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# **Report from WLTP and WLTP Sub Group EV**

28<sup>th</sup> IWG EVE Meeting, Ottawa, October 17<sup>th</sup> to 18<sup>th</sup>

# Report to EVE from WLTP and WLTP Sub Group EV

Topics discussed during last IWG WLTP meeting in Tokyo, September 2018

- As an overview of the topics discussed in WLTP, please find on the right hand side the agenda of the last IWG WLTP meeting (24th meeting) held in Tokyo/JP from September 18th to 20th
- This agenda contains all topics discussed in the IWG WLTP and its task forces and the Subgroup on electrified vehicles (WLTP SG EV)
- Main focus during last IWG WLTP meeting has been the issues/topics going in amendment number 5 of GTR15

➔ Adoption of amendment #5 in next GRPE (January 2019)

➔ Drafting deadline for working document: October 16<sup>th</sup>

WLTP-24-02e\_rev1

## AGENDA of the 24<sup>th</sup> WLTP IWG Meeting



.	Date and Time	Location
IWG	18 <sup>th</sup> ~ 20 <sup>th</sup> September 9:30 ~ 17:30 21 <sup>st</sup> September 9:30 ~ 12:30	TKP Ichigaya Conference Center*
the following meetings will be held in conjunction with IWG meeting		
Low Temp TF	17 <sup>th</sup> September 14:30 ~ 17:30	Honda Yaesu Building *
UNR-WLTP Drafting	21 <sup>st</sup> September 14:30 ~ 17:30	JASIC Tokyo Office *

\*) refer WLTP-24-02e\_Appendix\_01&02 for more detail

< > indicates the purpose of each agenda

IS : Information Sharing, D : Discussion, RC : Reach Consensus

### \*\*\*\*\* Day\_1 (18<sup>th</sup> September) \*\*\*\*\*

1. **Welcome & Organization <IS>** (9:30-9:45)
  - ◇ Opening comments by Chair
  - ◇ Administrative Info. from JASIC
2. **Adoption of Minutes & Agenda <IS>** (9:45-10:00)
  - ◇ Minutes of 23<sup>rd</sup> WLTP IWG meeting (WLTP-23-07e)
  - ◇ Proposed Agenda (WLTP-24-02e\_rev1)
3. **GTR#19 (Evaporative Test) Amd#2 <RC>** (10:00-11:00)
  - ◇ Summary of Amendment by TF Leader (WLTP-24-05e\_GTR19\_Amd2)
  - ◇ Proposed text amendment  
(WLTP-24-05e\_Appendix01\_GTR19\_Amd2text)

Link to folder of IWG WLTP meeting in Tokyo (with all documents):

<https://wiki.unece.org/display/trans/WLTP+24th+session>

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## Report to EVE from WLTP and WLTP Sub Group EV

### WLTP topics affecting electrified vehicles – Vehicle M concept from Pure ICE Vehicles

#### Background:

- Introduction of Vehicle M concept for Pure ICE vehicles (in WLTP interpolation method)
- The agreed vehicle M concept for pure ICE vehicles allows to extend the interpolation range of pure ICE vehicles from 30 to 40g/km CO<sub>2</sub>
- Vehicle M concept already in place for electrified vehicles in the context of (N)OVC-HEVs where the interpolation range can be extended from 20 to 30g/km (Charge-Sustaining) CO<sub>2</sub>

#### Conclusion in SG EV and approved by IWG WLTP:

- As the agreed and concluded proposal from pure ICE vehicles contains wording amendments as well as figures for a proper explanation of the defined tolerances, the text for electrified vehicles needs to be aligned to the text of the pure ICE vehicles

**➔ Part of amendment #5 of GTR15 (Annex 8, Paragraph 4.5.1.)**

Link to latest GTR: <https://wiki.unece.org/download/attachments/58524122/15.10.2018%20Based%20on%20GRPE-76-26r1e%201200.docx?api=v2>

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## Report to EVE from WLTP and WLTP Sub Group EV

### WLTP topics affecting electrified vehicles – REESS voltage measurement

#### Background:

- The application of instantaneous voltage is leading to an unjustified CO2 benefit for the manufacturer when applying the REESS balance correction.
  - This effect is based on the Joule Heat losses
  - The heat losses are depending on many battery parameter, are not linear and the dependency is not linear as well

#### Conclusion in SG EV and approved by IWG WLTP:

- To avoid this unjustified CO2 benefit, the agreed and concluded solution is to only allow a fixed voltage in the context of RCB correction (for the test itself and for the correction factor determination)
- Subgroup EV agreed to use the nominal voltage as the fixed voltage as it is already used in another location in the GTR-Annex of electrified vehicles

**➔ Part of amendment #5 of GTR15 (Annex 8, Appendix 3, Paragraph 3.4.)**

Link to latest GTR: <https://wiki.unece.org/download/attachments/58524122/15.10.2018%20Based%20on%20GRPE-76-26r1e%201200.docx?api=v2>

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## Report to EVE from WLTP and WLTP Sub Group EV

