

## Memorandum

### Analysis of the question regarding the requirement of 'comparable stringency'

This memorandum addresses the question concerning the 'comparable stringency' requirement laid down in Article 13(7) of Regulation 443/2009 of 23 April 2009 setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO<sub>2</sub> emissions from light-duty vehicles (the '**CO<sub>2</sub> Regulation**').<sup>1</sup>

The question asks in essence whether the correlation mechanism envisaged by the Commission with a view to ensuring that the requirements of CO<sub>2</sub> emissions laid down in the CO<sub>2</sub> Regulation remain 'comparably stringent' after the transition from the New European Driving Cycle ('**NEDC**') to the Worldwide harmonized Light vehicles Test Procedure ('**WLTP**') actually complies with the requirement set out in Article 13(7) of the CO<sub>2</sub> Regulation.

To answer the above question, this memorandum will first outline the consequences of the transition from NEDC to WLTP on the CO<sub>2</sub> emissions of passenger cars and will then interpret the provision contained in Article 13(7) of the CO<sub>2</sub> Regulation. Finally, it will assess whether the correlation mechanism envisaged by the Commission is consistent with the 'comparable stringency' requirement as interpreted in the present memorandum.

#### 1. THE CONSEQUENCES OF THE TRANSITION FROM NEDC TO WLTP ON THE CO<sub>2</sub> EMISSIONS REQUIREMENTS FOR PASSENGER CARS SET OUT IN THE EU LEGISLATIVE FRAMEWORK

This section first describes the current EU legislative framework concerning monitoring of carbon dioxide ('**CO<sub>2</sub>**') emissions from passenger cars and then

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<sup>1</sup> Regulation (EU) No 333/2014 of the European Parliament and of the Council of 11 March 2014 amending Regulation (EC) No 443/2009 to define the modalities for reaching the 2020 target to reduce CO<sub>2</sub> emissions from new passenger cars, OJ L 103, 5.4.2014, p. 15–21.

discusses the consequences of the transition from the NEDC to the WLTP on the emission requirements of CO<sub>2</sub> provided for by the EU legislation.

### 1.1 The current EU legislative framework concerning monitoring of CO<sub>2</sub> emissions from passenger cars

The CO<sub>2</sub> emission requirements for passenger cars are laid down in the CO<sub>2</sub> Regulation. As stated in Recital 19 to the CO<sub>2</sub> Regulation, *'[m]anufacturers should have flexibility to decide how to meet their targets under this Regulation and should be allowed to average emissions over their new car fleet rather than having to respect CO<sub>2</sub> targets for each individual car. Manufacturers should therefore be required to ensure that the average specific emission for all the new cars registered in the Community for which they are responsible does not exceed the average of the emissions targets for those cars.'* (emphasis added) In other words, the specific emission CO<sub>2</sub> requirement laid down in the CO<sub>2</sub> Regulation must be respected at fleet level rather than at the level of each single vehicle sold by the relevant manufacturer.<sup>2</sup>

Specifically, according to Article 3 of the CO<sub>2</sub> Regulation, manufacturers are required to ensure that the 'average specific emissions of CO<sub>2</sub>' of their passenger cars do not exceed the applicable 'specific emission target' determined in accordance with Annex 1 of the CO<sub>2</sub> Regulation. Annex 1 provides the formulae to calculate the specific emissions of CO<sub>2</sub> for each new passenger car. The 'average specific emissions of CO<sub>2</sub>' that the fleet of each manufacturer is required not to exceed are:

- For all new cars registered after 2016: 130 g/km;
- For all new cars registered after 2020: 95 g/km.

The CO<sub>2</sub> Regulation provides for a detailed monitoring procedure to assess whether the CO<sub>2</sub> specific emissions requirements are respected. The procedure, described in Articles 8 and following of that Regulation, consists essentially of the following steps:

- For every new passenger car, the 'specific emissions of CO<sub>2</sub>' are measured on the basis of the methodology laid down in Regulation 715/2007 on type approval of motor vehicles with respect to emissions from light passenger and commercial vehicles and on access to vehicle repair and maintenance

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<sup>2</sup> In this respect, it should be noted that the CO<sub>2</sub> Regulation also recognizes the necessity of ensuring that different approaches are followed with regard to small volume and niche manufacturers. See Recital 20 and 21 and Article 11 of the CO<sub>2</sub> Regulation.

information (the '**Basic Regulation**').<sup>3</sup> The resulting CO<sub>2</sub> emissions values are entered in the certificate of conformity of the vehicle.

- The competent national authorities must record the CO<sub>2</sub> emissions values – as well as other information listed in Annex 2 of the CO<sub>2</sub> Regulation – as reported in the certificate of conformity of the vehicle of each new passenger car registered in the territory of the Member State ('**MS**') concerned. That information must also be made available to the respective manufacturer. By 28 February of each calendar year, the competent national authorities must transmit the information collected in the preceding year to the European Commission (the '**Commission**'), including the CO<sub>2</sub> emissions values and the number of new passenger cars registered within their territories.
- The Commission collects all the information sent by the competent national authorities in a central register. By 30 June of each calendar year the Commission calculates for each manufacturer, on the basis of the input received from the competent national authorities, the difference between the average specific emissions of CO<sub>2</sub> in the preceding calendar year and the specific emissions target. The Commission must notify each manufacturer of the result of these calculations.
- Should the above-mentioned calculations reveal that a manufacturer has exceeded the specific emissions target in the preceding year, Article 9 of the CO<sub>2</sub> Regulation requires the Commission to impose an excess emissions premium calculated using the formulae provided for by the second paragraph of that Article.
- According to Article 11 of the CO<sub>2</sub> Regulation, by 31 October of each calendar year the Commission is also required to publish the results of the above-mentioned calculations in a publicly accessible list.

Further procedural rules concerning the monitoring of CO<sub>2</sub> emissions are provided by Regulation 1014/2010 on monitoring and reporting of data on the registration of new passenger cars pursuant to the CO<sub>2</sub> Regulation (the '**Monitoring Regulation**').<sup>4</sup> For instance, Article 3 of the Monitoring Regulation lists the sources upon which the

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<sup>3</sup> Regulation (EC) No 715/2007 of the European Parliament and of the Council of 20 June 2007 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 (Text with EEA relevance), OJ L 171, 29.6.2007, p. 1–16.

