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Neutral Citation Number: [2020] EWHC 783(QB)

Claim No: QB-2016-000011
(formerly HQ16X03625) & Ors

THE VW NOx EMISSIONS GROUP LITIGATION
IN THE HIGH COURT OF JUSTICE
QUEEN'S BENCH DIVISION
B E T W E E N : -

6 April 2020

ANTHONY JOSEPH CHAMPION CROSSLEY & ORS

Claimants

-and-

(1) VOLKSWAGEN AKTIENGESELLSCHAFT
(2) AUDI AKTIENGESELLSCHAFT
(3) SKODA AUTO a.s.
(4) SEAT S.A.
(5) VOLKSWAGEN GROUP UNITED KINGDOM LIMITED
(6) VOLKSWAGEN FINANCIAL SERVICES (UK) LIMITED
(7) AUTHORISED DEALERSHIPS

Defendants

B e f o r e :

MR JUSTICE WAKSMAN

Tom de la Mare QC, Oliver Campbell QC, Ben Jaffey QC, Adam Heppinstall, Gareth Shires and Rachel Tandy (all jointly instructed by the Claimant Steering Committee comprised of Slater & Gordon Solicitors, Leigh Day Solicitors, and SPG Law Solicitors for the Claimants

Michael Fordham QC, Prashant Popat QC, Brian Kennelly QC, Kathleen Donnelly, Lucy McCormick, Celia Oldham, Celia Rooney and Warren Fitt (instructed by Freshfields Bruckhaus Deringer LLP Solicitors) for the First to Sixth Defendants
Noel Dilworth (instructed by Freshfields Bruckhaus Deringer LLP Solicitors) for the Seventh Defendant

JUDGMENT

Hearing dates: 2-6 and 9-13 December 2019

Further Written Submissions: 5 and 11 February and 4 and 9 March 2020

INTRODUCTION

1. This is the trial of two preliminary issues. They arise in the context of a very large group action brought by about 91,000 owners or lessees of VW, Audi, Skoda and SEAT cars, all of which used a particular VW diesel engine with type designation EA 189 ("the Engine"). For convenience, and save where the context otherwise requires I shall refer to all such owners or lessees as VW Owners and the vehicles which they owned or leased as VW vehicles.

2. The claim is brought, first, against the manufacturers of the affected vehicles namely, in short, VW, Audi, Skoda, and SEAT (First to Fourth Defendants), then against the relevant VW financial services arm here (Sixth Defendant) and finally, against a variety of authorised VW dealers ("the Dealers") (Seventh Defendant). All of the Defendants are represented by the same solicitors, namely, Freshfields Bruckhaus Deringer LLP ("Freshfields") although the Dealers are represented by different counsel to the other Defendants. Nothing turns on this because the Dealers simply adopted the position of the other Defendants for the purpose of this trial. Save where the context otherwise requires, I shall refer to the Defendants collectively as "VW".

3. This claim is one of many that have been brought by disaffected VW owners around the world, as a result of what has often been described as the "VW Emissions Scandal" which broke in the USA in September 2015 (I shall use the more neutral expression "the Emissions Controversy"). Put very briefly, this was that the Engine had a software function which enabled it effectively to recognise when it was being tested for compliance, among other things, with vehicle emissions standards. The particular emissions concerned are various nitrogen oxide compounds to which I shall refer generically (as did the parties) as NOx. Under these test conditions, the Engine's Engine Control Unit ("ECU") - in effect the car's computer - instructed the Engine to run in such a way that it would comply with the test in respect of NOx emissions. However, on the road, in "normal" driving conditions, that function was turned off and impermissible NOx levels were produced. In other words, so it was said, the Engine was able to "cheat" and thereby pass the test, compliance with which was vital to the ability of VW to sell vehicles with this Engine. This is because it was a pre-condition to such vehicles being given EU "type-approval" or the equivalent in other jurisdictions by the relevant authorities. Without that approval, such vehicles could not lawfully be sold.

4. It was research undertaken in the US which led to the disclosure that on the road, the affected VW cars were consistently producing far more NOx emissions than they should have done, and as had been recorded in the tests.

5. In the US, VW admitted that the software in the Engine constituted a "defeat device" for the purposes of US law and that, without the use of such a device, the US emissions standards tests could not have been passed. In that regard, VW paid a fine of US$2.8bn. Various other substantial payments were

made. Penalties were also imposed upon VW elsewhere. On 13 June 2018, the public prosecutor's office in Braunschweig imposed an administrative fine of €1bn on the First Defendant in relation to breach of its supervisory duties in respect of the production of relevant vehicles. The public prosecutor's office in Munich imposed an administrative fine of €800m on the Second Defendant for the same reason.

6. What VW also offered to all affected VW owners was to remove the software function at the heart of the controversy, a procedure which involved changing the settings in the ECU and which would take around 30 minutes at a local VW garage. The Claimants have referred to this as the "software fix" while the Defendants describe it as a "technical measure". For the sake of convenience, and nothing more, I shall refer to it simply as a "fix".

7. The instant claim here alleges a variety of causes of action against the Defendants including fraudulent misrepresentation in relation to the sale of the affected vehicles. A number of those causes of action proceed upon the basis (either alone or with others) that the software function of the Engine amounts to a "defeat device" within the particular meaning of Article 3 (10) of EU Parliament and Council Regulation 715/2007 dated 20 June 2007 ("the Regulation"). If so, then one consequence is that its use in the Engine and thus the sale of the affected vehicles, was unlawful, being prohibited by Article 5 (2) of the Regulation. On any view, and as I held when ordering the trial of these preliminary issues on 10 April 2019, whether there is a such a defeat device is an important issue in the litigation.

8. A further issue relates to the Claimants' reliance on formal letters to VW, issued by the "competent authority" in Germany for these purposes, being its Federal Motor Transport Authority ("the KBA") dated 15 October, 20 November, and 11 December 2015 ("the KBA Letters"). [1]The KBA Letters required VW to undertake the fix referred to above and followed agreement on the part of VW to do so. However, in each of the lengthy KBA Letters, the KBA also stated that in its view, the Engine's software function did indeed constitute a defeat device. The Claimants say that this amounts to a finding or decision which is binding on me sitting in a Court of an EU Member State. On that footing it is argued that whatever view I may take as to the substance, I am bound in any event to apply the decision said to be contained in the KBA Letters so that I must hold that the Engine contained a defeat device. Whether I am so bound is, again, an important issue in the case. Unsurprisingly, given the volume of litigation that the Emissions Controversy has generated, some Courts in Germany have already considered this question and concluded that the KBA Letters do indeed bind them, while other Courts have not decided the point. No German Court has positively found that the KBA Letters do <u>not</u> bind it.

[1] There was also a letter dated 16 November but this was withdrawn and replaced by that dated 20 November.

9. The two preliminary issues ordered to be tried are these:

> **Issue 1:** **Is the High Court of England and Wales bound (having regard to the terms and operation of the EC Type-approval legislation and pursuant to its duty of sincere co-operation) by the finding of the competent EU Type-approval authority (the…KBA, or by the UK's Vehicle Certification Agency (VCA) in this case) that a vehicle contains a defeat device in circumstances where that finding could have been, but has not been, appealed by the manufacturer; and/or is it an abuse of process for the Defendants to seek collaterally to attack the KBA's and VCA's reasoning or conclusions by denying that the affected vehicles contain defeat devices?**
> ["The KBA Issue"]
>
> **Issue 2:** **Where a vehicle's engine control unit is capable of identifying the New European Driving Cycle test and operates in a different mode during the test by altering the rate of exhaust gas recirculation to reduce NOx emissions, does the vehicle contain a "defeat device" within the meaning of Article 3(10) of Regulation 715/2007/EC?**
> ["The Defeat Device Issue"]

10. Although the Defeat Device Issue is listed second, I took the view that I should be addressed on it, the substantive issue first, as this would provide a helpful background to understanding what the KBA was or was not saying in the KBA Letters, with the technical and legislative context already established. If, of course, I were to find that I was in any event bound by the KBA Letters as the Claimants contend, then my own view on the substance would be strictly irrelevant and indeed, perhaps, strictly impermissible. However, in a case of this kind it would make no sense not to deal with the substantive issue. That is because I might, of course, find that the KBA Letters did not bind me and even if I did, I might be reversed on any appeal. The converse could also be true. In the event, neither side objected to the approach which I took at trial. I shall mirror that approach in this judgment by deciding the Defeat Device Issue first, followed by the KBA Issue. I should add that the latter was amended shortly before the trial so as to encompass what the Claimants say is an equally binding decision made by the VCA here; that is reflected in the current formulation of the KBA Issue.

11. I propose to deal with matters in the following order:

(1) Brexit;
(2) The Australian Proceedings;
(3) The Reference to the CJEU;
(4) The Evidence Adduced;
(5) NOx Emissions;
(6) The Engine and NOx Emissions;
(7) The Software Function;
(8) The EU Type-approval Regime and the core EU legislation;
(9) Other relevant legislation;

(10) The Defeat Device Issue: Analysis;

(11) The KBA Issue: Analysis;

(12) Conclusions.

BREXIT

12. On 31 January 2020, shortly after the conclusion of the trial, the UK withdrew from the EU. I asked the parties whether this would make any difference to any of the arguments made before me. I received written submissions on that topic on 4 and 9 March 2020. It is clear from those submissions that it is common ground that Brexit makes no difference here because EU Law (including the jurisdiction of the CJEU) will continue to have effect as if the UK was still a Member State until the end of the "transition period" which is 31 December 2020. This includes the general obligations which the UK owes *qua* Member State. Accordingly, for the purpose of this judgment, the position is as it was before 31 January 2020.

THE AUSTRALIAN PROCEEDINGS

13. In 2015 a class-action similar to this one was commenced against VW in the Federal Court of Australia, on behalf of about 100,000 VW owners ("the Class Action"). In addition, in 2016 the Australian Competition and Consumer Commission ("ACCC") took proceedings against VW ("the Regulatory Proceedings").

14. Those two sets of proceedings were managed together by Foster J. In 2018 he tried a number of preliminary issues including one which was similar if not identical to Issue 2 here. The relevant Australian legislation was drawn from that in the EU, so any judgment on this question, although not binding on me, would have been highly relevant.

15. However, before judgment was handed down by Foster J and by 6 September 2019, the Class Action was settled in principle without any admission of liability from VW which agreed to pay compensation to the VW owners of somewhere between Aus.$87m and Aus.$127m. Subsequently, and by 23 September 2019, VW agreed with the ACCC to pay a fine of Aus.$75m to settle the Regulatory Proceedings. That required the approval of the Court.

16. By a lengthy judgment handed down by Foster J on 20 December 2019, he refused to approve the figure for the fine of Aus.$75m and substituted a fine of Aus.$125m instead ("the Australian Judgment"). VW is presently seeking to appeal the Australian Judgment.

17. Nonetheless, I decided that it was appropriate to permit the parties to make any submissions they wished about the relevance and content of the Australian Judgment. They did so on 5 and 11 February 2020.

18. I deal with those submissions below.

THE REFERENCE

19. In late 2015, the Paris State Prosecutors' Office commenced an investigation into certain engines made by a European car manufacturer known in those proceedings as "Company X". Following investigations, it was reported that the NOx emissions of the engines concerned were much higher outside testing conditions and that they had systems which were modified in ordinary operating conditions, so as to reduce the effectiveness of the anti-pollution system. The Prosecutors' Office considered that there was a case for saying that Company X had practiced criminal deception on the consumers who bought the cars. The Prosecutors Office decided to make a reference to the CJEU ("the Reference").

20. The Court heard oral argument on the Reference in November 2019. The Advocate-General's Opinion was due to be issued on 29 January 2020. That being so, the Claimants invited me to consider that Opinion and make written submissions upon it. I agreed with that course of action, with provision for the Defendants to reply if they wished. However, the issue of the Opinion was then delayed until 19 March. I was prepared to await the Opinion and any submissions upon it, upon the basis that it would indeed be delivered on 19 March. In fact, there was then a further delay so that it will not be issued now until 28 April. I took the view that it would not be appropriate to delay further my judgment in this matter and I have not done so.

21. I deal with one aspect of the Reference in the context of the KBA Issue below. I also say something more about it in the Confidential Annex attached to this judgment but which is not published with it.

THE EVIDENCE ADDUCED

22. As the Issues essentially concern matters of interpretation and law, it is unsurprising that there are few factual disputes. There was no live lay evidence and there is simply the 17th witness statement of Gareth Pope, a solicitor with Slater & Gordon, served on behalf of the Claimants, dated 2 October 2019. This provides a detailed overview of the issues and how they have been dealt with in other jurisdictions as well as summarising some of VW's own internal documents. In the event, he was not cross-examined on it.

23. As for expert evidence, there is the report of the Claimants' technical expert Mr Felix Domke, dated 30 August 2019, which is relevant to the Defeat Device Issue. He was not required by the Defendants to attend court for cross-examination. Otherwise, technical matters are the subject of an Agreed Technical Document ("ATD") which is a substantial and helpful document itself based very largely (but not exclusively) on a similar document provided for the Court in the Australian proceedings.

24. Otherwise, each side called an expert witness on German law relevant to the KBA issue. They were Prof. Ekkehard Hofmann for the Claimants, and Prof. Meinhard Schröeder for the Defendants. Each of them produced a principal and supplementary report together with the usual joint statement.

25. Given the number of vehicles affected by the Emissions Controversy (about 1.2 million in the UK alone) and the extent of the litigation it has spawned, there is, unsurprisingly, a vast amount of documentation. However the parties' approach to disclosure for this trial has been sensibly focused for which I am most grateful. I will leave any further comments on documents until later when dealing with the particular contexts in which they arise.

NOX EMISSIONS

26. It is not in dispute that diesel engines (among other sources) produce emissions out of the exhaust and thus into the atmosphere which include NOx. It is also not in dispute that NOx emissions are harmful and hazardous to human health and detrimental to air quality. To take, by way of example, one judicial observation made in paragraph 1 of the judgment of Garnham J in *R (Client Earth) v Secretary of State for the Environment etc* [2016] EWHC 2740:

> "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 the Department for the Environment, Food and Rural Affairs ("DEFRA") estimates that exposure to nitrogen dioxide has "an effect on mortality equivalent to 23,500 deaths annually in the [United Kingdom]"."

27. Or, as was noted in the fifth recital to EU Directive 77/102,

> "it is essential that [NOx] emissions…from motor vehicles should be restricted with immediate effect in order to establish a basis for coherent Community action to reduce the limits of the three pollutants [NOx, CO and unburnt hydrocarbons]…"

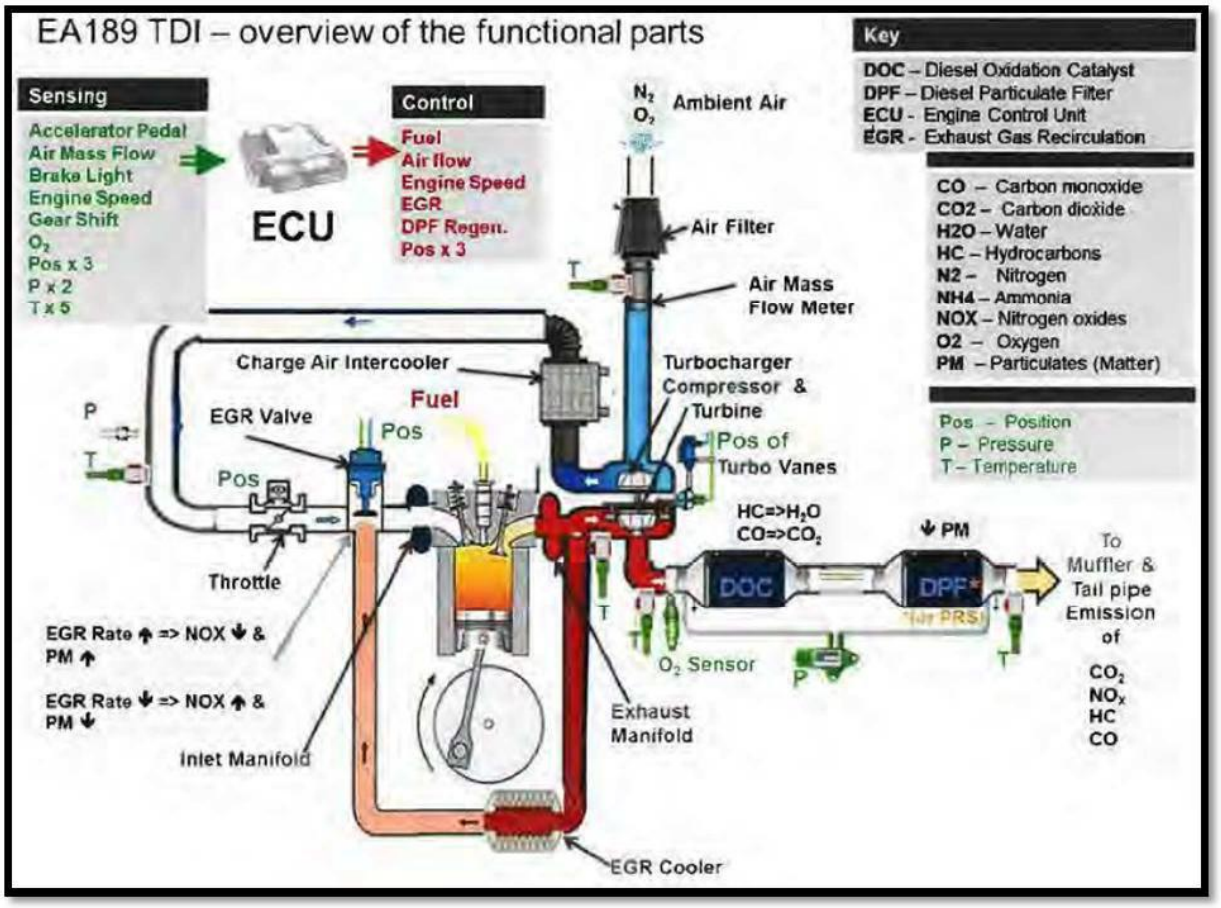
28. NOx emissions from vehicles were first regulated by EU law in 1976. Other regimes around the world, including in particular the US and Australia, similarly regulate such emissions.

THE ENGINE AND NOX EMISSIONS

29. I draw much of the following, either directly or indirectly, from the ATD and the submissions of both sides.

30. What happens in the Engine with regard to NOx emissions is essentially uncontroversial. The characterisation of the relevant processes, for the purpose of the relevant EU legislation, however, is much in dispute on the Defeat Device Issue. What I am concerned with here is the first matter.

31. As an aid to a description of the Engine, I set out below the diagram which appears under paragraph 21 of the ATD ("the Diagram").



32. A diesel engine is an engine powered by the combustion of diesel fuel. It operates by self-igniting the injected fuel. This takes place through the compression of a mixture of air and fuel (air-fuel mixture) in the combustion chamber shown in the centre of the Diagram, the anti-clockwise flow of compressed air into the chamber, having passed through the Intercooler above and to the left of the chamber. The fuel injector is shown at the top of the chamber between the intake and the exhaust valves. This compression feature is why in some of the instruments referred to below, diesel engines fall under the generic description of "compression ignition (CI)" as opposed to petrol engines referred to as "positive ignition (PI)".

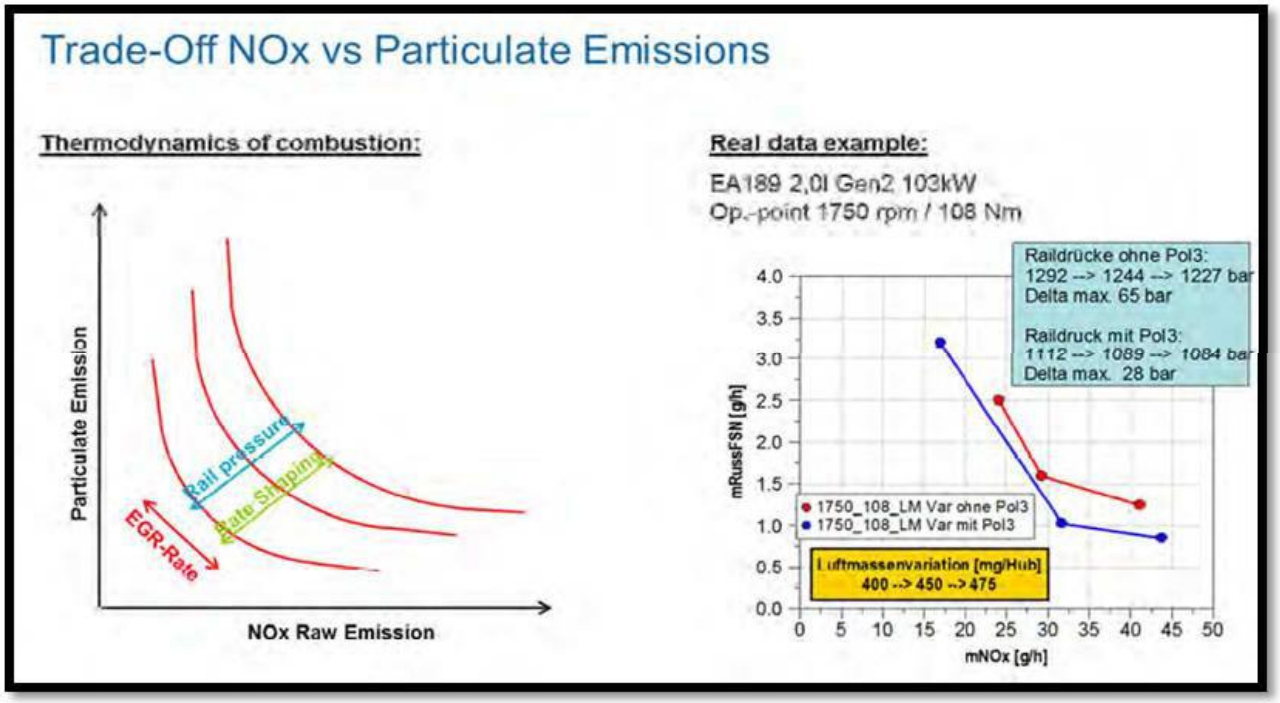
33. The combustion which takes place in the combustion chamber (the cylinder) drives the piston. With the combustion of the fuel in the combustion chamber, products of combustion are created. These are primarily nitrogen, carbon dioxide, water and oxygen with small amounts of pollutants such as NOx, carbon monoxide, sulphur dioxide, hydrocarbons and particulate matter (e.g. fine dust or soot).

34. NOx is the collective term for chemical compounds produced in the combustion chamber from the reaction of nitrogen and surplus oxygen. NOx is generally considered to comprise nitric oxide (NO) and nitrogen dioxide (NO_2). It is produced at high pressure and high temperature.

35. The ECU is the computer that controls the vehicle's engine and exhaust function. It receives data inputs from a variety of sources in the vehicle, which are then interpreted by its software. Following the interpretation of those inputs, the ECU adjusts the signals it sends to devices it controls which adjusts engine and emission behaviour to affect performance at a particular point in time. The ECU is constantly functioning and adjusting the behaviour of the engine and emissions while the vehicle is being used. The ECU is also used to monitor (either directly through sensors or indirectly through models) and control exhaust after treatment systems.

36. One system that can be adjusted by the ECU is the exhaust gas recirculation system. Exhaust gas recirculation ("EGR") involves recirculating combustion products which are produced in an engine during the combustion process back into the combustion chamber. The functioning of the EGR system is controlled by changing the position of the EGR vent. The EGR vent is described as the EGR Valve in the Diagram. When the EGR Valve is down, all of the exhaust gases leave the chamber and pass through the Exhaust Manifold shown to the immediate right of the chamber; after then passing through the lower turbo vanes they continue on through the Diesel Oxidation Catalyst ("DOC" - i.e. a catalytic converter), then the Diesel Particulate Filter ("DPF") and eventually out through the exhaust pipe. However, if the EGR Valve is raised then this has the effect of enabling the exhaust gases, once they have passed through the Exhaust Manifold to be recirculated via the EGR Cooler, back through the Inlet Manifold and to re-enter the Chamber. The EGR is shown in the lower part of the Diagram underneath the piston head. The position of the EGR Valve can be adjusted so as to allow more or less of the exhaust gases to recirculate. As is shown at the bottom left of the Diagram, in general terms, a higher EGR Rate will lead to a reduction in the amount of NOx ultimately leaving the chamber but conversely a higher proportion of particulate matter. On the other hand, a lower EGR Rate means that a higher proportion of NOx will leave the chamber but there will be a reduction in the amount of particulate matter.

37. This trade-off is shown in the graph set out below.



38. The DPF has the function of reducing particulate matter (e.g. soot) before it is emitted from the exhaust pipe. The DPF needs to be regularly "regenerated" so that it does not become blocked with the absorbed particulate matter. By the regeneration process, the carbon particles which have accumulated inside it are burnt off i.e. oxidised. At consistent high speed this process occurs "passively" i.e. without the need for any intervention by the engine management system. But at lower speeds where the temperature of the exhaust gases is lower, the carbon particles will accumulate in the filter unless there is "active" regeneration. This involves additional fuel being oxidised in the DOC so as to heat up the DPF to a temperature which will then enable the oxidation of the accumulated carbon particles within it. While this process is occurring, the EGR function is switched off. Generally, the active regeneration process will itself consume fuel. The effect of active regeneration is to increase tailpipe emissions of, among other things, NOx. All of that said, the need for active regeneration is relatively infrequent and is sufficiently short so that it has a minimal impact on overall average emissions performance during the operating life of the vehicle.

39. However, to the extent that the production of particulates increases when EGR is in operation, there will be a consequential increase in the need for and frequency of active regeneration of the resulting carbon particles in the DPF.

40. Thus, and as stated in the ATD:

> "101. All else being equal, higher EGR Rates principally result in lower engine-out rates of NOx production and higher engine-out rates of particulate matter formation, which will give rise to increased DPF regeneration frequency."

102. As explained in paragraph 92 above, DPF regenerations result in an increase (spike) in NOx, CO2, HC, and PM emissions.
103. Further, in normal operation and use, an increase in particulates will result in an increase in active DPF regenerations which will in turn result in an increase in NOx emissions during these regenerations."

THE SOFTWARE FUNCTION

41. The software component of the EGR system is contained in the ECU, which regulates the extent to which, if at all, the exhaust gases are recirculated i.e. the EGR Rate.

42. At the technical heart of this case is the uncontroversial fact that the EGR system operates in two modes which are here referred to as Mode 1 and Mode 2. The ECU dictates which Mode is to be used at any given time.

43. The ATD states as follows in this respect:

"106. A different "set of maps" exist for Mode 1 and Mode 2, and are based on original test bench mapping but both are optimised independently for different purposes. Broadly speaking, Mode 1 is optimised for NOx and other pollutant emissions (primarily by specifying lower target air mass which would be expected to result in a higher EGR Rate) and compliance with the NEDC, and Mode 2 is optimised for "comfort". Mode 2 is the mode optimised for comfort including fuel economy, reliable regeneration of the particulate filter and noise, vibration and harshness (NVH) (primarily by specifying a higher target air mass which would be expected to result in a lower EGR rate); which is expected to result in higher NOx emissions than in Mode 1.

107. The ECU of all the affected vehicles starts in Mode 2.

108. If all the conditions set out in paragraph 110 below are satisfied before the engine starts, the ECU switches to Mode 1 and the engine starts in Mode 1.

109. If one of the conditions set out in paragraph 110 is not satisfied before the engine starts, the engine will start in Mode 2 and remain in Mode 2.

110. The EGR System will operate in Mode 1 if the engine is started within the following parameters:

(a) the engine has a "cold start", which requires:

(i) engine coolant temperature typically between approximately 18°C and 50°C;

(ii) fuel temperature typically between approximately 18°C and 40°C;

(iii) oil temperature typically between approximately 18°C and 32°C;

(iv) ambient temperature typically between approximately 18°C and 32°C;

(b) the ambient pressure is more than approximately 890 hPa (corresponding to an altitude lower than approximately 1000 meters above sea level);

111. A switch from Mode 1 to Mode 2 will occur when, among others, the following conditions are met:

(a) the position of the accelerator pedal exceeds a maximum position that can be applied (which is measured by the potentiometer); and

(b) for certain vehicles, the velocity of the vehicle does not fall into a defined distance versus time corridor which includes e.g. the NEDC which is prescribed in the testing framework (and is further described in Section 2 below).

112. If the factors at paragraph 110 are present when the engine is started, and Mode 1 is effective, the vehicle will continue to run in Mode 1 for so long as the parameters in paragraph 111 are not triggered. As an illustrative example, if the car starts up in an environment satisfying the conditions in paragraph 110 and is then driven within the prescribed time/distance corridor and the accelerator pedal is not pressed beyond a threshold position (and no other condition initiates a switch to Mode 2), the ECU would continue to operate in Mode 1.

113. If a vehicle which begins running in Mode 1 is driven in a different pattern that is detected as not complying with the parameter approximating to the NEDC, then the vehicle will switch to Mode 2. Depending on how the vehicle is driven, the vehicle may remain in Mode 1 for a period of time before eventually exiting the NEDC corridor which causes the ECU to switch to Mode 2.

114. Once the engine has started operating in Mode 2 it will remain in Mode 2. To enter Mode 1 it must be stopped and then restarted again in a way that satisfies the conditions for operation in Mode 1.

115. Mode 1 and Mode 2 differ in terms of their fuel injection strategy and EGR strategy. This means that there are differences in the engine characteristics for controlling and managing rail pressure, injection timing and desired fresh air mass.

116. With respect to the other operational parameters, if all other engine operational parameters and testing conditions are left unchanged, then operating a vehicle within a certain set of operational maps:

(a) in Mode 1 would result in:
(i) higher rail pressure;
(ii) less efficient combustion (as there is more recirculated gas due to the higher EGR Rate) resulting in decreased NOx and increased particulate matter; and
(iii) injection timing is constantly variable and may or may not differ from Mode 2;

(b) certain areas in Mode 2 maps would result in:
(i) lower rail pressure;
(ii) more efficient combustion (as there is less recirculated gas and more fresh air due to the lower EGR Rate) resulting in increased NOx and decreased particulate matter; and
(iii) injection timing is constantly variable and may or may not differ from Mode 1."

44. The upshot of all this, in broad terms, is that when the Engine was undergoing the relevant New European Drive Cycle (NEDC) testing for the purpose of type-approval of the VW vehicles, the ECU was able to detect the fact of that testing by reference to the existence of the parameters referred to above; in that event, the EGR system would operate in Mode 1. The resulting comparatively lower NOx emissions were such as to satisfy the relevant emissions requirements so as to pass that part of the test. Conversely, when the vehicle was being driven in ordinary road conditions, the parameters consistent with testing would no longer apply so the EGR system would now run in Mode 2. The effect would be that comparatively and significantly greater NOx emissions would be produced which would exceed the applicable limits such that, had the Engine been running in Mode 2 when tested, it would have failed that part of the test.

