**Real-world Driving Emissions tests: the facts**

How member states are trying to weaken Euro 6 rules through the backdoor

December 2015

1\textsuperscript{st} Real-world Driving Emissions package

In May 2015, the European Commission and member states agreed the first Real-world Driving Emissions (RDE) package, finally bringing closer the implementation of the 2007 Euro 6 regulations.\textsuperscript{1} The Euro 6 regulations required that diesel cars emit no more than 80mg/km of nitrogen oxides (NOx) during “normal”\textsuperscript{2} driving. The requirements applied to all new cars from September 2015 but could not come into effect in the absence of a testing procedure (describing the conditions for normal driving). Despite reservations about some aspects of the methodology\textsuperscript{3} (notably the inadequate treatment of cold starts and regeneration events and inappropriate tools to normalise the driving) T&E welcomed the decision.

The first package left open the values for ‘not-to-exceed limits’ and when these should apply. It agreed these limits would be enforced in two steps to give more time for the industry to:
- Firstly, adapt their existing vehicles to tighter limits; and
- Secondly, to comply with the Euro 6 limits on the road with a margin of tolerance for the test procedure.

Not-to-exceed limits are defined by the multiplying of the legal emission limit by a conformity factor (CF) that represents the extra emission allowance for a vehicle under the RDE test procedure.

2\textsuperscript{nd} Real-world Driving Emissions package

On the 28 October 2015, a meeting between the European Commission and member states under the auspices of the Technical Committee on Motor Vehicles (TCMV) reached agreement on the Second RDE package establishing implementation dates and conformity factors. The national experts agreed to allow Euro 6 diesel cars to emit over double the Euro 6 limit from 2017 to 2020 (CF of 2.1), and 50% more after 2020 (CF of 1.5), a de facto permanent increase of the standard to 120 mg/km. The agreement is tabulated here.

Prior to the meeting the European Commission had proposed significantly more stringent limits applying conformity factors of 1.6 in the short term and 1.2 in the longer term.

<table>
<thead>
<tr>
<th>Date</th>
<th>New Type Approvals</th>
<th>All vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.2016</td>
<td></td>
<td>Testing commences</td>
</tr>
<tr>
<td>1.9.17</td>
<td>Not to exceed limit 168mg/km</td>
<td></td>
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<tr>
<td>1.9.19</td>
<td>Not to exceed limit 168mg/km</td>
<td></td>
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<tr>
<td>1.9.20</td>
<td>Not to exceed limit 120mg/km</td>
<td></td>
</tr>
<tr>
<td>1.9.21</td>
<td>Not to exceed limit 120mg/km</td>
<td></td>
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</tbody>
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\textsuperscript{1} 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
\textsuperscript{2} Article 5(1) of Regulation (EC) 715/2007
\textsuperscript{3} \url{http://www.transportenvironment.org/publications/realistic-real-world-driving-emissions-tests-last-chance-diesel-cars-0}
Positions of member states

T&E has acquired the written submissions made by member states prior to the TCMV meeting. These are summarised in the table below along with the positions of key stakeholders:

<table>
<thead>
<tr>
<th>Country/Organisation</th>
<th>Interim CF</th>
<th>Long-term CF</th>
<th>Implementation Dates</th>
<th>Comments</th>
</tr>
</thead>
</table>
| European Commission   | 1.6        | 1.2          | 1. September 2017 (new types)/2018 (all vehicles)  
2. September 2019 (new types)/2020 (for all vehicles) | Robust and legal proposal |
| Germany               | 1.6 – 2.2  | 1.4          | EC proposal          | Weakening EC proposal on CF |
| France                | 2.0        | 1.4          | 1. September 2017 (new types)/2019 (all vehicles)  
2. September 2020 (new types)/2021 (for all vehicles) | Weaker than the Commission position + delays to introduction |
| UK                    | 2.2        | 1.4          | 1. September 2017 (new types)/2018 (all vehicles)  
2. September 2020 (new types)/2021 (for all vehicles) | Weaker than the Commission position + delays to introduction |
| Italy                 | 3.0        | EC proposal  | 1. September 2017 (new types)/2019 (all vehicles)  
2. September 2020 (new types)/2021 (for all vehicles) | Weaker than the Commission position (short-term CF in particular) + delays to introduction |
| Spain                 | 2.3        | 1.6          | 1. September 2017  
2. September 2020 (new types)/2022 (for all vehicles) | Weaker than the Commission position + delays to introduction |
| Sweden                | 2.5        | EC proposal  | 1. September 2017 (new types)/2019 (all vehicles)  
2. September 2019 (new types)/2021 (for all vehicles) | Weaker than the Commission position (short-term CF in particular) + delays to introduction |
| The Netherlands       | 1.5        | 1 (+ margin of error) | 1. January 2017 (new types)/2018 (all vehicles)  
2. January 2019 (new types)/2020 (for all vehicles) | More ambitious than the Commission position; wants same standard for petrol and diesel vehicles; The only country that voted against the TCMV agreement as too weak |
| Belgium               | No position | EC proposal  | EC proposal          | |
| Bulgaria              | 3.0        | EC proposal  | 1. September 2017 (new types)/2019 (all vehicles)  
2. September 2020 (new types)/2022 (for all vehicles) | Weaker than the Commission position (short-term CF in particular) + delays to introduction |
| Czech Republic        | 2.7        | 1.7          | 1. September 2017 (new types)/2019 (all vehicles)  
2. September 2020 (new types)/2022 (for all vehicles) | Weaker than the Commission position (short-term CF in particular) + delays to introduction; Abstained in the TCMV vote as deemed the agreement too ambitious |
| Denmark               | 1.4        | 1.1875       | 1. January 2017 (new types)/2018 (all vehicles)  
2. January 2019 (new types)/2020 (for all vehicles) | More ambitious than the Commission position |
| Hungary               | 2.5        | Set later based on experience | 1. September 2017 (new types)/2019 (all vehicles)  
2. September 2021 (new types)/2022 (for all vehicles) | Weaker than the Commission position (short-term CF in particular) + delays to introduction |
| Ireland               | EC proposal | EC proposal  | EC proposal          | |

**Notes:**
- Long-term CF indicates the period over which the target is set.
- Interim CF indicates the steps taken towards achieving the long-term goal.
- Implementation Dates specify the dates for the implementation of the target.
The majority of member states – with the exception of Belgium, Denmark, Ireland and the Netherlands – wanted to weaken the new test for diesel cars during the meeting in October. Despite the Euro 6 limit being known since 2007 and in force since 2014, many wanted to allow the industry to exceed the NOx limit by up to 300% until 2020. And even in the long term, despite NOx abatement technology being widely available today and some vehicles already meeting the standard on the road, most countries wanted to see the 80mg NOx limit being extended to at least 100mg/km open-endedly.

### Uncertainty in the testing procedure

The final CF should represent the uncertainty of the PEMS measurement. To assess the *maximum error* or uncertainty of PEMS systems, the Commission’s Joint Research Centre (JRC) undertook analysis⁴ that identified and quantified the following error sources:

- The error difference between laboratory and PEMS measurement: 7%
- Signal misalignment: <3%
- Analyzer (= sensors measuring exhaust emissions) drift: <20%

The JRC assessed the *maximum* possible error which they estimated to be 30% but stated this is a clear over-estimation and not an average discrepancy. Based on the JRC analysis, the Commission subsequently calculated the average PEMS error of measurement to be 18.75%, which then lead to an absolute maximum CF of 1.2. This was the value proposed by the European Commission to member states.

All errors evaluated are based on today’s state-of-the-art technologies, which are expected to substantially improve in the coming years. The factor of 1.2 will therefore be significantly lower by 2020 when it is proposed to apply.

### Legal interpretation

T&E has commissioned lawyers at ClientEarth to assess the legality of the decision taken by the TCMV. Comitology rules stipulate that the Commission and national experts are only empowered to supplement the original Euro 6 legislation with non-essential elements (such as CF) if they are based on robust

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⁴ [https://circabc.europa.eu/d/a/workspace/SpacesStore/a4c8455f-de18-4f3a-9571-9410827c4f87/2015_10_01_Error_analysis_JRC.pdf](https://circabc.europa.eu/d/a/workspace/SpacesStore/a4c8455f-de18-4f3a-9571-9410827c4f87/2015_10_01_Error_analysis_JRC.pdf)
technical assumptions not entailing political choices. This is in accordance with the EU treaties and the previous CJEU case law.