<sup>4</sup> Commission Regulation (EU) No 1014/2010 of 10 November 2010 on monitoring and reporting of data on the registration of new passenger cars pursuant to Regulation (EC) No 443/2009 of the European Parliament and of the Council Text with EEA relevance, OJ L 293, 11.11.2010, p. 15–20.

competent national authorities may rely to obtain information about the specific CO<sub>2</sub> emissions of each vehicle.

## 1.2 The transition from NEDC to WLTP and the consequences on the measurement of the CO<sub>2</sub> emissions targets

On 14 June 2016, the Technical Committee on Motor Vehicles ('*TCMV*') approved the Draft WLTP Regulation, which will introduce a new test procedure for the type-approval of vehicles: the WLTP.<sup>5</sup> The WLTP includes a new test cycle for measuring emissions and CO<sub>2</sub>, the so-called World Light Test Cycle ('*WLTC*').

The WLTC will replace the so-called New European Driving Cycle ('*NEDC*') currently used to measure emissions and CO<sub>2</sub> pursuant to Regulation 692/2008 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 (the '*Implementing Regulation*').<sup>6</sup>

The WLTC is more representative of real driving conditions, since it has been developed from a world-wide database of collected driving data from passenger cars and light commercial vehicles (where available). Compared to the NEDC, the WLTC is a more dynamic driving cycle, covering a wider range of engine conditions: it has higher speeds (maximum speed and average speed with stops at 131.3 km/h and 46.5 km/h respectively), steeper accelerations and decelerations and less idling time (12.6%) compared to the NEDC, whose maximum speed and average speed including stops are of 120 km/h and 33.6 km/h respectively, constant accelerations and decelerations, and higher idling duration (23.73%). The engine operating area is significantly more widely covered under the WLTC compared to the NEDC.<sup>7</sup>

It is worth noting that the transition from NEDC to WLTP will also have the side-effect of rendering the CO<sub>2</sub> emissions targets set out by the CO<sub>2</sub> Regulation (i.e. 130 and 95 g/km) significantly more stringent.<sup>8</sup> In fact, such targets, which were originally set

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<sup>5</sup> Based on the information at our disposal, the final version of the WLTP Regulation and annexes is due to be adopted around May 2017

<sup>7</sup> Monica Tutuianu, Pierre Bonnel, Biagio Ciuffo, Takahiro Haniu, Noriyuki Ichikawa, Alessandro Marotta, Jelica Pavlovic, Heinz Steven, *Development of the World-wide harmonized Light duty Test Cycle (WLTC) and a possible pathway for its introduction in the European legislation*, Transportation Research Part D: Transport and Environment Volume 40, October 2015, Pages 61–75, Page 71.

<sup>8</sup> Peter Mock, Jörg Kühlwein, Uwe Tietge, Vicente Franco, Anup Bandivadekar, John German, *The WLTP: How a new test procedure for cars will affect fuel consumption values in the EU*, International Council on Clean Transportation (ICCT), Working Paper 2014-9, October 2014, Page 4. See, also, Philip Owen, DG CLIMA, *NEDC/WLTP correlation process*, presentation

on the basis of the characteristics of the NEDC,<sup>9</sup> have not been adjusted to take into account the more dynamic nature of the WLTC and the resulting higher CO<sub>2</sub> emissions generated during that cycle.<sup>10</sup> Based on publicly available information, it appears that the transition from NEDC to WLTP will cause the CO<sub>2</sub> emissions recorded during the laboratory tests to increase on average by about 11%<sup>11</sup> (although a figure closer to 20% is the general assumption of the automotive industry) but the exact impact will vary depending on the mass and engine type of each individual vehicle.

### 1.3 The amendments of the CO<sub>2</sub> Regulation triggered by the transition from NEDC to WLTP

Article 13(7) of the CO<sub>2</sub> Regulation empowers the Commission to adopt the necessary implementing and delegated acts to reflect any change in the regulatory test procedure for the measurement of CO<sub>2</sub> emissions, i.e. the NEDC. In this respect, it should be noted that the delegation of power contained in Article 13(7) of the CO<sub>2</sub> Regulation was to be exercised under the condition that the CO<sub>2</sub> requirements provided for by the CO<sub>2</sub> Regulation would remain ‘comparably stringent’ after the transition from the old to the new testing procedures.

On the basis of Article 13(7) of the CO<sub>2</sub> Regulation, the Commission recently adopted a draft delegated regulation aimed at replacing Annexes I and II to the CO<sub>2</sub> Regulation (the ‘**Draft CO<sub>2</sub> Amending Regulation**’). These annexes amend the formulae for calculating the CO<sub>2</sub> specific emission target of each manufacturer, but leave the CO<sub>2</sub> requirement originally laid down in the CO<sub>2</sub> Regulation unchanged.<sup>12</sup> Therefore, while the testing procedures will change, the specific CO<sub>2</sub> emission requirements will remain 130 gCO<sub>2</sub>/km and, after 2020, 95 g CO<sub>2</sub>/km.

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during the ENVI COMMITTEE 3 September 2015, slide 3, available at this [link](#) (last access 13.03.2017).

<sup>9</sup> Philip Owen, DG CLIMA, *NEDC/WLTP correlation process*, presentation during the ENVI COMMITTEE 3 September 2015, slide 3, available at this [link](#) (last access 13.03.2017).

<sup>10</sup> D. Tsokolis, S. Tsiakmakis, A. Dimaratos, G. Fontaras, P. Pistikopoulos, B. Ciuffo, Z. Samaras, *Fuel consumption and CO<sub>2</sub> emissions of passenger cars over the New Worldwide Harmonized Test Protocol*, Applied Energy, Volume 179, 1 October 2016, Pages 1152–1165, Page 1154.