45. Paragraph 8 of the Defence served in this action reads (in part) as follows:

"(b) It is admitted that the… ECU… incorporated a software function which was capable of identifying the parameters of the … NEDC test and operated in mode 1 within those parameters, and mode 2 outside of those parameters;

(c) It is admitted that in mode 1, the rate of ..EGR.. in the engine was generally higher than in mode 2, and that, all else being equal, a higher rate of EGR tends to reduce NOx but increase the generation of particulates in the combustion chamber of the engine."

46. As to why that software function should be there at all, VW's answer is less than illuminating. Thus, Freshfields' letter dated 2 August stated as follows ("the Freshfields Letter"):

"3. To the best of VWAG's knowledge the software function was incorporated in the affected vehicles because certain engineering employees from its Diesel Engine Development and Powertrain Electronics departments involved in the development of the software function in affected EA189 engines were having difficulties in meeting the EU5 standards for the vehicles containing a 2.01 EA189 engine in respect of NOx emissions in the requisite timeframes. The use of the software function enabled them to meet the standard in the requisite timeframes and to optimise for customer comfort when the vehicles were not being tested.

4. For 1.21 and 1.61 engines in affected vehicles, to the best of VWAG's knowledge, the 2.01 EA189 engine was used as a base model and the desire for consistency of approach contributed to the inclusion of the software function in those engines. The inclusion of the software function in 1.21 and 1.61 engines in affected vehicles also enabled them to meet EU5 standards in the requisite timeframes and to optimise for customer comfort when the vehicles were not being tested."

47. This was in response to paragraph 41 of my Order dated 3 July 2019 (as varied by agreement between the parties), which required that :

> "The 5th to 6th Defendants shall provide a full explanation as to why the software function described in paragraph 8 of the Generic Defence was included in the engine control units of affected vehicles."

48. By its letter dated 9 August, Slater & Gordon contended that Freshfields' explanation was not the "full explanation" required. By its letter dated 21 August, Freshfields disagreed, and there the matter rested.

49. The obvious truth is that the software function was there so that vehicles with the Engine could gain EU type-approval because when Mode 1 was operating, the Engine would pass the NEDC test on which type-approval depended; whereas when the vehicles were being used normally on the road the NOx emissions would be too high. However, Mode 2 was the desirable "normal" mode because it entailed, among other things, greater fuel economy or in any event performance which was adjudged to be optimum for the customer. Otherwise, it would not be there.

THE EC TYPE-APPROVAL REGIME AND THE CORE EU LEGISLATION

Introduction

50. Both this section and the next deal with EU legislation (i.e. Directives, Regulations and Decisions). This section is concerned with the core legislation that set up and operates the structure for vehicle type-approval, testing and (among very many other things) defeat devices. The next section is also concerned with such matters but is of a wider and less direct ambit. Parts of it, for example, are concerned with "heavy duty" vehicles (e.g. lorries) as opposed to the "light duty" vehicles (e.g. cars) in issue here. But it is prayed in aid mainly by the Defendants (with whom the Claimants have engaged on this point) essentially to support their case on the construction of, in particular, the operative definition of "defeat device" in Article 3 (10) of the Regulation ("Article 3 (10)"). This appeal to the wider legislative framework has been referred to in submissions as "the Landscape Argument".

51. The concept of "type-approval" was first introduced by Council Directive 70/156. Any vehicle to be sold in the EU had to have obtained the relevant type-approval issued by a relevant authority in a Member State, which approval covered the particular type of vehicle in question i.e. make and model. That Directive was successively amended, in particular in 1976, with the introduction of a single binding EC type-approval system; in other words, a vehicle or particular component would require a type-approval whose pre-conditions were a matter of EU law and not national law. Once a "competent authority" in a particular Member State had granted type-approval for a particular vehicle, then that approval was valid for the whole of the EU. It did not need to be validated separately in every other Member State. A manufacturer could choose which competent authority to approach for approval. Typically (but by no means always), the approval would be sought from the competent authority

located in the same Member State as the manufacturer. So, for example, the principal type-approval in issue here for VW vehicles (as distinct from Audi, Skoda and SEAT) was that granted by the German authority, being the KBA. The reason why a type-approval granted by a competent authority in one Member State could be valid for the whole EU was because the requirements for such approval derive from EU instruments and were therefore of the same content wherever they were to be applied.

52. The three core pieces of EU legislation here are as follows:

(1) Parliament and Council Directive 2007/46 made on 5 September 2007 ("the Framework Directive");

(2) The Regulation; and

(3) Commission Regulation 692/2008 dated 18 July 2008 ("the Implementing Regulation").

53. As is often the case, all three have been subject to amendment over the years. The references given below are to those iterations in force as at September 2015, as agreed by the parties, unless otherwise stated.

The Framework Directive

54. According to its title, this was to establish

> "a framework for the approval of motor vehicles and their trailers and systems components and separate technical units intended for such vehicles."

55. The Recitals included the following:

> "(2) For the purposes of the establishment and operation of the internal market of the Community, it is appropriate to replace the Member States' approval systems with a Community approval procedure based on the principle of total harmonisation.
>
> (3) The technical requirements applicable .. should be harmonised and specified in regulatory acts. Those regulatory acts should primarily seek to ensure a high level of road safety, health protection, environmental protection, energy efficiency and protection against unauthorised use.
>
> (4) … the scope of the present Directive should cover all categories of vehicles, enabling manufacturers to benefit from the advantages of the internal market by means of the Community type-approval…
>
> (11) By Council Decision 97/836/EC (2), the Community acceded to the Agreement of the United Nations Economic Commission for Europe concerning the adoption of uniform technical prescriptions for wheeled vehicles, equipment and parts which can be fitted to and/or used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions (Revised 1958 Agreement).
>
> Consequently, United Nations Economic Commission for Europe (UNECE) Regulations to which the Community accedes, in application of that Decision, and amendments to UNECE Regulations to which the Community has already acceded should be incorporated within the Community type-approval procedure either as requirements for EC vehicle type-approval, or as alternatives to existing Community law. In particular, where the Community decides, by means of a Council decision, that a UNECE Regulation shall become part of the EC vehicle type-approval procedure and replace existing Community law, the Commission should be empowered to make the necessary adaptations to this Directive…
>
> (13) In order to ensure that the procedure for monitoring conformity of production, which is one of the cornerstones of the Community type-approval system, has been correctly implemented and functions properly, manufacturers should be regularly checked by the competent authority or by an appropriately qualified technical service appointed for that purpose.
>
> (14) The main objective of the legislation on the approval of vehicles is to ensure that new vehicles, components and separate technical units put on the market provide a high level of safety and environmental protection. This aim should not be impaired by the fitting of certain parts or equipment after vehicles have been placed on the market or have entered service. Thus, appropriate measures should be taken in order to make sure that parts or equipment which can be fitted to vehicles and which are capable of significantly impairing the

functioning of systems that are essential in terms of safety or environmental protection, are subject to a prior control by an approval authority before they are offered for sale. These measures should consist of technical provisions concerning the requirements that those parts or equipment have to comply with…

(23) Since the objective of this Directive, namely the achievement of the internal market through the introduction of a compulsory system of Community type-approval for all categories of vehicles, cannot be sufficiently achieved by the Member States and can, therefore, by reason of the scale of the action, be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty."

56. The Articles included the following:

"*Article 1*

Subject matter

This Directive establishes a harmonised framework containing the administrative provisions and general technical requirements for approval of all new vehicles within its scope and of the systems, components and separate technical units intended for those vehicles, with a view to facilitating their registration, sale and entry into service within the Community…Specific technical requirements concerning the construction and functioning of vehicles shall be laid down in application of this Directive in regulatory acts, the exhaustive list of which is set out in Annex IV

Article 2

Scope

1. This Directive applies to the type-approval of vehicles designed and constructed in one or more stages for use on the road, and of systems, components and separate technical units designed and constructed for such vehicles.

Article 3

Definitions

3. 'type-approval' means the procedure whereby a Member State certifies that a type of vehicle, system, component or separate technical unit satisfies the relevant administrative provisions and technical requirements;

5. 'EC type-approval' means the procedure whereby a Member State certifies that a type of vehicle, system, component or separate technical unit satisfies the relevant administrative provisions and technical requirements of this Directive and of the regulatory acts listed in Annex IV or XI;

23. 'system' means an assembly of devices combined to perform one or more specific functions in a vehicle and which is subject to the requirements of any of the regulatory acts;

33. 'type-approval certificate' means the document whereby the approval authority officially certifies that a type of vehicle, system, component or separate technical unit is approved;

36. 'certificate of conformity' means the document set out in Annex IX, issued by the manufacturer and certifying that a vehicle belonging to the series of the type approved in accordance with this Directive complied with all regulatory acts at the time of its production;

Article 4

Obligations of Member States

1. Member States shall ensure that manufacturers applying for approval comply with their obligations under this Directive.

2. Member States shall approve only such vehicles, systems, components or separate technical units as satisfy the requirements of this Directive.

3. Member States shall register or permit the sale or entry into service only of such vehicles, components and separate technical units as satisfy the requirements of this Directive. They shall not prohibit, restrict or impede the registration, sale, entry into service or circulation on the road of vehicles, components or separate technical units, on grounds related to aspects of their construction and functioning covered by this Directive, if they satisfy the requirements of the latter.

4. Member States shall establish or appoint the authorities competent in matters concerning approval, and notify to the Commission such establishment or appointment in accordance with Article 43.

The notification act of the approval authorities shall include the name, the address, including electronic address, and their area of responsibility.

Article 8

General provisions

1. Member States may not grant any EC type-approval without first ensuring that the procedures referred to in Article 12 have been duly and satisfactorily implemented.

Article 11

Tests required for EC type-approval

1. Compliance with the technical prescriptions laid down in this Directive and in the regulatory acts listed in Annex IV shall be demonstrated by means of appropriate tests performed by designated technical services. The test procedures, the specific equipment and tools necessary to perform those tests shall be described in each of the regulatory acts.

2. The required tests shall be performed on vehicles, components and separate technical units which are representative of the type to be approved.

Article 12

Conformity of production arrangements

1. The Member State which grants an EC type-approval shall take the necessary measures in accordance with Annex X to verify, if need be in cooperation with the approval authorities of the other Member States, that adequate arrangements have been made to ensure that production vehicles, systems, components or separate technical units, as the case may be, conform to the approved type.

Article 18

Certificate of conformity

1. The manufacturer, in his capacity as the holder of an EC type-approval of a vehicle, shall deliver a certificate of conformity to accompany each vehicle, whether complete, incomplete or completed, that is manufactured in conformity with the approved vehicle type. In the case of an incomplete or completed vehicle, the manufacturer shall complete only those items on side 2 of the certificate of conformity which have been added or changed at the current stage of approval and, if applicable, shall attach to the certificate all certificates of conformity delivered at the previous stage.

Article 30

Vehicles, systems, components or separate technical units not in conformity with the approved type

1. If a Member State which has granted an EC type-approval finds that new vehicles, systems, components or separate technical units accompanied by a certificate of conformity or bearing an approval mark do not conform to the type it has approved, it shall take the necessary measures, including, where necessary, the withdrawal of type-approval, to ensure that production vehicles, systems, components or separate technical units, as the case may be, are brought into conformity with the approved type. The approval authority of that Member State shall advise the approval authorities of the other Member States of the measures taken.

2. For the purposes of paragraph 1, deviations from the particulars in the EC type-approval certificate or the information package shall be deemed to constitute failure to conform to the approved type.

3. If a Member State demonstrates that new vehicles, components or separate technical units accompanied by a certificate of conformity or bearing an approval mark do not conform to the approved type, it may ask the Member State which granted the EC type-approval to verify that vehicles, systems, components or separate technical units in production continue to conform to the approved type. On receipt of such a request, the Member State concerned shall take the requisite action as soon as possible and in any case within six months of the date of the request.

INTERNATIONAL REGULATIONS

Article 34

UNECE Regulations required for EC type-approval

1. UNECE Regulations to which the Community has acceded and which are listed in Part I of Annex IV and in Annex XI are part of the EC type-approval of a vehicle in the same way as the separate directives or regulations. They shall apply to the categories of vehicles listed in the relevant columns in the table of Part I of Annex IV and Annex XI."

57. Annex III to the Framework Directive sets out the information which must be supplied by the manufacturer seeking type-approval. Paragraph 3.2 deals with information about the "Internal Combustion Engine". Within that, paragraph 3.2.12 deals with "Measures taken against air pollution" which includes, at 3.12.24 "Exhaust gas recirculation: yes/no". Annex IV sets out all the requirements for the purpose of type-approval by reference to the relevant EU instrument. Annex VI sets out the required elements of the type-approval certificate. Annex IX does the same for the certificate of conformity to be provided for customers by the manufacturer. The certificate of conformity has rightly been referred to as the vehicle's "passport". It cannot be produced by the manufacturer without the "type-approval certificate" which in turn cannot be obtained without passing the relevant test in all respects. All of this is in the context of the aim of providing harmonised and consistent standards to ensure, among other things, health and environmental protection, whereby relevant tests are to be established by which compliance with such standards can be measured for the purpose of type-approval. Subsequent non-compliance with the relevant standards in the case of a particular vehicle or vehicles can result in withdrawal of their type-approval.

58. This, then, is the framework for the more detailed legislation set out in the Regulation and the Implementing Regulation.

The Regulation

59. I then turn to the relevant provisions of the Regulation which deals with:

> "type-approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information".

60. Its Recitals provide, among other things, as follows (square brackets added):

> "(4) In March 2001 the Commission launched the Clean Air For Europe (CAFE) programme…This has led to the adoption of a thematic strategy on air pollution by a communication of 21 September 2005. One of the conclusions of the thematic strategy is that further reductions in emissions from the transport sector (air, maritime and land transport), from households and from the energy, agricultural and industrial sectors are needed to achieve EU air quality objectives. In this context, the task of reducing vehicle emissions should be approached as part of an overall strategy. The Euro 5 and 6 standards are one of the measures designed to reduce emissions of particulate matter and ozone precursors such as nitrogen oxides and hydrocarbons.
>
> (5) Achieving EU air quality objectives requires a continuing effort to reduce vehicle emissions. For that reason, industry should be provided with clear information on future emission limit values. This is why this Regulation includes, in addition to Euro 5, the Euro 6 stage of emission limit values.
>
> (6) In particular, a considerable reduction in nitrogen oxide emissions from diesel vehicles is necessary to improve air quality and comply with limit values for pollution. This requires reaching ambitious limit values at the Euro 6 stage without being obliged to forego the advantages of diesel engines in terms of fuel consumption and hydrocarbon and carbon monoxide emissions. Setting such a step for reducing nitrogen oxide emissions at an early stage will provide long-term, Europe-wide planning security for vehicle manufacturers.
>
> (7) In setting emissions standards it is important to take into account the implications for markets and manufacturers' competitiveness, the direct and indirect costs imposed on business and the benefits that accrue in terms of stimulating innovation, improving air quality, reducing health costs and increasing life expectancy, as well as the implications for the overall impact on carbon dioxide emissions.

(12) Efforts should be continued to implement stricter emission limits, including reduction of carbon dioxide emissions, and to ensure that those limits relate to the actual performance of vehicles when in use.

(15) The Commission should keep under review the need to revise the New European Drive Cycle [NEDC] as the test procedure that provides the basis of EC type-approval emissions regulations. Updating or replacement of the test cycles may be required to reflect changes in vehicle specification and driver behaviour. Revisions may be necessary to ensure that real world emissions correspond to those measured at type-approval. The use of portable emission measurement systems and the introduction of the 'not-to exceed' regulatory concept should also be considered.

(16) OBD [On Board Diagnostics] systems are important in the control of emissions during the use of a vehicle. Due to the importance of controlling real world emissions, the Commission should keep under review the requirements for such systems and the tolerance thresholds for monitoring faults.

(21) In order to clarify the scope of legislation on vehicle emissions, Directive 2005/55/EC...on the approximation of the laws of the Member States relating to the measures to be taken against the emission of gaseous and particulate pollutants from compression-ignition engines for use in vehicles, and the emission of gaseous pollutants from positive-ignition engines fuelled with natural gas or liquefied petroleum gas for use in vehicles should be amended in such a way as to cover all heavy-duty vehicles so as to make clear that this Regulation concerns light-duty vehicles [only].

(26) Power should also be conferred on the Commission to establish specific procedures, tests and requirements for type-approval, as well as a revised measurement procedure for particulates and a particle number based limit value, and to adopt measures concerning the use of defeat devices, access to vehicle repair and maintenance information and test cycles used to measure emissions. Since those measures are of general scope and are designed to supplement this Regulation by the addition of new non-essential elements, they should be adopted in accordance with the regulatory procedure with scrutiny provided for in Article 5a of Decision 1999/468/EC."

61. The Articles then provide, among other things, as follows:

"Article 1
Subject matter
1. This Regulation establishes common technical requirements for the type-approval of motor vehicles (vehicles) and replacement parts, such as replacement pollution control devices, with regard to their emissions.

2. In addition, this Regulation lays down rules for in-service conformity, durability of pollution control devices, on-board diagnostic (OBD) systems, measurement of fuel consumption and accessibility of vehicle repair and maintenance information.

Article 2
Scope
1. This Regulation shall apply to vehicles of categories M 1, M 2, N 1 and N 2

[it is common ground that the affected vehicles here all fall within categories M 1 and N 1]

Article 3
Definitions
4. 'gaseous pollutants' means the exhaust gas emissions of carbon monoxide, oxides of nitrogen, expressed in nitrogen dioxide (NO_2) equivalent, and hydrocarbons;

5. 'particulate pollutants' means components of the exhaust gas which are removed from the diluted exhaust gas at a maximum temperature of 325 °K (52 °C) by means of the filters described in the test procedure for verifying average tailpipe emissions;

6. 'tailpipe emissions' means the emission of gaseous and particulate pollutants;

7. 'evaporative emissions' means the hydrocarbon vapours emitted from the fuel system of a vehicle other than those from tailpipe emissions;

9. 'on-board diagnostic system' or 'OBD system' means a system for emission control which has the capability of identifying the likely area of malfunction by means of fault codes stored in a computer memory;

10. 'defeat device' means any element of design which senses temperature, vehicle speed, engine speed (RPM), transmission gear, manifold vacuum or any other parameter for the purpose of activating, modulating, delaying or deactivating the operation of any part of the emission control system, that reduces the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use;
[emphasis added and I refer to the emission control system as the "ECS"]

11. 'pollution control device' means those components of a vehicle that control and/or limit tailpipe and evaporative emissions;

Article 4
Manufacturers' obligations
1. Manufacturers shall demonstrate that all new vehicles sold, registered or put into service in the Community are type approved in accordance with this Regulation and its implementing measures. Manufacturers shall also demonstrate that all new replacement pollution control devices requiring type-approval which are sold or put into service in the Community are type approved in accordance with this Regulation and its implementing measures. These obligations include meeting the emission limits set out in Annex I and the implementing measures referred to in Article 5.

2. Manufacturers shall ensure that type-approval procedures for verifying conformity of production, durability of pollution control devices and in-service conformity are met. In addition, the technical measures taken by the manufacturer must be such as to ensure that the tailpipe and evaporative emissions are effectively limited, pursuant to this Regulation, throughout the normal life of the vehicles under normal conditions of use. Therefore, in-service conformity measures shall be checked for a period of up to five years or 100 000 km, whichever is the sooner. Durability testing of pollution control devices undertaken for type-approval shall cover 160 000 km. To comply with this durability test, the manufacturers should have the possibility to make use of test bench ageing, subject to the implementing measures referred to in Paragraph 4. In-service conformity shall be checked, in particular, for tailpipe emissions as tested against emission limits set out in Annex I. In order to improve control of evaporative emissions and low ambient temperature emissions, the test procedures shall be reviewed by the Commission.

3. Manufacturers shall set out carbon dioxide emissions and fuel consumption figures in a document given to the purchaser of the vehicle at the time of purchase.

4. The specific procedures and requirements for the implementation of paragraphs 2 and 3 shall be established in accordance with the procedure referred to in Article 15(2).

Article 5
Requirements and tests
1. The manufacturer shall equip vehicles so that the components likely to affect emissions are designed, constructed and assembled so as to enable the vehicle, in normal use, to comply with this Regulation and its implementing measures.

2. The use of defeat devices that reduce the effectiveness of emission control systems shall be prohibited. The prohibition shall not apply where:
(a) the need for the device is justified in terms of protecting the engine against damage or accident and for safe operation of the vehicle;
(b) the device does not function beyond the requirements of engine starting;
or
(c) the conditions are substantially included in the test procedures for verifying evaporative emissions and average tailpipe emissions.
[emphasis added]

3. The specific procedures, tests and requirements for type-approval set out in this paragraph, as well as requirements for the implementation of paragraph 2, which are designed to amend non-essential elements of this Regulation, by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 15(3). This shall include establishing the requirements relating to:

(a) tailpipe emissions, including test cycles, low ambient temperature emissions, emissions at idling speed, smoke opacity and correct functioning and regeneration of after-treatment systems;…

(c) OBD systems and in-use performance of pollution control devices;

(d) durability of pollution control devices, replacement pollution control devices, in-service conformity, conformity of production and roadworthiness;…

(h) test equipment;…

Article 10
Type-approval
[see below]

Article 13
Penalties
1. Member States shall lay down the provisions on penalties applicable for infringement by manufacturers of the provisions of this Regulation and shall take all measures necessary to ensure that they are implemented. The penalties provided for must be effective, proportionate and dissuasive. Member States shall notify those provisions to the Commission by 2 January 2009 and shall notify it without delay of any subsequent amendment affecting them. 2. The types of infringements which are subject to a penalty shall include:
(a) making false declarations during the approval procedures or procedures leading to a recall;
(b) falsifying test results for type-approval or in-service conformity;
(c) withholding data or technical specifications which could lead to recall or withdrawal of type-approval;
(d) use of defeat devices;
and
(e) refusal to provide access to information.

Article 14
Redefinition of specifications
3. The Commission shall keep under review the procedures, tests and requirements referred to in Article 5(3) as well as the test cycles used to measure emissions. If the review finds that these are no longer adequate or no longer reflect real world emissions, they shall be adapted so as to adequately reflect the emissions generated by real driving on the road. The necessary measures, which are designed to amend non-essential elements of this Regulation, by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 15(3)."

62. As can be seen, therefore, the immediate reason why it matters whether the software function here amounts to a defeat device is because if it is, its use is prohibited by Article 5 (2) of the Regulation ("Article 5 (2)"). It also opens up the manufacturer to penalties, as provided for in Article 13 (1). It can also be seen that the prohibition does not apply in the cases set out in Article 5 (2) (a)-(c) ("the Exceptions"). VW has stated that it reserves its position in these proceedings as to the application to the Engine of one or more of the Exceptions in the event that it is a defeat device. However, to date, VW has not pleaded any positive case to that effect in its Defence. For their part, the Claimants say that, quite apart from this trial, it is now too late for the Defendants to rely upon any of the Exceptions hereafter. I do not have to resolve that dispute within the confines of this judgment which, in any event, is not directly concerned with the Exceptions but whether the Engine is a defeat device in the first place.

63. The broad effect of Article 10 is that if the vehicle complies with the relevant requirements of the Regulation and its implementation measures, then the competent authority must grant the relevant type-approval. Conversely, if there is no compliance they must not. Given the centrality of the test procedure to deciding whether the vehicle has complied, this means that essentially, if the test is passed then the vehicle must be type-approved. The logic of that is obviously that if there is a harmonised and consistent procedure for ascertaining compliance, competent authorities cannot be permitted to either qualify or disqualify vehicles according to other criteria.

64. It is also made clear that the features of the vehicle which enable it to pass the test at the outset must be durable i.e. they must remain for the duration of what is deemed to be the vehicle's working life and there is a procedure for the vehicle to be audited accordingly. This can be done either subsequently or initially, and preferably with the benefit of a deliberately "aged" vehicle. Again, this involves the use of a test.

65. As for the Annexes to the Regulation, Annex I sets out at Table 1 the emissions limits pertaining to the standard called "Euro 5" which was the applicable standard for the Engine here. Table 2 shows the (then) future intended standard of Euro 6 with significantly lower permitted NOx emissions.

66. The need for an efficient OBD system arises in the emissions context because there has to be a mechanism by which the vehicle can itself detect that it is not functioning properly so far as emissions, among other things, are concerned in order that the issue can be addressed and rectified.

The Implementing Regulation

67. This deals with:

> "implementing and amending [the] Regulation…on type-approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information"

68. Its Articles provide, among other things,

> *"Article 2*
> **Definitions**
>
> 18. 'emission control system' means, in the context of the OBD system, the electronic engine management controller and any emission-related component in the exhaust or evaporative system which supplies an input to or receives an output from this controller;
>
> **Articles**
> *Article 3*
> **Requirements for type-approval**
> 1. In order to receive an EC type-approval with regard to emissions and vehicle repair and maintenance information, the manufacturer shall demonstrate that the vehicles comply with the test procedures specified in Annexes III to VIII, X to XII, XIV, XVI and XX to this Regulation…
>
> 5. The manufacturer shall take technical measures so as to ensure that the tailpipe and evaporative emissions are effectively limited, in accordance with this Regulation, throughout the normal life of the vehicle and under normal conditions of use. These measures shall include ensuring that the security of hoses, joints and connections, used within the emission control systems, are constructed so as to conform with the original design intent…
>
> 9. The Type 6 test measuring emissions at low temperatures set out in Annex VIII shall not apply to diesel vehicles. However, when applying for type-approval, manufacturers shall present to the approval authority with information showing that the NOx aftertreatment device reaches a sufficiently high temperature for efficient operation within 400 seconds after a cold start at – 7 °C as described in the Type 6 test. In addition, the manufacturer shall provide the approval authority with information on the operating strategy of the exhaust gas recirculation system (EGR), including its functioning at low temperatures. This information shall also include a description of any effects on emissions. The approval authority shall not grant type-approval if the information provided is insufficient to demonstrate that the aftertreatment device actually reaches a sufficiently high temperature for efficient operation within the designated period of time. At the request of the Commission, the approval authority shall provide information on the performance of NOx aftertreatment devices and EGR system at low temperatures.

Article 4

Requirements for type-approval regarding the OBD system

1. The manufacturer shall ensure that all vehicles are equipped with an OBD system.

2. The OBD system shall be designed, constructed and installed on a vehicle so as to enable it to identify types of deterioration or malfunction over the entire life of the vehicle.

3. The OBD system shall comply with the requirements of this Regulation during conditions of normal use.

Article 5

Application for EC type-approval of a vehicle with regard to emissions and access to vehicle repair and maintenance information

1. The manufacturer shall submit to the approval authority an application for EC type-approval of a vehicle with regard to emissions and access to vehicle repair and maintenance information.

3. In addition, the manufacturer shall submit the following information:…

(b) detailed written information fully describing the functional operation characteristics of the OBD system, including a listing of all relevant parts of the emission control system of the vehicle that are monitored by the OBD system;..

(f) a description of the provisions taken to prevent tampering with and modification of the emission control computer;

Article 6

Administrative provisions for EC type-approval of a vehicle with regard to emissions and access to vehicle repair and maintenance information

1. If all the relevant requirements are met, the approval authority shall grant an EC type-approval and issue a type-approval number in accordance with the numbering system set out in Annex VII to Directive 2007/46/EC.

For vehicles type approved to the Euro 5 emission limits given in Table 1 of Annex I of Regulation (EC) 715/2007 the relevant requirements shall be deemed to be met if all the following conditions are fulfilled:

(a) the requirements of Article 13 are met;

(b) the vehicle has been approved according to UN/ECE Regulations No 83, series of amendments 06, No 85, No 101, series of amendments 01 and in the case of compression ignition vehicles No 24 Part III, series of amendments 03. In the case referred to in the fourth subparagraph Article 14 shall also apply.

3. When granting an EC type-approval under paragraph 1, the approval authority shall issue an EC type-approval certificate using the model set out in Appendix 4 to Annex I.

Article 8

Conformity of production

1. Measures to ensure the conformity of production shall be taken in accordance with the provisions of Article 12 of Directive 2007/46/EC.

2. Conformity of production shall be checked on the basis of the description in the type-approval certificate set out in Appendix 4 to Annex I to this Regulation.

Article 9

In service conformity

1. The provisions for in-service conformity are laid down in Annex II to this Regulation and, for vehicles type-approved under Council Directive 70/220/EEC (1), in Annex XV to this Regulation.

2. Measures to ensure in-service conformity of vehicles type-approved under this Regulation or Directive 70/220/EEC shall be taken in accordance with Article 12 of Directive 2007/46/EC.

3. The in-service conformity measures shall be appropriate for confirming the functionality of the pollution control devices during the normal useful life of the vehicles under normal conditions of use as specified in Annex II to this Regulation.

> 4. The in-service conformity measures shall be checked for a period of up to 5 years of age or 100 000 km, whichever is the sooner."

69. As for the Annexes, the form of the type-approval certificate referred to in Article 6 is set out at Appendix 4 to Annex 1. This includes details of when and by whom the test was carried out. In addition, data from the test results was required which includes, at paragraph 2.1 of the required Additional Information, the relevant NOx emissions values obtained.

70. Annex II sets out the particular requirements for in-service conformity.

71. Annex III is of particular importance. It states as follows at the outset:

> *"ANNEX III*
> **VERIFYING AVERAGE EXHAUST EMISSIONS AT AMBIENT CONDITIONS**
> (TYPE 1 TEST)
> 1. INTRODUCTION
> This Annex describes the procedure for the type 1 test verifying the average exhaust emissions at ambient conditions.
> 2. GENERAL REQUIREMENTS
> 2.1. The general requirements shall be those set out in paragraph 5.3.1 of UN/ECE Regulation 83, with the exceptions described in sections 2.2 to 2.5.
> 2.2. The vehicles that are subject to the test set out in paragraph 5.3.1.1 shall be understood as being all vehicles covered by the scope of this Regulation.
> 2.3 The pollutants specified in paragraph 5.3.1.2.4 shall be understood as being all those covered by Tables 1 and 2 of Annex 1 of Regulation (EC) No 715/2007.
> 2.4. The reference to the deterioration factors from paragraph 5.3.6 in paragraph 5.3.1.4 shall be understood as being a reference to the deterioration factors specified in Annex VII to this Regulation.
> 2.5. The emission limits referred to in paragraph 5.3.1.4 shall be understood as being a reference to the emission limits set out in Table 1 of Annex 1 to Regulation (EC) No 715/2007 for Euro 5 vehicles, and in Table 2 of Annex 1 of Regulation (EC) No 715/2007 for Euro 6 vehicles."

72. It later states:

> "3.13.3. At the request of the manufacturer, the test procedure specific to periodically regenerating systems shall not apply to a regenerative device if the manufacturer provides data to the approval authority that, during cycles where regeneration occurs, emissions remain below the standards given in Table 1 or 2 of Annex I to Regulation (EC) No 715/2007 applied for the concerned vehicle category after agreement of the technical service.
> 3.13.4. For a periodically regenerating device, during cycles where regeneration occurs, emission standards can be exceeded. If a regeneration of a pollution control device occurs at least once per type 1 test and the device has already regenerated at least once during vehicle preparation cycle, it shall be considered as a continuously regenerating system which does not require a special test procedure."

