather than the 8 estimated on the basis adopted in the plan.

78. Ms Smith argues that the Secretary of State relied on the best available evidence to develop the AQP. She said that COPERT emission factors "*are used by most member states across the EU*". These were, she said in oral submissions, "*industry recognised standards*". Paragraph 43 of the UK overview document says that COPERT is the "*recommended method of calculating vehicle emissions by the European Monitoring and Evaluation Program and the European Environment Agency Emissions Inventory Guidebook*".

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[2] When Nitrogen Oxide is emitted in air it rapidly transforms into Nitrogen Dioxide. "*NOx"* refers to both Nitrogen Dioxide and Nitrogen Oxide.

79. In her statement, Dr Holman suggests that this pessimistic scenario "*corresponds closely with recent on road measurements of emissions from Euro six cars*." She says that measurements by one UK company, 'Emissions Analytics', of emissions from some 80 Euro 6 diesel cars have shown that the nitrogen dioxide emissions under real urban driving conditions are approximately 4.5 times the emission limit. She refers to a European Commission press release dated 20 October 2015 which says that the average discrepancy revealed in other studies is four times emission limits. As she puts it "*this suggests that the scenario used in the sensitivity analysis in the technical report is likely to be closer to reality than that used for the main analysis*." None of that is seriously challenged.

80. Ricardo, the department's consultants, appear to have reached a similar view by the end of 2014. In an email to DEFRA officials dated 24 November 2014, Ricardo responded to the following observation: "*there was some concerns highlighted in discussions… As to whether fleet projections from DfT are "real" fleet projections or whether they are in fact somehow adjusted in order to make DFT's model work correctly and therefore not representative of the real world*." Ricardo replied suggesting that there was "*some emerging real-world testing evidence which shows large conformity factors for Euro 6*".

81. The AQP's technical report acknowledges the significance of the potential deficiencies of the COPERT assumptions. At paragraphs 196-197 the report says:

> *"Whilst emerging data indicates that the real world performance of vehicles is growing closer to European test cycle results, there is still some disparity. The road transport emissions used to inform our analysis are based on the latest data on vehicle NOx emissions (COPERT 4v11). These COPERT emission factors do include an assessment of non-conformity to account for disparity, however, recent evidence from Portable Emissions Measurement System (PEMS) data based on a limited number of Euro 6 diesel passenger cars has indicated that the current COPERT data may underestimate emissions for some vehicles.*
>
> *In order to assess how this disparity may affect our projections, an alternative scenario has been modelled, based assuming emissions to be higher than currently predicted."*

82. That calculation assumed that real-world emissions were five times the estimated test emissions. The results of that modelling, according to the technical report, demonstrate that:

> *"if emissions from Euro 6 vehicles were higher in reality than expected in modelling, it could result in up to 22 additional zones being in exceedance of the NO2 limit values in 2020. This demonstrates the significant impact that performance of emissions standards can have on efforts to reduce NO2 concentrations."*

83. It is apparent that DEFRA recognised that they were adopting an optimistic forecast as the foundation for their modelling. Later in the submission to ministers of 14 May 2015, referred to at paragraph 66 above, Ms Natasha Smith said "*Based on our most optimistic projections we would need to implement LEZs in 6 major cities to deliver compliance outside London by 2020.*" It appears ministers were content to adopt those most optimistic projections. In an email he sent on 8 June 2015, Mr Dickens said:

> *"As we are all acutely aware there are major uncertainties around modelling. We have agreed a central set of assumptions from modelling which results in the need for seven low emission zones. However the vast majority of the uncertainty lies on one side of this suggesting more action will be necessary."*

84. The emerging evidence about emissions from Euro 6 vehicles reached as far as the Cabinet. A Cabinet briefing document on air quality, apparently dated October 2015 includes the following:

> "*emerging findings from real-world testing by independent experts, Emission Analytics…suggest emissions for Euro 6 are significantly higher than previously thought. With a conformity factor of 4 early modelling estimates that 23 zones would be non-compliant in 2020."*

85. Against that background, the observation in the technical report supporting the AQP set out above, is remarkable. It means that the Government is acknowledging that its plan is built around a forecast based on figures which "emerging data" is undermining and that if higher, more realistic, assumptions for emissions are made the number of zones which will not meet the limit value in 2020 increases substantially. In my judgement, it is no answer to that point to say that COPERT is widely used in Europe; the fact that others are ignoring the obvious weaknesses of the data is of no assistance to the department.