In the case of conformity factors, the TCMV should have set their value on the basis of the JRC analysis, i.e. long-term CF of 1.2. Raising this to 50% constitutes a clear political compromise designed to give leeway to the car industry by allowing them to emit significantly more than the agreed limit, without a clear scientific justification. TCMV has thus exceeded its implementing powers provided in the original Euro 6 legislation, giving the co-legislators (the European Parliament) a legitimate reason to reject the second RDE package.

**Impacts of higher conformity factors**

By applying a higher conformity factor the Euro 6 regulation is weakened, leading to more exceedances of NO₂ ambient air pollution standards that are already widely breached across Europe. T&E has analysed the Commission data on the current exceedances of EU air quality legislation in the member states; this shows that CF of 3 will result in 10% of monitoring stations continuing to exceed the legal air quality limits in 2030. In contrast, CF 1 (i.e. full compliance with the 80mg/km target) will enable almost all cities and highly trafficked locations to meet targets (only 2% exceedance) thereby avoiding infraction proceedings and potential fines on member states.

The technology to achieve the Euro 6 limits is available and costs are significantly less than was estimated when the Euro 6 limits were agreed back in 2007. Independent TNO research\(^5\) commissioned for the European Commission has concluded the following:

- Euro 6 light-duty vehicles with real-world compliance are technically feasible, even with stringent RDE requirements
- The additional production costs will often be below or around €100. For diesel vehicles not equipped with SCR (NOx after-treatment needed to meet Euro 6 configuration), it can be up to €500.

About one in 10 new cars achieve the 80mg/km standard on the road today; and in the US – where the pollution standards are twice as strict – the same European manufacturers are meeting those limits. The Commission has undertaken a further analysis that shows that setting an interim CF at 1.6 is within the margin range that would require only 10% of current Euro 6 diesel vehicle models to be replaced and re-designed. These models are simply being required to meet the Euro 6 limits agreed in 2007.

\(^5\) TNO 2013 Implementation of Euro 6 light-duty vehicle pollutant standards and benchmark against other international standards
Discussions in the European Parliament

The European Parliament has the right to reject the RDE implementing measure on legal grounds. The rules stipulate that MEPs have three months to raise an objection:

- The ENVI Committee must vote (through a simple majority) to reject the proposal. The vote is scheduled for 14 December 2015
- Plenary of the Parliament must vote (with an absolute majority or 376 MEPs). The vote will be conducted in either mid-January or early February 2016

MEPs submitted their official objection on 3 December 2015. Five political groups currently support a resolution to reject the implementing measure: the S&D, ALDE, the Greens, GUE and the EFDD. The resolutions calls on the Commission and member states to submit a new proposal by spring 2016, stating: “Calls on the Commission to withdraw the draft Regulation and submit a new one without delay and by 1 April 2016 at the latest, in order to introduce a real-driving emissions test for all vehicles to ensure the effectiveness of emission control systems” to comply with the Euro 6 legislation.

The new RDE measure clearly exceeds implementing powers provided for in the basic Euro 6 Regulation – by changing the limit agreed in 2007 by 50% without robust scientific evidence. This represents an obvious political decision which is outside of the scope of EU comitology. Changing primary legislation through the backdoor of comitology is unconstitutional and T&E has urged MEPs to tell the Council and Commission they will not allow legislation agreed eight years ago to be circumvented.

Diesel cars can be clean but most today are not: just one in 10 achieve Euro 6 limits on the road. Only in Europe is diesel dominant. Other regions use hybrids and other alternative fuels as a means to lower both air pollution and CO₂ emissions. The costs of modern diesel cars diverge little from comparable petrol hybrid models but these are both cleaner and have much lower CO₂ emissions.

RDE is a key component of the package of solutions to reduce the shocking costs and impacts of air pollution in Europe. EU legal proceedings for breaching NO₂ limits have already commenced in the UK, Germany, France and Spain, and will be followed by action against other member states. RDE is needed to provide a solution and lower NO₂ exposure. It ignores the sad reality that nitrogen dioxide (NO₂) pollution, mainly from diesel cars, causes premature deaths of the order of 75,000 annually as well as asthma and birth abnormalities. Ambitious RDE finally enforcing the pollution limits agreed almost a decade ago is one of key measures necessary to reverse that, together with an overhaul of the EU testing system to make it more independent and robust.

Further information

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5 T&E is currently preparing a more in-depth legal analysis of conformity factors which will be published shortly
7 http://www.transportenvironment.org/sites/te/files/publications/Dont_Breathe_Here_exec_summary_FINAL.pdf