### WLTP topics affecting electrified vehicles – Drive Trace Index for EVs

#### Background

- The application of drive trace indices RMSSE and IWR is required by GTR 15
- The calculated need to comply with the limits defined in the same chapter of GTR15
- But not clear with the current version how electrified vehicles with their specific procedures need to be handled (e.g. Charge-Depleting-Test and City-Cycles-Test for OVC-HEVs and Shortened Test Procedure for PEVs)

#### Conclusion in SG EV and approved by IWG WLTP:

- Necessity to update the current text to make clear how EVs should be treated

#### → Part of amendment #5 of GTR15 (Annex 7, Paragraph 7.4.)

Link to latest GTR: <https://wiki.unece.org/download/attachments/58524122/15.10.2018%20Based%20on%20GRPE-76-26r1e%201200.docx?api=v2>

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## Report to EVE from WLTP and WLTP Sub Group EV

### WLTP topics affecting electrified vehicles – Definition of REESS charging

#### Background

- The current definition of REESS charging was working but left open a lot of room for interpretation
- E.g. no definition in the definition of „normal charge“ and „on-board-charger“

#### Conclusion in SG EV and approved by IWG WLTP:

- Necessity to update the current text to close the room for interpretation as best as possible
- By updating the text, making text robust and prepared for future charging technologies

#### ➔ Part of amendment #5 of GTR15 (Annex 8, Appendix 4, Paragraph 2.2.3.)

Link to latest GTR: <https://wiki.unece.org/download/attachments/58524122/15.10.2018%20Based%20on%20GRPE-76-26r1e%201200.docx?api=v2>

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## Report to EVE from WLTP and WLTP Sub Group EV

### WLTP topics affecting electrified vehicles – Fuel Cell Vehicles

#### Background:

- Analysis of non-observed contaminations is wasting valuable resources
- In case of the gravimetric method, no correction of hydrogen lines is described in GTR15

#### Conclusion in SG EV and approved by IWG WLTP:

- Concerning non-observed contaminations, the proposal is to exempt the analysis of the specific contaminations as some might not be checked during the hydrogen production process; checking in Type approval would just waste resources; exemption based on a new ISO standard which describes the quality control methods of each production process
- Concerning the hydrogen line correction, including of this correction into the GTR text

**→ Part of amendment #5 of GTR15 (Annex 8, Appendix 7, Paragraph 2.2.5.)**

Link to latest GTR: <https://wiki.unece.org/download/attachments/58524122/15.10.2018%20Based%20on%20GRPE-76-26r1e%201200.docx?api=v2>

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## Report to EVE from WLTP and WLTP Sub Group EV

### WLTP topics affecting electrified vehicles – Amendment of Annex 8 Post Processing

#### Background:

- Table A8/2 in Annex 8 contains information which is more appropriate to be located in the post processing tables (units, rounding)
- Post Processing Tables give a clear guidance how values shall be calculated and which rounding shall be applied
- In addition: No definition for intermediate rounding available in current text

#### Conclusion in SG EV and approved by IWG WLTP:

- Integration of the information of Table A8/2 in Annex 8 into post processing table steps
- Adding the missing information regarding intermediate rounding

#### ➔ Part of amendment #5 of GTR15 (Annex 8, Tables A8/5 to A8/11)

Link to latest GTR: <https://wiki.unece.org/download/attachments/58524122/15.10.2018%20Based%20on%20GRPE-76-26r1e%201200.docx?api=v2>



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## Report to EVE from WLTP and WLTP Sub Group EV

### WLTP topics affecting electrified vehicles – Low Temperature for EVs

Task of the Low Temperature Task Force under the umbrella of the IWG WLTP is to discuss and conclude on a new low temperature testing procedure, for pure ICE vehicles as well as for electrified vehicles (NOVC-HEVs, OVC-HEVs, PEVs and NOVC-FCHVs).

- More criteria emissions shall be checked in the future (not relevant for FCHVs and PEVs)
- Test Procedure and applied cycle (specific procedures may be required for electrified vehicles)
- Consideration of Auxiliary devices and their effect in addition to higher rolling resistance on fuel and electric consumption, CO<sub>2</sub> and range (for the purpose of customer information)

Main focus of WLTP SG EV:

- EV specific points shall be discussed in SG EV
- Discussion results is then input for Low Temp TF

**➔ No Progress in the last month on EVs, discussion currently starting again**

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## Report to EVE from WLTP and WLTP Sub Group EV

### WLTP topics affecting electrified vehicles – Durability

Main focus of durability Task Force:

- Durability of exhaust emission after treatment systems

Main focus of WLTP SG EV:

- REESS durability and its effect on range, fuel consumption and energy consumption from complete vehicles perspective

**→ No Progress in the last month on EVs, discussion currently starting again**

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## Report to EVE from WLTP and WLTP Sub Group EV

### Next Meetings of WLTP Sub Group EV

#### Next meetings:

- Web-Audio on November 12th, 9:00 to 12:00 CET
- If possible, time slot within IWG WLTP session in January 2019 (not confirmed yet)

#### Focus in upcoming meetings:

- Low Temp Test for EVs
- Durability in the context of EVs