86. It seems to me plain that by the time the plan was introduced the assumptions underlying the Secretary of State's assessment of the extent of likely future non-compliance had already been shown to be markedly optimistic. In my judgement, the AQP did not identify measures which would ensure that the exceedance period would be kept as short as possible; instead it identified measures which, if very optimistic forecasts happened to be proved right and emerging data happened to be wrong, might achieve compliance. To adopt a plan based on such assumptions was to breach both the Directive and the Regulations.

Other measures

87. My conclusions on the proper construction of Article 23, on the legitimacy of the adoption of 2020 as the target date and on the adequacy of DEFRA's modelling assumptions, are sufficient to dispose of this application. This application must succeed and the AQP must be quashed.

88. In deference to the quality of the arguments I heard, however, and in case this matter should go further, I will go on briefly to record my conclusions on the other principal matters raised.

89. First, it was argued by Ms Lieven that the defendant was in breach of the Directive by not adopting a sufficient number of CAZs. It will be apparent from what I have said already that it seems to me likely that fixing on a more proximate compliance target date and adopting a less optimistic assumption for likely emissions might well mean that CAZs are required in more cities, but ultimately that will depend on the outcome of further modelling.

90. Second, the need to consider the outcome of fresh modelling is equally applicable in respect of the need for CAZs of greater scope. However, as I have indicated above, in my judgement Ms Smith was right in her submission that the Government did not need to do more than was necessary to meet the compliance targets; in that sense the response had to be proportionate. That may well mean that the scope of the zones both inside and outside London does not need to change. Again however, that is not a matter for me, but a question for the defendant after considering further modelling.

91. Third, Ms Lieven identified further possible steps, such as fiscal measures to disincentivise the use of diesel cars and vans, locally targeted scrappage schemes, targeted vehicle retrofitting schemes and measures specifically targeting diesel cars, which she suggested ought to be adopted so as either to make more certain the achievement of the objectives in the Directive or advance the date of compliance.

92. I fail to see how any of them could achieve either of those objectives if low emission zones of sufficient scope are established in all cities where adequate modelling predicts exceedances. CAZs come into effect promptly on being established. LEZs, CAZs and ULEZs are designed to ensure emissions below the required levels. As noted above, charges are to be fixed for such zones at a level which will ensure compliance with the limits in the Directive.

93. Fourth, Ms Lieven criticises the role of HM Treasury. In my view, that criticism is misplaced. It seems to be wholly unsurprising that in its dealings with DEFRA the Treasury should have been seeking to manage and limit the extent of public expenditure. That is what the Treasury is there for. Unless it were the case that the Government permitted the Treasury to refuse to fund measures necessary to ensure compliance, or the Treasury took over DEFRA's management of the response to the Directive (and I have seen no evidence of either), then I see no grounds for criticism. Whilst I recognise that negotiations with HM Treasury must have been challenging, DEFRA was the Department responsible for ensuring compliance with the Directive. For understandable reasons HM Treasury did not wish more public funds spent than was necessary to achieve compliance. But doing no more than was necessary was sufficient.

94. Finally, Ms Lieven and particularly Mr Tromans, criticise the provision made in the AQP for London. The observations made above about the flaws in the plan nationally apply to London as they do to other cities. Whether further, London–specific measures are necessary will depend on the further analysis and further modelling

which I have found to be required to ensure compliance with the Directive and the Regulations.

Conclusions

95. For the reasons set out above I conclude:

i) that the proper construction of Article 23 means that the Secretary of State must aim to achieve compliance by the soonest date possible, that she must choose a route to that objective which reduces exposure as quickly as possible, and that she must take steps which mean meeting the value limits is not just possible, but likely.

ii) that the Secretary of State fell into error in fixing on a projected compliance date of 2020 (and 2025 for London);

iii) that the Secretary of State fell into error by adopting too optimistic a model for future emissions; and

iv) that it would be appropriate to make a declaration that the 2015 AQP fails to comply with Article 23(1) of the Directive and Regulation 26(2) of the Air Quality Standards Regulations 2010, and an order quashing the plan.

96. I will hear counsel further on the precise details of the relief that is appropriate.