

**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 test 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;

T. Fujiwara 6/10/2016 11:47

**Comment [1]:**  
 Japan needs CO2/Fuel consumption data at cold temperature.  
 All emission/CO2/Range measurement should be done by one test at harmonized cold temperature.

jrc 13/9/2016 11:26

**Comment [2]:** Some statements were included, Not only background in this section: Delete statements from here (now in the introduction) and add:

- 1.State of the legislation in the different Regions (partially done)
- 2.Interest of the CP

jrc 13/9/2016 11:39

**Deleted: BACKGROUND**

jrc 13/9/2016 11:30

**Comment [3]:** Comment from VW & BMW Delegate

jrc 13/9/2016 11:36

**Comment [4]:** Before any further development it should remain clear which is the actual procedure and if it is enough or not

T. Fujiwara 25/9/2016 14:41

**Comment [5]:** JAMA comments;  
 (1) Effective test requirement by combining each CP needs  
 (2) Appropriate limit based on assessment study (cost vs effect)  
 (3) Avoid unnecessary overinvestments

jrc 13/9/2016 11:32

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jrc 13/9/2016 11:42

**Comment [6]:** Note expected with the consideration of RDE as an alternative

jrc 13/9/2016 11:46

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jrc 13/9/2016 11:46

**Comment [7]:** ACEA Comment  
 Not necessary test procedure....

- report to the WLTP-IWG on the progress;
- deliver technical advice and a GTR text proposal;
- focus only on the technical issues regarding the procedure to be developed, while decisions are made at the WLTP-IWG level

[new point on the relations and interactions with other WG ans TFs](#)

[Close collaboration with EV, etc..](#)

[GTR drafting](#)

[How](#) and at which level (compromise and work load)

### 3. 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.](#)

- [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\(s\).](#)
- [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:

- Define the test procedure to measure the distance specific emissions of the following pollutants: total HC CH4 and NMHC (??), CO, NOx and Particle Number.
- 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:

- Assess whether the shortened test procedure for range measurement is appropriate at low temperatures or develop a new procedure for range determination
- 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

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

- Start with an analysis of the existing normative and literature on the [method](#);
- Prepare a comparative analysis amongst the different regional procedures;
- 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;
- Develop the harmonized method;
- Validate the method

jrc 13/9/2016 11:45  
**Comment [8]:** Note expected Renault. Not only procedure but also category ....

jrc 13/9/2016 11:52  
**Comment [9]:** delete

jrc 13/9/2016 11:51  
**Deleted:** political

Covadonga Astorga 21/9/2016 16:21  
**Comment [10]:** Contact Serge - WLTP chair

jrc 13/9/2016 12:10  
**Comment [11]:** We may also use the EV subgroup as a reference  
It applies for any other working group (Road load, etc)

Covadonga Astorga 21/9/2016 16:22  
**Comment [12]:** Not at the beginning  
But we will consider if necessary

T. Fujiwara 25/9/2016 14:37  
**Comment [13R12]:** Decide fundamental issue first and then two group if necessary.

Covadonga Astorga 19/9/2016 10:35  
**Comment [14]:** TF did not accepted the proposals for 2 sub- groups so the scope is the same for the TF work and it will include specific references to the work to be done for Low T emissions and for LowTemp Range

Covadonga Astorga 6/10/2016 07:47  
**Comment [15]:** DELETE

jrc 13/9/2016 12:02  
**Deleted:** Define the temperature at which the low temperature test should be carried out in order to be representative of realistic winter temperatures. ... [1]

jrc 13/9/2016 12:16  
**Comment [16]:** Rephrase and Delete the "extension" referred to hybrids

jrc 13/9/2016 12:15  
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jrc 13/9/2016 12:13  
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Covadonga Astorga 6/10/2016 07:46  
**Comment [17]:** DELETE

jrc 13/9/2016 12:03  
**Deleted:** Define the temperature at which the low temperature test should be carried out in order to be representative of realistic winter temperatures. ... [2]

jrc 13/9/2016 12:03  
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T. Fujiwara 25/9/2016 15:00  
**Comment [18]:** If we discuss the auxiliary devices, it should not be limited to only electric range but also CO2/FC of ICEs. Test conditi... [3]

jrc 13/9/2016 12:11  
**Deleted:** both subgroups

jrc 13/9/2016 12:18  
**Deleted:** general

jrc 13/9/2016 12:19  
**Comment [19]:** Partially done  
Need to complete it with China ... [4]

4. TIMING

For subgroup LowTemp-Emis (to be agreed)

For subgroup LowTemp-Range (to be agreed)