<sup>11</sup> The 11% estimate is based on the results of the tests reported in D. Tsokolis, S. Tsiakmakis, A. Dimaratos, G. Fontaras, P. Pistikopoulos, B. Ciuffo, Z. Samaras, *Fuel consumption and CO<sub>2</sub> emissions of passenger cars over the New Worldwide Harmonized Test Protocol*, Applied Energy, Volume 179, 1 October 2016, Pages 1152–1165, Page 1154.

<sup>12</sup> In this respect, please note that according to Recital 3 to the Draft CO<sub>2</sub> Regulation: ‘[t]he correlation methodology is to be used during the phasing-in of the WLTP until end of 2020 to ensure that manufacturers’ compliance with the CO<sub>2</sub> emission targets can be verified on the basis of the NEDC emission values during that period. As a consequence, WLTP based specific CO<sub>2</sub> emission targets should be applied with effect from the calendar year 2021’. It can be inferred from this Recital that the CO<sub>2</sub> specific emission requirements are due to be modified.

To ensure compliance with the obligation of ‘comparable stringency’ set out by Article 13(7) of the CO<sub>2</sub> Regulation,<sup>13</sup> the Commission developed a ‘*mechanism for translating the NEDC based specific emissions targets into WLTP values that represent stringency comparable to that specified for the NEDC based targets*’.<sup>14</sup> This mechanism is described in the recently adopted draft Implementing Regulation setting out the methodology for determining the correlation parameters necessary for translating the values obtained when testing new vehicles under the WLTP into values that can be correlated with the NEDC based targets (the ‘**Draft Correlation Regulation**’).

The correlation mechanism described in the Draft Correlation Regulation essentially consists of the following steps:

- The competent national authorities carrying out the WLTP will translate the CO<sub>2</sub> emissions values established on the basis of the new test procedure into NEDC based emissions values (the ‘**NEDC CO<sub>2</sub> reference value**’). The correlation will be carried out on the basis of a correlation tool (‘**CO2MPAS**’), i.e. a software model developed by the Commission’s Joint Research Centre.<sup>15</sup> Importantly, it should be noted that, as the Draft Correlation Regulation recognizes, CO2MPAS does not always deliver accurate results, particularly with respect to advanced vehicle technologies or specific technology configurations.<sup>16</sup>
- The competent national authorities will check the NEDC CO<sub>2</sub> values declared by the manufacturers against the NEDC CO<sub>2</sub> reference value calculated by CO2MPAS. The NEDC CO<sub>2</sub> values declared by the manufacturer (for the vehicle in L and H configurations) will be used as the basis for any further calculation, including the assessment of the compliance by the manufacturer with the specific emission targets, unless any of the following circumstances occur:

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<sup>13</sup> Article 13(7) of the CO<sub>2</sub> Regulation provides that ‘[t]he Commission shall be empowered to adopt delegated acts in accordance with Article 14a in order to adapt the formulae set out in Annex I, using the methodology adopted pursuant to the first subparagraph, while ensuring that reduction requirements of comparable stringency for manufacturers and vehicles of different utility are required under the old and new test procedures.’ (emphasis added)

<sup>14</sup> Explanatory memorandum, Draft Amending Regulation.

<sup>15</sup> CO2MPAS: Vehicle simulator predicting NEDC CO<sub>2</sub> emissions from WLTP, at <https://CO2mpas.io/>. CO2MPAS uses an input data matrix compiled by the car manufacturer that specifies various technical features and parameters of the vehicle (e.g. fuel type, engine capacity, gearbox ratios, etc.) as well as the results of the WLTP test. CO2MPAS uses this input matrix to run an algorithm that compares a simulated WLTP test of the vehicle against a simulated NEDC-2 test to create an NEDC CO<sub>2</sub> reference value.

<sup>16</sup> See Draft Correlation Regulation, Recital 6.

- a) The NEDC CO<sub>2</sub> reference value exceeds the manufacturer's declared NEDC CO<sub>2</sub> value by more than 4%. In this case, the manufacturer may request the performance of a physical test by using a modified NEDC ('NEDC-2'), which will be described *infra*.<sup>17</sup> The results of the NEDC-2 physical test are then compared with the declared NEDC CO<sub>2</sub> values. Any discrepancy between such measurements is noted and recorded on the vehicle's conformity and approval certificates.<sup>18</sup>
- b) The competent national authority deems that *'there are justified reasons to consider that the declared NEDC CO<sub>2</sub> value is too low in relation to a measured NEDC CO<sub>2</sub> value.'*<sup>19</sup> (emphasis added) In this case, the competent national authority may oblige a vehicle to undergo a physical NEDC-2 test.
- c) The competent national authority may execute random physical NEDC-2 tests to verify that the input data and the NEDC CO<sub>2</sub> reference values are determined correctly. Random physical NEDC-2 tests are aimed at ensuring that CO2MPAS inputs are not used as a means to artificially lower CO<sub>2</sub> emissions values.<sup>20</sup>

It is important to note that the NEDC-2 physical tests carried out in the three above-mentioned scenarios do not correspond to the original NEDC test described in Annex XII to the Implementing Regulation.<sup>21</sup> In fact, the preamble to the Draft Correlation Regulation states that *'[i]n order to ensure a level playing field, the same NEDC test conditions that have been defined for the correlation tool [i.e. CO2MPAS] should apply for those tests [i.e. the NEDC-2].'*<sup>22</sup> Therefore, Annex I to Draft Correlation Regulation provides for a number of amendments to the test conditions of the NEDC described in Annex XII to the Implementing Regulation.

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<sup>17</sup> See Draft Correlation Regulation, Annex I, point 3.2.2. As discussed *infra*, the NEDC-2 is a modified version of the NEDC described in Annex XII of the Implementing Regulation.

<sup>18</sup> See Draft Correlation Regulation, Annex I, points 3.2.8. Moreover, if the physical test results do not exceed the declared results by more than 4%, the competent national authority accepts the declared results as the basis for further calculations. If, however, the physical results exceed the declared results by more than 4%, a second physical test is run. If the averaged results of the two physical tests do not exceed the declared results by 4% the declared results are used as the basis for future calculations. If the second physical test results still exceed the declared results by over 4%, a third physical test is run and the average of the three physical tests is used as the basis for future calculations.