73. In other words, the test procedure will be sensitive to the fact that there can be occasional increases in NOx emissions when active regeneration of the DPF occurs, as explained in paragraphs 38-40 above. The upshot is, one way or another, to compensate for that and in effect, not to penalise the vehicle being tested in terms of satisfying the test's requirements.

74. UN/ECE Regulation 83 ("Regulation 83") was incorporated into EU law by Council Decision 97/836 of 27 November 2007, which followed the revision of the original United Nations Economic Commission for Europe (ECE) Agreement. The latter concerned the adoption of uniform conditions of approval and reciprocal recognition of approval for motor vehicle equipment and parts and was made in Geneva on 20 March 1958. Subsequent amendments to Regulation 83 were then published in the Official Journal. It prescribes the precise form of and procedure for the various applicable tests and in relation to the affected vehicles here this is the "Type I Test" described in Annex 4a thereto. It

is that test which, with the modifications described in Annex 3 to the Implementation Regulation, is relevant here.

75. The test is static in the sense that the vehicle is not driven on the open road; instead it is placed on a chassis dynamometer or "rolling road" designed to simulate the linear movement of the vehicle. The test requires that the vehicle is in good mechanical condition and has been run-in and driven for at least 3,000 km beforehand. The engine's settings and controls should be as prescribed by the manufacturer. Its performance should be as stated by the manufacturer and it must be capable of being used for "normal driving" and "more particularly that it is capable of starting when cold and hot". See paragraphs 3.2.1, 3.2.4 and 3.2.6. Paragraph 6 sets out in great detail the emissions test procedure which in broad terms, consists of 2 different cycles each of which requires the vehicle to be "driven" on the dynamometer in different configurations. The first cycle is the "urban cycle" and the second is the "extra-urban cycle". The particular configuration is by reference to idling, gear changing, accelerations, steady-speed periods, decelerations, use of the different gears, average speed and distance to be notionally covered. Two cycles are designed to simulate the sort of driving conditions to be found in town and then on the open road. There are then, among other things, detailed provisions as to how each element of those configurations, for example, accelerating or gear changing, is to be carried out.

76. Annex 13 to Regulation 83 then sets out detailed provisions dealing with the regeneration activity referred to above. In particular, a formula leading to a value known as Ki, is used in order to capture the increases in NOx emissions caused "legitimately" by the need to regenerate from time to time. That value is then applied to the results of the test in a way which compensates for those increased emissions in a very sophisticated manner.

77. Annex 11 of the Implementing Regulation sets out "the functional aspects of OBD systems for the control of emissions from motor vehicles." Appendix 2 thereto explains how a group of vehicles may belong to the same "family" for OBD purposes where they share the same specific parameters. These included:

> "**Emission control system:**
> — type of catalytic converter (i. e. oxidation, three-way, heated catalyst, SCR, other),
> — type of particulate trap,
> — secondary air injection (i.e. with or without),
> — exhaust gas recirculation (i.e. with or without)"

78. Finally, in this context, Annex 7 of the Implementing Regulation sets out the detailed procedure for testing the durability of pollution control devices by reference to a vehicle which has covered a designated mileage (in fact kilometres) or has been "aged" to achieve the same result.

79. The ATD provides a useful summary of the NEDC test as relevant to the vehicles in issue here:

“127. Conducting such testing in a laboratory has two principal advantages: repeatability and comparability of results. Laboratory conditions mean that various sources of variability, such as temperature and air pressure can be controlled. This means that the results of the NEDC are highly reproducible and, because the NEDC is consistent, the exhaust emissions values of one vehicle are directly comparable to the exhaust emissions values of every other vehicle under test conditions.

128. On the road, if the same vehicle is driven in the same manner, over the same distance-time corridor, and the conditions are the same as those under which it is tested in the laboratory, the exhaust emissions, including engine NOx emissions, will be similar. However, because you cannot control every variable affecting engine performance and emissions on the road, the results of any two tests will never be identical.

129. Given the highly specific nature of the NEDC requirements, it is unlikely that a vehicle driven in normal use will be driven at the same speeds, for the same time and in the same conditions as the conditions specified by the European Standards.

130. Real world driving is route-based, in that distance is fixed, defined by a starting point and a destination. As such, no two real-world routes are likely ever to be identical, due to traffic, ambient conditions and driver performance. Conversely, standardised laboratory tests are cycle-based, in the time and speed are defined. This, in turn, makes these cycles repeatable. The NEDC cycle involves some conditions that are almost certainly encountered in real-world driving, but identical recreation of all conditions and the continuous speed and time trace of the NEDC in its entirety during real-world driving is never encountered in the real world. To do so would require multiple factors including pre-conditioning, correct temperature and exact time/distance corridors and not steering the vehicle to be present at the same time.

131. Relevant factors that may influence fuel consumption and exhaust emissions on the road are:

(a) related to the driver: the driver’s fitness on the day, acceleration behaviour, switching point/gear-shifting speed and driving dynamics;

(b) related to traffic: amount of traffic/traffic jams, traffic light stops (quantity, duration), speed profile, and acceleration profile;

(c) related to external conditions: temperature, wind, rain and road conditions (wet, dry etc.); and

(d) related to the vehicle condition: correction of quantity of fuel injection according to software update (new training), DPF regeneration in a cycle, use of heating/air condition, and consumer comforts (fan, windscreen wipers etc.).

132. There are differences between vehicle emissions under normal driving conditions (normal vehicle operation and use) and laboratory conditions.

133. The first test cycle to be legislated in the EU (or EEC at the time) was the ECE-15 in 1970 and it was designed to represent urban driving conditions of busy European cities at that time. There was an update to the test cycle in 1991 to try to better represent more demanding, high speed driving mode. Recently there has been an initiative to further update the testing procedures. In 2007, a working group of the United Nations Economic Commission for Europe (UN/ECE) began to develop a worldwide harmonized test procedure for light vehicles that has become known as the “Worldwide Harmonized Light Vehicles Test Procedure” (the WLTP). The WLTP includes a new test cycle that is designed to be more representative of average modern-day driving behaviour and limits the tolerances in and related to the NEDC. The WLTP came into force on 1 September 2017 and all newly registered cars were required to undergo the WLTP testing from 1 September 2018.

134. There are tolerances in the current procedures regarding the assessment of vehicles before they are tested under the NEDC. Before a vehicle can be tested under the NEDC, and in an attempt to simulate normal driving conditions, the level of resistance of the dynamometer must be set to simulate the level of resistance the vehicle would experience if driven on the road. This resistance setting, known as the “road load” is adjusted for each specific vehicle that is tested and can be determined using different methods.

135. Road load and inertia settings simulate and assume various factors including a dry and level road, straight line driving (no turns), minimal wind, closed windows and that all devices not needed for driving the vehicle are turned off (e.g. air conditioning and headlamps). This makes no allowance for uphill / downhill driving, rain, significant wind speed, multiple passengers and luggage, and the use of systems that would be used in normal vehicle operation and use…

137. Further:

(a) there are tolerances in the current procedures regarding the testing of vehicles under the NEDC. This may include things such as the reference mass of the vehicle, the choice of wheels and tyres, how the laboratory instruments are calibrated, the temperature of the test cell, use of higher gears and the driving technique of the individual driver;

(b) there are specific vehicle operations, for example the regeneration of the DPF, that are not accounted for during the testing of the vehicle for NOx emissions;

(c) vehicles can be tested in their “key-on” platform (e.g. standard mode) and would not be retested in other user selected platforms (e.g. sports or economy mode);

(d) the steering wheel of the vehicles is not utilised (i.e. the wheels remain straight) and consequently the power steering function is not in use; and

(e) factors relating to vehicle operation. This includes the use of on-board electrical equipment, such as air conditioning and entertainment systems as well as other external factors such as driving style, fuel quality, weather conditions and road surface."

80. What is plain from these paragraphs and the EU materials already referred to is that:

(1) The testing has been designed to replicate as far as possible, normal driving conditions and the performance of the vehicle, by reference to emissions and otherwise, thereunder;

(2) The test is not and can never be an exact replica of actual driving conditions for the reasons given above although it has built-in tolerances to try and give as best an approximation as possible;

(3) Over time, such testing can be and will be improved so as to approximate to a greater extent current normal driving conditions;

(4) However, those inherent limitations on the test should not obscure the fundamental point that it is and is intended to be sufficiently approximate to normal driving conditions that a vehicle's performance on the test (with regard to emissions and otherwise) is likely to be a reasonable approximation of its performance on the road. That is why a vehicle which passes the test is deemed to be compliant with EU requirements for the purpose of type-approval. The test, in other words, is presumptive evidence of such compliance. It plainly has no other purpose;

(5) That being so, whatever else may be said about it, a software function which enables a vehicle to pass the test because (artificially) it operates the vehicle in a way which is bound to pass the test and in which it does not operate on the road is a fundamental subversion of the test and the objective behind it. In other words, it destroys the utility of the test because it makes it impossible for performance under it to be the approximation of normal driving conditions and performance which it is intended to be.

OTHER RELEVANT LEGISLATION

81. I have set out below (largely chronologically) legislation from the US as well as earlier EU legislation dealing with (in broad terms) defeat devices. This includes precursors to the core EU legislation referred to above, legislation which shows the origin of the expression "defeat device", and the ways in which the EU legislation has dealt with vehicles other than the Light Duty ("LD") vehicles in issue here, principally Heavy Duty ("HD") vehicles i.e. lorries and the like. Both sides have cited numerous materials in this regard. Much of this is said to be relevant to the Landscape Argument. There are also some other materials which I consider to be relevant to which I have referred.

82. While I make some comments in passing here, the conclusions which can (and cannot) be drawn from these materials and how, if at all, they assist me in interpreting Article 3 (10), I discuss in context below.

US Background

83. For present purposes, the story of defeat device prohibition starts with the US Federal Clean Air Act 1963 as subsequently amended. Section 203 thereof (among other sections) deals with vehicle emissions ("Section 203"). By Section 203 (a) (1) vehicles require certificates of conformity before they can be sold. Section 203 (a) (3) (b) then prohibits:

> "the manufacture, selling, or installation of any device that bypasses, defeats, or renders inoperative a required element of the vehicle's emissions control system."

84. This suggests clearly that the target of the "defeat" is the ECS (which expression I use in a general sense here), along with the ECS being "bypassed" or rendered inoperative.

85. However, at all material times there was also a specific definition of defeat device provided by Part 86 of the Electronic Code of Federal Regulations ("Part 86") as follows:

> "Defeat device means an auxiliary emission control device (AECD) that reduces the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use, unless:
>
> (1) Such conditions are substantially included in the Federal emission test procedure;
> (2) The need for the AECD is justified in terms of protecting the vehicle against damage or accident;
> (3) The AECD does not go beyond the requirements of engine starting; or
> (4) The AECD applies only for emergency vehicles and the need is justified in terms of preventing the vehicle from losing speed, torque, or power due to abnormal conditions of the emission control system, or in terms of preventing such abnormal conditions from occurring, during operation related to emergency response…"

86. Broadly speaking this equates to Articles 3 (10) and 5 (2).

87. AECD is then separately defined as:

> "any element of design which senses temperature, vehicle speed, engine RPM, transmission gear, manifold vacuum, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any part of the emission control system."

88. ECS is separately defined as:

> "a unique group of emission control devices, auxiliary emission control devices, engine modifications and strategies, and other elements of design designated by the Administrator [of the Environmental Protection Agency – "EPA"] used to control exhaust emissions of a vehicle."

89. One can understand the sense of "auxiliary" here because the concept is something which is additional to or supplementing whatever "basic" emission control devices were installed in the vehicle which, in this context, had to be present because they are required by the EPA.

90. All of this, of course, is against a background where (as with the EU as at 2015) the method of assessing whether a vehicle was emissions-compliant was to test it in "laboratory" conditions. The logic of the first proviso or exception to the definition of defeat device in Part 86 is obviously that if the conditions in which the ECS is reduced are in fact part of the test, then the fact that the ECS's effectiveness is reduced in such conditions does not matter because that will already have been tested - and presumably, the vehicle passed. In other words, the level of emissions, although now increased, was still within limits or otherwise acceptable. I shall refer to this proviso and to any other provisos or exceptions to the same effect as the Test Inclusion Proviso.

91. A pertinent example of the application of Section 203 is shown in the edition of the EPA's Environmental News released on 23 July 1973. In relation to certain 1973 models of VW cars sold or to be sold in the US, VW had failed to notify the EPA that they contained what were found to be defeat devices. One of the two impugned devices de-activated the EGR when low-temperature was

detected. The relevant test at the time did not include low-temperature conditions and so this would not have occurred during the test which was operated only at ambient temperatures. VW subsequently agreed to take appropriate action to eliminate this.

92. The International Council on Clean Transportation ("ICCT") produced a Historical Review of the US Vehicle Emissions Program and Emission Recall Cases in April 2017. It cites the case of the GM 1995 Recall. Here, the cars' computers would sense when the climate control (air conditioning) was switched on, at which point the fuel was enriched by increasing the proportion of fuel to air, which had the effect of preventing the catalytic converters from working properly. This led to substantially increased CO emissions, well above the limits. The test would not have revealed this because the vehicles were not tested with climate control switched on.

93. A final example from the same document, closer to this case, was where the defeat devices were programmed to disable the ECS during normal real-world driving conditions, while the ECS was kept operating during the laboratory tests so that the EPA emission standards would be met. These devices were operated in heavy duty diesel engines in vehicles made by Caterpillar Inc. and other companies. The discovery of this led to a settlement in 1998.

EU Directive 98/69 for LD vehicles

94. The first time that a defeat device definition was introduced in the EU context was on 13 October 1998 with the making of Directive 98/69 for LD vehicles. This operated largely by making many substantial amendments and additions to Directive 70/220. The defeat device definition provided as follows:

> "**Article 2.1.16**. 'Defeat device' means any element of design which senses temperature, vehicle speed, engine RPM, transmission gear, manifold vacuum or any other parameter for the purpose of activating, modulating, delaying or deactivating the operation of any part of the emission control system, that reduces the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use. Such an element of design may not be considered a defeat device if:
>
> I. the need for the device is justified in terms of protecting the engine against damage or accident and for safe operation of the vehicle, or
>
> II. the device does not function beyond the requirements of engine starting, or
>
> III. conditions are substantially included in the Type I or Type VI test procedures."

95. It can be seen that this closely, though not exactly, follows Part 86. Proviso III is a form of Test Inclusion Proviso.

96. For diesel engines, the relevant test was Type I. This was to verify the average tailpipe emissions after a cold start.

97. For petrol engines only, and in addition to the Type I test, a new Type VI test was introduced. Its purpose was to verify the average low ambient temperature carbon monoxide and hydrocarbon tailpipe emissions after a cold start.

98. The explanation for this additional test can be found in, among other places, the report of the European Parliament's Committee on the Environment, Public Health and Consumer Protection, dated 24 March 1997, whose rapporteur was Mr. Bernd Lange. The report was about the latest draft of what became Directive 98/69. In one of the Opinions attached, the following was stated:

> "**Low temperature testing**
>
> Conventional catalysts do not work effectively until they reach a high temperature. Emission tests have shown that emissions during the catalyst warm-up phase account for up to 80-90 % of emissions of the whole driving cycle. At sub-zero temperatures the percentages increase to 95-98 %. The test cycle used to approve vehicle emissions is set at a temperature above +20ºC. To overcome the cold start and cold weather problem new fast acting catalysts have been developed. A cold weather test for CO emissions at -7ºC is already mandatory in the United States. The Commission, however, has not proposed such a test in the European Union."

99. And then, in that context, at paragraph 6.1.1 of Annex VII, which deals with petrol engines only:

> "Any irrational emission control strategy which results in a reduction in effectiveness of the emission control system under normal operating conditions at low temperature driving, so far as not covered by the standardized emission tests, may be considered a defeat device."
>
> [underlining added].

100. I shall refer to all references to an "irrational emission control strategy" as "IECS". I agree that on the face of it, the reason for introducing the IECS here was that it would be possible for manufacturers to ensure that the particular low temperature Type VI test was passed since it operated only at one particular low temperature (-7°C) and yet have the ECS operate in an adversely different way at other temperatures even if close to -7°C. Such a strategy would be irrational because on the face of it there would be no reason why the effectiveness of the ECS should be reduced at, say, -8°C.

101. It will be noted that the IECS definition included its own Test Inclusion Proviso.

102. Leaving aside the fact that the IECS provision only applied to petrol engines at low temperature, the key difference between the core definition of defeat device and the IECS provision is that the former requires (a) the sensing of parameters (b) for the purpose of deactivating (etc.) the ECS, leading to (c) a reduction in its effectiveness. On the other hand, the latter simply requires there to be an irrational emission control strategy which then reduces the effectiveness. It is also expressed to be one form of – i.e. a subset of – a defeat device. But whichever provision is apposite, there has to be a reduction in the ECS effectiveness which itself has somehow to be ascertained.

103. In 2000, the provisions referred to in paragraphs 94 to 102 above were applied to Regulation 83 by way of amendment. Article 5.1.2.1 of Regulation 83 prohibits the use of a defeat device. Regulation 83 is incorporated into the LD regime via the Implementing Regulation, and Annex 8 paragraph 6 of Regulation 83 is applied via paragraph 3.1 of Annex VIII to the Implementing Regulation; however, the IECS provision there is still applicable only to petrol engines at low temperature. However, the information requirements at Article 3 (9) of the Implementing Regulation (see paragraph 68 above) go somewhat wider because they deal with diesel engines at low temperature.

EU Directive 1999/96 for HD Vehicles

104. The defeat device concept was first introduced into the EU HD regime by Directive 1999/96. Much of this operated by way of amendment to Directive 88/77. Thus, Annex 1 to the latter was now replaced by a new Annex 1 which contained a definition of defeat device essentially similar to that found in Directive 98/69.

> "2.28 'Defeat Device' means any element of engine or vehicle design which measures or senses vehicle speed, engine speed, gear used, temperature, intake pressure or any other parameter, with a view to activating, modulating delaying or deactivating the operation of any component of the emission control system so that the effectiveness of the emission control system is reduced under conditions encountered in normal vehicle use.
>
> Such a device will not be regarded as a defeat device if:
>
> --- the need for the device is justified temporarily to protect the engine against intermittent operating conditions that could lead to damage or failure and no other measures are applicable for the same purpose which do not reduce the effectiveness of the emission control system;
> --- the device operates only when needed during engine starting and/or warming-up and no other measures are applicable for the same purpose which do not reduce the effectiveness of the emission control system."

105. It will be noted that here, there was no Test Inclusion Proviso.

106. Paragraph 6.1.1 then provided, among other things, that:

> "The use of a defeat device and/or irrational emissions control strategy is forbidden."

107. However, and unlike the position under Directive 98/69 the IECS is not defined here nor is there any Test Inclusion Proviso thereto.

EU Directive 2001/27 for HD Vehicles

108. Amendments were then made to the EU HD regime in 2001 by Directive 2001/27. These included the following provisions contained in the Annex which operated as amendments to Annex 1 to Directive 88/77 (as itself amended by Directive 1999/96 referred to above):

> "**2.28**. "defeat device" means a device which measures, senses or responds to operating variables (e.g. vehicle speed, engine speed, gear used, temperature, intake pressure or any other parameter) for the purpose of activating, modulating, delaying or deactivating the operation of any component or function of the emission control system such that the effectiveness of the emission control system is reduced under conditions encountered during normal vehicle use unless the use of such a device is substantially included in the applied emission certification test procedures.'
> [underlining added]
>
> **"2.29**. "auxiliary control device" means a system, function or control strategy installed to an engine or on a vehicle, that is used to protect the engine and/or its ancillary equipment against operating conditions that could result in damage or failure, or is used to facilitate engine starting. An auxiliary control device may also be a strategy or measure that has been satisfactorily demonstrated not to be a defeat device.
>
> **2.30**. "irrational emission control strategy" means any strategy or measure that, when the vehicle is operated under normal conditions of use reduces the effectiveness of the ECS to a level below that expected during the test."

109. What has now happened is that the core definition of a defeat device (underlined above) remains in paragraph 2.28 but with the addition of a Test Inclusion Proviso at the end. The provisos to the

previous definition have now been moved to paragraph 2.29, defining "auxiliary control device" ("ACD").

110. However, 2.30 is new. Here, there is, for the purposes of IECS, an explicit reference to or comparison with levels "expected" on the applicable emission test procedures. Further, the low-temperature requirement for the applicability of IECS has been removed.

111. There are also these provisions in a new paragraph 6 under the heading "Specifications and Tests":

> "6.1.2.1. The use of a defeat device and/or an irrational emission control strategy is forbidden**.**
>
> 6.1.2.2. An auxiliary control device may be installed to an engine, or on a vehicle, provided that the device:
> — operates only outside the conditions specified in paragraph 6.1.2.4, or
> — is activated only temporarily under the conditions specified in paragraph 6.1.2.4 for such purposes as engine damage protection, air-handling device protection, smoke management, cold start or warming-up, or
> — is activated only by on-board signals for purposes such as operational safety and limp-home strategies….
>
> 6.1.2.3. An engine control device, function, system or measure that operates during the conditions specified in Section 6.1.2.4 and which results in the use of a different or modified engine control strategy to that normally employed during the applicable emission test cycles will be permitted if, in complying with the requirements of Sections 6.1.3 and/or 6.1.4, it is fully demonstrated that the measure does not reduce the effectiveness of the emission control system. In all other cases, such devices shall be considered to be a defeat device.
>
> 6.1.2.4. For the purposes of point 6.1.2.2, the defined conditions of use under steady state and transient conditions (1) are:
> — an altitude not exceeding 1 000 metres (or equivalent atmospheric pressure of 90 kPa),
> — an ambient temperature within the range 283 to 303 K (10 to 30 °C),
> — engine coolant temperature within the range 343 to 368 K (70 to 95 °C)."

112. Thus, as it seems to me, these are the principal prohibitions against defeat devices and IECS, now defined as a separate category. Further, an ACD which might otherwise appear to be a defeat device will not be regarded as such provided not only that it falls within the definition thereof at paragraph 2.29 but also that any of the conditions set out in paragraph 6.1.2.2 are fulfilled. In addition, an ACD can otherwise be demonstrated not to be a defeat device.

113. Finally, paragraph 6.1.2.3 will also exempt an engine control device even where it leads to a different control strategy to that normally employed during the test if there is no reduction in the effectiveness of the ECS. If the latter cannot be shown then it will be deemed to be a defeat device.

114. In 2002, UN ECE Regulation 49 ("Regulation 49"), which deals with HD vehicles was amended so as to bring in the changes made by Directive 1999/96 described above.

EU Directive 2002/51 and Directive 2004/26 for motorcycles and non-road vehicles

115. Also in 2002, provisions which are broadly similar to those introduced for the HD regime by Directive 2001/27 were applied to motorcycles by Directive 2002/51 dated 19 July 2002.

116. In 2003, Regulation 49 was again amended to reflect Directive 2001/27. A truncated version of those provisions was applied to non-road vehicles by Directive 2004/26 in 2004.

EU Directives 2005/55 and 2005/78 for HD Vehicles

117. In 2005, a new Directive 2005/55 was introduced for HD vehicles as a replacement altogether for Directive 88/77. The former included, at Annex 1, provisions similar to the those from Directive 2001/27 referred to above.

118. However, Directive 2005/78, which implemented (but also amended) Directive 2005/55, introduced a substantially amended set of provisions into the HD regime. These include the following at a replacement Annex 1 for Directive 2005/55:

> "2.1. For the purposes of this Directive, the following definitions shall apply:
>
> "defeat strategy" means:
> [1] [inserted]— an AECS that reduces the effectiveness of the emission control relative to the BECS under conditions that may reasonably be expected to be encountered in normal vehicle operation and use, or
>
> [2] [inserted] a BECS that discriminates between operation on a standardised type-approval test and other operations and provides a lesser level of emission control under conditions not substantially included in the applicable type-approval test procedures,
>
> …. "auxiliary emission control strategy (AECS)" means an emission control strategy that becomes active or that modifies the base emission control strategy for a specific purpose or purposes and in response to a specific set of ambient and/or operating conditions, e.g. vehicle speed, engine speed, gear used, intake temperature, or intake pressure;
>
> "base emission control strategy (BECS)" means an emission control strategy that is active throughout the speed and load operating range of the engine unless an AECS is activated.
> Examples for BECS are, but are not limited to:
> — engine timing map,
> — EGR map,
> — SCR catalyst reagent dosing map;
>
> 6.1.2 The use of a defeat strategy is forbidden…
>
> 6.1.5.2. An auxiliary emission control strategy (AECS) that operates within the conditions of use specified in section 6.1.5.4 and which results in the use of a different or modified emission control strategy (ECS) to that normally employed during the applicable emission test cycles will be permitted if, in complying with the requirements of section 6.1.7, it is fully demonstrated that the measure does not permanently reduce the effectiveness of the emission control system. In all other cases, such strategy shall be considered to be a defeat strategy.
>
> 6.1.5.3. An auxiliary emission control strategy (AECS) that operates outside the conditions of use specified in section 6.1.5.4 will be permitted if, in complying with the requirements of section 6.1.7, it is fully demonstrated that the measure is the minimum strategy necessary for the purposes of paragraph 6.1.5.6 with respect to environmental protection and other technical aspects. In all other cases, such a strategy shall be considered to be a defeat strategy.
>
> 6.1.5.4. As provided for in section 6.1.5.1, the following conditions of use apply under steady state and transient engine operations:
> — an altitude not exceeding 1 000 metres (or equivalent atmospheric pressure of 90 kPa),
> and
> — an ambient temperature within the range 275 K to 303 K (2 °C to 30 °C),
> and
> — engine coolant temperature within the range 343 K to 373 K (70 °C to 100 °C).
>
> 6.1.5.5. An auxiliary emission control strategy (AECS) may be installed to an engine, or on a vehicle, provided that the operation of the AECS is included in the applicable type-approval test and is activated according to section 6.1.5.6."

119. Very broadly speaking the prohibited AECS seems to connote what was previously the core definition of the (old) "defeat device". See the definition of AECS and then the first type of "defeat strategy". There then follow at paragraphs 6.1.5.2-6.1.5.5 the relevant provisos. The Test Inclusion Proviso is stated at paragraph 6.1.5.5. Paragraph 6.1.5.2 is similar to but not the same as the old 6.1.2.3 of Annex 1 to Directive 2001/27. It applies to an AECS which operates within and not outside the paragraph 6.1.5.4 parameters and which results in a different emission control strategy to that normally employed in the test. But it should be noted that it will be permitted if there is no "permanent" reduction of effectiveness of the ECS. In this context the absence of permanence surely means temporary, otherwise this proviso might apply far more widely than would have been anticipated. But in the absence of showing there is no permanent reduction, again, this strategy would count as a defeat device.

120. But there is also now the introduction of the separately-prohibited BECS. This is a control strategy which discriminates between operation in the test and operation outside it. This concept also has its own Test Inclusion Proviso. The IECS prohibition has been removed.

121. While the wording and structure has changed substantially, one can see that a (prohibited) defeat strategy is either [1] the AECS, which is equivalent to the old "defeat device" or [2] a BECS which discriminates between operating under (a) type-approval test conditions and (b) other conditions which are not themselves included in the test.

122. All of these changes were then applied to Regulation 49 in 2008.

Regulation 595/2009 for HD Vehicles

123. In 2009 further changes were brought about in the HD regime by the replacement of Directive 2005/55 by a new Regulation 595/2009. Thus:

> "Article 3(8): 'defeat strategy' means an emission control strategy that reduces the effectiveness of the emission controls under ambient or engine operating conditions encountered either
>
> [1] [inserted] during normal vehicle operation or
>
> [2] [inserted] outside the type-approval test procedures;
>
> Article 3 (24) 'Auxiliary Emission Strategy' (hereinafter 'AES') means an emission strategy that becomes active and replaces or modifies a base emission strategy for a specific purpose and in response to a specific set of ambient and/or operating conditions and only remains operational as long as those conditions exist;
>
> Article 3(25) 'Base Emission Strategy' (hereinafter 'BES') means an emission strategy that is active throughout the speed and load operating range of the engine unless an AES is activated;…
>
> Article 5(3) The use of defeat strategies that reduce the effectiveness of emission control equipment shall be prohibited."

124. The AES/BES strategies are not themselves prohibited, but they are the subject of separate information requirements i.e.

> "8.3. The extended documentation package shall include the following information:
> (a) information on the operation of all AES and BES, including a description of the parameters that are modified by any AES and the boundary conditions under which the AES operate, and indication of which AES and BES are likely to be active under the conditions of the test procedures set out in Annex VI;…"

125. Thus, in these truncated provisions the required reduction in effectiveness must occur in engine conditions which occur either normally or outside of the test. But either way, what has to be shown is a reduction.

126. Regulation 49 was later amended in 2013 to take account of Regulation 595/2009.

Later Regulations in the LD Regime

127. Commission Regulation 2016/646 applied to the LD regime. The references to AECS and BECS remained, but simply to provide the basis for the extended document package to be provided by the manufacturer at the time of type-approval (as with the HD regime). Those information requirements were then extended in the next applicable regulation being Regulation 2017/1151.

128. I should add here that Regulation 2016/646 was the subject of challenge at the General Court of the CJEU in the case of *Ville de Paris v Commission* T-339/16, ECLI;EU;T;2018;927, 13 December 2018. The challenge succeeded and the regulation was annulled on a deferred basis. Its replacement was proposed on 14 June 2019. In addition, the decision itself is being appealed. I make further reference to that decision below.

129. I do not consider it necessary to cite any further materials at this stage.

INTERPRETATION OF EU LEGISLATION

130. Before embarking upon my determination of the Defeat Device Issue, it is necessary to rehearse some relevant principles of the interpretation of EU legislation. To that end, I have been provided with an extensive set of materials relied upon by each side so as to produce their own set of interpretive principles for which they contend. They have done so not only in the body of their Skeleton Arguments, but also in the Claimants' "Supplementary Note on Purposive Interpretation" and the Defendants' "Annex A: Principles of Interpretation".

131. It is not necessary to engage in an extensive discursus of all of these materials. I confine myself to the matters set out below.

132. First, there is ample support for the proposition that in general, the exercise of interpreting EU legislation is more obviously purposive than a similar exercise in the UK.

133. In that regard, I found the observations of Arden LJ (as she then was) in *HMRC v IDT* [2006] EWCA Civ. 29 at paragraph 20 to be particularly instructive. At paragraph 69 she referred to the judgment of the CJEU in *Srl Clifit v Minister of Health* [1982] ECR 3415 which stated at para 20 that:

> "every provision of Community Law must be placed in its context and interpreted in light of the provisions of Community law as a whole, regard being had to the objectives thereof and to its state of evolution at the date on which the provision in question is to be applied."

134. Similar statements referring to the need to consider context and purpose as well as language appear in some of the other cases I refer to below.

135. Then, at paragraph 71 of her judgment, she said that:

> "the court should have regard to the objectives of the legislation. English statutes rarely contain statements of their objectives because they are often found not to be reliable guides to the detailed points of interpretation that tend to arise on English statutes. However, European Union directives frequently have long preambles setting out the purposes or reasons for the measures and what it is intended to achieve. This point is an indication that the objectives of a measure have a greater normative force under Community law than they would under English Law."

