WLTP GTR#15 Amend#6

Overview square brackets SG EV needs to provide input
Amendment to calculation chapter 4 in Annex 8
Status: 25.05.2020 (for SG EV on May 28th)

Link the latest version of the informal document updating the working document (GTR#15Amd#6):

https://wiki.unece.org/display/trans/GTR15+Amnd+6+Drafting ✔

Square bracket topic in WD of 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; high voltage REESS under CD condition are not allowed to use nominal voltage

Final status:

- It was agreed by SG EV during the meeting on April 8th to follow JPN proposal (with 60V threshold)
- Only remark: Last line in Table A8.App3/1 („break-off criteria judgment…") shall be deleted from the proposal

Discussion basis:

- Current text in square brackets → working document: Annex 8, Appendix 3, paragraph 3.2.
- Proposal JPN: 200315_JPN_input_REESS voltage measurement.docx (complete paragraph 3)

Conclusion within WLTP SG EV:

[X]   Shall go into GTR#15 Amd#6

[ ]   Shall not go into GTR#15 Amd#6, topic shall be further postponed

Link the latest version of the informal document updating the working document (GTR#15Amd#6):

https://wiki.unece.org/display/trans/GTR15+Amnd+6+Drafting

Square bracket topic in WD of WLTP GTR#15 Amend#6
Proposal 1 in the context of the CO_2 correction factor application of NOVC-HEVs

Intention of the proposal:

- Proposal is to give the manufacturer the option to use a worst case approach based on the generic approach from pure ICE vehicles
- These proposals will reduce unnecessary testing without any additional value

Current status:

- JAMA supports the proposal; JPN is not able to support it without academic explanation and will check ACEA EV explanation
- EC supports the proposal

Supporting documents from ACEA EV:

200402_Generic approach_CO2_correction_NOVC-HEV.pptx

200512_ Academic Explanation for generic RCB Correction NOVC-HEVs (input ACEA EV).pdf

 200512 Draft text of Annex 8 Appendix 2a (Input ACEA EV).docx (draft text proposal)

Conclusion within WLTP SG EV:

☐ Shall go into GTR#15 Amd#6

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

Link the latest version of the informal document updating the working document (GTR#15Amd#6):

https://wiki.unece.org/display/trans/GTR15+Amnd+6+Drafting

Square bracket topic in WD of WLTP GTR#15 Amend#6

Proposal 2 in the context of the CO_2 correction factor application of OVC- and NOVC-HEVs

Intention of the proposal:

- Manufacturer should be able to group several interpolation families into one K_{CO2} family
- This proposals will reduce unnecessary testing without any additional value

Current status:

- JPN supports the concept of making the family wider, however, it should be well justified from the technical view points
- EC supports the concept of having the same family criteria as the CoP family
- Final feedback required in WLTP SG EV web-audio on May 28th

Supporting documents from ACEA EV:

200402_K_CO2_factor family proposal (based on COP family concept)_(N)OVC-HEV.pptx

Draft text proposal (word document):

200514 Draft text proposal KCO2 correction factor family.docx

Conclusion within WLTP SG EV:

☐   Shall go into GTR#15 Amd#6

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

Link the latest version of the informal document updating the working document (GTR#15Amd#6):

https://wiki.unece.org/display/trans/GTR15+Amnd+6+Drafting

Square bracket topic in WD of WLTP GTR#15 Amend#6

Expected number of cycles in CD mode for OVC-HEV

Intention of the proposal:

- 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 agrees that a solution is needed and supports the concept of declaring the number of CDC cycles and voiding the test if the number is different, but EC is also open to a more elegant solution to solve this problem.
- JPN is not able to support if the test was treated as an invalid test (reason: same scenario as other parameter should be applied)
- Proposed wording in [...] in the working document would need further amendment (also authorities should be able to request a repetition of the test on their request)
- Further, during the meeting on April 2nd, a specific use case has been introduced and explained (number of CD cycles less than the expected number) and a possible problem has been addressed (see link below)

