ToR of the task force
Low and Realistic Winter temperature
(Kick-off meeting 12-13 September 2016)

WLTP Phase 2
Reference Document WLTP-14-14e - Low & Realistic Winter Temperature Task Force

Mandate and Terms of Reference

1. The purpose of the low temperature test is to check the level of specific pollutant emissions of vehicles in conditions that may easily be encountered during the winter season.

Introduction

As far as conventional vehicles are concerned, the test procedure should assess the impact of low temperature on the efficiency of after-treatment devices or other emission control technologies. In order to properly reflect the conditions that are encountered in real world winter conditions, the road load should be representative of the increased resistance to progress at low temperatures due to the higher air density and other factors (viscosity of transmission lubricant, …).

A proper procedure to define the road load and consequently the dyno settings should be developed.

Another element to be addressed is whether the emissions should be predominantly measured during the cold start and immediately after or during the whole WLTC cycle. Moreover, low temperatures largely affect the range of electrified vehicles as a consequence of a reduced efficiency of the battery and also due to the additional energy consumption from auxiliaries (i.e. heating system).

This aspect does not fall within the typical scope of the low temperature tests, especially due to the absence of exhaust emissions in the case of battery electric vehicles. However this is an important element for the information to customers whose choice at the moment of the purchase of an electrified vehicle can be heavily influenced by the available range.

2. MANDATE OF THE LOW-TEMP TASK FORCE

The Low-Temp Task Force shall:

• be open to all experts, stakeholders and CP representatives that have an interest in WLTP;
• be chaired by the European Commission;
• develop a harmonised low temperature test procedure (Type 6 test) for the assessment of the emissions of specific pollutants in conditions that may be easily encountered during the winter season;
• propose a harmonised procedure to assess the impact of low temperatures on the range of electric vehicles for proper information of the consumers;
• act as a platform for the exchange of information and contributions of stakeholders, to be discussed and agreed during the development process.

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en consumption and the range of electrified vehicles
There are temperatures or develop a new procedure for range determination
range of electrified vehicles at low temperature. The specific objectives are the following:
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3.2 Subgroup LowTemp-Range

The scope of the activity of this sub-group is the development of a test procedure to determine the impact on the range of electrified vehicles at low temperature. The specific objectives are the following:

1. Assess whether the shortened test procedure for range measurement is appropriate at low temperatures or develop a new procedure for range determination
2. Develop a test procedure to assess the impact of auxiliary systems (e.g. heating device, ... on the energy consumption and the range of electrified vehicles

A key approach is proposed which can be adapted to the specific purpose of each deliverable.

1. Start with an analysis of the existing normative and literature on the method
2. Prepare a comparative analysis amongst the different regional procedures;
3. Propose a way forward for the development of a harmonized procedure, including considerations on whether there is need for experimental activities and to what extent;
4. Develop the harmonized method;
5. Validate the method

GTR drafting

How and at which level (compromise and work load)

TERMS OF REFERENCE

It is proposed to divide the Low Temp Task Force in two sub-groups, one in charge of the procedure for assessing the pollutant emissions in conventional and electrified vehicles (LowTemp-Emis), the second in charge of the procedure for assessing the impact of the low temperature test on the range of electrified vehicles (LowTemp-Range).

Define the temperature at which the low temperature test should be carried out in order to be representative of realistic winter temperatures.

1. Define the driving cycle to be used for the test at low temperature and more specifically whether the whole WLTC cycle should be used or just the first phase(s).
2. Define the procedure for the adjustment of the road load and consequently of the dyno settings.

3.1 Subgroup LowTemp-Emis

The scope of the activity of this sub-group is the development of a test procedure to check specific pollutant emissions. The specific objectives are the following:

1. Define the test procedure to measure the distance specific emissions of the following pollutants: total HC CH4 and NMHC (??), CO, NOx and Particle Number.
2. Define specific provisions to the low temperature test to diesel and hybrid vehicles

3.2 Subgroup LowTemp-Range

The scope of the activity of this sub-group is the development of a test procedure to determine the impact on the range of electrified vehicles at low temperature. The specific objectives are the following:

For a key approach is proposed which can be adapted to the specific purpose of each deliverable.

1. Start with an analysis of the existing normative and literature on the method
2. Prepare a comparative analysis amongst the different regional procedures;
3. Propose a way forward for the development of a harmonized procedure, including considerations on whether there is need for experimental activities and to what extent;
4. Develop the harmonized method;
5. Validate the method

Report to the WLTP-IWG on the progress;

Deliver technical advice and a GTR test proposal;

Focus only on the technical issues regarding the procedure to be developed, while decisions are made at the WLTP-IWG level

Close collaboration with EV, etc.
4. TIMING

For subgroup LowTemp-Emis (to be agreed)
For subgroup LowTemp-Range (to be agreed)