<sup>19</sup> See Draft Correlation Regulation, Annex I, points 3.2.7.

<sup>20</sup> See Draft Correlation Regulation, Recital 8.

<sup>21</sup> Annex XII, *Determination of CO<sub>2</sub> emissions, fuel consumption, electric energy consumption and electric range*, Implementing Regulation.

<sup>22</sup> Draft Correlation Regulation, Recital 6.

Based on the information at our disposal, it would appear that the amendments to the original NEDC test conditions described in Annex I to Draft Correlation Regulation will have an impact on the 'specific emissions of CO<sub>2</sub>' of the tested vehicles.<sup>23</sup> In other words, vehicles tested under the modified NEDC-2 test will generally produce higher CO<sub>2</sub> emissions than vehicles tested under the original NEDC test provided for by Annex XII to the Implementing Regulation.<sup>24</sup>

## 2. INTERPRETATION OF THE COMPARABLE STRINGENCY REQUIREMENT IN LIGHT OF THE ORDINARY MEANING OF THE WORDS, CONTEXT AND PURPOSE AND THE EU LAW PRINCIPLE OF LEGAL CERTAINTY

In order to reply to the question concerning the regulatory amendments described in the first section of the present memorandum, the exact meaning of the provisions laid down in Article 13(7) of the CO<sub>2</sub> Regulation should first be analysed.

In this respect, it should be recalled that, as the Court of Justice of the EU (**'Court of Justice'**) has stated, '*the interpretation of a provision of European Union law requires that account be taken not only of its wording and the objectives it pursues, but also its context and the provisions of European Union law as a whole*'<sup>25</sup> (emphasis added).

These interpretative criteria will be applied to the provisions of Article 13(7) of the CO<sub>2</sub> Regulation, with a view to establishing the limits to the Commission's delegation of power contained therein. In particular, the interpretation will aim at establishing the scope of the Commission's obligation to ensure, following the transition from NEDC to WLTP, the '*reduction requirements of comparable stringency for manufacturers and vehicles of different utility [that] are required under the old and new test procedures*'.<sup>26</sup>

### 2.1 Literal interpretation of the terms 'comparable' and 'stringent'

Literal interpretation may be defined as '*the action of explaining what a normative text conveys by looking at the usual meaning of the words contained therein*'.<sup>27</sup> As

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<sup>23</sup> In this respect, see *infra* section 3.2.

<sup>24</sup> See footnote 22, *supra*.

<sup>25</sup> C-583/11 P, *Inuit Tapiriit Kanatami and Others v Parliament and Council*, ECLI:EU:C:2013:625, par. 50.

<sup>26</sup> Article 13(7) of the CO<sub>2</sub> Regulation.

<sup>27</sup> Koen Lenaerts and José A. Gutiérrez-Fons, *To Say What the Law of the EU Is: Methods of Interpretation and the European Court of Justice*, EUI Working Paper AEL 2013/9. This source

the Court of Justice explained, literal interpretation requires assessing what the ordinary meaning of the terms is.<sup>28</sup>

In this respect, it should be emphasized that Article 13(7) of the CO<sub>2</sub> Regulation – which, as noted above, together with Article 8(9) constitutes the legal basis of the Draft CO<sub>2</sub> Regulation and of the Draft Correlation Regulation – provides that:

*'The Commission shall, by means of implementing acts, determine the correlation parameters necessary in order to reflect any change in the regulatory test procedure for the measurement of specific CO<sub>2</sub> emissions referred to in Regulation (EC) No 715/2007 and Regulation (EC) No 692/2008. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 14(2) of this Regulation.*

*The Commission shall be empowered to adopt delegated acts in accordance with Article 14a in order to adapt the formulae set out in Annex I, using the methodology adopted pursuant to the first subparagraph, while ensuring that reduction requirements of comparable stringency for manufacturers and vehicles of different utility are required under the old and new test procedures' (emphasis added).*

In order to interpret the literal meaning of this requirement, it is therefore necessary to assess the ordinary meaning of the terms 'comparable' and 'stringent'. The following table offers a comparison of the definitions of these two terms provided for by some of the most widely-used English dictionaries.<sup>29</sup>

	<b>Oxford English Dictionary</b>	<b>Collins</b>	<b>Merriam Webster</b>
'comparable'	of equivalent quality	of the same kind or in the same situation	capable of or suitable for comparison

is particularly authoritative as K. Lenaerts is the current president of the Court of Justice of the European Union.

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See, e.g., C-369/13, *Gielen and Others*, ECLI:EU:C:2015:85, par. 29. Please note that these are only some of the results reported in the above-mentioned dictionaries.

'stringent' (of laws and regulations)	strict, precise, and exacting	rigidly controlled, enforced, strict; severe	marked by rigor, strictness, or severity
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The literal interpretation of the terms 'comparable' and 'stringent' suggests that for the specific CO<sub>2</sub> emission requirements to remain 'comparably stringent' after the transition to WLTP, the strictness of such requirements must be similar enough to allow for a direct comparison, that is to say, equivalent or almost equivalent.

Such an interpretation is not contradicted by a comparative assessment of the English, Italian, French and German versions of Article 13(7) of the CO<sub>2</sub> Regulation. The Italian, French and German versions of that Article use the terms '*rigore comparabile*', '*rigueur comparable*' and '*vergleichbar strenge*,' and, as such, they are in line with the English version.

Nevertheless, it must be noted that the literal interpretation of the terms 'comparable' and 'stringent' does not provide conclusive evidence with regard to the degree of similarity that should exist between the stringency of the CO<sub>2</sub> emissions requirements under the NEDC and the WLTP. In other words, it is not clear whether, after the transition to the WLTP, the stringency of the CO<sub>2</sub> emission requirements is required to remain 'equivalent' or just 'similar'.

It is therefore necessary to assess whether, in light of its objective and context, Article 13(7) of the CO<sub>2</sub> Regulation may be interpreted to the effect that the Commission has the duty of ensuring that the CO<sub>2</sub> requirements before and after the transition to the WLTP will remain of equivalent stringency.