136. See also paragraphs 12.34 and 12.35 of *"Understanding Legislation: A Practical Guide to Statutory Interpretation"* by Lowe and Potter, Hart 2018 ("L&P") which set out the contextual approach. So when there is a dispute over interpretation, that which will allow the provision to achieve its purpose will be preferred to one which does not. That said, if the legislative intent is clear from the words, the court should not rewrite it by reference to its purpose. See paragraphs 12.43 and 12.44 of L&P.

137. Second, recourse can be (and often is) had to the recitals of the relevant instrument because they explain what its purpose is and why it came to be there. But again, they must not be used to derogate from a provision, or to interpret the provision in a way which is clearly contrary to its wording. See L&P at paragraphs 12.46 and 12.47.

138. Third, recourse can be had to the *"travaux preparatoires"* to the relevant provision. These may include original and amending legislative proposals, and explanatory memoranda from the Commission. However, it is important to see that they are from an authoritative body and that they truly form part of the legislative history. They need also to demonstrate clearly the meaning or purpose relied upon. Put another way, they should be "bang on point". See paragraph 42 of the judgment of Jacob LJ in *Nova v Mazooma* [2007] Bus LR 1032, and see generally, L&P at paragraphs 12.51-12.54.

139. Fourth, other parts of the measure containing the provision in question can be looked at to identify its true meaning, context and purpose; see paragraph 668 of "Judicial Control in the EU: Procedures and Principles" by Lasok and Millett (1st Edition, 2004) ("L&M").

140. Fifth, identical or substantially identical provisions should be interpreted in the same way - at least where they are in the same EU legislation - see *Planta v Land Berlin* [2019] 4 WLR 28 and paragraph 694 of L&M.

141. Sixth, other pieces of EU legislation than the measure in question may also be relevant. In this context, the Defendants cited *Apple & Pear v Commissioners of Customs and Excise* C-102/86, 1988 2

[CMLR] 394. The CJEU there held that in interpreting a provision in a 6th Directive, it was appropriate to take into account the judgment of that Court on the 2nd Directive, since both Directives shared the same legislative object of harmonising Member States' laws on turnover taxes. Reference was also made to *Spain v Commission* C-197/13P, 2014, where the CJEU had recourse to similar regulations to those whose provision was in question, relating to the management of the EU's funds, especially where the texts to be compared were "almost identical".

142. Seventh, the Defendants also rely on cases where a particular concept used in one piece of legislation should be given the same meaning as in another piece of legislation unless a different intention is expressed. Thus, where the concept of "communication to the public" was not defined in the relevant Directive, regard should be had to the need for concepts used in the same body of Directives to have the same meaning. This was where the measure in question was expressly stated in its Recital 20 to be based upon the rules and principles laid down in earlier Directives. See paragraphs 187 and 188 of the judgment of the CJEU in *Football Leisure v QC Leisure* [2012] Bus LR 1321.

143. In this context, I was also referred to *Deckmyn v Vandersteen* [2014] Bus LR 1368. Where the defence to a claim for breach of copyright was that the allegedly infringing work was a parody, there was a dispute as to what that concept meant. It was not itself defined at all in the relevant measure. That being so, the CJEU held, unsurprisingly in my view, that one has to consider its usual meaning in everyday language and in its context and having regard to the purpose of the measure on which it formed part. I am not sure that this is particularly relevant here (other than emphasising the need to look at context and purpose, as well as language) where the concept at issue before me is "defeat device"; that is a concept which <u>is</u> defined but which can hardly be said to have an everyday meaning.

144. Next, provisions should be interpreted to ensure that they are given full effect ("effet utile") and so they should be interpreted broadly, so as to ensure the smooth functioning of the scheme of which they form part; however, this cannot be used to produce a result inconsistent with the aim of the provision. See L&M at paragraph 695.

145. Finally, the interpretation preferred may be based on the fact that the alternative interpretation would render another provision in the same measure redundant or ineffectual. Thus, in the case of *Vaditrans v Belgium* [2018] RTR 15, the relevant legislation distinguished in various places between "regular" and "reduced" weekly rest periods for lorry drivers. A provision which allowed such drivers to take "reduced weekly rest periods" in their cabs accordingly did not cover "regular" weekly rest periods and therefore the latter could not be taken in the drivers' cabs. That seems to me to be a clear case but the CJEU went on to make three further points in support of this interpretation:

> "32 If the Union legislature had intended to cover, in Article 8(8) of that regulation, both regular and reduced weekly rest periods, it could have simply used the words 'weekly rest periods' to encompass both those types of rest period.
>
> 33 Furthermore, if all of a driver's rest periods could be taken in the vehicle, the distinction made in Article 8(8) of Regulation No 561/2006 would be devoid of any meaning and that provision would thus lose its effectiveness.
>
> 34 That interpretation of Article 8(8) of Regulation No 561/2006 is supported by the legislative history of that provision, in that it shows, through the amendments made to that provision, the intention of the EU legislature."

146. What can be inferred from the absence of an express statement in the relevant provision is however, limited, according to L&M at paragraph 697:

> "An interpretation deduced from the absence of an express statement in a legal provision is acceptable only in the last resort, when no other interpretation appears to be adequate or compatible with the text of the provision, its context and its objectives."

147. Finally, and in relation to all of this, it goes without saying that how all of these particular principles play out (over and above the relevance of the immediate context and purpose of the relevant provision as well as its language) will depend very much on the facts of any particular case.

THE DEFEAT DEVICE ISSUE: ANALYSIS

Introduction

148. The Claimants submit that the software function here is clearly a defeat device within the meaning of Article 3 (10) of the Regulation which, for convenience, is set out again here.

> **"10. 'defeat device' means any element of design which senses temperature, vehicle speed, engine speed (RPM), transmission gear, manifold vacuum or any other parameter for the purpose of activating, modulating, delaying or deactivating the operation of any part of the emission control system, that reduces the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use;"**

149. The Claimants contend that this provision contains three requirements which must be satisfied in order for there to be a defeat device:

(1) there is an element of design of the Engine which senses parameters such as temperature etc;

(2) the purpose of that particular design is so as to activate, deactivate or modulate (i.e. change) the operation of any part of the emission control system (ie the ECS);

(3) that change in the operation of the ECS as a result of the sensing of the parameters reduces the effectiveness of the ECS.

150. The Claimants contend that each of these requirements is satisfied here because:

(1) the software function senses parameters like temperature and speed, so as to engage Mode 1 and Mode 2, switching between them as appropriate; this much is common ground between the parties;

(2) the purpose of the design, by reason of these switching between Mode 1 and Mode 2, is to change the operation of the Engine's EGR, which is itself part of the ECS;

(3) the effect of changing the operation of the Engine in this way is to reduce the effectiveness of the ECS because the difference between Mode 1 and Mode 2 is the reduction or cessation of the EGR process and thereby the (significant) increase in NOx Emissions.

151. The Defendant's case, as advanced in this trial, does not take issue with the basic interpretation of Article 3 (10) but instead contends that there is no defeat device within the meaning of that provision here for one or more of the following reasons:

(1) The EGR process in the Engine is not part of the ECS because the latter is confined to the control processes in the exhaust system and not (as here) in the Engine's combustion chamber; this is because:

(a) the EGR occurs in a physically different location to the exhaust pipe (the Locational Argument); and/or

(b) the function of the EGR (unlike emission controls within the exhaust pipe) is not to "control" by reduction, the emissions otherwise present at all; rather it is to prevent the NOx emissions from ever arising (the Functional Argument);

If the above arguments are correct then there cannot be a defeat device here because no part of the ECS, as properly construed, is modulated in any way, nor is its effectiveness reduced;

(2) The second argument is that the reduction (or otherwise) of the effectiveness of the ECS caused by its modulation has to be ascertained by reference to normal road conditions, as opposed to its performance in test conditions. In other words, the "true comparator" is between the emissions in normal road conditions as modulated (i.e. using Mode 2) and what the emissions would be, also on the road, when the Engine is running in Mode 1. Put another way, for the purpose of showing a reduction, that which is thereby reduced is the operation of the Engine in normal road conditions. While it is common ground that there is a reduction in NOx emissions when compared with such emissions produced by the Engine when undergoing the test (i.e. in Mode 1) that is a wrong and irrelevant comparator. Since, as is common ground, the Claimants have produced no evidence to show that there is an increase in NOx emissions when one compares what those emissions would be when the Engine is running in Mode 1 in normal road conditions with what such emissions would be when the Engine is running in Mode 2, again in normal road conditions, there is no evidence of any relevant reduction in the effectiveness of the ECS - even if the latter were to cover EGR; I refer to this as "the True Comparator" argument; It is this argument which invokes the Landscape Argument;

(3) Finally, there is a third argument which is to the effect that in any event, reduction in effectiveness of the ECS is not to be measured by reference only to NOx emissions but

emissions overall. Since there is no evidence that overall there is any reduction in the effectiveness of the ECS when assessed on this "holistic" basis (and indeed, it is recognised, for example, that when EGR is operating, there is likely to be an increase in the production of particulates) the final "reduction" requirement of the definition is not made out; I refer to this as "the Holistic Argument";

152. It follows that if any of the Defendants' arguments succeed, the software function here is not a defeat device. On the other hand, if none of those arguments succeed, then it is.

153. Before turning to those arguments in detail, I would repeat the general observations I made in paragraph 80 above.

The Locational Argument

154. It is plain that the whole point of the EGR is to reduce ultimate NOx emissions. No other purpose has been suggested. The fact that the process (including the EGR Valve and pipework as shown in the Diagram) occurs in and about the combustion chamber as opposed to the exhaust pipe system (where the catalytic converter and DPF reside) is completely irrelevant in my view. The fact that what are controlled are the level of gases which are "emitted" from the exhaust pipe does not mean that the control of such emissions must reside only in the exhaust pipe.

155. The Locational Argument proceeds upon an artificial distinction which serves no purpose and has no legislative basis. The only point of it would appear to be to provide the Defendants with a defence which if correct, would mean that the software function (albeit now fixed) was never in fact unlawful under EU law at all.

156. Also, given the importance of controlling NOx emissions in diesel vehicles, since the principal method of enabling such vehicles to comply with the relevant standards is by the operation of the EGR it would be very odd indeed if it was not to be regarded as forming part of the ECS.

157. All of this is borne out by the following further matters:

(1) The definition of "reagent" at Article 2 (27) of the Implementing Regulation draws a clear distinction between the exhaust aftertreatment system, and the ECS which controls it; this is contrary to the Defendants' submission which is in effect that the ECS is the exhaust aftertreatment system which cannot be correct;

(2) Article 3 (9) of the Implementing Regulation requires manufacturers to supply information for the purpose of type-approval as to the operation of the EGR at low temperatures including a "description of any effects on emissions"; that clearly suggests that the EGR is seen as part of the overall emissions control system;

(3) Further, paragraph 3.3.1.3 of Annex 1 to the Implementing Regulation includes as "pollution control system parameters", catalytic converters, particulate filters and the EGR. While this is not itself a definition of ECS, it is very hard to see how the EGR can be regarded as part of a system to control pollution and yet not part of an emissions control system. Equally, EGR is included as a "measure" taken against air pollution in paragraph 3.2.12.2.4 of Appendix 3 to Annex 1 of the Implementing Regulation. Yet further, paragraph 2.8 of Annex 11 to the Implementing Regulation states that malfunctions and reductions in the efficiency of the EGR system shall be monitored by the OBD system. This is in the context of the functional aspects of the OBD system for controlling emissions. That would clearly suggest that the EGR is part of the emissions control system. All of this reflects paragraph 2.4 of Annex 11 to Regulation 83 whose requirements (subject to stated exceptions) are to be followed by reason of paragraph 2.1 of Annex 11 to the Implementing Regulation;

(4) Article 4 (1) of the Implementing Regulation requires the fitting of an OBD system and Annex 11 at paragraph 2.8 states that any reduction in the efficiency of the EGR must be monitored and paragraph 2.11 requires proof of this function in the test. Paragraph 3.6 of Appendix 1 to Annex 11 states that the OBD system must monitor the EGR and in paragraph 2 of Appendix 2 thereto, the OBD system parameters include EGR under the heading "emission control system" (see paragraph 77 above);

(5) On the facts, and as to whether it would make sense to see EGR as part of the ECS, it should be noted that VW itself referred to it as such on various occasions: see the materials contained in Appendix 1 to the Claimants' Skeleton Argument. They include the following:

(a) as part of a slide presentation relating to VW and Audi diesel engines during a meeting in September 2006 with the US EPA and the California Air Resources Board ("CARB"), where the first slide contained a diagram of the EGR system headed "Emission Control System-EGR-System";

(b) during a meeting with the CARB on 16 February 2011 where the VW said "yes" to a question as to whether the emission control system included EGR;

(c) an internal document from May 2009 showing the EGR as part of the ECS;

(d) a presentation from 2001 stating that "reducing emissions by means of internal engine measures is an essential requirement of effective emission control systems".

(6) It is noteworthy that while not defining an ECS as such, Article 3 (23) of the Framework Directive provides that a "system" is

> "…an assembly of devices combined to perform one or more specific functions in a vehicle and which is subject to the requirements of any of the regulatory acts;"

Unsurprisingly the reference is not to where a particular component is located but what it does. If this definition of "system" is to be applied to the description of ECS in Article 3 (10) of the Regulation, then EGR would plainly be part of it.

158. There is, however, one provision referred to in Article 2 (18) of the Implementing Regulation which, to recall, states as follows:

> " 'emission control system' [ECS] means, in the context of the OBD system, the electronic engine management controller and any emission-related component in the exhaust or evaporative system which supplies an input to or receives an output from this controller;"

159. The same definition (but without the reference to OBD system) appears in paragraph 2.4 of Annex 11 to Regulation 83, which Annex is itself concerned with the functional aspects of the OBD.

160. In my judgment, this definition covers both the engine management controller and/or a relevant component. The reason is obvious. If the ECU itself (for present purposes equivalent to the "engine management controller") is not functioning properly, it may have an adverse effect on any component relevant to emissions (for example a catalytic converter) even if the converter component itself is sound. So there are different elements of the system. Since the ECU regulates the operation of EGR, that aspect of the ECU is part of the defined ECS for the purpose of Article 2 (18) of the Implementing Regulation. Context, as always, is all. This definition is there because of the provisions relating to the need for and operation of the OBD system, itself a part of or connected to the ECU. In that context, having regard to what it is that the OBD system must monitor, it is obvious that EGR is part of that system along with other "components" like catalytic converter and DPF - because Annex 11 to Regulation 83 says so.

161. As it happens, I consider that in this context, it is also strongly arguable that for the purpose of this definition, the EGR elements are themselves components within the "exhaust system" (as opposed to the tailpipe) since, as is shown in the Diagram, what are recirculated are indeed exhaust gases and recirculation thereof only occurs after they have already passed through the exhaust manifold. However, this point was not specifically argued before me and the view I have just expressed is not necessary for my conclusion here, or more generally.

162. On any view, the definition of ECS in paragraph 2 (18) either positively assists the Claimants or at least it is neutral as regards their submissions on the Locational Argument.

163. I agree that the EGR is not part of the exhaust "aftertreatment system" which is a separate way of controlling NOx, although not it seems the primary one. But that does not mean that the EGR is not part of the ECS; both are listed at paragraphs 3.3.4.6 and 3.3.4.7 of Annex 11 to Regulation 83 along

with paragraphs 2.8 and 2.9 of Annex 11 to the Implementing Regulation. The fact that the ECU controls both of these does not show that the EGR is otherwise than in the ECS.

164. Equally the fact that the unquestionable purpose of the emissions limits is to control exhaust gas emissions or tailpipe emissions tells one nothing about the meaning of ECS. That is because all the relevant emissions come out of the exhaust pipe not somewhere else (leaving to one side evaporative emissions). As already stated, that hardly means that whatever controls what comes out of the exhaust pipe is necessarily to be found within it. That is a non-sequitur. The fact that emissions going into the exhaust pipe are controlled by EGR does not alter the fact that without the EGR the emissions out of the exhaust pipe would be higher.

165. Further, the Defendants' reliance on Article 2 (27) to the Implementing Regulation and aftertreatment systems does not assist them, for the reasons given above. Further references to emissions control systems in the context of aftertreatment systems, in paragraphs 8.1, 9.1 and 10 of Annex 16 to the Implementing Regulation, add nothing here. They simply show the difference between a reagent on the one hand and the ECU on the other.

166. Paragraph 2 of Appendix 2 to Annex 11 of the Implementing Regulation specifically refers to ECS by reference to a list of items which includes EGR. It is very difficult to see why, for the purposes of OBD, it should include EGR and yet EGR should not have the same impact generally. After all, the OBD function amounts to a secondary regime to ensure the effectiveness of the primary regime which involves the control of emissions. The OBD is there to ensure that any faults in the primary process can be detected so that it can be put right (for example the replacement of a defective catalytic converter). In that sense, the whole of the OBD regime is parasitic upon and protective of the basic emissions requirements of the vehicle concerned.

167. The Defendants argue that because the monitoring function of the OBD specifically refers to the monitoring of EGR, this separate reference shows that EGR is not to be regarded as part of the ECS. But one has to ask why? If the EGR is not part of the emissions control system, why should the OBD be monitoring it at all?

168. It is also to be noted that paragraph 3.3.1.3 of Annex 1 to the Implementing Regulation refers to "pollution control systems" as including EGR. The same is true of the definition of additional pollution control devices in paragraph 3.2.12.2.4 of Appendix 3 to Annex 1. This is all dealing with information requirements for type-approval.

169. The Defendants further argue that if EGR is part of ECS, then so is any part of the Engine or aspect of its operation which senses and responds to a particular parameter (like speed) which has the effect of reducing the effectiveness of the emission system. So, for example, a cruise control which

automatically gives more power to the engine on an incline so that it can maintain the designated speed will itself increase emissions. Yet, argue the Defendants, it would make no sense to see the cruise control as part of the emissions control system. There is nothing in this point. The Claimants are not saying that anything about the engine which could affect NOx emissions forms part of the ECS. Rather, the ECS includes things whose purpose is to control emissions. The purpose of the cruise control is to maintain a particular speed. The fact that it can cause, incidentally, an increase in NOx emissions when operated on an incline is irrelevant (cf the climate control-related function described in the GM case referred to in paragraph 92 above).

170. For all those reasons, the Defendants' Locational Argument Fails.

The Functional Argument

171. The argument that in any event the EGR process does not "control" NOx emissions because instead it serves to prevent them ever arising is specious in my view:

(1) First, and on any view, the emissions being controlled i.e. reduced, are being so controlled before whatever exits from the exhaust pipe. Thus the catalytic converter and the DPF reduce whatever gases have come their way so far, as it were; but equally, there are NOx gases produced "first time round" in the Engine's combustion chamber. Those gases are then literally reduced (because they are burnt off) when recirculated through the chamber. It is thus wrong to say that relevant NOx emissions are in fact prevented from arising. More accurately, they are reduced at an earlier stage; to that extent the Functional Argument adds nothing to the Locational Argument;

(2) In any event, and more importantly, the distinction between preventing NOx emissions from arising in the first place and their reduction at a later stage is a highly technical form of linguistic distinction which, given the clear purposes of the legislation at issue here, would be rejected whether as a matter of the English law of statutory interpretation or the broader more purposive approach taken by EU law;

(3) Once more, there is no suggested purpose to this artificial distinction other than one which has the consequence of providing the Defendants with a defence.

(4) Indeed, the ATD itself states in paragraph 119 that the EGR Valve, when operated in response to a signal from the ECU, "influences" NOx concentrations in the engine exhaust. But if so, it obviously "controls" such emissions.

172. Article 3 (11) of the Regulation defines a "pollution control device" as being "those components of a vehicle that control and/or limit tailpipe and evaporative emissions." The Claimants contend that this includes the EGR since that is what it does. Interestingly, the Defendants do not disagree that

EGR is included within this definition, but say that this is only because of the addition of the word "limit" to the word "control", and without that addition, EGR would not be included. The logic of that is that the word "limit" encompasses "prevent from arising". That is a hopeless contention. In any event, the paradigm examples of pollution control devices are presumably catalytic converters and DPF's, being separate components which need to be replaced from time to time. Elements of the EGR, like the EGR Valve are probably less so.

173. Though not of direct assistance, it is noteworthy (as the Defendants accept) that US definitions of the ECS have included EGR as part of them. The Defendants' answer to this is to say that it is a different regime. That, of course, is true but the historical foundation in US legislation of concepts such as defeat devices make it more relevant than otherwise. There are US regulations cited at paragraph B5 to Annex B to the Defendants' Skeleton Argument which refer to any engine modification which "controls or causes the reduction of" emissions. It is suggested that "causing the reduction of" is coterminous with "preventing the arising of" so that this definition is wider than that in Article 3 (10). I disagree, again because "causing the reduction of" is surely equivalent to or at least encompasses "reducing" something which is already there. On that footing, the cited definition is in reality not wider at all. So this does not help the Defendants.

174. For all those reasons, the Defendant's Functional Argument must also fail.

175. The EGR system is thus to be regarded as part of the ECS for the purpose of Article 3 (10).

The True Comparator Argument

Introduction

176. I consider this by reference to language, purpose and the related Landscape Argument.

Language

177. Naturally, I begin with the language of Article 3 (10) itself. Part of the Defendants' argument rests upon the contention that the relevant reduction must take place during, or across, as it were, normal road conditions. In other words, the latter expression in Article 3 (10) applies to the position both before and after the reduction. I do not agree. The "conditions which may reasonably be expected to be encountered in normal vehicle operation and use" ("Normal Conditions") simply apply to the situation in which the reduction occurs. That is logical because if the reduction only occurs in some unreal situation which is <u>not</u> likely to appear when the car is driven in Normal Conditions, it is very likely not to matter.

178. But on that basis, the question still arises as to what is the proper comparator for the purpose of the reduction. In other words, one has to ask "reduced in comparison to what?". In my view, the

comparison is with what the position was without the offending modulation caused by the change of modes. So in this case, the position when Mode 2 did not operate, which then takes one back to Mode 1. That in turn takes us back to the test because that is the only environment in which Mode 1 operates, leaving aside a possible very short period when the car is being started.

179. The Defendants agree that the correct comparison is with Mode 1, but only when Mode 1 operates in Normal Conditions. I have already stated that this cannot be taken from the language. But in addition, in this particular case, Mode 1 is set to operate in the particular parameters of the test, once sensed. It is, by definition, not designed to operate in Normal Conditions at all and will not do so, unless the software is changed. What would not be a true or realistic comparator, therefore, would be Mode 1 operating in Normal Conditions outside the test.

180. I interpose here to say something about the word "defeat". That word does not in fact appear in the language of Article 3 (10) which is expressed to define a defeat device. That said, the Claimants sought to gain support from the word "defeat" in the sense that it must connote the defeat of the test. However, having regard to the history of the legislation before the Regulation and how the phrase "defeat device" first emerged, it seems clear that the subject of the "defeat" is the ECS. In that sense, the word "defeat" is being employed as would be the terms modulate, deactivate etc. It is not, as such a reference to defeating the test, although in many cases (and certainly in this one) the effect of the software function or "strategy" would have the effect of defeating the object of the test, having regard to the type-approval regime.

181. That point, however, does not assist the Defendants. The question still remains how the required reduction in effectiveness is to be ascertained. As already noted, the comparison is between the operation of the different relevant modes. In all cases where the software function (and hence change of modes) in question concerns the difference between how the vehicle will perform in a test as opposed to in Normal Conditions, it follows that the comparison is indeed between test performance and road performance. See, for example, the Caterpillar Inc. case referred to in paragraph 93 above.

182. On the other hand, if, for example, the second mode is triggered by the operation of climate control in Normal Conditions, then indeed one compares the result of that mode (greatly increased CO emissions) with the mode that otherwise operates (climate control off). However, that will equate with the test results which were confined to ambient temperatures with climate control off. The result is the same if one is comparing one mode which applies in Normal Conditions save at or below a particular low temperature, at which point the second and impugned mode is triggered. See paragraphs 91 and 92 above. So either directly (as in this case) or indirectly the comparison will end up being test or test-compliant performance.

183. None of that entails the results contended for by the Defendants on the language of Article 3 (10) which is that the situation of Normal Conditions must apply to all comparisons made for the purpose of the operation (or otherwise) of that provision.

184. In our case, the comparison is between Mode 2, which effectively or substantially switches off the EGR so as to produce greatly increased NOx emissions, and Mode 1 which, essentially can only operate in test conditions set out above. In this case, the Engine's test performance will always be the correct comparator because that is the context and only context (bar a short period after the vehicle starts up) when Mode 1 can operate. The fallacy in the Defendants' True Comparator argument is to create a comparison which, apart from anything else, is impossible. It is rather like seeking to compare the effect of the "climate control on" mode with its resulting increase in fuel/air with the same mode operating but when the climate control is off.

185. Accordingly, if one is looking simply at the language of Article 3 (10) itself, that does not support the True Comparator Argument.

186. I now turn to Article 5 (2) of the Regulation set out at paragraph 61 above but which I repeat here:

> "**Requirements and Tests…**
>
> **2. The use of defeat devices that reduce the effectiveness of emission control systems shall be prohibited. The prohibition shall not apply where:**
> **(a) the need for the device is justified in terms of protecting the engine against damage or accident and for safe operation of the vehicle;**
> **(b) the device does not function beyond the requirements of engine starting;**
> **or**
> **(c) the conditions are substantially included in the test procedures for verifying evaporative emissions and average tailpipe emissions."**
> [emphasis added]"

187. First, it should be noted that the actual prohibition of defeat devices in Article 5 (2) is itself in a section headed "Requirements and Tests". It lies between Article 5 (1) which obliges manufacturers to equip vehicles with components affecting emissions which will enable it to comply with the emission standards, and Article 5 (3) which provides for tests and procedures dealing with the various requirements. That being so, it would be unlikely if the comparator for the purpose of establishing the existence or otherwise of a defeat device was not somehow related back to test performance.

188. Second, the Exception to the prohibition at Article 5 (2) (c) is a Test Inclusion Proviso making specific reference to the test. It is unclear why this should be there if the test is irrelevant to the exercise anyway. In truth, what this provision does do is to emphasise the importance of the test. The "conditions" are not actually referred to in Article 5 (3) directly. I suspect this is because the original definition with the same words was originally in one place with the Exceptions dealt with at the same time. Then the phrase "conditions" would appear in the same paragraph. See the earlier legislation cited above. But in any event, it is obvious that the relevant "conditions" are the "conditions of normal

road use". The point then is that if the reduction occurs in road conditions which are already replicated or contained in the test itself, there is no need to prohibit the device. That is because it will already have become operational in the test itself and (presumably) its operation did not cause the vehicle to fail. Or if it did, then the point is academic because the vehicle would not have obtained type-approval.

189. However, the Defendants say that Article 5 (2) (c) supports the True Comparator Argument. They contend that this Exception shows that the prohibition of the defeat device only ever applies in situations where the comparison cannot be a comparison of like-with-like which is why this Exception exists. And therefore, outside this (and the other) Exceptions the "like with like" comparison must be the right one. I do not accept this argument. It assumes what it seeks to prove (that the words in Article 3 (10) themselves entail such a comparison which I do not accept) and ignores the fundamental relevance of the test and its purpose.

190. Accordingly, there is nothing in the language of Article 5 (2) which supports the Defendants' case either. In truth its language (and that of Article 3 (10)) militates against it.

Purpose

191. Having regard to the need to give a purposive interpretation to Article 3 (10) several further observations can be made:

(1) The removal of test results as the relevant comparator renders the test of no utility; yet it is the test which is the only indicator for type-approval purposes of whether the required emissions standards have been met by the vehicle in question;

(2) On that basis, there is no obvious purpose to the prohibition of a defeat device as construed by the Defendants; they respond by arguing that there is still a purpose to such a prohibition because if the defeat device, on their analysis, would reduce the effectiveness of the ECS when the vehicle is in one state of affairs while being driven in normal road conditions to the notionally later state of affairs, then the prohibition is at least aimed at preventing some element of ineffectiveness on the part of the ECS which is a "good thing". But the problem with that response is that it makes no sense for the legislation, against the background already described, to prohibit a device which may have this somewhat attenuated effect, while not prohibiting a device which is sensitive to being tested and then operates the vehicle always in a different mode; and this in a context where the specific emissions limits are not now observed because the vehicle is not being driven in what amounts to pass-test mode;

(3) The value of this much attenuated prohibition is even less if it is allied to the Defendants' Locational and/or Functional and/or Holistic Arguments because then, it is unclear what, if any, reduction will in fact be shown;

(4) On the Defendants' analysis, the reduction in the effectiveness of the ECS is entirely relative and may be minor (depending in part on whether the Holistic Argument is correct or not). Even after the reduction, it may still be the case that the NOx emissions are all within limits (and would therefore pass the test); whereas applying the test standards means, obviously, that if there is a reduction from them, by definition, the vehicle will now be in breach as it were;

(5) Moreover, when it is recognised that the true comparator, directly or indirectly, is the test, the whole rationale for the prohibition of defeat devices becomes clear; what is prohibited is a device with a particular purpose namely to modulate part of the ECS which reduces its effectiveness on the road. While in this case, the study of the Engine's actual emissions on the road showed that they were all well above the maximum NOx limits, the reason why there would be a defeat device is because the non-test mode deliberately changed the EGR function so that materially higher NOx emissions would inevitably result.

192. There was some debate before me about any reductions in effectiveness which were "de minimis". In my view, this is irrelevant unless the level of emissions produced in the changed mode would still have been acceptable in the test. And either they are or they are not. Of course, in the real world, they are most unlikely to be. Here, for example, on the Defendants' own case, the vehicle would be simply incapable of passing the test unless EGR was applied in a real and material way. It follows that without it, they would clearly fail the test. This is what was proved in the research but there is plentiful evidence from VW itself to that effect. See also the Freshfields Letter referred to in paragraph 46 above.

193. Many of the Defendants' submissions here were infused with the idea that their arguments and not those of the Claimants, dealt with the "real world". Thus, it was said, that it would surely make sense to be concerned in all respects with what happens in normal driving conditions as opposed to what happens in a test which is an approximation of the former at best.

194. But in truth, it is the Defendants' position which ignores the "real world" of the legislative context. This is that, for better or worse, the test, with all its limitations, is taken to be the approximation of real-world driving from the point of view of emissions limits and the conformity of the vehicle thereto. The comparison then becomes that between the assumed real-world of the test and the "real" real-world of normal driving conditions.

195. This is echoed in paragraph 137 of the judgment of the Court in *Ville de Paris* which stated as follows:

> "Accordingly, the scale of the uncertainty resulting from the value of the CF pollutant conformity factors contained in the contested regulation [ie 2016/646] under no circumstances allows, contrary to the Commission's claims, the limits on emissions of oxides of nitrogen laid down for the Euro 6 standard, contained in Annex I to Regulation No 715/2007, to be applied during the RDE tests, given the potentially very great discrepancies between those limits and the actual volumes of oxides of nitrogen emitted during the tests, even though the NTE values of those emissions are not exceeded according to the measurements taken by the PEMS. The scale of the

uncertainty thus results in the de facto amendment of those limits for those tests, even though according to the provisions of Regulation No 715/2007 those limits must be observed under real driving conditions and, therefore, during official tests under real driving conditions prior to type approval, as stated in paragraph 122 above."