Draft text proposal (word document):

Working document: Annex 6, paragraph 1.2.3.4., 1.2.3.5. and 1.2.3.6. (ACEA EV text proposal)

ACEA EV provided an explanation based on an example: <update still work in progress – will not be available for May 14th>

Conclusion within WLTP SG EV:

☐ Shall go into GTR#15 Amd#6

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

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Drafting topics to be addressed in WD of WLTP GTR#15 Amend#6

Amendments in calculations of Annex 8 Chapter 4

Background of the proposal:

- ~~Correction: Brackets in some questions need to be set different to avoid misinterpretation (§4.1.3.1., §4.1.3.2., §4.1.3.3., §4.2.3.)~~
- Clarification: Add wording "arithmetic" in context of 'average' to make clear that the arithmetic average is meant
- Clarification: Adding "and charge-depleting fuel efficiency" in §4.2.2. headline; adding "for OVC-HEVs" in first sentence of §4.2.3.
- Guidance in equation where a division by "zero" is possible: Add wording in case of OVC-HEV equations where a division by "zero" would be possible in case of a pure electric driven CD test or at least one cycle in the CD test (FE_{CD}, $FC_{weighted}$, EAER, $EAER_p$)

Current status:

- Draft text proposal prepared
- Feedback required in WLTP SG EV web-audio on May 28th

Draft text proposal (word document):

200514 Amendments in calculation_GTR15 Annex 8 Chapter 4 (rev1).docx

Conclusion within WLTP SG EV:

☐ Shall go into GTR#15 Amd#6

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

Link the latest version of the informal document updating the working document (GTR#15Amd#6):

https://wiki.unece.org/display/trans/GTR15+Amnd+6+Drafting

Square bracket topic in WD of WLTP GTR#15 Amend#6
Low Temp Test Procedure

Current status of EV low temp topics can be seen in the latest version of the Excel Sheet:

→   20xxyy_Status Square bracket topics_Amd#6 WD.xlsx

Latest version of the Excel Sheet can be found on the UNECE wiki in the following folder:

https://wiki.unece.org/display/trans/Optional+annex+Low+T+-+Drafting

Presentation EV family concept by ACEA EV:

200515_Update_EV_Low Temp Family explanation slides_after SG EV.pptx

Proposed updates for (N)OVC-HEVs by EC on Low Temp Family Concept:

200520 Type 6 ICE_NOVC_OVC-HEV test vehicle selection proposal_EC.docx

EV related draft text proposals (word document) – for further commenting:

200514_Proposed draft text for EV_LT_# (except family related topics).docx

200518_Proposed draft text for EV_LT (family related topics).docx

BACK UP

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

Status after IWG IMD, Brussels, February 20th:

- 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
- JPN and EC position has not changed since January where they stated that without concrete proposal and justification
- As position has not changed : Shall not go into GT#15 Amd#6 and shall be further postponed (unless further justification provided)

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

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Conclusion within WLTP SG EV:

☐   Shall go into GTR#15 Amd#6

☒   Shall not go into GTR#15 Amd#6, topic shall be further postponed

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Link the latest version of the informal document updating the working document (GTR#15Amd#6):

https://wiki.unece.org/display/trans/GTR15+Amnd+6+Drafting

X

Possible input for WLTP GTR#15 Amend#6

Update/amendment to 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

Status after IWG IMD, Brussels, February 20th:

- JPN and EC position has not changed since January where they stated that this is not necessary to include now, can be done later
- As position has not changed : Shall not go into GT#15 Amd#6 and shall be further postponed

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, topic shall be further postponed

Possible input for WLTP GTR#15 Amend#6
Alternative option for COP testing of PEVs

Intention of proposal:

- 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

Status after IWG IMD, Brussels, February 20th:

- Topic can be skipped and will be further postponed

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, topic shall be further postponed