**2.2 Interpretation of the comparable stringency requirement in light of its context and purpose**

According to the well-established case-law of the Court of Justice, '*every provision of [EU] law must be placed in its context and interpreted in the light of the provisions of [EU] 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*'.<sup>30</sup>

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<sup>30</sup> C-283/81, *CILFIT v Ministero della Sanità*, ECLI:EU:C:1982:335, para 20.

As regards the context of Article 13(7) of the CO<sub>2</sub> Regulation, it should be noted that the requirement of comparable stringency was not included in the original text of the Regulation adopted in 2009. This provision was introduced by Article 1(10)(d) of Regulation 333/2014, which replaced the original Article 13(7) of the CO<sub>2</sub> Regulation. The purpose of such an amendment is highlighted in Recital 11 to Regulation 333/2014:

*'A new, more realistic and reliable test procedure should be agreed as soon as feasible. Work in this direction is proceeding through the development of a Worldwide harmonized Light vehicles Test Procedure (WLTP) in the framework of the United Nations Economic Commission for Europe but has not yet been completed. In order to ensure that specific CO<sub>2</sub> emissions quoted for new passenger cars are brought more closely into line with the emissions actually generated during normal conditions of use, the WLTP should be applied at the earliest opportunity. In view of that context, Annex I to Regulation (EC) No 443/2009 establishes emission limits for 2020 as measured in accordance with Regulation (EC) No 715/2007 and Annex XII to Commission Regulation (EC) No 692/2008. When the test procedures are amended, the limits set in Annex I to Regulation (EC) No 443/2009 should be adjusted to ensure comparable stringency for manufacturers and classes of vehicles. Accordingly, the Commission should carry out a robust correlation study between the NEDC and the new WLTP test cycles to ensure its representativeness regarding real driving conditions.'* (emphasis added)

The Commission was therefore required to carry out a 'robust correlation study' between NEDC and WLTP and, on the basis of the results of this study, to adjust the specific emission requirements set out in the CO<sub>2</sub> Regulation accordingly.

Nevertheless, contrary to what was specified in the above-mentioned Recital, the specific emission targets provided for by the CO<sub>2</sub> Regulation will not be adjusted to accommodate for the transition from NEDC to WLTP. As a matter of fact, despite the entry into force of the WLTP in 2017 the specific emission target for each manufacturer will continue to be expressed on the basis of the NEDC values, while the new WLTP based specific emission targets will be determined only in 2021, on the basis of the CO<sub>2</sub> emissions of the vehicles registered in 2020.<sup>31</sup>

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<sup>31</sup> In this respect, recital 4 of the Draft CO<sub>2</sub> Amending Regulation provides that '[i]n 2020 the CO<sub>2</sub> emissions of all new vehicles registered is to be determined on the basis of both the NEDC and

Given the absence of any *ad hoc* adjustment of the specific emission requirements laid down in the CO<sub>2</sub> Regulation, it could be argued that the ‘comparable stringency requirement’ laid down in Article 13(7) should be interpreted narrowly. Indeed, only a strict interpretation of this requirement would ensure that the transition to the WLTP will not increase the stringency of the requirements laid down in the CO<sub>2</sub> Regulation, also bearing in mind that the specific emission targets will be not adjusted on the basis of a ‘*robust correlation study*’ carried out by the Commission. A strict interpretation of this requirement would consequently imply that the stringency of the CO<sub>2</sub> emission requirements under WLTP should be ‘equivalent’, and not merely ‘similar’, to those under NEDC.

An overview of the broader context of Article 13(7) of the CO<sub>2</sub> Regulation would be in line with such a narrow interpretation of the comparable stringency requirement. In fact, it should be noted that the Commission, in the paragraph dealing with the impact assessment accompanying the proposal that led to the adoption of Regulation 333/2014 (*‘Impact assessment’*) regarding the adaptation of the CO<sub>2</sub> emissions requirements to the new test cycle, recognized that:

*‘New vehicle CO<sub>2</sub> emissions for the purposes of the Regulations are assessed as part of the type approval procedure using the New European Driving Cycle (NEDC). Article 13(3) of the car Regulation and Article 13(5) of the van Regulation request the test cycle to be updated to reflect the real CO<sub>2</sub> emissions behaviour of vehicles and to include eco-innovations within the test procedure. Work is proceeding on the World Light Duty Test Procedure (WLTP), but it is uncertain when this will be finalised and implemented.*

*It is clear that the 95 gCO<sub>2</sub>/km and 147 gCO<sub>2</sub>/km targets established in the Regulations were intended by the co-legislators to be applied with an equivalent stringency to the 130 gCO<sub>2</sub>/km and 175 gCO<sub>2</sub>/km targets, i.e. measured under the NEDC. This means that in theory manufacturers could continue testing their vehicles under NEDC*

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*the WLTP in accordance with the correlation methodology. By monitoring both those CO<sub>2</sub> values, robust datasets should be available for comparing the level of emissions resulting from the two test procedures. Those datasets should allow the determination of WLTP based specific emission targets that are of a stringency comparable to those determined by reference to NEDC measurements in accordance with the requirement set out in Article 13(7) of Regulation (EC) No 443/2009’ (emphasis added).*

conditions till 2020 for the purpose of compliance with the Regulations<sup>32</sup> (emphasis added).

Therefore, the Commission appears to have recognized that the stringency of the CO<sub>2</sub> specific emission targets developed under NEDC and provided for by the CO<sub>2</sub> Regulation were intended by the legislator to remain 'equivalent' after the transition from NEDC to WLTP.

As regards the objective pursued by the 'comparable stringency' requirement set out in Article 13(7) of the CO<sub>2</sub> Regulation, it should be noted that the purpose of Regulation 333/2014 was, *inter alia*, to create sufficient legal certainty for the automotive sector with regard to future CO<sub>2</sub> requirements and to ensure that such requirements would be technically feasible.<sup>33</sup> An interpretation of the 'comparable stringency' requirement in light of those aims would evidently require a strict degree of equivalency between the stringency of the CO<sub>2</sub> requirements under the NEDC and the WLTP. Otherwise, car manufacturers would be unable both to predict how stringent these requirements would become after the transition to the WLTP and, consequently, to take the measures necessary to ensuring their vehicles' compliance.<sup>34</sup>

In view of the above, it can be argued that Article 13(7) of the CO<sub>2</sub> Regulation, read in light of its context and its aims, suggests that the 'comparable stringency' requirement should be interpreted to the effect that it requires the Commission to ensure a strict degree of equivalency between the stringency of the CO<sub>2</sub> requirements under NEDC and WLTP.