[emphasis added]

The Landscape Argument

Introduction

196. The Defendants contend that by reason of the legislative history set out above, and in particular how the emissions control regime has developed for HD vehicles, there is significant support for the True Comparator Argument from the Landscape Argument.

197. In essence, the Landscape Argument runs thus:

(1) By 2001, the HD regime had prohibited two separate strategies concerned with emissions. One was the "defeat device" in more or less the same basic form as Article 3 (10) but the other was the Irrational Emissions Control Strategy ("IECS");

(2) The true comparator for the application of IECS was the result to be expected in the underlying type-approval test;

(3) But if the test is the true comparator for the defeat device definition as well, then both of these concepts effectively catch the same thing; but if that is right, then one of them must be redundant. The principles of interpretation would run against such a conclusion;

(4) Since the comparator for IECS is expressly stated to be the expected results in the test, in order to avoid being redundant, the defeat device comparator must be something else; the only "something else" it could be is performance in normal road conditions, which is what the True Comparator Argument says;

(5) If this is how defeat device is to be interpreted within the HD regime then, the same or similar definition in the LD regime, i.e. Article 3 (10) must be construed the same way since these regimes are related.

198. The Landscape Argument is a novel one in the sense that it was never made by the Defendants to the KBA, the German Courts or the Australian Courts. [2] Unlike some of the other arguments raised by the Defendants, there have been no pronouncements upon this one.

199. Before descending into the detail of the argument, and the Claimants' response to it, there are a number of overarching difficulties with it, in my view:

(1) If the Landscape Argument is correct, it means that from an objective point of view, the EU legislators intended that the importance and sanctity of the type-approval test as the essential

[2] See also the Confidential Annex.

means of demonstrating emissions limits compliance was to be protected properly only in the case of HD and not LD vehicles. In the latter case, there would only be the highly attenuated control on emissions effectiveness insofar as it was reduced between one point in road use and another point in road use which would require no reference to test performance at all; given the overall purpose of the Regulation as set out above, and other related instruments within the LD regime, that would be an extremely odd result; but it is the inevitable endpoint of the Landscape Argument;

(2) The exercise here is at one remove, since this is not a case where, on any view, the provision in question, if interpreted in one way, can be said to make redundant another provision in the same measure i.e. the Regulation. That is because there is no "other provision" therein. There is only Article 3 (10);

(3) On any view, the development of the EU emissions control legislation has been somewhat haphazard, in part at least, because the context is not simply the EU but also, as originated, the US emissions control regime and also an international context beyond both the EU and the US. There is therefore a need for caution when analysing the HD and LD regimes as if the changes to both have always been coherent or principled. That factor is important in the context of the Defendants appeal to the "redundancy" argument. In other words, in this particular area any overlap between relevant provisions is not as significant as it might be in others.

The Emergence of IECS

200. As can be seen from the history outlined above, this concept was introduced as something of a side wind and into the LD regime at first only for petrol engines operating at low temperature. In its first incarnation (through Directive 98/69) there was no express comparator for the reduction in emissions effectiveness. However, there was a Test Inclusion Proviso which at least, and rather like Article 5 (2) (c), was still an indication of the primacy of the test.

201. The introduction of the IECS at this point was to deal with a particular problem. It might not have been captured by the defeat device definition, looked at objectively, which postulated an element of design sensing a particular parameter for the purpose of altering adversely the emissions effectiveness. On the other hand all that was needed in the low-temperature context of the IECS was some reduction in effectiveness at low temperature which could not be justified (i.e. was irrational).

202. One then moves to the next incarnation of IECS, being its introduction into the HD regime by Directive 1996/96 along with the "classic" definition of defeat device, save that in the case of the latter, for some reason the Test Inclusion Proviso has disappeared. Given the general currency of this

Exception before and after this Directive it is difficult to see any logic to the omission and it looks like a mistake. So far as the IECS concept is concerned, it is now not qualified by reference to petrol engines at low temperature but on the other hand it is not defined at all. It is not possible to say why it was included in this way. Nonetheless, this was the regime until 2001.

203. The next incarnation of IECS appeared in Directive 2001/27 for HD and it will be recalled that this one was defined as:

> "any strategy or measure that, when the vehicle is operated under normal conditions of use reduces the effectiveness of the ECS to a level below that expected during the test."

This is the incarnation upon which the Defendants rely for the purpose of the Landscape Argument.

204. In this context, the Defendants place great emphasis on the memorandum to the Commission in respect of the fifth iteration of the draft proposal for what became Directive 2001/27 ("the Memorandum"). Before turning to the Memorandum, I should say something of the history of these proposals insofar as I can divine it from the materials before me. All of the proposals are framed in terms of amendments to Directive 88/77 because that was the original relevant Directive in respect of emissions from HD vehicles. The first proposed amendment, entitled "Rev. 0" was dated 30 April 2000. There appeared to be no amendments to "defeat device" at that stage and no reference to IECS. But Rev. 2 did contain those amendments and in the form in which they ultimately appeared in Directive 2001/27. Rev. 3 had the same terms and was discussed at the 64th meeting of the Motor Vehicles Committee of the Commission held on 17 November 2000. There were, however, no comments on these terms. All that can be seen was a reference to the amended paragraph 2.28 of Annex 1 which said that the defeat device was as before but with some clarification "regarding the use of a defeat device during operational conditions." The new paragraph 2.29 was said "to define an auxiliary control device, which is not a defeat device, may be allowed under certain conditions." There was no reference to the new paragraph 2.30 which contained the definition of an IECS.

205. The Memorandum itself was promoting Rev. 4 but it noted that the 64th meeting had approved Rev. 3. It stated that the proposals introduced, among other things:

> " - strengthened provisions to act against the use of "defeat devices" [1] and "irrational" emission control strategies [2]. This will require manufacturers to provide detailed information to justify the use, under defined operating conditions of any measure that may otherwise be considered a defeat device or an irrational emission control strategy. In addition, the proposal provides for an additional screening tool for type-approval authorities to ensure that such measures are not utilised by engines in real conditions of use."

206. The two footnotes read as follows:

> "1 - Defeat devices are elements of engine or vehicle design which brings the operation of the emission control system reducing the effectiveness in normal vehicle use.
>
> 2 - Irrational emission control strategies are measures which reduce the effectiveness of emission control systems, when the vehicle is operated under normal conditions, to levels below those determined during the applicable emission test procedure."

207. Footnote 1 comes from the previous paragraph 2.28 in Directive 99/96. Footnote 2 was a paraphrase of IECS as it came to be defined in the new Directive.

208. The Defendants argue that this part of the Memorandum shows that what was deliberately being "strengthened", for the purposes of the HD regime (but not the LD regime since it never included this iteration of IECS for diesel vehicles), was what could be considered a prohibited device or strategy. The strengthening came in the form of the addition of this version of IECS to the existing definition of defeat device. And therefore, the HD regime was deliberately intended to be stronger than the LD regime. It would therefore follow, or at least it would be no surprise, if the defeat device in its "classic" form where it existed by itself (as in the Regulation) was weak and not all-encompassing.

209. The first problem with this argument is that I do not accept its premise. That is to say I do not accept that on any fair reading, the "strengthening" provisions referred to by the Memorandum had anything to do with what the IECS could encompass. It is plain from the text that instead, the "strengthening" was constituted by the new disclosure and information requirements to be put in place along with the underlying type-approval test and the additional screening tool which could be used to check that once in service, defeat strategies were not in operation. That view of the Memorandum is supported by Recital (2) to Directive 2001/27. This stated that:

> "Directive 1999/96/EC provided for new emission test cycles and prescriptions to prevent the use of defeat device and/or irrational emissions control strategy. It is now appropriate to strengthen those requirements and to provide a tool for authorities to determine whether engines are using defeat devices and/or irrational emissions control strategies under normal conditions of use to manipulate engine performance at the expense of emissions control."

210. The strengthening is the provision of a tool to detect the existence of such devices. That, in turn, is demonstrated by the new documentation and screening provisions set out in paragraph 6.1.3 and 6.1.4 of the amended Annex 1 in the new Directive which were not present at all in the previous Directive 1999/96.

211. None of the above deals with the introduction or significance of IECS in its new iteration. I do not consider that the two footnotes referred to above add anything in this respect. They simply set out the relevant definitions.

212. I should add that the notion of strengthening as referring to increased information and transparency at the type-approval stage is echoed for the LD Regime in Recital (5) of Regulation 2016/46:

> " 'defeat devices' as dividing Article 3 (10)…. Reducing the level of emission control are prohibited. Recent events have highlighted the need to strengthen the enforcement in this respect. Therefore it is appropriate to require a better supervision of the emission control strategy applied by the manufacturer -type approval, following the principles already applied to heavy-duty vehicles by… Regulation… 595/2009 and its implementing measures."

213. Assuming as I do for present purposes that the Memorandum relied upon by the Defendants constitutes "*travaux*" there is therefore nothing in it to suggest that the part of the defined IECS which

refers to what would be expected from the test is the contemplated "strengthening". It is very far from being "bang on" the point in question as advanced by the Defendants (cf. the *Nova* case referred to in paragraph 138 above).

214. Therefore I do not accept that this initial building block for the Landscape Argument is there at all.

215. Further, in my judgment, there is nothing in the defined iteration of IECS in Directive 2000/21 to entail the conclusion that the prior definitions of defeat device and IECS in Directive 1999/96 did not already have the test as their implicit comparator.

216. Yet further, the very definition of IECS in Directive 2001/27 has an incidental impact on the Defendants' separate linguistic argument that for the purpose of Article 3 (10) the reference to "under normal conditions of use" itself suggests that the comparator must be with performance at some other stage during the use of the car on the road. I say that because the new IECS definition expressly states that this is not the comparator (rather it is the test) and yet it still speaks of "under normal conditions of use". What this goes to show, in my view, is a point previously made which is that it is one thing to find that in a particular case the modulation of the ECS occurs between two different stages in the operation of the car on the road (e.g. switching the air conditioning on or off); it is quite another to decide how to measure the reduction and by reference to what comparator.

217. It is, of course the case that the IECS concept was dropped entirely from the HD regime by Implementing Directive 2005/78. (It was retained for motorcycles until 2016 but I do not think anything significant flows from that.) Instead, one had the overarching definition of "defeat strategy" comprising the AECS and the "discriminating" BECS. It is very difficult to draw anything from this further development in the language which necessarily supports the Landscape Argument.

218. It is true that the prohibited defeat strategy of the AECS variety appears to approximate to the "classic" defeat device. As for the other prohibited defeat strategy, being the "discriminating" BECS, it is somewhat difficult to say that this is the same as the old IECS. What one can say is that there is at least an express reference to performance under the test (though in the context of discrimination) while there remains no such reference in the definition of AECS. However, even that conclusion is not quite what it seems because of paragraph 6.1.5.2. This effectively says that an AECS which runs a different emissions control strategy to that employed in the test cycle <u>will</u> be a prohibited defeat strategy unless it falls within the stated exceptions. So at this point one does have a reference back to test performance in the context of AECS.

219. Finally, so far as the HD regime is concerned there is the much more truncated definition of defeat strategy in paragraph 3 (8) of Regulation 595/2009, again dealing with the HD regime. This does not

expressly state what the true comparator is for the purpose of the reduction in effectiveness and in my judgment takes the matter no further so far as the Landscape Argument is concerned.

220. Pausing there, even without considering the Claimants' specific response to the Landscape Argument, it seems to me to be highly flawed for the reasons already set out.

221. The Claimants, for their part, have given an extended analysis to explain how IECS came to be there in the HD regime. They said that its focus was upon "always on" measures that then responded to different parameters while the vehicle was in operation (for example, temperature) as opposed to those which operated only by reference to test conditions and which then changed outside the test. The former were said to be "off-cycle" measures while the latter was something else.

222. As to this, I agree with the Defendants that there are some problems with this. First, it could be said that the objective, at the end of the day, is always about dealing with "off-cycle" emissions if that means emissions outside the test i.e. on the road. One is not interested in the emissions produced during the test itself since by definition, they will have been emissions compliant with the relevant limits otherwise the test would not have been passed. Second, I agree that "always on" may mislead since even if a strategy is "always on" it inevitably has to change something to do with the ECS and therefore vary in its operation, otherwise there would never be the required reduction in effectiveness. Third, I cannot be sure that the use of the word "expected" in the 2001 iteration of IECS is used to denote a situation where there could be no actual test results to use as a comparison (and thus dealing with the sort of problem referred to in paragraph 100 above) whereas the "classic" defeat device definition would require only a comparison with "actual" results.

223. On the other hand, I would agree that, especially as formulated in Directive 2005/78 these two concepts did suggest something of a distinction between a basic emission control strategy that was always in operation (although to varied effect) and the more stark auxiliary strategy which only came into effect when something happened, for example an effective disabling of EGR altogether when the non-test parameters were detected by the device in question.

224. So I think overall that there is still something in the Claimants' suggested explanation. But in any event, the Defendants' own thesis is highly flawed for the reasons given in paragraphs 209-220 above.

225. Furthermore, at the end of the day I am not at all persuaded that if the true comparator was actual or expected test performance for both the "classic" defeat device and also IECS (or some later approximation) the former would necessarily be redundant even within the HD regime. The IECS may well catch operations not caught by defeat device (for example air conditioning on/off). Yet further, to the extent that there is an overlap, the very fact of the somewhat tortuous and contorted legislative history of the HD regime means that a great deal of circumspection is required before

having recourse to the redundancy argument. This case is very far from the case of *Vaditrans* referred to in paragraph 145 above.

226. The Defendants also rely upon a number of *ex post facto* documents to support the Landscape Argument. For example, some written questions were put to Mr Gunter Verheugen, the EU Commissioner for Enterprise and Industry from 2004-2010, which followed an interview with him in August 2016. That interview formed part of an information gathering exercise undertaken by the EU Parliamentary Committee of Enquiry into Emission Measurements in the Automotive Sector whose report was produced on 2 March 2017 ("the EMIS Report"). The exchange with Mr Verheugen relied upon by the Defendants is as follows:

> "[Q2] During your hearing of 30 August 2016 you were asked about the discrepancy between the definitions and requirements in emissions legislation for Light Duty Vehicles (LDV) and for Heavy Duty Vehicles (HDV). In your written answer to question 8, you state that the use of defeat devices in HDVs in the U.S in 1998 led to the European Commission introducing clearer definitions and limitations on defeat devices and auxiliary control devices (in Directive 2001/27/EC). Indeed, definitions were added for 'auxiliary control device', which, if used to protect the engine, must be demonstrated not to be a defeat device before it can be considered acceptable to use. The Directive 2001/27/EC also included a definition of 'irrational emission control strategy', which means "any strategy or measure that, when the vehicle is operated under normal conditions of use, reduces the effectiveness of emission control system to a level below that expected on the applicable test procedures". If the Commission was fully aware of the dangers of defeat devices 15 years ago for HDVs, why were these definitions not copied and pasted into subsequent legislation for LDV (Euro 5 and Euro 6)? Could you look into your archive and explain to EMIS Committee why this failure has been committed?
>
> [A2] I do not agree that the European Commission has failed to prohibit defeat devices in LDV. Directive 98/69/EC on Euro 3/Euro 4 emission standards already contained the provision that such defeat devices are forbidden, and the definition and prohibition are almost identical to the US legislation. At the time of discussing and adopting Regulation (EC) 715/2007 on Euro 5/Euro 6 emission standards, there was no evidence or suspicion that manufacturers of LDV had applied forbidden defeat devices. The appropriateness of the legal prohibition of defeat devices under Euro 3/Euro 4 was never questioned by any stakeholder during the entire legislative process, which is why this provision was carried over from Euro 3/Euro 4 legislation to the one on Euro 5/Euro 6. It must be concluded that the prohibition of defeat devices in Euro 5/Euro 6 was seen as a sufficient deterrent to prevent illegal behaviour of LDV producers at the time. Subsequently, in 2009, the concept of an 'irrational emission control strategy' for HDV was dropped and replaced by (prohibited) 'defeat devices'.
>
> [Q3] A comparison of the current emissions legislation for LDV (Regulation (EU) No 715/2007) and HDV (Regulation (EU) No 595/2009) shows clear linguistic differences between the definition and responsibilities relating to defeat devices and auxiliary emission control strategies. For example, Regulation 595/2009 on Euro V and VI standards for HDVs includes additional clarifications lacking in the Euro 5/Euro 6 legislation for LDV: The definition of defeat strategy includes the additional element "or outside the type-approval test procedures": "'defeat strategy' means an emission control strategy that reduces the effectiveness of the emission controls under ambient or engine operating conditions encountered either during normal vehicle operation **or outside the type-approval test procedures**". This suggests that the legislators in the European Commission, under your supervision, knew that there were issues with the definition of a defeat device and cars being calibrated only to meet emission limits in the New European Driving Cycle (NEDC) type approval test, but chose not to address the issue properly in the legislation regulating LDVs. How could the Commission have negotiated two pieces of legislation that aim to tackle the same problem but with such different results? Why did the Commission not include reference to the type approval test procedure in the definition of defeat devices for the Light Duty Vehicles, despite the fact that similar wording had been proved to be effective in stopping emissions cheating in the HDV sector?
>
> [A3] First of all I wish to point to the fact that the Commission applied the Euro 5/ Euro 6 concept on defeat devices in Regulation 595/2009, thus aligning the legal provisions for LDV and HDV. I cannot remember precisely, why the Commission suggested adding the mentioned half sentence in its proposal for Regulation 595/2009. As far as I can recollect, Type approval authorities and manufacturers discussed how to qualify a device that is needed to protect the engine. Furthermore I cannot remember that any institution inquired about any possible incoherence between the legislation for LDV and HDV during the legislative process for 595/2009.

> Finally, I do believe that it is wrong to assume, that a half sentence like "**or outside the type approval test procedures"** in the Euro 5/Euro 6 legislation would have prevented European manufacturers from using illegal defeat devices. Manufacturers that used illegal defeat devices did so intentionally and gave false declarations during the whole type approval procedure under the Euro 5/Euro 6 legislation, which includes the normal use of a vehicle. Finally, and regrettably so, illegal behaviour cannot be 100 percent excluded by any legislation, but should always be severely sanctioned."

227. This exchange is not only inadmissible so far as any question of interpretation is concerned but it also does not directly support the Landscape Argument anyway. The same can be said for the EMIS Report itself. The Defendants rely upon paragraph 38 which states that:

> "The emissions legislation for heavy-duty vehicles has always been stricter on defeat devices than for light-duty vehicles. It remains unclear why the commission did not transpose these more stringent provisions from heavy to light-duty vehicles legislation."

228. I would make the same comment about this passage. Further, in terms of what the relative strictness was about, it is worth referring to paragraph 31 which states that:

> "Unlike in the case of heavy-duty vehicles, car manufacturers were not required to disclose or justify their emissions strategies. Having such an obligation would facilitate controlling for defeat devices. Even with RDE tests, the risk that defeat strategies are used cannot be completely excluded in the future."

229. That is surely an echo of the points made about the true nature of the "strengthening" in paragraph 209 above.

230. In general, in my view, the history of the emergence of IECS and the other concepts in the HD regime comes nowhere close to overcoming all of the arguments already referred to, which are in favour of the Claimants' interpretation of defeat device by reference to language, context and purpose. I consider that the Landscape Argument must be rejected.

The Possibility otherwise of conducting Comparative Road Tests

231. Part of the True Comparator Argument is that at all material times, it would have been possible to undertake comparative "on the road" tests to see whether there was indeed a reduction in the effectiveness of the ECS. This point was also made by the Defendants to rebut the suggestion (if made by the Claimants in these terms) that it would not be possible to conduct comparative road tests, as opposed to simply referring back to the test results.

232. This point is to be distinguished from the argument that in this case, emissions road testing of Mode 1 makes no sense and is inappropriate anyway, because it was not designed to operate in normal road conditions. See paragraphs 178 and 179 above.

233. Obviously, there is a sense in which <u>some</u> measurement of "on the road" emissions was possible, certainly as at 2015, because that was the year of the research in the US which showed the greatly increased NOx emissions which in turn led to the Emissions Controversy in the first place. However, that does not deal with whether at all stages, there was a form of road testing conveniently available to do a comparative test.

234. It is not in doubt that there have been some forms of portable emissions testing in place for some time, certainly in the US. We know this from the evidence about what became known in the course of this trial as "the Cincinnati Run".

235. This arose as follows: in the case of the GM Recall (referred to in paragraph 92 above) a settlement was reached between GM and the US EPA in relation to the greatly increased amounts of carbon monoxide emitted from the relevant vehicles when the climate control was switched on. The settlement had many features but involved, among other things, a "fix" to the vehicle software not unlike the fix undertaken with VW cases here; but it also involved periodic testing thereafter. In part, this was to be done by using portable testing devices in the HD vehicles affected, as they completed the same specified journey once with the climate control on and once with it off. The specified journey was from Cincinnati to the Kentucky Welcome Center Rest Stop (see Attachment 1 to Appendix D to the Consent Decree dated 6 December 1995). It should be added, however, that there were also to be comparative dynamometer tests. But insofar as there was comparative road testing for particular emissions, I agree that this shows the state of play, at least in the US, at that time.

236. A second point made by the Defendants in this context relied upon the fact that Janet Reno, the then US Attorney General, stated that the defeat devices found in the GM vehicles were not just "paper" violations but were a "real world" increase in emissions. In one sense, that is obvious - the problem was the extent of the emissions while the vehicles were on the road. But those remarks hardly support the further contention made here by the Defendants that because the emissions occurred in the real world, any comparison to assess the reduction of the effectiveness of the ECS had itself to be - and only to be - a road test. That simply does not follow.

237. I was also referred to the Commission Notice dated 26 January 2017 on Guidance on the Evaluation of Auxiliary Emissions Strategies and the presence of Defeat Devices in the context of the Regulation ("the Guidance Notice"). The first part of the Guidance Notice deals with the evaluation of AES at the type-approval stage because by then, the manufacturers were obliged to produce detailed information about them. The assessment of the AES here was all about the technical evaluation of the information and documents supplied. It is the second part of the Guidance Notice which is more pertinent. This was not to do with the type-approval stage at all, but rather how one would test for the presence of a defeat device in an already type-approved vehicle while in service. While it was said that the vehicles should be tested (again) in the laboratory (i.e. with the dynamometer) it then said that they should be tested in modified conditions, which included both adjustments to the laboratory test but also testing "on the road". The Guidance therefore assumes that some form of road testing was possible.

238. Of course the question is still what kind of road testing for emissions was contemplated by the EU regime when the defeat device prohibition was first introduced in 1998. There is really very little if any evidence to suggest that on the road emissions testing was contemplated to provide the comparison.

239. A further reason why, according to the Defendants, it must be comparative road testing is because if it were otherwise, then entirely "innocent" reductions in ECS effectiveness would be penalised e.g. engine optimisation. I do not agree. If the resulting emissions were higher than the test limits then, unless the case fell within one of the Exceptions, it should not be permitted.

240. Furthermore, to take the Defendants' "Alpine" example, if the reduction is due to the vehicles ECU's reaction to high altitude and/or low temperature, none of which was catered for in the test, then that might be adjudged to be a defeat device. But the solution then would be to embody a parameter of testing to reflect this so that it is only defeat devices which then operate outside the designated limits which would be caught.

241. A further difficulty for the Defendants is that in my view (though this was not conceded by them) the True Comparator argument depends to a significant extent on the Holistic Argument. If the latter is correct, then the suggestion is that if one undertook a road test of the differential modes in question, there may be little or no overall adverse effects if one takes emissions as a whole. But that means that the testing itself must be very complex and sophisticated because it somehow has to blend the results in relation to each individual emission and then somehow come up with an overall assessment. But the portable tests referred to so far attended only to concentrate on one particular emission. Or at least I have not seen any evidence of "holistic" portable testing.

242. It is true that Portable Emissions Measurement Testing ("PEMS") is now advocated in the EU context. It would have formed part of the supplementary road testing of RDE (Real Driving Emissions) specified by the annulled Commission Regulation 2016/646 (supplementary because the "laboratory" test remained). However, this does not negate the fact that type-approval testing is at all material times being done by reference to the test and the definition of defeat device for LD regime has remained a constant.

243. None of the above creates any material support for the True Comparator Argument in my view.

244. Furthermore, it is very hard to see what the point of this road test comparison is if the only result is that even with the reduction across normal driving conditions the ultimate emissions are still within limits. It is not clear what degree of reduction would be required to make the relevant software function a defeat device. On the other hand, if the ultimate comparator is the test result, then there is

certainty: either the changed and reduced effectiveness of the ECS now leads to emissions which are outside the limits of the test or it does not.

Conclusion

245. For all the above reasons, the True Comparator argument must be rejected.

The Holistic Argument

246. The Defendants' core argument here is that the required reduction in the effectiveness of the ECS is a reduction in its overall effect on emissions control and not simply by reference to the particular emission in issue i.e. here, NOx. As set out at paragraph 4.2 of Part I of their Further Information:

> "The correct approach to reduced effectiveness of the emission control system is holistic and material. In essence there has to be an unacceptable, overall reduction in the effectiveness of the ECS. That includes an assessment of matters such as the scale of any change in emission level, the picture over time (peaks and troughs) and the picture as to different emissions (e.g. whether one emission goes up and another goes down)."

247. This argument is made independently of the Defendants' other arguments.

248. There is, in my judgment, an initial problem with this argument which is that it ignores the fact that the test, the passing of which is a prerequisite for type-approval, does not assess emissions on some global basis. Each relevant emission is assessed by reference to the particular limits and in some cases combinations of emissions are assessed also. Each relevant limit must be observed. In the case of diesel vehicles these are carbon monoxide, NOx, particulates, and the combined mass of total hydrocarbons and NOx together. Equally, the details of the type-approval set out those various limits. There is no concept of "swings and roundabouts" in the test. Indeed it would be wholly illogical to do so since excessive levels of each particular emission are undesirable in themselves.

249. If the above is correct, then it is very difficult to see why a defeat device should be such only if there is some overall reduction in emissions taken as a whole even though (for example) it unquestionably produces excessive levels of NOx.

250. And even if some global emissions comparison was appropriate, it is very difficult to see how such a comparison could be conducted, how much weight should be given to the increase (or decrease) of one particular emission as opposed to another and so on.

251. Equally, there is nothing in the language of Article 3 (10) or its precursors to mandate such a holistic approach. The effect of the ECS will be reduced if increased levels of NOx result from the de-activation of EGR because the NOx emissions will no longer be effectively controlled. No instance has been cited to me of where the holistic approach has actually been applied when deciding whether or not there was a defeat device, bearing in mind that the concept of a reduction in the effectiveness of the ECS has been in place for very many years starting in the US.

252. The Defendants say that because the required modulation is of any part of the ECS, whereas the reduction must be to the effectiveness of the ECS, it must follow that the latter is encompassing all pollutants to be assessed together. That simply does not follow. The distinction here is not between examining one pollutant as opposed to all pollutants but between the part of the ECS modulated (because not all of the ECS with its different elements needs to be modulated) and then the effectiveness of the ECS as a whole which, in my judgment, would obviously include any part thereof. So where the part of the ECS modulated is EGR then it is true that the ECS's effectiveness so far as NOx is concerned is reduced.

253. The Defendants make much of the fact that the test has to compensate for regeneration of the DPF which has been described above, on the basis that when regeneration takes place there will be a "spike" in NOx emissions. They say that this shows that it would be wrong to assess the NOx emissions by reference to what happens in a "snapshot" moment. But in truth, the reason why there has to be compensation for the regeneration of DPF (within defined parameters) is simply because that regeneration is a necessary part of the functioning of the vehicle, without which the DPF itself would not operate so as to remove the particulates. This says nothing about the proper interpretation of the requirement of reduction in the effectiveness of the ECS. And if there was no designed-in compensation for this regeneration in the test (in which case it may fail) it would almost certainly fall within the Exception at Article 5 (2) (a). On the other hand, if the test has designed-in compensation for the regeneration then, even if the regeneration would still fall foul of Article 3 (10) it would obviously fall within the Test Inclusion Proviso at Article 5(2) (c).

254. Paragraph 3.9 of the Defendants' Skeleton Argument refers to one part of a section of the Guidance Notice dated 26 January 2017 i.e. after the Emissions Issue emerged. The part quoted reads:

> "acceptable emissions increases per combinations of pollutants, technologies and conditions".

No context is provided.

255. In fact, the context is a section of the Guidance Notice which deals with proposed ways to test vehicles for the presence of defeat devices in a new JRC (Joint Research Council) protocol. It is worth quoting it at more length (the quoted phrase is underlined):

> "The JRC protocol proposed to introduce 4 categories of procedures to cover the possible situations.
> • In **category 1,** the testing is conducted in a laboratory under a controlled environment with only limited changes when compared to the legislative cycle and the modified parameters can be controlled. **The modification of the testing conditions should not lead to a significant change in the physical response of the engine system**. Examples of such modifications include testing vehicles with an open door or rolled-down windows.
> • In **category 2**, the testing is conducted in a laboratory or on the road with conditions different than the legislative cycle and the value of the modified parameters can be controlled….The classification of the tests within the different categories is the responsibility of the TAA and should be supported by the AES declarations delivered at type-approval. An example of a testing protocol is given in Annex III.
> **3.3. Evaluation of the test results for the various categories**
> To facilitate the evaluation of tests under the various categories, it is recommended to develop **testing thresholds** corresponding to acceptable emissions increases per combinations of pollutants, technologies and conditions.

> Any emission test that falls above those testing thresholds should be classified as a "suspicious" case. Under category 1, emissions exceeding the recommended thresholds are a strong indication for a possible presence of prohibited defeat devices, since there can be no plausible explanation for an increase in pollutant emissions by simple modifications that do not affect the engine performance. In such a case, it is certain that the vehicle sensed that it is not tested in a regulatory cycle and therefore changed its emission level, i.e. a prohibited defeat device is present. Under categories 2 to 4, emissions exceeding the recommended thresholds might result from the possible presence of a defeat device and/or the physical effects upon the emissions control of an AES. Further investigations and explanations from the manufacturers will be needed…."

256. So it can be seen from the proper context that the first category of test was making a number of allowances so that if there were still emissions above the set thresholds, the only answer could be that there was a defeat device in operation. The reference to combinations of pollutants, technologies and conditions is simply a description of what the thresholds would deal with in the first test. It has absolutely nothing to do with holistic approach to reduction of the ECS's effectiveness for the purposes of Article 3 (10).

257. Similarly, the fact that when tailpipe emissions are measured in the test, averages are taken, does not begin to entail that on the question of reduction of effectiveness one looks at the emissions globally in some "swings and roundabouts" sense. It is simply dealing with how sensibly to measure any particular emission by reference to doing so over time rather than, for example, in a split second. So there is nothing in the point raised at paragraph 3.10 of the Defendants' Skeleton Argument.

