

### *Low and Realistic Winter Temp Task force: Work plan*

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<b>Informal Document</b>	<b><i>Working Plan 2017-03-14 ( TF LowT 06-03)</i></b>

The scope of the low and realistic winter temperature procedure will be to address the vehicle emissions (including CO<sub>2</sub>) and electric range at low and/or realistic winter temperature. The work of this task force should be based on the GTR 15, and the items for discussion are the low and/or realistic winter temperature for the procedure, fuel, cycle, road load, impact of auxiliary system, vehicle category, measured compounds, and parameters.

The proposal is based on the ToR and it includes the following tasks as well as building on procedures based on existing legislation and expert knowledge within the group:

#### **Action 1 A: Low Temp-Emis**

As a first step it is proposed to collect all available data and knowledge about the vehicle emissions at low and/or realistic winter temperature which may help to decide whether the emissions should be measured during the whole cycle or a reduced part of it.

- Aim to develop a harmonised low and/or realistic winter temperature test procedure for the assessment of vehicle emissions (including CO<sub>2</sub>, and electric range at low and/or realistic winter temperature;
- define the driving cycle to be used for the procedure at low and/or representative winter temperature and more specifically whether the whole WLTC cycle should be used or part of it;
- define the procedure to measure the distance specific emissions of the following compounds: total HC, CH<sub>4</sub>, NMHC, CO, NO<sub>x</sub>, and CO<sub>2</sub> as well as PM and Particle Number;
- work to define the low and/or realistic winter temperature for the procedure;
- describe measurement procedures and calculations based on existing legislation and on output from lab procedures in the TF;
- use or modify existing methods where ever reliable, confirm the cost effective and easy to apply technologies which are available, and reflect state of the art technologies. Revise the measurement procedure where it is suggested to be inadequate and develop a new measurement procedures or technologies when necessary;
- define the procedure for the adjustment of the road load and consequently of the dyno settings; develop a proposal for the handling of families for low temperature requirements.

## **Action 1 B: Low Temp-Range**

- Aim to propose a harmonised procedure to assess the impact of low and/or realistic winter temperatures on the electric range of electrified vehicles (PEVs, OVC-HEVs ...); determining the relevant electric range parameter(s)
- aim to propose a procedure to assess the impact of auxiliary systems (e.g. interior heating device including seat heater, battery heating device, ...) on the energy consumption and the electric range of electrified vehicles;
- define the vehicle technology and topics for vehicle technology to be addressed (i.e. PEVs, OVC-HEVs versus driving electric range, impact of auxiliaries, fuel and energy consumption etc.) ;
- discuss on driving cycle and low and/or realistic winter temperature, use GTR 15 as starting point;
- define if simulation or testing is needed for each identified topic and purpose, for vehicle technology;
- assess whether the shortened procedure for PEV and OVC-HEV range measurement is appropriate at low and/or realistic winter temperatures or otherwise propose modification and agree a new procedure for range determination;
- collection of available data if needed;
- define specific provisions for the low and/or realistic winter temperature procedure for hybrid vehicles where necessary.

## **Action 2**

Design and carry out an experimental measurement campaign to search for new data. Action 2 will depend on the progress and success of action 1A&B and it will be planned and launched only if necessary.

## **Action 3**

- draft legislation text: deliver technical advice and the basis for a GTR text proposal make recommendations to the WLTP IWG on the document strategy, i.e. a new GTR or as an annex to the WLTP GTR

Task force will contribute to the GTR drafting, TF will focus only on the technical issues regarding the procedure to be developed, while decisions are made at the WLTP-IWG level