### **2.3 Interpretation of the comparable stringency requirement in light of the general principles of EU law**

As the Court of Justice has repeatedly held, '*in construing a provision of secondary European Union law [such as Article 13(7) of the CO<sub>2</sub> Regulation], preference should as far as possible be given to the interpretation which renders the provision*

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<sup>32</sup> Commission Staff Working Document Impact Assessment, Accompanying the documents Proposal for a regulation of the European Parliament and of the Council amending Regulation (EC) No 443/2009 to define the modalities for reaching the 2020 target to reduce CO<sub>2</sub> emissions from new passenger cars and Proposal for a regulation of the European Parliament and of the Council amending Regulation (EU) No 510/2011 to define the modalities for reaching the 2020 target to reduce CO<sub>2</sub> emissions from new light commercial vehicles, part II, para 4.5., page 48.

<sup>33</sup> Impact assessment, part I, para 3, page 29.

<sup>34</sup> In this regard, see also interpretation of the 'comparable stringency requirement' in light of the general principles of EU law, *infra*.

consistent with the general principles of European Union law and, more specifically, with the principle of legal certainty<sup>35</sup> (emphasis added).

In this respect, it must be recalled that the principle of legal certainty requires that '[EU] rules enable those concerned to know precisely the extent of the obligations which are imposed on them, and that those persons must be able to ascertain unequivocally what their rights and obligations are and take steps accordingly'<sup>36</sup> (emphasis added).

Consequently, it is necessary to interpret the 'comparable stringency' requirement laid down in Article 13(7) of the CO<sub>2</sub> Regulation in light of the principle of legal certainty, with a view to ensuring that this provision safeguards the right of car manufacturers to predict the stringency of the CO<sub>2</sub> requirements following the transition from NEDC to WLTP and to take necessary steps to comply with them.

In this regard, an interpretation of the 'comparable stringency' requirement to the effect that emissions requirements need only remain 'similarly stringent' – and not 'equivalently stringent' – after the transition to the WLTP the CO<sub>2</sub> might run against this requirement of legal certainty. In fact, car manufacturers would not be in a position to predict how stringent the requirements would be after the transition to the WLTP. It is evident that 'similarly stringent' CO<sub>2</sub> requirements could be, for instance, more stringent, less stringent, equally stringent, etc.<sup>37</sup>

On the other hand, an interpretation of the 'comparable stringency' requirement to the effect that it requires a strict degree of equivalence between the stringency of the CO<sub>2</sub> requirements under NEDC and WLTP would be consistent with the principle of legal certainty. Should this interpretation be followed, car manufacturers would be in a position to assess – in light of the stringency of the CO<sub>2</sub> requirements under the currently applicable NEDC test conditions – how stringent the requirements will be following the transition to the WLTP.

In view of the above, it could be argued that an interpretation of Article 13(7) of the CO<sub>2</sub> Regulation in light of the general EU law principle of legal certainty suggests that

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<sup>35</sup> C-340/08, *M and Others*, ECLI:EU:C:2010:232, par. 64.

<sup>36</sup> C-345/06, *Heinrich*, ECLI:EU:C:2009:140, par. 44.

<sup>37</sup> In this respect, it must be noted that the stringency of the CO<sub>2</sub> requirements depends, in substance, on the relationship between the volume of CO<sub>2</sub> emissions produced by a tested vehicle and the relevant CO<sub>2</sub> threshold. The fact that the 'stringency' of the CO<sub>2</sub> requirements is expressed by numeric values, i.e. the values which measure the CO<sub>2</sub> emissions produced by that vehicle, purports the interpretation of the term 'comparable' as 'equivalent' rather than 'similar'.

such provision requires the Commission to ensure that the CO<sub>2</sub> requirements before and after the transition to the WLTP must remain of equivalent stringency.<sup>38</sup>

#### **2.4 Conclusion on the interpretation comparable stringency requirement laid down in Article 13(7) of the CO<sub>2</sub> Regulation**

The interpretation of the ‘comparable stringency’ requirement laid down in Article 13(7) of the CO<sub>2</sub> Regulation in light of the ordinary meaning of the terms ‘comparable’ and ‘stringent’, of the context and purpose of that provision and of the EU law principle of legal certainty suggests that the Commission is required to ensure the transition from NEDC to the WLTP to be ‘neutral’ as regards the stringency of the CO<sub>2</sub> emissions requirements laid down in the CO<sub>2</sub> Regulation.

Indeed, the analysis carried out above supports the argument that the mentioned requirement should be interpreted to the effect that the stringency of the CO<sub>2</sub> emissions requirements must remain ‘equivalent’.

Bearing the above in mind, it should be assessed whether the correlation mechanism developed by the Commission to ensure compliance with the ‘comparable stringency’ requirement, which has been described *supra*, is suitable to adequately ensure that the CO<sub>2</sub> requirements before and after the transition from NEDC to WLTP will remain ‘equivalently stringent’.

### **3. ASSESSMENT OF COMPATIBILITY OF THE COMPARABLE STRINGENCY REQUIREMENT WITH CO<sub>2</sub>MPAS’ CORRELATION BETWEEN THE NEDC AND WLTP CO<sub>2</sub> VALUES ADOPTED BY THE COMMISSION**

This section will assess whether the correlation mechanism described in the Draft Correlation Regulation – as outlined in the first section of this memorandum – will ensure that the transition from NEDC to WLTP will meet the ‘comparable stringency’ requirement laid down in Article 13(7) of the CO<sub>2</sub> Regulation.