258. Paragraph 3.15 of the Defendants Skeleton Argument, refers, in the context of DPF regeneration, to paragraph 5.3.1.4.1 of Regulation 83 which provides as follows:

> "Notwithstanding the requirements of paragraph 5.3.1.4., for each pollutant or combination of pollutants, one of the three resulting masses obtained may exceed, by not more than 10 per cent, the limit prescribed, provided the arithmetical mean of the three results is below the prescribed limit. Where the prescribed limits are exceeded for more than one pollutant, it is immaterial whether this occurs in the same test or in different tests."
> [emphasis added]

259. Again, it is said that this provision and in particular, the words underlined by the Defendants support the Holistic Argument. It does no such thing in my judgment. First, the reason why there is a reference to combination of pollutants is because, as already stated, some of the test parameters deal with pollutant levels in combination as well as their individual levels all of which are subject to limits. Secondly, the 10% "cushion" is there because there are to be three NEDC tests: as long as the average test result comes in below the limits it does not matter if the limit is exceeded by up to 10% in one of those tests.

260. Then, insofar as paragraph 3.17 of the Defendants' Skeleton Argument suggests that the Holistic Argument compliments the True Comparator Argument, that goes nowhere since I have rejected the latter argument already.

261. Paragraph 3.20 of the Defendants' Skeleton Argument refers to what amounts to an exception in the HD regime in the case of an AECS which applies where the control of one regulated pollutant under

specific conditions is traded off so as to maintain control of all other regulated pollutants within the relevant values (see 6.1.5.6 of Annex 1 to Directive 2005/55 as amended). Yet again, this is taken out of context. The full provision reads as follows:

> "6.1.5.5. An auxiliary emission control strategy (AECS) may be installed to an engine, or on a vehicle, provided that the operation of the AECS is included in the applicable type-approval test and is activated according to section 6.1.5.6.
> 6.1.5.6. The AECS is activated:
> − only by on-board signals for the purpose of protecting the engine system (including air-handling device protection) and/or vehicle from damage,
> or
> − for purposes such as operational safety, permanent emission default modes and limp-home strategies,
> or
> − for such purposes as excessive emissions prevention, cold start or warming-up,
> or
> − if it is used to trade-off the control of one regulated pollutant under specific ambient or operating conditions in order to maintain control of all other regulated pollutants within the emission limit values that are appropriate for the engine in question. The overall effects of such an AECS is to compensate for naturally occurring phenomena and do so in a manner that provides acceptable control of all emission constituents."

None of that says anything about how to measure the reduction in effectiveness for the purpose of Article 3 (10).

262. Paragraph 3.21 of the Defendants' Skeleton Argument then quotes the later Regulation 2017/1151 which refers to the detailed documentary packages which manufacturers had to supply to the type-approval authority. This Regulation came in the wake of the Emissions Controversy. The relevant section contains a host of detailed and comprehensive information requirements, although the definition of defeat device remains unchanged from Article 3 (10). The phrase cited occurs in the following provision (cited passage underlined):

> **"Extended Documentation Package**
> The extended documentation package shall include the following information on all AES:
> (a) a declaration of the manufacturer that the vehicle does not contain any defeat device not covered by one of the exceptions in Article 5(2) of Regulation (EC) No 715/2007;
> (b) a description of the engine and the emission control strategies and devices employed, whether software or hardware, and any condition(s) under which the strategies and devices will not operate as they do during testing for TA;
> (c) a declaration of the software versions used to control these AES/BES, including the appropriate checksums of these software versions and instructions to the authority on how to read the checksums; the declaration shall be updated and sent to the Type-approval Authority that holds this extended documentation package each time there is a new software version that has an impact to the AES/BES;
> (d) detailed technical reasoning of any AES including a risk assessment estimating the risk with the AES and without it, and information on the following:
> (i) why any of the exception clauses from the defeat device prohibition in Article 5(2) of Regulation (EC) No 715/2007 apply;
> (ii) hardware element(s) that need to be protected by the AES, where applicable;
> (iii) proof of sudden and irreparable engine damage that cannot be prevented by regular maintenance and would occur in the absence of the AES, where applicable;
> (iv) a reasoned explanation on why there is a need to use an AES upon engine start, where applicable;
> (e) a description of the fuel system control logic, timing strategies and switch points during all modes of operation;
> (f) a description of the hierarchical relations among the AES (i.e., when more than one AES can be active concurrently, an indication of which AES is primary in responding, the method by which strategies interact, including data flow diagrams and decision logic and how does the hierarchy assure emissions from all AES are controlled to the lowest practical level;
> (g) a list of parameters which are measured and/or calculated by the AES, along with the purpose of every parameter measured and/or calculated and how each of those parameters relates to engine damage; including the method of calculation and how well these calculated parameters correlate with the true state of the parameter being controlled and any resulting tolerance or factor of safety incorporated into the analysis;
> (h) a list of engine/emission control parameters which are modulated as a function of the measured or calculated parameter(s) and the range of modulation for each engine/emission control parameter; along with the relationship
> between engine/emission control parameters and measured or calculated parameters;
> (i) an evaluation of how the AES will control real-driving emissions to the lowest practical level, including a detailed analysis of the expected increase of total regulated pollutants and CO_2 emissions by using the AES, compared to the BES."

263. In that context, the reference to "increase of total regulated pollutants" does not indicate some overall assessment of how the pollutants are emitted on a global basis without reference to individual limits – rather, it obviously means "all" in the sense of "each and every".

264. Paragraph 3.2 of the Defendants' Skeleton Argument makes reference to the position of a cold-start within Article 3 (9) of the Implementing Regulation. The manufacturer has to provide the type-approval authority with information to show that the NOx aftertreatment device (being the component in question here) reaches a sufficiently high temperature for efficient operation within 400 seconds after a cold start.

265. All this means is that the NOx aftertreatment device, in order to be permissible, has to reach a temperature at which it can work properly within 400 seconds. The information provided by the manufacturer has to be sufficient to prove this. And if required by the Commission, the approval authority will provide information on the performance of NOx aftertreatment devices. All of this is cited by the Defendants to show that there is or may be an element of evaluation on the part of the type-approval authority with regard to whether the information supplied does indeed show that the temperature necessary for efficient operation of the device can be achieved in the time period. That is then built upon to suggest that there would be nothing exceptional in the type-approval authority also having to undertake an overall assessment and evaluation by reference to all the different forms of omissions to then work out whether, overall, it can be said that the position is really worse with the defeat device in operation than without it. One only has to state that proposition to see the absurdity of the Defendants' argument which is based on the entirely different and limited provision about NOx aftertreatment devices, and I reject it.

266. In truth, as it seems to me, a number of quite disparate and in my judgment irrelevant parts of the legislation have been cited as support for the Holistic Argument. It is plain that they do not do so and the Holistic Argument must fail.

267. The Defendants are correct to say that the Claimants have not sought to adduce evidence as to the reduced effectiveness of the ECS on some overall and holistic basis, as opposed to confining themselves to the agreed position which is that NOx emissions would increase as a result of the operation of the software function here under Mode 2. However, since there is nothing in the Holistic Argument, this point is irrelevant.

Conclusion on the Defeat Device Issue

268. Having therefore dismissed all of the Defendants' Arguments, it must follow that the software function in issue in this case is indeed a defeat device because it falls within Article 3 (10). As will become apparent, I am far from alone in this conclusion. The KBA, along with numerous courts and

other bodies in various other jurisdictions, agree that the software function here is a defeat device. Details of these are set out in as paragraphs 269 - 282 below. While I take comfort from that fact, I make it clear that there is no need to resort to it because in my judgment the answer is so plain in any event. My conclusion therefore does not depend on what has been decided elsewhere.

Other decisions/guidance elsewhere

Introduction

269. As stated above, my conclusion on the Defeat Device Issue is supported by a number of decisions, findings or advisory opinions given in other jurisdictions. They have been the subject of submissions and for the sake of completeness I make reference to them here.

The KBA Letters

270. Regardless of whether the findings made in the Letters are binding upon me or not, they clearly and firmly reach the conclusion that the software function did indeed amount to a defeat device, albeit for slightly different reasons than those given by me above. See paragraphs 304-315 below.

Other Authorities' Decisions

271. I have already referred in paragraph 5 above to the fines imposed by the public prosecutors' offices in Braunschweig and Munich. VW did not challenge either of these. In addition, the Dutch and Italian consumer regulators imposed fines on VW on the basis that, among other things, the vehicle contained defeat devices. VW appealed both decisions without success. Finally, as well as the KBA and VCA, the Luxembourg type-approval authority called SNCH wrote to the KBA to say that certain Audi engines manufactured with such a device did not comply with the underlying type-approval.

The German Courts

272. I refer below to a number of decisions of the German Courts.

273. The decisions of the OLG Koblenz, OLG Naumburg, OLG Braunschweig and LG Stuttgart are all supportive, as is the pending reference to the CJEU from LG Gera. See paragraphs 326-339 below.

274. The same is true of the BGH Advisory Opinion dated 8 January 2019 ("the BGH Advisory Opinion"). This dealt with a number of matters in the context of a claim that a VW car was materially defective because of the presence of a defeat device. In that context, the Court said at paragraph 6 (aa) that the device which activated enhanced exhaust gas recirculation when the test bench was detected, was likely to be an illegal defeat device under the Regulation. Then, having set out the background to and purpose of the Regulation, paragraphs 10 and 11, the Court stated as follows at paragraph 12 (b):

> "on the basis of these broad provisions, the software installed in the plaintiffs vehicle may also be an illegal defeat device… (See OLG Koln..OLG Koblenz …). Such software detects whether the vehicle is in a test cycle

> to determine the emission values and in this case switches to a mode in which more exhaust gases return to the engine and the emission of nitrogen oxides (NOx values) is reduced. In normal driving operation, however, such software activates another mode in which exhaust gas recirculation takes place only to a lesser extent; it thus determines the operating mode of the vehicle concerned-test bench run or real operation-on the basis of technical parameters and accordingly activates or deactivates gas recirculation which directly impairs the effectiveness of the emission control system."

275. At paragraph 17 (bb) it is said that this was a "probably" illegal defeat device.

276. This is of course, only an Advisory Opinion because the issues were not yet ultimately decided but nonetheless it emanates from the BGH and is significant.

277. There were, however, two cases where the German Courts did not find that to be a defeat device where the matter was in issue.

278. The first is the decision of LG Bamberg dated 8 November 2016. The claim against VW was rejected on many grounds. At one point in paragraph 3 (b), the Court said this:

> "… Is the passenger car defective because it possesses a prohibited defeat device. The Claimant has made no submissions in this regard. Ultimately, this is also irrelevant because it is probably the case that there is no defeat device present…"

279. The reasoning is brief and the Claimant did not appeal.

280. The second decision is that of LG Düsseldorf dated 24 March 2017. In, again, a very brief passage giving one of a number of reasons why the claim failed, the Court said this:

> "No prohibited defeat device within Article 3 (10) … is present. In accordance with the, to that extent, uncontested submission of the Defendant, under normal non-road driving conditions the software does not influence the emission control system the manipulation only concerns the laboratory test process. The registration of the vehicle in the Euro 5 categories is not called into question by the Federal Motor Transport Authority responsible for this."

281. This passage appears to accept some form of the True Comparator argument which I have rejected above. It should be noted that the Claimants here did appeal, after which the matter was settled.

282. The preponderance of German Court decisions therefore supports the Claimants.

The Australian proceedings

283. For the purpose of the settlement of the Regulatory Proceedings, VW made a number of admissions as to breach of s29(1)(a) of the Australian Consumer Law (which constitutes Schedule 2 to the Competition and Consumer Act 2010). Those admissions concerned the making of false representations to purchasers of the relevant vehicles.

284. However, it did not admit that they were defeat devices within the meaning of Australian Design Rule 79 - Emission Control for Light Vehicles. This provision is in materially the same terms as Article 3 (10). It is plain from the judgment of Foster J that he thought that VW should have made such an admission, and it seems likely that he would have so concluded himself, if he had to hand-down a

judgment. However, the fact is that he did not and so there is neither a formal finding nor a formal admission in this respect.

285. Much of Foster J's judgment is taken up with why he took the view that the agreed civil penalty of Aus.$75m was too low. While it might be relevant to a broader view of VW's conduct in relation to the Emissions Controversy as a whole, I do not see how it can assist me in the determination of the Defeat Device Issue.

286. In those circumstances, I say no more about the Australian Proceedings.

THE KBA ISSUE

Introduction

287. This is as follows:

> **"Is the High Court of England and Wales bound (having regard to the terms and operation of the EC Type-approval legislation and pursuant to its duty of sincere cooperation) by the finding of the competent EU type-approval authority (the.. KBA, or by the [UK's] Vehicle Certification Agency (VCA) in this case) that a vehicle contains a defeat device in circumstances where that finding could have been, but has not been, appealed by the manufacturer; and/or is it an abuse of process for the Defendants to seek collaterally to attack the KBA's and VCA's reasoning or conclusions by denying that the affected vehicles contain defeat devices?"**

288. Although I have decided as a matter of substance that the software function is a defeat device under the Defeat Device Issue, it is necessary for me to determine the KBA Issue as well, even though it is strictly academic. That is because I may be proved wrong on the former, should the matter go further, and because I have been asked to determine it anyway and have had full argument.

289. So far as the KBA Letters are concerned, the Claimants contend as follows:

(1) They constitute decisions that the software function is a defeat device;

(2) Those decisions bind the Courts in Germany as a matter of German Law;

(3) They also bind other authorities in other Member States (including this Court) because:-

(a) They bind as a matter of EU law;

(b) Alternatively, they bind as a matter of German law and by reason of EU and/or English law, there is a conflicts rule to the effect that the question as to whether they bind here must be decided by reference to their binding effect or otherwise under German Law, being the law of the seat of the KBA.

290. I deal with the above matters in turn. Questions (1) and (2) are pure matters of German Law on which I have heard from the parties' experts.

291. As for the VCA Letter, the Claimants contend that this binds this Court because:

(1) It amounts also to a decision that the software function is a defeat device;

(2) As a matter of EU and/or English law, it binds here.

292. If the KBA and/or VCA Letters bind the Court here, then the Claimants contend that the Defendants' attempt to "re-litigate" the issue of the defeat device is itself an abuse of process. If they do not bind, the Claimants accept that there cannot be any relevant abuse.

293. The Defendants challenge each stage of the Claimants' case as set out above.

The Powers of the KBA

294. It is common ground, as already stated, that only the KBA can grant the type-approval for the affected VW cars. It is not open to the relevant authorities (or Courts) in other Member States to go behind the grant of type-approval by the KBA which is valid across the EU.

295. But the KBA, as an approval authority, has other powers too.

296. Thus, Articles 30 and 33 of the Framework Directive provide as follows:

> **30. Vehicles, systems, components or separate technical units not in conformity with the approved type**
>
> 1. If a Member State which has granted an EC type-approval finds that new vehicles, systems, components or separate technical units accompanied by a certificate of conformity or bearing an approval mark do not conform to the type it has approved, it shall take the necessary measures, including, where necessary, the withdrawal of type-approval, to ensure that production vehicles, systems, components or separate technical units, as the case may be, are brought into conformity with the approved type. The approval authority of that Member State shall advise the approval authorities of the other Member States of the measures taken.
>
> 2. For the purposes of paragraph 1, deviations from the particulars the EC type-approval certificate or the information package shall be deemed to constitute failure to conform to the approved type….
>
> 3. If a Member State demonstrates that new vehicles, components or separate technical units accompanied by a certificate of conformity or bearing an approval mark do not conform to the approved type, it may ask the Member State which granted the EC type-approval to verify that vehicles, systems, components or separate technical units in production continue to conform to the approved type. On receipt of such a request, the Member State concerned shall take the requisite action as soon as possible and in any case within six months of the date of the request.
>
> 4. The approval authority shall request the Member State which granted the system… or incomplete vehicle type-approval to take the necessary action to ensure that vehicles in production are brought back into conformity with the approved type in the following cases:
>
> (a) in relation to an EC vehicle type-approval, where the nonconformity of a vehicle is attributable exclusively to the nonconformity of a system, component or separate technical unit;..
>
> On receipt of such a request, the Member State concerned shall take the requisite action, if necessary in conjunction with the Member State making the request, as soon as possible and in any case within six months of the date of the request. Where a failure to conform is established, the approval authority of the Member State which granted the…EC type-approval or the approval of the incomplete vehicle shall take the measures set out in paragraph 1.
>
> 5. The approval authorities shall inform each other within 20 working days of any withdrawal of EC type-approval and of the reasons therefor.
>
> 6. If the Member State that granted EC type-approval disputes the failure to conform notified to it, the Member States concerned shall endeavour to settle the dispute. The Commission shall be kept informed and, where necessary, shall hold appropriate consultations with a view to reaching a settlement.
>
> **33 Notification of decisions and remedies available**
>
> All decisions taken pursuant to the provisions adopted in implementation of this Directive and all decisions refusing or withdrawing EC type-approval, or refusing registration or prohibiting sales, shall state in detail the reasons on which they are based. Any such decision shall be notified to the party concerned who shall, at the same time, be informed of the remedies available to him under the laws in force in the Member State concerned and of the time limits allowed for the exercise of such remedies."

297. In other words, the authority which is to impose the relevant measures in the event of non-conformity is the relevant approval authority ("the Relevant Authority") (i.e. for these purposes the KBA). Sub-

paragraph 3 then allows for an approval authority in any other Member State to request to the Relevant Authority to take appropriate measures where the former can show a lack of conformity. It is then for the Relevant Authority to undertake the measures required but if there is a dispute between the two authorities as to whether, and if so what action is required, there is a settlement mechanism which would involve the Commission effectively as a mediator. Albeit that in a case where the Relevant Authority takes measures following a request from another approval authority, it can include the latter in terms of any action to be taken, the only party which can decide what measures, if any, should be taken is the Relevant Authority.

298. Article 33 then requires the decisions made by the Relevant Authority to state their reasons and inform the addressee of their right to challenge those decisions.

299. Relevant parts of the Framework Directive were transposed into German Law by the Decree on EC Type-Approval ("EC-FGV"). Article 30 of the Framework Directive is dealt with by Section 25 of the EC-FGV as follows:

> **"Decree on EC type approval requirements for motor vehicles and their trailers and for systems, components and separate technical units intended for such vehicles (EC Vehicle Approval Directive - EC-FGV)**
> **§ 25 Ensuring conformity of production, cancellation and return**
> (1) If the Federal Motor Transport Authority discovers that vehicles, systems, components and separate technical units do not comply with the approved type, it can order the necessary measures for the relevant type in accordance with the applicable Directives 2007/46/EC, 2002/24/EC and 2003/37/EC in order to ensure conformity of production with the approved type.
> (2) The Federal Motor Transport Authority can retrospectively order supplementary provisions also for vehicles that are already on the roads, separate technical units or components in order to rectify deficiencies that have occurred and to ensure that the former comply with regulations.
> (3) The Federal Motor Transport Authority can cancel or withdraw the type approval in full or in part, in particular if it is discovered that
>
> 1. vehicles with a certificate of conformity or separate technical units or components with a prescribed marking do not comply with the approved type,
> 2. vehicles, separate technical units or components represent a considerable risk for traffic safety, public health or the environment,
> 3. the manufacturer does not possess an effective system for monitoring the compliance of production or does not apply this system in the manner envisaged or
> 4. the holders of the type approval breach the conditions associated with the type approval."

300. It will be noticed that each limb of section 25 has a pre-condition:

(1) under sub-paragraph (1) (necessary measures) it is that the vehicle does not comply with the type-approval granted;

(2) under sub-paragraph (2) (order supplementary provisions) it is that deficiencies have occurred with the vehicles or they do not comply with regulations;

(3) under sub-paragraph (3) (partial or full withdrawal of type-approval) it is that vehicles do not comply with the type-approval or there is a risk to traffic safety, public health or the environment, the manufacturer does not have an effective system to monitor compliance of production or there are breaches of the conditions imposed with the type-approval.

301. The third of these powers is obviously the most serious since any form of withdrawal of type-approval is likely to be of the utmost commercial seriousness to the manufacturer concerned. The first of these powers applies where there has been some actual deviation in production from the type-approval upon which the certificate of conformity is based. The second power, as I see it is, where there is a breach of relevant regulations whether or not there is also a departure from the specification set out in the type-approval.

302. It is not in dispute that without the establishment of one of the relevant pre-conditions the KBA cannot exercise any of these powers. That is a matter of "jurisdiction" as it were. In other words, and to use language familiar to English lawyers there is no provision for the making of a simple "consent order" by the KBA so as to exercise any of these powers but without the jurisdiction to do so having been established.

The KBA Letters

303. There are a total of three relevant decision letters from KBA ("the KBA Letters"). I deal with each in turn.

304. The first is dated 15 October 2015. The first 2 pages read as follows:

> **"Subsequent ordinance of an auxiliary requirement to an EC type-approval for whole vehicle approval, system approval**
> **- Volkswagen AG**
> Dear Sir/Madam,
> Pursuant to section 25(2) of the German Regulation on the EC approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles *(German EC VAR)*, subsequent auxiliary requirements for the granted type-approvals are ordered as of the date that this decision is delivered.
> The following subsequent auxiliary requirements are ordered for the system approvals listed in Annex 1:
>
> > [1] In order to guarantee regulatory conformity of the type EA 189 EU5 engine approved with this type-approval or one of its amendments, the prohibited defeat devices are to be removed pursuant to para. 2.16 of UN/ECE Regulation No. 83 in accordance with para. 5.1.2.1 of UN/ECE Regulation No. 83 and Article 3(10) of Regulation (EC) No. 715/2007 in accordance with Article 5(2) sentence 1 of Regulation (EC) No. 715/2007, and appropriate measures to restore conformity are to be taken, particularly in respect of emissions of the approved system following the removal of the defeat device. That conformity is to be substantiated by producing appropriate evidence.
> >
> > [2] The schedule and action plan submitted to the KBA on 7 October 2015 (Annex 2 – schedule and action plan) must be adhered to. Specific solutions are to be approved by the KBA before being applied out in the marketplace, including as to their effectiveness and technical feasibility, timescale, and the submission of additional documentation with regard to product recalls which are to be carried out. Depending upon further progress and the technical circumstances, the KBA will set definitive dates for each of the steps in relation to the product recall. Any deviations from the plan which become necessary must be agreed with the KBA in good time. The KBA must be provided with regular reports as to the success of the product recalls.
> >
> > [3] In the event that this ordinance is not observed, the German Federal Motor Transport Authority is entitled under section 25(3) German EC VAR to partially or completely revoke or withdraw the type-approval.
>
> For vehicles with 1968 cc engines with these type-approvals, the following subsequent auxiliary requirement is ordered:

> [5] By 21 October 2015, a binding general solution to the defect must be found and demonstrated with the aid of a vehicle equipped with the test software.
>
> For vehicles with 1598 cc engines with these type-approvals, the following subsequent auxiliary requirement is ordered:
>
> [6] A binding general solution to the defect must be demonstrated by 15 November 2015.
>
> For vehicles with 1199 cc engines with these type-approvals, the following subsequent auxiliary requirement is ordered:
>
> [7] A binding general solution to the defect must be demonstrated by 30 November 2015.
>
> The following subsequent auxiliary requirements are ordered for the whole vehicle approvals listed in Annex 1:
>
> [8] In order to guarantee regulatory conformity of vehicles, including those already on the market, equipped with engines to which the emissions system approvals relate (type EA 189 EU5 engines), which have been approved with this type-approval or one of its amendments, the prohibited defeat devices are to be removed pursuant to Article 3(10) of Regulation (EC) No. 715/2007 in accordance with Article 5(2) sentence 1 of Regulation (EC) No. 715/2007. In addition, appropriate measures are to be taken to restore conformity of the vehicles, which shall be achieved by restoring the conformity of the emissions system approval in accordance with Regulation (EC) No. 715/2007, as well as that of additional system approvals that may be affected; this is to be substantiated by producing appropriate evidence.
>
> [9] The schedule and action plan submitted to the KBA on 7 October 2015 (Annex 2 – schedule and action plan) must be adhered to. Specific solutions are to be approved by the KBA before being applied out in the marketplace, including as to their effectiveness and technical feasibility, timescale, and the submission of additional documentation with regard to product recalls which are to be carried out. Depending upon further progress and the technical circumstances, the KBA will set definitive dates for each of the steps in relation to the product recall. Any deviations from the plan which become necessary must be agreed with the KBA in good time. The KBA must be provided with regular reports as to the success of the product recalls.
>
> [10] In the event that this ordinance is not observed, the German Federal Motor Transport Authority is entitled pursuant to section 25 (3) German EC VAR to partially or completely revoke or withdraw the type-approval."

[numbers in square brackets added]

305. It is common ground that in German administrative law parlance, this first section of the letter constitutes the "tenor" of the decision i.e. the specific action or remedy required or (if any) formal declaration. It will be noted that this was a decision made under s25 (2), dealing with "deficiencies" and remedying non-compliance with regulations. The relevant deficiency or non-compliance is stated in paragraphs [1] and [8] as being the "prohibited defeat devices". They were prohibited because they were in breach of paragraphs 2.16 and 5.1.2.1 of Regulation 83, along with Articles 3 (10) and 5 (2) of the Regulation, all of which has been considered above.

306. The next 11 pages of this Letter set out the history of the issue of the defeat devices and detailed findings by the KBA as to why they were properly to be regarded as such. VW had previously submitted to the KBA an "action plan" which in essence involved recalling all affected vehicles in order to undertake the software fix, such plan to be approved by the KBA and to which VW would submit. However, and at the same time, VW was maintaining in correspondence with the KBA either

from itself or from its lawyers in Germany, Freshfields, that there was no such defeat device and, by implication therefore, no non-compliance.

307. Whatever VW may have thought when it sent in the proposed action plan, its stance was in fact impossible. If the KBA agreed that there was no defeat device, it could not order the action plan even if VW was happy to comply with it. If it wished to order the action plan, as VW was inviting it to do, the KBA had to conclude that there was a defeat device. As noted above, this was a matter of jurisdiction as far as the KBA was concerned. In other words, it could not merely approve the action plan without the necessary findings.

308. To take compliance with Articles 3 (10) and 5 (2) of the Regulation as an example, I set out the relevant passages from the first letter.

> "In the written statement of 7 October 2015, Volkswagen AG also states that each time the engine is started the exhaust gas recirculation mechanism in Mode 1 is active when taking the operating curve recorded in the ECU, with the operating curve only covering the route taken by the vehicle over time in the NEDC with low tolerance levels of 1 % to 2%. In the event of a deviation from this during the real-life operating curve as a result of the relevant tolerance thresholds being exceeded, this triggers a departure from the operating curve described and the set-up for normal operation and use is then activated. It is further stated that a return to the application as per the operating curve described, i.e. a return to EGR Mode 1, only occurs the next time the engine is started. In the present case, as mentioned above, the EGR Rate is changed depending on the mode selected, which means that a modulation of the function, in this case the EGR, takes place.
> In addition to that, the EGR must be part of the emission control system. Under UN/ECE Regulation No 83, a pollution or emission control system means the components of a vehicle that control and/or limit exhaust emissions (and evaporative emissions, which are not relevant here)…
> In the written statement submitted by Volkswagen AG of 7 October 2015 it is also explained that a set-up (Mode 0) for normal operation and use of the vehicle has been recorded in the ECU, in which the physically/chemically inseparable coupling of the formation of nitrogen oxides (NOx) and the particles in the engine-based combustion is configured in such a way that the particles formed exhibit a sufficiently low level to ensure durability of the particulate filter (DPF). In addition, there is an operating curve in the ECU which is active after each time the engine is started, and in the course of activation it controls the EGR (Mode 1) in such a way that less NOx and thus more particles are produced during engine-based combustion…
> The EGR must thus be understood as a pollution control device and thus as part of the emission control system if it is capable of controlling the exhaust gas emissions…
>
> In the written statement of 7 October 2015 Volkswagen AG states that in Mode 1 the EGR is controlled in such a way that less NOx and more particles are produced during engine-based combustion; this means by logical implication that in Mode O more NOx and less particles are produced during engine-based combustion…
>
> Even though the term "effectiveness" has not been more specifically defined in either the legislation or by any statements made by the European Commission, in the present context of a reduction in the effectiveness of the emission control system, this term can be interpreted to mean that the exhaust as emissions are not allowed to increase. …a reduction in the effectiveness of the emission control system takes place; the rule does not provide for any counteracting or offsetting of the reduction of the effectiveness in relation to one emission limit, as set out in the memorandum prepared by law firm Freshfields Bruckhaus Deringer dated 6 October 2015, by means of improving the effectiveness in relation to other emission limits that are to be observed. However, it is necessary that this reduction of the effectiveness of the emission control system occurs under conditions which may reasonably be expected to be encountered in normal vehicle operation and use…
> In this respect Volkswagen AG also states in its written statement of 7 October 2015 that there is an operating curve in the ECU which is active after each start of the engine, and in the course of activation it controls the EGR in Mode 1 in such a way that less NOx and more particles are produced during engine-based combustion. The written statement goes on to illustrate that when the tolerance levels are exceeded the operating curve departs Mode 1 and the set-up for Mode O is activated for normal operation and use, with a return to the application of Mode 1 only taking place the next time the engine is started.
> Volkswagen AG clearly and unambiguously stated that every time the engine is started the EGR is always initially in Mode 1 and switches to Mode O if the tolerance thresholds for the NEDC synthetic driving cycle are exceeded. From a practical perspective, starting the engine at the beginning of each journey to be travelled is a

> condition that may reasonably be expected to be encountered in normal vehicle operation and use. After the engine is started in normal operation and use, some form of driving behaviour then follows…in practice, it is not possible to drive outside the emissions testing cycle without a change of the EGR Mode from Mode 1 to Mode O (as a result of exceeding the tolerance levels for the NEDC driving cycle). This means that at each engine start and subsequent driving - to be understood as normal operation and use in real life - the EGR is started in Mode 1 with low NOx emissions and then Mode O with higher NOx emissions is activated. Therefore, the reduction of the effectiveness of the emission control system occurs under conditions which may reasonably be expected to be encountered in normal vehicle operation and use.
>
> Therefore, a prohibited "defeat device" under paragraph 2.16 UN/ECE Regulation No 83 - 06 series of amendments - was used in the present case."

309. The KBA then went on to find that there was a prohibited defeat device within the meaning of Articles 3 (10) and 5 (2) of the Regulation by essentially the same reasoning.

310. The particular arguments raised by VW and addressed by the KBA were as follows, using terminology from my judgment on the Defeat Device Issue:

(1) The Locational Argument;

(2) The Functional Argument;

(3) An argument that for Article 3 (10) to bite at all, the mode switch had to take place all in the course of using the vehicle in normal road conditions. That argument was not pursued before me; neither the True Comparator nor the Holistic Arguments were made to the KBA.

