Possible input for WLTP GTR#15 Amend#6

Postponed topics from UN R WLTP development

Possible input for WLTP GTR#15 Amend#6

Update/amendment to include extrapolation for PEVs, define interpolation range for PEVs

Intention of the proposal:

- No extrapolation defined for PEVs, no interpolation range defined for PEVs
- Proposals adds this option and shall define value for interpolation and extrapolation range

Current status:

- Support on the concept but still discussion required on the values "minimum interpolation range", "maximum interpolation range", "maximum allowed extrapolation range"; also on the question if the vehicle M concept shall also be applicable for PEVs
- Discussion required if topic can be supported and integrated into Amendment#6 of GTR#15 or not

Updated version and draft text included in document: 191016_Extrapolation_OVC-HEV_interpolation extrapolation PEV.docx

Conclusion within WLTP SG EV :

☐ Shall go into GTR#15 Amd#6

☐ Shall not go into GTR#15 Amd#6 and shall be further postponed

Possible input for WLTP GTR#15 Amend#6

Update/amendment to include extrapolation for OVC-HEVs

Intention of the proposal:

- Extrapolation is defined for OVC-HEVs but to avoid mistakes in the extrapolation two additional aspects need to be considered, to ensure that the extrapolation is right and correct
    - By extrapolation below VL, the amount of CD-cycles need to be identical between VL and the extrapolated vehicle below VL; if VL was not able to drive CD in pure electric operation, also no pure electric operation for the extrapolated vehicle below VL allowed
    - By extrapolation above VH, the amount of CD-cycles need to be identical between VH and the extrapolated vehicle above VH; if VH was able to drive CD in pure electric operation until SoC_{min}, also pure electric operation for the extrapolated vehicle above VH required

Current status:

- JPN and EC stated that not necessary to include it now, can be done later

- Discussion required if topic can be supported and integrated into Amendment#6 of GTR#15 or not

Latest version: 190930_WLTP-GTR-Proposals_EV_extrapolation_OVC-HEVs.pdf

Conclusion within WLTP SG EV :

☐   Shall go into GTR#15 Amd#6

☐   Shall not go into GTR#15 Amd#6 and shall be further postponed

Possible input for WLTP GTR#15 Amend#6

Update/amendment of the wording of nominal voltage

Intention of proposal:

- Nominal voltage is a fixed voltage value which is not taking care of the voltage decrease of a REESS
- For PEV test procedures, nominal voltage is not allowed at all; but still for the CD-test of an OVC-HEV
- Proposal limits the application of nominal voltage to the CS-conditions of an OVC-HEV and to the low voltage REESSs of PEVs and OVC-HEVs under CD conditions
- For low voltage REESS, nominal voltage application should be allowed in any case as these REESS are small and the voltage decrease over SoC is small

Current status:

- EC supports the proposal
- JPN understand the proposal but cannot support the integration of the proposal into UNR WLTP first edition
- Discussion required if topic can be supported and integrated into Amendment#6 of GTR#15 or not

Latest version: 190903_ACEA TF EV proposal nominal voltage_with_comment_and_changes.docx

Conclusion within WLTP SG EV :

☐ Shall go into GTR#15 Amd#6

☐ Shall not go into GTR#15 Amd#6 and shall be further postponed

Possible input for WLTP GTR#15 Amend#6

Alternative option for COP testing of PEVs

<u>Intention of proposal:</u>

- JAMA is proposing an alternative method (option) to the existing COP procedure (first cycle of the PEV test procedure for DC energy consumption confirmation) as in current procedure, vehicle is coming out of the test with a high SoC because procedure is starting with a fully charged battery and only one cycle is being driven
- If vehicle is shipped by plane, there is a requirement to have a maximum SoC of 30% which means that for those vehicles, the manufacturer needs to discharge the REESS down to this level
- Alternative procedure is following the same methodology like the existing procedure but starting with lower SoC and therefore avoiding this discharge of the REESS after the first cycle

<u>Current status:</u>

- General concern on timeline raised during UN R WLTP development
- Discussion required if topic can be supported and integrated into Amendment#6 of GTR#15 or not

Presentation describing proposal: PEV Test Procedure for COP_JAMA.pdf

Conclusion within WLTP SG EV :	
☐	Shall go into GTR#15 Amd#6
☐	Shall not go into GTR#15 Amd#6 and shall be further postponed

Possible input for WLTP GTR#15 Amend#6

CO_2 correction factor determination (Annex 8) – Drafting issue in §4.1.1.3.