#### **3.1 Given CO<sub>2</sub>MPAS’ inaccuracy, competent national authorities will often be required to rely on the NEDC-2**

As noted above, the correlation mechanism described in the Draft CO<sub>2</sub> Regulation provides that the competent national authorities will, as a first step, be required to

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<sup>38</sup> Please note that in this context ‘equivalent’ does not necessarily mean ‘identical in every respect’.

translate the CO<sub>2</sub> emissions values established on the basis of the new test procedure into NEDC CO<sub>2</sub> reference values.

However, since CO2MPAS is not always able to deliver accurate results,<sup>39</sup> the Draft CO<sub>2</sub> Regulation stipulates that in the following circumstances the use of CO2MPAS should be followed by a physical NEDC-2 test:

- The NEDC CO<sub>2</sub> reference value exceeds the manufacturer's declared NEDC CO<sub>2</sub> value by more than 4%;
- The competent national authority deems that *'there are justified reasons to consider that the declared NEDC CO<sub>2</sub> value is too low in relation to a measured NEDC CO<sub>2</sub> value.'*<sup>40</sup>

Moreover, Recital 6 to the Draft Correlation Regulation states that: *'a limited number of random physical tests should be performed with a view to verifying that the input data and the NEDC reference values based on the correlation tool [i.e. CO2MPAS] output are correctly determined'*.

Based on the available information, it would appear that manufacturers will request the competent national authorities to carry out NEDC-2 tests after running CO2MPAS in a considerable number of cases, which are estimated to range between 10% and 50% (depending on the vehicle technical package) for vehicles with traditional combustion engines. However, in respect of electrically rechargeable vehicles there will be a significantly higher number of cases where CO2MPAS will not produce a reliable result and NEDC-2 tests will be required.

Therefore, it is possible to predict that, for the period in which CO2MPAS will be used, the CO2MPAS results will have to be verified by a NEDC-2 physical test, on average, in 1 out of 3 cases.

### **3.2 The differences between the NEDC and NEDC-2 test conditions will lead to an increase in the CO<sub>2</sub> emissions of tested vehicles**

The NEDC-2 test conditions described in Annexes I to the Draft Correlation Regulation differ in several significant respects from those of the original NEDC set out in Annex XII to the Implementing Regulation.

The Draft CO<sub>2</sub> Correlation Regulation provides amendments to the following test conditions of the original NEDC: determination of vehicle inertia; determination of the

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<sup>39</sup> See Draft Correlation Regulation, Recital 6.

<sup>40</sup> See Draft Correlation Regulation, Annex I, points 3.2.7.

pre-conditioning effect; ambient conditions; determination of the battery’s initial state of charge; determination of the difference in tyre pressure prescriptions; determination of the tyre tread depth; determination of the inertia of rotating parts; determination of the road loads.

Based on the information at our disposal, it would appear that the differences between the NEDC and the NEDC-2 test conditions will give rise to an increase in the CO<sub>2</sub> emissions values of vehicles tested, thus making the NEDC-2 significantly more stringent than NEDC.

The following table reports the differences between the test conditions of NEDC and NEDC-2<sup>41</sup> that are expected to have a significant impact on the CO<sub>2</sub> emissions produced by the tested vehicles:

<b>Test condition</b>	<b>Difference between NEDC and NEDC-2</b>	<b>Estimated impact</b>
<b>Laboratory temperature setting</b>	<p>Under the NEDC, manufacturers can choose to set the laboratory temperature between 20°C and 30°C.</p> <p>For CO2MPAS modelling the laboratory temperature is fixed at 25°C.</p> <p>Under the NEDC-2, manufacturers can chose to set the laboratory temperature between 20°C and 25°C.</p>	<p>Under the NEDC, manufacturers are allowed to set the laboratory temperature between 20°C and 30°C. Therefore, the impact of the modification of the laboratory temperature will vary depending on the temperature that each manufacturer currently sets.</p> <p>However, it is possible to predict an estimated maximum impact of <u>+1% of CO<sub>2</sub> emissions on average.</u></p>
<b>Tyre pressure</b>	<p>The NEDC-2 sets the tyre pressure at the average of recommended levels, while in NEDC manufacturers are allowed to use the highest</p>	

<sup>41</sup> The NEDC-2 testing conditions referred to in this table are contained in the current version of Annex I to the Draft CO<sub>2</sub> Regulation.

	recommended pressure.	
<b>Tyre tread depth</b>	<p>Under NEDC manufacturers are allowed to use tyres with 50% tyre tread depth.</p> <p>The NEDC-2 requires a tyre tread depth of 80%. However, based on the information made available to us, it appears that the effect of the higher tyre tread depth is incorrectly estimated in the Draft <u>CO<sub>2</sub></u> Correlation Regulation. Unless that can be compensated by physical test data, this impact is still valid to consider.</p>	<p>The changes to tyre pressure, tyre tread depth and road load determination test conditions will cumulatively have an impact on <u>CO<sub>2</sub> emissions which is difficult to exactly quantify.</u></p> <p><u>The specific impact of rolling resistance is difficult to individually quantify as it depends on the combination of tyre choice/clustering for specific vehicle models in the type-approval process.</u></p>
<b>Road Load determination and rolling resistance</b>	<p>Under NEDC, the vehicle in a family with the second worst rolling resistance is tested.</p> <p>The NEDC-2 addresses rolling resistance according to a different methodology, i.e. the rolling resistance class value. Moreover, other differences are caused by the impact of additional equipment (vehicles prepared and tested at lowest and highest masses), the velocity before warm-up and pre-test braking allowances.</p>	
<b>Estimated average impact between NEDC and NEDC-2 physical tests</b>		<u>The overall impact of the above-listed items will be, on average, a +5% increase in CO<sub>2</sub> emissions</u>

	<p><u>However, depending on the specific vehicle model (and therefore depending on the particular fleet concerned) that figure could be higher or lower.</u></p>
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In view of the above, it would appear that vehicles tested under NEDC-2 conditions will, on average, produce a higher amount of CO<sub>2</sub> emissions than if they were to be tested under the NEDC conditions described in Annex XII to the Implementing Regulation. However, it is important to note that the exact impact of the above-listed differences between NEDC and NEDC-2 may vary depending on the relevant manufacturer: while for some manufacturers the switching from NEDC to NEDC-2 may have limited consequences, for other manufacturers the negative impact may be significant. Therefore, the above-described ‘average’ impact of +5% in terms of CO<sub>2</sub> emissions should be considered merely indicative and cannot serve as correlation key between NEDC and NEDC-2 or between NEDC and WLTP.