311. In response, the KBA held as follows:

(1) The EGR was part of the ECS;

(2) The software function changed the operation of the EGR;

(3) Mode 0 (which is the same as Mode 2 in the parlance of this case) will produce greater NOx emissions than Mode 1 because of the lowered EGR rates;

(4) Since Mode 1 would operate at every engine start, if only briefly, before the test cycle parameters were exceeded, before reverting to Mode 2, there was a switch between modes during normal operations and use of the vehicles;

(5) As a result of the switch, the effectiveness of the ECS was reduced;

(6) None of the exceptions in Article 5 (2) applied;

(7) There was therefore an impermissible defeat device;

(8) The measures taken by the KBA in the light of this constituted a proportionate response.

312. Finally, the Letter ended thus:

> *"Information on right of challenge :*
> This decision can be challenged within one month after notification. The challenge is to be made in writing or orally for recording to the Kraftfahrt-Bundesamt (German Federal Motor Transport Authority).."

313. The particular measures to be adopted (subject to the time limits specified in the body of the letter) were contained in Annex 2 thereto, being the action plan submitted by VW itself dated 6 October 2015.

314. The Second KBA Letter, of 20 November 2015, was to much the same effect save that it applied to EU3 and EU 4 engines, whereas the First Letter applied to EU 5 engines, and the binding general solution for all engine sizes had to be provided by 30 November 2015.

315. The final KBA Letter, dated 11 December 2015 was addressed to Audi AG and made reference to approvals for "Volkswagen AG: Audi-branded vehicles". The measures here were said to be taken pursuant to s25 (1) not 25 (2) of the EC-FGV. The powers under the former sub-section arise where there is non-conformity with the underlying type-approval. The stipulated measures were required in order to bring such vehicles back into conformity with the approval. In other words, the presence of the defeat device meant that they did not conform to the approval. Otherwise, the substance of the Letter is the same as the earlier ones, particularly with regard to the finding that there was a prohibited defeat device.

The Import of the KBA Letters

316. Both experts agreed that the only part of an administrative decision like those contained in the KBA Letters which is binding is its "tenor", or regulatory content. Both agreed that even where the finding was clearly part of the reasoning leading to the ultimate order, and even where it was the answer to a "preliminary question" which had to be answered before the order could be made, the key point is still what was contained within the tenor. Here, both agreed where the tenor was to be found and it was within the first two pages, together with Annex 2 which was referred to therein.

317. However, Prof. Hofmann, for the Claimants, said that the tenor here also included a finding that there was an "impermissible defeat device" which was referred to within the tenor. The fact that the reasoning leading to that conclusion was not within the tenor but within the remaining body of the Letter was neither here nor there. He considered this conclusion to be unsurprising, since it formed the foundation for the KBA to be able to make any order at all.

318. For his part, Prof Schröeder said that the findings as to the defeat device constituted no more than a "preliminary question" to be answered before the authority exercised its power. That was insufficient for inclusion within the tenor. The problem with that analysis, in my view, is the reference to the impermissible defeat device in the tenor. If that reference is to be seen as a finding to that effect then, while the reasoning comes later, such a finding would be within the operative part of the Letter. As to that, all that Prof Schröeder could say was that this was not a finding of a defeat device but merely a shorthand expression for the subject of the argument between VW and KBA as to whether it was a

defeat device or not. I regard that suggestion as wholly unconvincing. The expression "impermissible defeat device" was not qualified in any way, such as following the word "alleged" and there was no reason for it to be qualified since in the body of the Letter the KBA had found precisely that.

319. I accept that the tenor does not contain a formal declaration, in a separate line, that there was an impermissible defeat device but I do not consider that, as a matter of German law, this was necessary in order for the reference to the impermissible defeat device contained within paragraph [1] of the Letter to form part of the tenor. In this regard, I preferred the evidence of Prof Hofmann who said that a formal declaration was not necessary and the expression "impermissible defeat device" clearly did constitute a finding to that effect. He agreed that it would have been better if the finding of impermissible defeat device have been set out in a separate paragraph but this was not fatal provided that the finding was sufficiently clear, and I agree with him that it was.

320. In cross-examination, Prof Hofmann was referred to the decision of the Federal Court of Justice dated 4 February 2004 to which he had referred in his report. There, the relevant regulatory authority's decision was that approval of a rental agreement was refused. The finding at issue was the prior one that tenancies of this kind required approval in the first place. While that might have been implicit in the order made - and would explain why the authority considered that it had to decide whether to approve or not, this finding was not included in the tenor. Whereas in our case, the relevant finding was. Moreover, as the Claimants put it, here, it was inextricably linked in the tenor to the order to remove it.

321. The Court in that case held that the finding that approval was in fact required for such a tenancy was not binding upon it. It gave numerous reasons for that view. The first reason was that the decision did not bind because it was not a Court decision. Another was because it was not in the "decision" but merely a "simple preliminary question". Prof Hofmann said that the decision had been open to some criticism generally because it failed to respect the separation of powers but he accepted what the Court had said when it made the point of about the finding not being in the "decision" of the authority i.e. its tenor. However, that does not matter, since in our case, it was. That, in my judgment, is the key point of difference, for present purposes.

322. Prof Hofmann was also referred to a decision of the Federal Administrative Court of 15 June 2016. This was in the context of how a public order should appear and that, according to this decision, the tenor must have "objective explanatory value." The question was how the recipient of the order had to understand it, in good faith, in the circumstances pertaining to the recipient at the time. This debate arose in the context of Prof Hofmann agreeing that the tenor should not be ambiguous and any question of ambiguity should be resolved in favour of the addressee. He agreed that one would have to take into account how a recipient would interpret it but it was not up to the perspective of the

recipient to interpret the tenor. Here, I do not think he was saying anything other than while one has to look at the way in which a recipient would read the tenor, that does not mean that the subjective view of the recipient in question was determinative. The decision of the Federal Administrative Court was that any public order should have "objective explanatory value." The question was how the recipient had to understand the decision in good faith in the circumstances existing at the time. I do not think that in truth that was really different from what Prof Hofmann was saying. In any event, in our case, the finding of impermissible defeat device in the tenor clearly passed that test. It would be ludicrous to suggest (and it was not) that VW did not understand what finding was made; indeed we know that it was under no illusions about the finding as to defeat device because it made a conscious decision not to appeal, not because of any misunderstanding of the Letters, but as a practical and commercial reaction to them. See further paragraph 370 below.

323. Turning to a different point, I do not consider that because the KBA may have chosen the wrong route to the measures ordered (i.e. s25(2) instead of s25 (1) as featured in the last Letter) it makes any difference. The way in which the defeat device was treated in the Letters and its jurisdictional basis for any action remains the same. The Defendants argued that when the KBA made its orders in the first three Letters purportedly pursuant to s25 (2) it was not in fact exercising any powers derived from Article 30 of the Framework Directive at all. I do not agree and in any event this matter was not put to the experts. In fact, Articles 6 (2) and 9 (6) of the Implementing Regulation would cover the KBA's ability to order the necessary measures to be taken.

324. Nor do I think it matters whether the KBA had the express power to make a formal declaration as to defeat device within the confines of s25. Indeed, in cross-examination, Prof Schröeder was disposed to agree, if (contrary to his view) the tenor of the Letters included a finding that there was a defeat device. The real question for him was not the source of any declaratory power but whether in truth the tenor did include such a finding.

325. Further, Prof Hofmann is supported in his approach by some German cases which treated the KBA Letters as binding on the question of defeat device. For these purposes I record that the relevant first instance court is the Landgericht ("LG"), the Regional court. Appeals from this court are heard by the Oberlandgericht ("OLG"), the Higher Regional court. Finally, for present purposes, appeals from the OLG are heard by the Bundesgerichtshof ("BGH"). Because these cases also pronounced upon the underlying substantive issue (as referred to in paragraph 272 above) I also make reference here to those pronouncements.

326. In the OLG Koblenz decision, 12 June 2019, which concerned a claim by an individual against VW, the Court observed at paragraph 26 that:

> "As evidenced by the final decision of the KBA, the engine of type EA 189 contains impermissible defeat device pursuant to Article 3 no. 10 of [the]…Regulation…This alone satisfies the Senate that the existence of an impermissible defeat device is to be assumed. The submission by the Respondent denying this therefore remains of no significance."

327. That said, the Court went on to say in paragraphs 27 and 28 as follows:

> "27. Notwithstanding the above, after an independent appraisal by the Senate it is also established that an impermissible defeat device and not merely a purely internal engine management device, is present.
> 28. The…[BGH] .. Has also already indicated that an impermissible defeat device exists (… Indicative ruling of 8 January 2019…). The Senate adheres to this indicative ruling…
> 31. Based upon these broadly defined regulations, the software installed in the vehicle belonging to the Applicant is nothing other than an impermissible defeat device pursuant to Article 5 (2)… (See also Koblenz Higher Regional Court-… Decision of 27 September 2017). This is because such software recognises whether the vehicle is undergoing the test cycle will be determination of emissions level and if this is the case switches to modus 1, in which the amount of exhaust gases are recirculated within the engine increases resulting in a reduction in the level of NOx output. In use under normal road traffic conditions the software activates modus 0, in which there is a lesser amount of exhaust gas recirculation; the software therefore uses technical parameters in order to determine the current type of operation of the vehicle-test procedure or real-life operation-and activates or deactivates accordingly the exhaust gas recirculation, which directly impacts on the effectiveness of the emissions control system."

328. This was similar to the reasoning of the BGH Advisory Opinion set out at paragraph 274 above.

329. Further, at paragraph 35 the Court rejected VW's contention that the employer software was merely an internal engine management device, because of the fact that it altered the emissions control system.

330. In the OLG Naumburg decision of 27 September 2019, the Court observed thus:

> "With regard to the engine control software installed therein, the purchased car was afflicted with a considerable material defect as defined by § 434 (1) S. 2 No. 2 BGB (German Civil Code), which the [BGH] .. confirmed in its advisory opinion dated 08 January 2019..; it justified this by stating that the vehicle was equipped with an inadmissible defeat device on the basis of which there was a risk of an operating ban by the authority responsible for admission to road traffic at the time the purchase contract was concluded and the suitability of the item for normal use (use in road traffic) was therefore lacking.
>
> The fact that the software installed by the defendant is a prohibited defeat device in accordance with Article 5(2) of Regulation (EC) No 715/2007 follows from the final decision of the Federal Motor Transport Authority of 15 October 2015 addressed to the defendant. The Federal Motor Transport Authority thereby issued subsequently ancillary provisions to the EC type-approval granted for the drive unit at issue, which are intended to remove the impermissible defeat device and take appropriate measures to restore compliance. In the grounds for its decision, the Federal Motor Transport Authority, after a detailed examination of the objections raised by the defendant, came to the conclusion that there is an "impermissible defeat device", the removal of which is necessary. Following its own critical examination, the Senate refers to the arguments of the Federal Motor Transport Authority cited in the decision."

331. The Court then referred to and adopted the reasoning of the BGH Advisory Opinion.

332. Although, as with the OLG Koblenz decision, the Court here did not make reference exclusively to the KBA Letter, it seems to me that it was among other things considering that it was bound thereby, as it stated that the fact that it was a defeat device "followed" from the decision of the KBA.

333. The LG Braunschweig decision of 31 August 2017 stated as follows in the context of a tort claim brought by a VW owner against VW:

> "67 A prohibited defeat device within the definition of Article 5(2), Article 3 no. 10 of Regulation (EC) No 715/2007 was included in the Claimant's vehicle.

> 68 This has been determined by the KBA and is accordingly binding upon the Court (see aaa directly below). But even if the Court were not bound to this, this finding is also correct in the opinion of the Court (see bbb below)…."

334. The Court then referred to the first page of the KBA Letter including the reference to prohibited defeat device and then continued as follows:

> "73 An extract from the grounds for the order reads as follows:
> 74 "There is a prohibited 'defeat device' as per Art. 3 no. 10 of Regulation (EC) No 715/2007…
> 76 According to Article 5(2) of the same Regulation, the use of defeat devices which reduce the effect of emission control systems (cf. II.1.3.) is prohibited. Consequently, vehicles in which the part, described by Volkswagen AG and referred to above, is installed do not meet the requirements for type-approval as per Regulation (EC) No 715/2007. Therefore, these vehicles should be deemed non-compliant."
> 77 This order has not been contested and is therefore final. Apart from the exceptional cases in the area of administrative liability where the breach of an administrative duty arises in the promulgation of an unlawful administrative act (in this regard, see for example BGH, judgment of 18 November 2010, III ZR 239/09, margin no. 12 - cited from *juris*), such irrefutable administrative acts have a binding effect, which means that the civil courts must accept as binding upon them both the fact of the promulgation of the administrative act as well as the finding and/or the rule associated with that administrative act (in this regard, see for example BGH, judgment of 30 April 2015, I ZR 13/14, margin no. 31; BGH, decision of 16 December 2014, EnVR 54/13, margin no. 19; BGH, judgment of 21 September 2006, IX ZR 89/05, margin no. 14; BGH, decision of 12 January 2006, IX ZB 29/04 margin no. 7 - each cited from *juris*). This binding effect does not, however, extend to mere preliminary issues regarding the finding or rule concerned (BGH, decision of 12 January 2006, IX ZB 29/04 margin no. 7 – cited from *juris*).
> 78 In the opinion of the Court, based on the order of the KBA of 15 October 2015 within the meaning of a decision with binding effect upon the court, it should be presumed that a prohibited defeat device was installed in the vehicles in question, i.e. including the vehicle of the Claimant.
> 79 Although the KBA did not make such a finding separately, the additions promulgated in the decision are based on an explicitly stated premise that a prohibited defeat device was installed in the vehicles in question. The KBA has explained this legal opinion in detail in the grounds of its order. The "prohibited defeat devices" to be removed are also mentioned explicitly in the operative part of the order."

335. This reasoning is precisely on point with regard to the binding nature of the KBA's finding of a prohibited defeat device. While the Court then went on to come to its own conclusions (to the same effect) this does not detract from what it said in these paragraphs. In the event, the Court found that the claimant there had no viable claim in tort but in my view this does not negate the utility of its findings that it was bound by the KBA. This decision was upheld by the OLG on appeal on 19 February 2019. Consistent with his position, Prof Schröeder stated (as he had to) that this decision was wrong. But I do not think that it was, and it remains a decision of which I can and should take note.

336. For the sake of completeness I should say that the Court's own detailed finding to the effect that this was a defeat device was set out in paragraphs 84-87. It concluded that it "indisputably" was and rejected, again, a form of Locational Argument.

337. On 30 August 2019, the LG at Gera decided to make a reference to the CJEU. At paragraph 8 of the summary of the request for a preliminary ruling, dealing with the basis for the reference, the Court stated:

> "It firstly finds that an impermissible defeat device within the meaning of Article 5 (2) and Article 3.10 of [the] Regulation… has been used in the construction of the car at issue. The corresponding decision of the [KBA].. is final and has a binding effect for the civil proceedings."

338. The question posed for the CJEU was not the existence or otherwise of a defeat device, but rather what civil claims might arise as a result. [3]

339. In other cases, for example, the LG Stuttgart decision dated 8 February 2018, the Court simply decided the issue of defeat device for itself. At paragraph 27 it concluded that the software function of the Engine and the differential operation of the modes fell within Article 3 (10). It then stated as follows:

> "28. The distinction made by the defendant between "so-called internal engine measures" and "exhaust gas cleaning in the emission control system" cannot be inferred from the regulation and clearly contradicts its purpose. Emission control as defined by the Regulation is not limited to the cleaning of exhaust gases. By returning part of the exhaust gases (emissions) to the combustion process in the engine, emissions are controlled. This part of the control system is switched off by the driving cycle detection. The defendant's interpretation is also obviously contrary to the purpose of the Regulation, whereby the test procedure should, as far as possible, reflect the behaviour of the vehicle under normal operating conditions. Art. 5 (1) EC Reg. 715/2007 explicitly stipulates that the manufacturer must equip the vehicle in such a way that the components likely to influence the emission behaviour are designed, manufactured and installed in such a way that, under normal operating conditions, the vehicle complies with this Regulation and its implementing measures. Recital 15 of the Regulation refers to the objective that emissions measured during type-approval tests should be equivalent to those measured in practical driving conditions. By contrast, the defendant's engine management system is not linked to specific operating conditions or environmental conditions, but exclusively to the NEDC's findings, and is therefore deliberately aimed at controlling emissions in the exceptional case of an approval test.
>
> 29 Since the inadmissibility of the defeat device has been established to the court's satisfaction, the question of the binding effect of the decision of the Federal Motor Transport Authority is irrelevant."

340. The defence advanced by VW and rejected by the Court in paragraph 28 appears to be a version of the Locational Argument.

341. In the Advisory Opinion of the BGH dated 8 January 2019, there was no reference at all to the KBA Letter. As to that, Prof Schröeder said that the absence of any reference to the KBA Letter at all showed positively that the BGH itself rejected the notion that it was bound by the KBA. On a fair reading of this decision, I do not think that one can infer this conclusion at all. It seems likely that the point about the KBA Letter being binding was not argued one way or another.

342. I see no difficulty in the fact that some Courts did not refer to the KBA Letter and others, while they did, decided the matter for themselves anyway. I accept that as a matter of strict theory (as would be the case in England too) if there is a binding decision then the court so bound should simply follow it without exploring the matter for itself. But the mere fact that the court does so, whether strictly entitled or not, assuming (a) that it correctly found that it was bound but (b) would come to the same conclusion anyway, is no evidence that it is <u>not</u> so bound. It is merely the court being pragmatic. It is precisely why I have decided the case on substance here. What there is not before me, is any German (or other) decision to the effect that the KBA Letter does <u>not</u> bind.

[3] See also the Confidential Annex.

343. Accordingly, there is real support in German case-law for the view that the effect of the KBA Letters as contended for by the Claimants is correct, and there is no support for the Defendants' position.

344. It is not in dispute that whatever is properly to be regarded as part of the tenor of the KBA Letters, they do bind other authorities and Courts in Germany as a matter of German law. Put another way, if (as I have found) the Defendants are wrong to say that the finding that there was a prohibited defeat device was not part of the tenor, it must inevitably follow that the KBA Letters are binding on that point in Germany.

VW's Ability to Appeal

Background to the KBA Letters

345. I need to say something more about the background here as a preliminary to the question of VW's ability to appeal the Letters.

346. On 25 September 2015 (i.e. very shortly after the Emissions Controversy emerged), and following meetings with VW on 23 and 24 September, the KBA wrote to VW asking for its response to a number of questions by 7 October. By this stage, VW had accepted that the affected vehicles were using a software function to differentiate between the two modes. The KBA was concerned that the relevant type approval granted might not conform to the Regulation, that defeat devices were being used and that the affected vehicles were not themselves in line with the type-approval granted due to manipulation. Accordingly, there was a case of non-conformity, and appropriate measures should be ordered to bring the vehicles back into line with the type approval. In its response to these concerns, VW was to:

> "provide a formal, binding declaration on whether your company sees itself as being in a position to remedy the technical issues admitted with regard to the aforementioned engines in accordance with Regulation (EC) No 715/2007. In addition, we expect you to submit a binding action plan and time schedule setting out how long it will take before this technical solution can be implemented for vehicles already in circulation."

347. As to the defeat device allegation, while the differential between the two modes was accepted, VW said that there was no defeat device because no part of the ECS was shut down. Rather, any change in the EGR rate occurred in the combustion chamber. In other words, this was the Locational Argument referred to above. Nonetheless, VW stated that it was working to remove the "switching logic" and would carry out a voluntary recall for all affected vehicles. For 2 L engines the software changes would be implemented as January 2016 and later for other engines.

348. On 30 September 2015, VW emailed the KBA, stating that plans would be drawn up to deal with the software defects, with feasibility studies to be produced for 1.6 L engines at the beginning of November 2015, 1.2 L engines at the end of November and 2 L engines by 21 October. The adjustments to the 2 L engines would start in January 2016.

349. A detailed presentation to KBA was made on 6 October including a number of slides. This included a timeline for software and other adjustments. These dates were incorporated into the body of the First KBA Letter and the presentation was annexed to it as Annex 2. The Second KBA Letter of 20 November addressed EU Type 3 and Type 4 engines. It ordered VW is a binding general solution for EU3 and EU4 engines by 30 November.

350. On 26 November VW wrote to the KBA saying that it could not meet the 15 November deadline for the Type 3 and 4 engines although it had met all the deadlines for the type 5 engines. They would have a meeting that day. A translation of the notes for part of that meeting suggests that VW wanted the EU type 3 engines to come out altogether because there was only a small number of them. The measures involving those engines "is seen as disproportionate". The Claimants contend that this expression is referring to VW seeing it as disproportionate while VW says that this was the view of the KBA. In this context, I think it must be a reference to VW contending that it was disproportionate because it wanted it taken out. It also sought a later date for corresponding measures for the type 4 engines, namely 18 December 2015.

VW's Ability to appeal

351. This question has developed into a substantial issue between the parties, although in my view, its importance has been overstated. It emerged almost by a side wind at the first CMC conducted by me in March 2019. The point was made there that the KBA had issued its Letters and VW had not appealed them so that (whatever they were) they were final. At that early stage, before expert evidence had been taken, it was questioned by the Defendants whether VW had a right to appeal at all.

352. The position is now much clearer. As the Letters state in their final paragraphs, there is a right to appeal to the German Administrative Court and thereafter to a higher appellate court. It would be surprising if it were otherwise, given the significance for a manufacturer of an adverse decision of an approval authority like the KBA. It would also run counter to Article 33 of the Framework Directive.

353. However, the Defendants then contended that in reality VW had no right of appeal because it had consented to the KBA's decision in the first place and/or had waived any such right.

354. That then led to a debate between the experts as to whether VW would have been debarred from appealing had it wished to do so.

355. In this regard, Prof Hofmann said that there was a difference between proffering a voluntary course of action and having it embodied in a binding order, non-compliance with which could lead to the relocation or withdrawal of type-approval which would be catastrophic for the Defendants. The possibility of that consequence in the event of breach was expressly stated in the Letters. Further, he said that while the substance of the action plan had been accepted by the KBA, fixed dates were

imposed and the extension later granted was, in effect, upon application to the KBA by the Defendants.

356. Both experts agreed that the form of appeal contemplated here was akin to a judicial review of the administrative acts of the KBA, as opposed to what we might call a full rehearing. In order to have *locus* they agreed that it was necessary for an appellant to show:

(1) that the administrative act in issue violated a subjective (justiciable) right of the person seeking a remedy (*per* section 42 (2) of VwGO (ie Verwaltungsgerichtsordnung – German Code of Administrative Court Procedure);

(2) further, and by way of an unwritten requirement, the appellant must have a plausible or "legal" interest in pursuing the appeal.

357. As for the violation of a right, both experts essentially regard this as the same as showing that the administrative act in some way constituted a burden on the party affected. Prof Schröeder said that it did not, because all the KBA Letters did was to adopt exactly what VW had voluntarily offered. In that sense, VW had already waived or abandoned any pre-existing right to leave the vehicles in their existing state. Therefore, whatever else the KBA Letters did, they did not impose any real burden upon VW at all. On the other hand, Prof Hofmann stated that following the proffering of the action plan, the resulting KBA Letters were a real burden on VW because it was now bound by specific dates and subject to the serious consequences of non-compliance referred to above.

358. In cross-examination, Prof Schröeder did not see this as a real difference on the basis that the voluntary action plan offered by VW would inevitably have to be approved and adopted, as it were, by the KBA. So VW must have contemplated a measure of control at the outset. However, he was also asked to deal with the question of dates. It was put to him that, for example, the first Letter stated that the general solution for the 2 L engine had to be found by 21 October, whereas the proposal from VW did not commit to that date and instead referred to the beginning of 2016. He then agreed that if VW did not agree to provide the solution by 21 October, perhaps because it could not do so, its only option would have been to appeal and that this was a course at open to it. In fact, it appears that there was not any discrepancy here between the date offered and the date ordered. Annex 2 to the First Letter indicates that the "general solution" was to be provided by Week 43 i.e. 21 October which is when the vehicle would be "presented" to KBA; also, the date for showing a general solution and the date for starting to implement the adjustments are different things. However, it seems to me that the same logic would follow even on the footing that the KBA Letter had adopted the dates suggested by VW, but VW subsequently found that it could not comply and yet KBA refused to extend. It is hard to see what VW could do, other than appeal.

359. It appears that Mr Gerwin Postel, VW's Senior Counsel saw that there was a difference between a voluntary recall which involved simply reporting it to the authorities, and one ordered by the authorities where the manufacturer must comply with the stipulation of the officials. See note 169 of the internal corporate communication from Mr Postel dated 6 November 2015. I agree that this is a real difference.

360. On this point I prefer the evidence of Prof Hofmann to the effect that the KBA Letters did interfere with VW's subjective rights.

361. As to the second requirement of there being a plausible or legal interest in appealing, in my view, if the reason for the appeal was to extend dates, there was obviously such an interest.

362. Going further, Prof Hofmann's evidence was to the effect that even though VW had submitted a voluntary plan of action, it could appeal any of the KBA Letters, including the defeat device findings therein in any event. He said that VW could in any event in theory change its mind and seek to appeal so as to reverse out of the whole of the adopted plan. He was criticised for saying this because it would surely never happen, given VW's pronouncements about the technical measures. However, in my view, whether such an appeal was likely to happen is not the point. There is a difference between a right to appeal (in the required German law sense of judicial review) and whether or not a party will exercise it.

363. A further point was made that any appeal would serve no purpose because if the decision of the KBA was reversed, the order for technical measures would go, and then VW would be exposed to withdrawal of type-approval. But that is not correct. If there was a successful appeal including on the question of defeat device, there would then be no basis for the KBA to act at all, including revoking the type-approval since there would have been no prohibited defeat device in the first place.

364. Prof Schröeder was asked about the ability of VW to appeal KBA's finding that there was a defeat device. He said that it could not because this was only a preliminary (although necessary) requirement for the action it took in terms of the measures. However, that depends on his view that this finding was not in the tenor of the Letter, which I have rejected above. Furthermore, Prof Schroeder later accepted that on any appeal by VW on the question of dates, it could, in that appeal challenge the finding that there was a defeat device. In that regard, he accepted that VW would have a legal interest in bringing such an appeal.

365. In the course of the cross-examination, the Defendants put to Prof Hofmann the decision of the Schleswig-Holstein Administrative Court 3rd Chamber dated 13 December 2017 and they subsequently relied upon it in argument. By that decision, the Court rejected a claim by an environmental organisation to have the decisions in the KBA letters annulled. This was on the basis

that the scheme of technical measures ordered effectively sanctioned the prior use of the prohibited defeat devices, that the technical measures had not been examined properly and that there would still be high NOx emissions. It argued that the legal consequence of annulment would be that the underlying type-approvals were no longer valid and VW should, in effect, start all over again. A reference to the CJEU was also sought. The Court rejected the claim on numerous grounds. These included the fact that the claimant organisation did not have a legitimate interest in bringing the claim because it would not achieve anything to its advantage. The claim would have been pointless because the annulment of the KBA Letters would have left the underlying type-approvals in place, for the very detailed reasons given by the Court. So the proposed claim could not achieve what the claimant organisation wanted. I do not see how that case assists here on the question of VW's putative plausible or legal interest in an appeal in the very different circumstances discussed above. Had VW, as the addressee of the KBA Letters, wished to appeal to deal with dates and/or the finding as to defeat devices, it could hardly be said to be pointless. If it succeeded, there would be a real and different outcome. That was also the thrust of Prof Hofmann's response here.

366. Again, in general, I preferred the evidence of Prof Hofmann to the effect that if VW wished to appeal it would have a plausible or legal interest in so doing. That accords in my view with common sense, given the jurisdictional basis which the KBA needed before making an order such as this – and whether it adopted in principle a voluntary course of action proposed by a manufacturer or whether it imposed it upon an unwilling manufacturer.

367. VW's conceptual problem in dealing with all of this at the time was that in truth it was trying to have it both ways. Namely the adoption of a voluntary plan to avoid a full recall or withdrawal of type-approval and yet without any admission (or finding) of there being a defeat device. As already explained, the KBA could not operate in that way.

368. Moreover, each Letter notified VW of its rights to appeal. Prof Hofmann was criticised by the Defendants for his emphasis on the significance of the appeal notification part of the Letters on the basis that it was completely unnecessary in respect of the second Letter since this was merely granting an extension of time as sought by VW. I do not agree; again, if VW wanted thereafter to change the dates and KBA would not agree, all it could do would be to appeal. I do not agree with Prof Schröeder that this notification of a right to appeal can be ignored being a mere matter of a standard form and was unnecessary (indeed inapplicable) verbiage.

369. Had VW decided to appeal any of the Letters, I do not believe that the German Court would have accepted a suggestion from KBA that all rights of appeal had been abandoned and the appeal notification itself was a mistake.

370. As it so happens, we know why VW did not appeal and why it was content to live with consequences of its own proposal. In the Q&A document dated 7 December 2016, produced for use externally by VW and its representatives, putative question 89 reads thus:

> **"89. Is Volkswagen taking – or has it already taken – action against the German Federal Motor Transport Authority to counter the allegations of manipulation?**
> Volkswagen did not appeal against the Federal Motor Transport Authority's decision of October 15, 2015. The software in vehicles with EA 189 engines does not, in Volkswagen's opinion, constitute a forbidden defeat device under European law. Although this understanding of the legal position as presented by Volkswagen is at variance with the Federal Motor Transport Authority's legal appraisal, Volkswagen purposefully chose not to appeal against the Federal Motor Transport Authority's decision of October 15, 2015. Volkswagen wishes – specifically in the interest of customers – to work hand in hand in a constructive and cooperative spirit with regulatory authorities such as the Federal Motor Transport Authority in order to implement the agreed action plan as quickly as possible. It is important to prevent any dispute from jeopardising this close working relationship."

371. It should also be remembered that as against the VCA, VW accepted that there was a defeat device (see paragraph 424 below).

372. At the end of the day, I am quite satisfied that (a) a right of appeal attached to the KBA Letters and (b) VW could have appealed, had it wished to do so, despite the KBA Letters resulting from its own proposed action plans.

373. The Claimants' position is that the availability of an appeal is relevant only to the question of the binding effect of the KBA Letters as a matter of EU law. I see that if one is talking about a formal right of appeal. If there is no such right, then Article 33 would be violated. Clearly, there was such a right.

374. However, I am far less persuaded that the availability of an appeal to VW in real terms bears on the binding effect of the KBA Letters. If the reason why VW could not appeal is because it had deprived itself of the ability to do so, or because any appeal would on the merits be hopeless, that seems to me to be a different matter altogether. However, this does not matter here because in my view, had it wished to do so, VW would at least have been able to show the relevant injury to subjective rights and a necessary legal interest. VW itself clearly thought it had such a right - it is just that it was not politic to exercise it. See paragraph 370 above. Indeed, in the end, the Claimants were disposed to agree that aside from any formal right to appeal, the question of appeal does not really go to the question of the binding nature of the decision.

375. Otherwise, the only significance of the lack of an appeal in fact is that it is too late for VW to appeal now and therefore the KBA Letters are, and have been for a number of years, final.