<u>Intention of the proposal:</u>

- Removing redundant text in paragraph 4.1.1.3., <u>no content change</u>
- KCO2 is mentioned in the formula and in the legend below the formula
- Text see next slide

<u>Current status:</u>

- EC/JPN: Discussion shall be postponed to a later stage
- Discussion required if topic can be supported and integrated into Amendment#6 of GTR#15 or not

<u>Conclusion within WLTP SG EV :</u>

☐ Shall go into GTR#15 Amd#6

☐ Shall not go into GTR#15 Amd#6 and shall be further postponed

Possible input for WLTP GTR#15 Amend#6

CO2 correction factor determination (Annex 8 App. 2) – Drafting issue in §4.1.1.3.

4.1.1.3. If the correction of the charge-sustaining CO_2 mass emission is required according to paragraph 1.1.3. of Appendix 2 to this annex or in the case that the correction according to paragraph 1.1.4. of Appendix 2 to this annex was applied, the CO_2 mass emission correction coefficient shall be determined according to paragraph 2. of Appendix 2 to this annex. The corrected charge-sustaining CO_2 mass emission shall be determined using the following equation:

$$M_{CO2,CS} = M_{CO2,CS,nb} - K_{CO2} \times EC_{DC,CS}$$

where:

$M_{CO2,CS}$ is the charge-sustaining CO_2 mass emission of the charge-sustaining Type 1 test according to Table A8/5, step No. 3, g/km;

$M_{CO2,CS,nb}$ is the non-balanced CO_2 mass emission of the charge-sustaining Type 1 test, not corrected for the energy balance, determined according to Table A8/5, step No. 2, g/km;

$EC_{DC,CS}$ is the electric energy consumption of the charge-sustaining Type 1 test according to paragraph 4.3. of this annex, Wh/km;

K_{CO2} is the CO_2 mass emission correction coefficient according to paragraph 2.3.2. of Appendix 2 to this annex, (g/km)/(Wh/km).

Possible input for WLTP GTR#15 Amend#6

Declared number of cycles in CD mode for OVC-HEV

Intention of the proposal:

- In the case of "number of tests", more than one CD test need to be performed
- It is not clear what need to be done in the case of a borderline OVC-HEV which reaches in one test the expected numbers of CD cycles but in another test one cycle more or one cycle less than the expected number of CD cycles
- Proposal is providing a solution how to deal with this situation

Current status:

- EC: not top priority; it is suggested to postpone this introduction
- JPN: not discussed, but also seen as low priority. This issue can be negotiated with the technical service at this stage and could be taken on board for discussion at a later stage.
- Discussion required if topic can be supported and integrated into Amendment#6 of GTR#15 or not

Latest version: ACEA EV Proposal_Inconsistency at expected number of cycles in CD mode for OVC-HEVs.docx

First version: Declared number of cycles in CD mode for OVC-HEVs.pdf

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Conclusion within WLTP SG EV :

☐ Shall go into GTR#15 Amd#6

☐ Shall not go into GTR#15 Amd#6 and shall be further postponed

Possible input for WLTP GTR#15 Amend#6

Additional topics (new)

Possible input for WLTP GTR#15 Amend#6

Revision of post processing table updates of January 2020

Background:

- Before the GRPE week in January 2020, JPN submitted an update on all the post processing tables in Annex 7 and Annex 8
- Updates had been intended to have only an impact on Level 1B
- Before GRPE and also during GRPE, the updates had been scrutinized and amendments had been proposed for the UNR WLTP
- Nevertheless, the available time for scrutiny before and during GRPE was limited so additional time was requested during the Geneva meeting to work on a more robust solution than the solution which is currently integrated in the UNR WLTP documents

Current status:

- Tables still need to be reviewed and a proposal still need to be prepared

Latest version: no document available yet

Conclusion within WLTP SG EV :

☐   Shall go into GTR#15 Amd#6

☐   Shall not go into GTR#15 Amd#6 and shall be further postponed

Possible input for WLTP GTR#15 Amend#6

K_{CO_2} correction factor family

Intention of the proposal:

- For HEVs, the CO_2 correction factor need to be determined for each interpolation family
- For the determination, five measurements are required (or only three in case specific provisions are fulfilled)
- Experiences in the already performed type approval tests show that in similar HEV powertrains, the factor is almost identical
- This means a lot of testing without any additional value
- A K_{CO_2} correction family concept will reduce this additional testing without any additional value

Current status:

- Proposal is still in preparation and will be shared on a short notice

Latest version: no document available yet

Conclusion within WLTP SG EV :

☐   Shall go into GTR#15 Amd#6

☐   Shall not go into GTR#15 Amd#6 and shall be further postponed