In this respect it must be recalled that the CO<sub>2</sub> Regulation provides for a ‘specific emission target’ to be met by the fleet of each individual manufacturer. In other words, under the CO<sub>2</sub> Regulation each manufacturer has the obligation to meet its own individual target. It follows that the Commission should ensure the respect of the ‘comparable stringency’ requirement at the level of each individual manufacturer rather than globally (as a matter of fact, the global impact of the switch from NEDC to NEDC-2 has no relevance with regard to the obligations that the CO<sub>2</sub> Regulation places on each individual manufacturer).

Finally, it must also be noted that the use of NEDC-2 instead of NEDC for the purpose of determining the ‘specific emissions of CO<sub>2</sub>’ of passenger cars may produce additional negative consequences for certain manufacturers. For instance, should the NEDC-2 be used to determine whether a vehicle qualify for ‘super-credits’ pursuant to Article 5a of the CO<sub>2</sub> Regulation, it is likely that some of the vehicles which are currently eligible for ‘super credits’ would lose their status. This would, in turn, impact the ‘average specific emissions of CO<sub>2</sub>’ of the relevant manufacturers, due to the fact that super-credit vehicles benefit from a ‘multiple counting’ for the purpose of the CO<sub>2</sub> target.<sup>42</sup>

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<sup>42</sup> Article 5a of the CO<sub>2</sub> Regulation provides that ‘[i]n calculating the average specific emissions of CO<sub>2</sub>, each new passenger car with specific emissions of CO<sub>2</sub> of less than 50 g CO<sub>2</sub>/km shall be counted as:

- 2 passenger cars in 2020,
- 1,67 passenger cars in 2021,

Again, the exact impact should be assessed at the level of each single manufacturer. Nevertheless, it is likely that the use of NEDC-2 with regard to super-credit vehicles would be an additional element suggesting that the requirement of ‘comparable stringency’ is not properly implemented in the correlation mechanism provided for in the Draft CO<sub>2</sub> Regulation.

### **3.3 The correlation mechanism set out in the Draft CO<sub>2</sub> Regulation does not appear appropriate to ensure compliance with the ‘comparable stringency’ requirement**

Based on the assumptions that (i) due to CO<sub>2</sub>MPAS’ inaccuracy, competent national authorities will often be required to rely on the NEDC-2 and (ii) the differences between the NEDC and NEDC-2 test conditions are such that they will lead to a substantial increase of the CO<sub>2</sub> emissions of the tested vehicles, there are grounds to argue that the correlation mechanism provided for in the Draft CO<sub>2</sub> Regulation does not comply with the ‘comparable stringency requirement’ laid down in Article 13(7) of the CO<sub>2</sub> Regulation.

Indeed, as discussed in detail above, the interpretation of the ‘comparable stringency requirement’ laid down in Article 13(7) of the CO<sub>2</sub> Regulation in light of the ordinary meaning of the terms ‘comparable’ and ‘stringent’, of the context and purpose of that provision and of the EU law principle of legal certainty, suggests that the stringency of the CO<sub>2</sub> emission targets should remain ‘equivalent’ after the transition from NEDC to WLTP. Not only should such equivalence be assessed on average, but also vis-à-vis each individual manufacturer, since it is for each individual manufacturer to comply with the targets set out in the CO<sub>2</sub> Regulation.

Therefore, it could be argued that the correlation mechanism set out in the Draft CO<sub>2</sub> Regulation does not allow reaching a strict equivalence between the stringency of the CO<sub>2</sub> requirements tested under NEDC and WLTP conditions:

- the inaccuracy of CO<sub>2</sub>MPAS makes it an inappropriate tool to duly translate the WLTP values into NEDC CO<sub>2</sub> reference values. It would appear that the NEDC CO<sub>2</sub> reference values calculated on the basis of CO<sub>2</sub>MPAS tend to be higher than the values which would result from a measurement under NEDC conditions. Therefore, CO<sub>2</sub>MPAS is unsuitable to ensure that the CO<sub>2</sub>

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- 1,33 passenger cars in 2022,  
- 1 passenger car from 2023,  
for the year in which it is registered in the period from 2020 to 2022, subject to a cap of 7,5 g CO<sub>2</sub>/km over that period for each manufacturer.’

requirements remain 'equivalent' after the transition from NEDC to WLTP;  
and

- the problems deriving from the inaccuracy of CO2MPAS cannot be solved by relying on the NEDC-2. Indeed, since the NEDC-2 is more stringent than the NEDC, it would appear that it produces higher results compared to the NEDC. Therefore, also the NEDC-2 does not guarantee that the CO<sub>2</sub> requirements remain 'equivalent' after the transition from NEDC to WLTP.

#### **4. CONCLUSION**

As discussed above, an interpretation based on the wording, context and purpose of Article 13(7) of the CO<sub>2</sub> Regulation and on the principle of legal certainty reveals that solid arguments point to the conclusion that the term 'comparable stringency' is to be interpreted as 'equivalent stringency'.<sup>43</sup>

Based on the above interpretation, it can be maintained that, based on the technical information made available to us (see section 3 *supra*), it is the correlation mechanism itself, as described by the Commission in the Draft Correlation Regulation, which is unsuitable to guarantee the compliance with the requirement laid down in Article 13(7) of the CO<sub>2</sub> Regulation. As a result, under these circumstances, the 'comparable stringency requirement' would only be met in the following situations:

- the original NEDC test is carried out again after the WLTP test; or
- the NEDC-based CO<sub>2</sub> targets laid down in the CO<sub>2</sub> Regulation are substituted by a WLTP-based targets established in light of the WLTP's test conditions, following an *ad hoc* robust correlation study.

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<sup>43</sup> Please note that in this context 'equivalent' does not necessarily mean 'identical in every respect'.