The binding nature of the KBA Letters as a matter of EU law

376. On the basis that the KBA Letters were binding on the question of the existence of a defeat device under German law, the final question here is whether they bound the authorities and Courts of other Member States, as a matter of EU law as well.

Purposive Overview

377. As a general point, and on the assumption that the decision of the relevant approval authority was binding locally in the relevant respects (i.e. it was more than merely a preliminary point or part of its reasoning, etc) it would seem odd if it did not bind everywhere in the EU. That would be consistent with the harmonised EU regime on type-approval. This is a case where type-approval granted by an approval authority in one Member state governs all other Member States without more. It does not require each approval authority in the other Member States to issue type-approvals of the same kind themselves. In this way, there is by definition complete consistency of approach because only one approval authority can grant it.

378. The Defendants submit that while this is true, it is only the binding nature of the grant of type-approval which was specifically provided for by the Framework Directive and it does not cover the binding nature of anything else. However, in the end, the Defendants were bound to concede at least that if, for example, an approval authority revoked a type-approval previously granted by it, that revocation would bind across the EU. If it were otherwise, a manufacturer could sell the affected vehicles in other Member States without compunction.

379. The Defendants' position also means that if an approval authority required particular measures to be taken by a manufacturer, that would only bind in its own Member State. That cannot be right-indeed the action plan submitted by VW here was not geographically confined. Prof Schröeder appeared to accept that the technical measures ordered by the KBA were at least binding under German law. But it goes further than that. No other approval authority could make such an order. It would be very odd if Member States other than that in which the measures were ordered were not bound, so that authorities in those other Member States were left to decide what to do about it. This negates the objective of total harmonisation set out in Article 1 of the Framework Directive. It would enable a manufacturer in private proceedings in another Member State to argue that it was not in fact bound to take the measures ordered by the relevant approval authority because that authority got it wrong. But the manufacturer could only be prevented from making that argument if the order of the relevant approval authority was in fact binding throughout the EU.

380. Of course, it is then necessary to define which are the relevant orders of any approval authority. They will be those orders which are binding according to local law, including (in the case of German law) any findings that are properly to be regarded as part of the tenor; obviously the order must be final and there must be a right of appeal.

381. There is no reason in principle why an approval authority is any less competent to decide a fact necessary for the exercise of its own jurisdiction (for example the existence of a defeat device) than the particular measures it decides to order as a result of finding that fact.

382. If there had been a "hostile" decision in the sense that the manufacturer did not agree beforehand to any measures, and it had resisted them on the basis that there was no defeat device, it could obviously have appealed on that question. The proportionality of the precise measure ordered might also be the subject of an appeal. It is difficult to see why the decision of the authority should be less binding simply because the manufacturer has to some extent restricted its ability to appeal by agreeing a course of action, especially where jurisdictional facts have to be found.

383. Because the approval authority from only one Member State governs the type-approval it has granted, across the EU the system for challenging it is governed by local remedies rules. So, for example, the question of what the order means is governed by German law. But in deciding whether the decision of an approval authority is correct the German Court will have to apply EU law because it is interpreting EU legislation (just as I have been here).

The Duty of Sincere Co-operation

384. Article 4 (3) of the Treaty on the European Union ("TEU") provides that:

> "Pursuant to the principal of sincere cooperation, the Union and the Member States shall, in full mutual respect, assist each other in carrying out tasks which flow from the Treaties.
>
> The Member States shall take any appropriate measure, general or particular, to ensure fulfilment of the obligations arising out of the Committees or resulting from the acts of the institutions of the Union.
>
> The Member States shall facilitate the achievement of the Unions tasks and refrain from any measure which could jeopardise the attainment of the Unions objectives."

385. A relevant example of how this would work can be found in the case of *Hedley Lomas* (C-5/94), EU:C:1996:205. Here, the UK Ministry of Agriculture, Fisheries and Food refused an export licence for livestock to be sent to Spain for slaughter on the basis that Spain did not comply with the relevant Directive on the process of slaughter. This was a harmonised system so that all Member States have to comply with the Directive although there was no sanction for non-compliance. At paragraph 18, the Court said that the UK could not invoke Article 36 of the TEU where a harmonised system was in place. At paragraph 28 it said that Member States could not on their own adopt corrective measures to stop what was seen as a breach of EU law by another Member state.

386. I agree that, as a Member State, the UK was and (until 31 December 2020) is obliged to give effect to the aim of having a harmonised approval regime which requires mutual recognition of the roles of the different approval authorities and in particular the precedence given to the authority which grants the type-approval in any particular case. This follows from the duty of sincere co-operation. The obligations on Member States to ensure proper type approval as set out in Article 4 (1)-(4) of the Framework Directive are fulfilled through the agency of the approval authorities. Thus, it can be said that the KBA Letters represent decisions made by Germany which must be respected by other Member States including, in this context, their own courts.

387. On that basis, where there is not only a harmonised system but one which is given effect by the grant of exclusive jurisdiction, as it were, to the approval authority of one particular Member State, it follows that the authority of another Member State cannot second-guess it. So, for example, as to measures which the granting has ordered to be taken in respect of vehicles because they contravene EU law, the other authority could not decline to be bound on the basis that the granting authority was wrong in law. Indeed, save for very limited exceptions, the other, non-granting authority cannot itself take any measures at all where the type-approval was granted elsewhere. See also article 30 (3) of the Framework Directive cited at paragraph 56 above.

388. That principle of deference to the other authorities would apply to courts elsewhere in the EU as well. The principle must apply, at least, where the party asking the court elsewhere to go behind the decision of the relevant approval authority was itself the addressee of the latter's order. There is a slight wrinkle in this case because for example the dealers sued here were not the addressee of the decision in Germany, but no point was taken before me about that.

389. I further agree that if it was open to the courts of other Member States to challenge the findings made by the relevant approval authority that there was a defeat device (as opposed to the quite separate question of determining the local private law consequences of any such finding in any particular claim) this would run contrary to the principle of "full effectiveness" in this case of the approvals regime; it would simply play havoc with the whole harmonised scheme.

390. All of this is particularly apt here where the approval authority is not merely engaged when the type approval is initially granted, or when an event occurs requiring its relocation or appropriate measures. The authority has a supervisory role over the life of the approved vehicle.

391. On the other hand, the Defendants contend that the true scope of the duty of sincere co-operation is more limited than the Claimants suggest. In particular, it would only prevent directly conflicting decisions. The Defendants rely on the decision of the House of Lords in *Crehan v Inntrepreneur* [2007] 1 AC 333. This was a competition law case and the question was whether a decision of the English Court was made in breach of the duty of sincere cooperation, given a prior decision of the Commission to the effect that certain standard form agreements between brewer and publicans were anti-competitive. It relied upon a factual finding that in 1991-1993 it was difficult to enter the English on-the-premises beer market. The later decision of the English Court was concerned with different parties whose positions needed to be assessed on their own facts. This was so even though the underlying point concerned the accessibility of the English beer market.

392. I see that, but in the case before me, it is precisely the same engine made by the same manufacturer, which was the addressee of the KBA Letters. Any factual difference is simply not possible. And if

the Commission decides that a particular addressee infringed competition law then that finding would indeed bind all Member States - see Article 16 (1) and (2) of Regulation 1/2003.

393. Nor should one distinguish between the case in *Crehan* which was a contest between a Member State court and the Commission and this case, where the Commission was not involved. As I stated above, in my view, the fact that the Commission is not involved is not relevant where the EU approvals regime itself dictates the exclusivity of the approval authority of one Member State. Accordingly, it cannot be said that this case should be regarded as an *a fortiori* example of where there is no conflict and so no breach of the duty of sincere cooperation.

394. For their part, the Claimants also say that in contrast, they would not be bound by any particular decision because they were not on any view the addressee of the KBA Letters and so they had no right of appeal against them. However, that is an entirely academic question here since the KBA found that there was a defeat device and there has been no appeal. Nonetheless, I should say that, it would seem odd to me if, for example, on an appeal from the KBA Letters, a court found that there was no defeat device and then in a private law action here, the Claimants were allowed to say that there was.

395. Moreover, in truth, had there been any such appeal in Germany, I suspect that relevant interested parties like, for example, local consumer organisations would be able to be heard. Either way, to the extent relevant, I would have thought that parties in the position of the Claimants, if faced with an adverse rather than supportive decision of the KBA, would be bound by it just as VW is bound by a supportive decision. To that extent, I would agree with the Defendants that the Claimants cannot "have their cake and eat it."

396. I should add, however, that it would actually be quite rare for individual civil cases to raise the point of the existence or otherwise of a defeat device. It has only arisen, graphically and extensively here because of the actions of VW. Usually, the only parties to a dispute as to whether there is a defeat device, or a dispute which turns on the resolution of that question, will be the relevant granting authority and the relevant manufacturer. [4]

Analogy with EU Competition Law

397. I agree that support for the Claimants' position that the KBA Letters were binding as a matter of EU law, can be found in the approach taken in relation to EU competition law. Although, in that area, the EU Commission and national courts have overlapping jurisdictions in relation to breaches of EU competition law, the general position is that courts of Member States should not undermine a decision

[4] See Confidential Annex.

taken by the Commission that, for example, a party has abused its dominant position. The correct way for that party to challenge such a decision is by means of an appeal from the Commission.

398. I further agree that the principle of non-interference is stronger here since it is not the case that the national courts here have overlapping jurisdiction. The only institution competent to make relevant orders is (here) the KBA. While it is true that the KBA is not itself an EU body like the Commission, I do not think that this makes any difference. That is because the EU legislation itself has granted it exclusive jurisdiction.

399. Moreover, and assuming that the relevant finding is within the tenor of the authority decision (to use German law as an example) it is very difficult to see why the EU harmonised scheme should require recognition by the other Member States of the grant of type approval but not other decisions, especially one as important as the KBA finding on defeat device which can hardly be dismissed as minor.

400. And of course VW's own plan was intended to (and did) operate throughout the EU.

401. I now refer to the case of *Astellas Pharma GmbH*, C-557/16 EU:C:2018:181. This concerned the grant of authorisation for medicinal products. The system there was that a manufacturer seeking such authorisation would send identical dossiers of information for each relevant Member State authority, one of which would then be nominated as the reference authority. It would produce an assessment of the product. This would be sent to all Member States' authorities. The latter would then have to approve the assessment and other details furnished by the reference authority and then the resulting authorisation would be implemented locally. If any Member State's authority disagreed with the assessment, the issue would be referred to a coordinating group.

402. Here, a question arose as to the length of the period during which a manufacturer would have exclusivity over the product which was the subject of the authorisation. A different manufacturer sought authorisation for a generic version of the same product. It sought to argue in the court of a Member State other than that of the original reference authority that the first authorisation had now expired. If so, there would be no bar to the authorisation of the generic product on the basis of time. The CJEU held that the court could investigate whether the first authorisation was time expired or not. But what it could not do was reopen the issue as to whether the first authorisation was properly granted at all, by reference to EU law. That has some resonance with the position here insofar as this Court is being invited to reopen the question of the determination by the KBA that there was a defeat device assuming, as I have found, that this was itself an operative part of the Letters.

403. The Opinion of the Advocate-General supported the decision taken by the CJEU and, as is often the case, his analysis is far more detailed than the judgment. There is no reason to think that the CJEU

did not adopt that analysis here. The Advocate-General saw the medicinal authorisation procedure as "decentralised" in the sense that the relevant authorities of each Member State had to decide whether to adopt the assessment of the reference authority or not. That being the case, there was a system of decentralised judicial review as well. In other words, in principle, a manufacturer seeking to challenge the earlier authorisation was not limited to the courts of the Member State of the reference authority. It could bring a claim in the courts of its own Member State. Given that it was a different manufacturer to that which had obtained the original authorisation, there might have been problems of standing if it were limited to the courts of the Member State of the reference authority.

404. However, having invoked the concept of decentralisation in this way, the Advocate-General then limited its operation. It would allow the later manufacturer to challenge in its own courts the extent of the exclusivity period attaching to the original authorisation, and when it expired. But the concept did not go so far as to permit the manufacturer to challenge the basis of the original authorisation itself save insofar as it could do so in the courts of the relevant Member State.

405. The Defendants seek to distinguish *Astellas* on the basis that the reason why the underlying decision to grant the authorisation could not be challenged elsewhere in the EU was because that challenge was so fundamental that it argued that the original authorisation never in fact existed. Whereas a challenge as to whether there is a defeat device or not is somehow different in nature and would be more likely to fall within the limited scope of permissible challenge by a local court elsewhere-rather along the lines of the question of the protected period in *Astellas*. I do not accept this distinction. In my judgment, the logic of *Astellas* would clearly be to prevent the question of defeat device or not from being decided here.

406. The position here is surely stronger (in favour of the KBA). This is because no other approval authority is party to the original type approval at all. That is the exclusive domain of the KBA. There is no "decentralisation" of the decision-making process as with medicinal authorisation which allowed for some role for the courts of other Member States, albeit only limited. Rather, the process is "centralised" not by reference to an EU body but a different body which is given EU powers.

407. While hardly determinative, I consider that *Astellas* provides support for the Claimants' position here. Its approach was followed by Lewis J in *Orion Corp v Secretary of State for Health and Social Care* [2019] EWHC 689.

408. The Defendants dispute the analogy from competition law first on the basis that the KBA is not an EU body like the Commission. I have dealt with this point above. Second, they argue that the relevant competition law provisions are all treated as being of direct effect in Member States (so as, for example, to found private law claims) while that is not so here. However, I disagree because the effect of the exclusive -type approval regime is directly to affect the supply of vehicles in the EU and their

lawful "drivability" by their owners. The exclusive delegation of powers to the relevant -type approval authority in one Member state means that, inevitably, in my view.

409. All of the above supports the "procedural exclusivity" of the KBA and the German Courts, which would deal with any appeal from its decisions.

The Defendants' Argument based on Directive 70/156

410. The Directive which first dealt with the type-approval system was 70/156. Article 8 thereof provides as follows:

> "1 . If the Member State which has granted EEC type-approval finds that a number of vehicles accompanied by a certificate of conformity do not conform to the type which it has approved, it shall take the necessary measures to ensure that production models conform to the approved type. The competent authorities of that State shall advise those of the other Member States of the measures taken, which may, where necessary, extend to withdrawal of EEC type-approval. The said authorities shall take like measures if they are informed by the competent authorities of another Member State of such failure to conform.
> 2. The competent authorities of the Member States shall inform each other within one month of any withdrawal of EEC type-approval, and of the reasons for such measure.
> 3 . If the Member State which has granted EEC type-approval disputes the failure to conform notified to it, the Member States concerned shall endeavour to settle the dispute. The Commission shall be kept informed and shall, where necessary, hold appropriate consultations for the purpose of reaching a settlement."

411. Paragraph 49 of the Defendants' Skeleton Argument refers to these provisions. It is not clear that the argument based upon them is still being run but in case it is, I would observe as follows. The Defendants seem to think that paragraph 1 of Article 8 means that if the Member State which granted the type approval then takes measures, the authorities of <u>other</u> Member States shall then take their own measures to enforce or replicate the original measures, as it were. However, the correct reading of this provision is that the "said authorities" refers back to the Member State's competent authority which had granted the type approval in the first place. So what paragraph 1 (2) is stipulating there is that the granting authorities must also take necessary measures if the relevant non-conformity has been discovered not by them but by authorities in other Member States who then inform them of the problem. There is then a procedure laid down by paragraph 1 (3) if the original granting authority disputes the need to take the measures suggested by authorities in other Member States.

412. In that sense, these provisions are in substance the same as those in the current Framework Directive dealt with above. They support the fact that the <u>only</u> party which can take measures (to apply throughout the EU) is the granting authority.

413. Even if that were wrong, and Article 8 somehow meant that each separate Member State's authority had to take its own measures to reflect those taken by the granting authority, the fact that the present position differs because the only authority which can grant the measures exclusively is the granting authority hardly shows that the granting authorities decisions do not bind elsewhere in the EU. Quite the reverse; they bind without the need for any reciprocal action from any other Member State at all.

414. As a matter of legislative history, Article 8 (3) is itself replicated in the present Article 30 (3). Contrary to the Defendants' submissions, paragraph 1 (2) of Article 8 was not removed; it was simply re-ordered so as to become Article 8 (2) in the successor Directive of 87/358.

415. In its turn, Article 33 of the present Framework Directive does not, it is true, state that all decisions of the granting authority bind other Member States. But it does highlight the importance of an appeal process from the granting authority decision if it is balanced.

416. I agree with the Defendants that not much turns on Recital 17 of the Framework Directive save that it does emphasise the primacy of the granting authority.

The KBA as the appropriate body to decide type-approval questions

417. The Claimants argued that the KBA is better placed than a civil court with the benefit of expert assistance to decide whether there is a defeat device. I accept this or at least that the KBA is in no worse position than a court. Its whole *raison d'être* is to deal with matters of this kind and it has built up an accumulated experience through the whole testing and approval-granting process. Moreover, insofar as it would go wrong in law, there remains the right of local appeal.

Conclusion on Limb 1

418. For all those reasons, I consider that the KBA's finding that there was a defeat device is not merely binding as a matter of German law but also binds all Member States (including their courts) as a matter of EU law. It therefore binds this Court.

Limbs 2 and 3

419. These are to the effect that even if the KBA decision did not bind directly as a matter of EU law, then, either as a matter of EU conflicts principles, or as a matter of English law, the question of its binding effect here must be decided by reference to German law being the local law of the KBA.

420. Given my conclusions under Limb 1, these questions do not arise. Nor do I consider it to be useful or appropriate for me to deal with them on the alternative hypothesis that my conclusions under Limb 1 are wrong. Any such "counterfactual" would be too complex and artificial to form the basis for a consideration of these questions.

Conclusion on the KBA Letters

421. On the basis, as I have found it, that the KBA Letters constitute a binding decision as to the existence of the defeat device as a matter of EU law, it must follow that the Defendants' collateral challenge to that decision in this Court amounts to an abuse of process in the circumstances of this case. I say that for the following reasons:

(1) The KBA and the relevant German appellate courts had "procedural exclusivity" on the decisions made by the KBA as I concluded in paragraph 409 above; the decision here was made against VW and included the finding as to the defeat device;

(2) VW could have, but did not, appeal that finding and this was a considered, pragmatic decision – see paragraph 370 above; it thus decided to live with the consequences of its own conceptual problem which I described it in paragraphs 307 - 367;

(3) However it has chosen, consciously, to go behind and seek to relitigate, the KBA Decision here. I agree with the Claimants that it falls within the principles laid down by the House of Lords in *Hunter v Chief Constable* [1982] AC 529 at paras. 541 and 542. It is true that (unlike *Hunter*) VW is not the claimant here but the defendant, so it did not initiate these proceedings, but it was of course up to VW to decide what defences to run or not run. Moreover it did so in the context summarised in the next sub-paragraph;

(4) A collateral challenge of this kind, and the invitation to this Court of a (deemed) Member State to deal with it does offend against the duty of sincere co-operation as I have found it to be; it would also interfere with the smooth and certain operation of the harmonised, centralised (in this case, in Germany) type-approval regime; see paragraphs 384-396 above;

(5) None of this is a proper use of the Court here, and it offends against the administration of justice.

The VCA Letter

422. The second aspect of Issue 1 to be considered relates to a letter dated 22 October 2015 sent by the UK approval authority, being the Vehicle Certification Agency ("VCA") to all other EU approval authorities ("the VCA Letter").

423. The background to this letter can be shortly stated. The VCA was (for present purposes) the type-approval authority for Skoda vehicles which contained the EA-189 engine. Following the emergence of the Emissions Controversy, the VCA sent to VW in respect of Skoda and other vehicles, a notification of intention to conduct a non-coding action on 1 October 2015. In an email dated 6 October, Mr Lawlor of the VCA wrote to Skoda as follows:

> "I understand that VW may be in a position to announce a proposed fix to the emissions problem later this week, if that is the case then Skoda should approach VCA to discuss the proposed rectification action. VCA will need to be actively involved in any discussion that will result in the correction to the approval issued by the United Kingdom, after that discussion will be a need to understand how the defeat device operated and what assurances can be demonstrated at a similar strategy is not being followed…."

424. Mr Haken of Skoda replied on 8 October that there had been on 7 October a negotiation between KBA and VW as a result of which further steps would be mutually agreed on. He went on to say:

> "EA 189 powertrains with defeat device were installed into Skoda vehicles. At present, our customers can verify whether a respective vehicle is concerned by using the Internet Skoda application or a Skoda dealer. Notwithstanding the fact that a vehicle is affected, it is safe and can be operated safely.
>
> Procedure of rectifying measures relating to software and possible modifications of hardware is now being intensively processed. Afterwards the term of service measures/exchange of faulty devices will be determined. When the required technical measures are defined you will be informed without delay. Please find enclosed "Questions and Answers" file which provides replies to some other questions. We thank you for your support and understanding that some of your concrete questions can be answered only after the investigation in VW is finished."

425. It will be noted that this email contained a clear admission that the Skoda engines contained defeat devices. The only context for that could be the EU law thereon. Nonetheless, VW has not repeated that admission in these proceedings in respect of those affected vehicles which are Skodas.

426. On 16 October Mr Lawlor sent a further email to Mr Haken stating that:

> "VCA are obliged under the requirements of Article 32,007/36/EC ensure that vehicles systems components or separate technical units accompanied by a certificate of conformity… That do not conform to the type it has approved are brought back into conformity.
>
> Therefore I would like to ask you to make arrangements as soon as possible to come to VCA to explain the issues that led to the current admissions of non-conformance and to present a solution and a timescale to the non-conformances."

427. This led to a meeting between the VCA and Skoda on 20 October 2015 involving 3 representatives of the VCA and 12 from Skoda. The signed joint note of the meeting reads as follows:

> "Using the presentation Volkswagen AG gave to the KBA on 13.10.2015, SKODA presented the schedule and action plan, i.e. the technical background, proposed timeline and measures planned for the field campaign for the EA189 affected Diesel vehicles.
> The parties agreed on the following:
> SKODA acknowledged that the VCA as EC type-approval authority for the SKODA vehicles (and SEAT Toledo) in the EU is the responsible authority to discuss and decide on any schedule and action plan SKODA is planning with regard to the EA 189 Diesel engines.
> VCA and SKODA agreed that a statement on the technical effects on the cars in real drive mode after the fix has been made needs to be made public as soon as the effects are clear. Currently, it is foreseen that it will have minimal effect on vehicle driving characteristics in normal use, but any degradation must be precisely quantified and communicated. VCA pointed out to SKODA, that it is important to tell the customers what the aim of the fix is and what it practically means to them *(e.g. before the fix 50 miles per gallon, after the fix 49,7 miles per gallon)* A common understanding between VCA and SKODA needs to be determined how to define customer fuel economy. As there in no equivalent for the "ADAC Ecotest" in the UK VCA suggests to use their road testing and agreed to provide SKODA with details on the recommended testing regime closest to the real world driving conditions (34% urban, 33% rural, 33% highway) This subject needs to be discussed in further detail in the upcoming meetings between VCA and SKODA.
> Following the comprehensive presentation of the VW schedule and action plan and timelines which are equally applicable to those of SKODA, VCA in principle agreed that these are feasible for SKODA. For a final approval SKODA will provide VCA with a measure and action plan for all vehicles that VCA approves (SKODA fleet +SEAT Toledo). Subject to a further review VCA will acknowledge the schedule and action plan. SKODA Foreseen timing for delivering the technical details of the fix for the EA189 2.01 engine is by 23.10.2015 and for the 1.21 by end of November 2015. SKODA will provide the timing for the 1.6 as soon as possible.
> SKODA agreed to provide VCA with a 2.01 EA189 Superb vehicle with the current software and when available (in ca 2 weeks) an ECU with the proposed fix (to be further developed later to suit the customers' needs), so that VCA can conduct independent testing of emissions before and after the fix.
> VCA stated that based on the current information provided by SKODA and subject to VCA's own evaluation and analysis, the issues around emissions of the EA 189 Diesel engines can be resolved by SKODA' s schedule and action plan as a voluntary service action in all 28 EU Member States, on a consensual basis with VCA. VCA notes that the produced EA 189 Diesel vehicles do not deviate from the EC type-approval and will be made compliant with emissions standards by implementing the schedule and action plan. Once VCA reaches a final decision based on the schedule and action plan provided by SKODA, VCA will communicate this to the Secretary of State (Minister of Transport), and afterwards to all other EU Member States.
> Furthermore, SKODA intends to address all EU Member States with a letter explaining the state of play and outcomes from discussions with VCA and kindly ask respective authorities for support (this letter to be coordinated with VCA communication).
> SKODA agreed to provide VCA with the documents delivered by VW AG to the KBA, including detailed technical spreadsheets.
> Contact persons for the exchange of information will remain as they are, that is Mr. Derek Lawlor for the VCA and Mr. Jan Novak for SKODA.
> SKODA agreed to provide VCA with an overview of authorities approving the different VW Group brands in Europe.
> Paul Willis informed VCA that he will inform the UK Secretary of State those cars with EA189 Diesel engines which already have been sold will be released for delivery to customers. He pointed to the necessity to release

> cars which are needed for disabled people, gas service and other instances. Customers will be informed about the necessity to come for a service action after delivery. SKODA will ask its importers in Europe to act in a similar way in the other EU Member States (already sold cars should in fact be delivered to avoid interference with customer rights; however, they should be part of the fix, i.e. the schedule and action plan). VCA informed SKODA that the approval of model update for the CW45/2015 has been granted."

428. Clearly, the action plan proposed by Skoda was the same as or similar to that presented by VW to the KBA at around the same time.

429. This led to the letter of 22 October addressed to the European Approval Authorities which is relied upon by the Claimants as a binding decision for the purposes of this part of the KBA Issue. It reads as follows:

> "Dear Type Approval Colleagues,
> **NON-CONFORMANCE OF VAG COMPRESSION IGNITION ENGINES**
> In accordance with EC 2007/46 Article 30 I am writing to inform you of the actions that the Vehicle Certification Agency (VCA) is taking with respect to the non-conformity of VW compression ignition engines (EA189 – 1.2l, 1.6l and 2.0l), which hold VCA approvals in the following brand names; Skoda and SEAT. Models include Skoda Fabia, Octavia, Roomster, Rapid, Superb and SEAT Toledo.
> The nature of this non-conformance is the prohibited use of a defeat device as defined in EC 715/2007 Article 5.
> VW/Skoda made a presentation to VCA on the 20th October 2015. The presentation covered the background to the current emissions strategy used by the VW group, the potential solutions for each of the affected engine types and the time lines to bring the vehicles back into conformity. The current defeat software makes use of driving profile recognition (recognising speed and distance); the corrective action will include the deactivation of the defeat software. It is anticipated that a software solution will be sufficient to bring the 2.0l and 1.2l engine types back into conformity The 1.6l will require both software and hardware solutions. It is expected that the engine approvals will be extended and the time lines to introduce these solutions are as follows; 2.0l – corrective actions introduced in March 2016; 1.2l – corrective actions introduced in June 2016; 1.6l – corrective actions introduced in October 2016.
> Skoda/VW will present these solutions to VCA as they become available and VCA will inform the European approval authorities as they are agreed."

The letter was then signed by Mr Lawlor.

430. While one understands that the VCA Letter had been preceded by a detailed meeting with Skoda which had resulted in a signed note setting out the proposed action plan, the fact is that the VCA Letter was not addressed to Skoda and did not purport to be a formal order or decision in my view. That is so even though there is a clear reference to the "prohibited use of a defeat device". Nor did the VCA Letter end with any kind of statement of remedies available to Skoda, as required by Article 33. In my judgment, this document falls on the other side of the line to the KBA Letters. While reference is made to Article 30 in terms of what actions the VCA was taking, in essence it seems to me to be reciting what Skoda is proposing to do and that it is acceptable to the VCA. In a sense, the real work had already been done with the KBA which had already issued the first of its Letters, even though, strictly, as far as Skoda was concerned, this was the province of the VCA.

431. A letter dated 1 March 2016 from the VCA to Skoda, records that in accordance with an agreement between them, Skoda would conduct a

> "voluntary service action with active invitations of customers in a regime of non-coding action in order to remove the software that optimises nitrogen oxides… emissions during dynamometer runs."

432. Various parameters were set out as having been reviewed by the VCA, to show that the vehicle now complied, including a requirement that there was an absence of prohibited defeat devices and the result here was that no such devices had been found. In summary it was said that the changes to the application data presented by Skoda to the VCA would enable the vehicles to comply with regulations. This letter appears to have been an agreed draft of what was to be sent out when the tests were successfully completed.

433. Then, by letters dated 10 and 30 June 2016, again addressed to European Approval Authorities, the VCA said that it had reviewed the technical measures proposed by Skoda to bring the engine back into compliance with the Regulation. An extensive test programme had been undertaken to establish that no cycle recognition software was present involving laboratory tests. The programme also confirmed compliance with exhaust emissions control devices and other elements. The results were set out slightly differently from the draft. So, for example, it was confirmed that there was an absence of cycle recognition device and that exhaust emissions and durability of emission control devices were compliant with the legislation.

434. By an email from the Italian type approval authority to Mr Lawlor, and following some checks carried out which revealed some non-conformities, its Director-General, Mr Vitelli, made a request under Article 30 (3) of the Directive to the VCA as the relevant approval authority to check the conformity of the particular vehicle and approved type and take all possible action to restore conformity. This request was then passed on by Mr Lawlor to Skoda asking them to deal with the non-compliance.

435. Notwithstanding that at all material times, Skoda and the VCA were clearly proceeding upon the basis that the vehicles had defeat devices installed and the subsequent testing of the software to remove them, and notwithstanding the formal request made by the Italian authority, I still do not consider that the VCA Letter constituted a relevant binding decision. Nor do I accept that it became such simply because of Skoda's admission on 8 October 2015. Had it been, then it would have bound this Court as a matter of EU law for the reasons already given.

436. That being so, it is not necessary to conduct detailed examination of the cases discussed by the parties on the question of the application of the "exclusivity" principle as far as this Court is concerned. Because of the lack of a relevant decision, I find it difficult to see how there could have been any exercise of the first set of remedies available to Skoda by virtue of the Road Vehicles (Approval) Regulations 2009/717 which would apply to orders made by the VCA. Even if there could have been, in order to show that other remedies had been exhausted, I cannot see how any claim for judicial review would lie here. On that basis, the Claimants must fail on this aspect of the KBA Issue. [5]

[5] SEAT vehicles are outwith the KBA Issue altogether because their type-approval came from the Spanish authority, MIDI.

OVERALL CONCLUSIONS

437. For all of the reasons given above,

(1) The Answer to Issue 1 in respect of the KBA Letters is:

(a) "Yes", this Court is bound, and

(b) "Yes", it is an abuse of process for the Defendants to seek collaterally to attack them by denying that the affected vehicles contain defeat devices;

(2) The Answer to Issue 1 in respect of the VCA Letter is "No" on both counts;

(3) The Answer to Issue 2 is "Yes", the affected vehicles did contain defeat devices within the meaning of Article 3 (10).

438. I will deal with all consequential matters following the handing-down of this judgment.

439. I am extremely grateful to all Counsel for their very helpful oral and written submissions and for the most efficient way in which they have conducted this trial.