

## Minutes of the 23<sup>rd</sup> WLTP IWG Meeting

	Date and Time	Location
IWG day_1	4 <sup>th</sup> June, 10:00 ~ 17:30	EU Commission Building*
IWG day_2	5 <sup>th</sup> June, 9:30 ~ 12:30	Palais des Nations: Room XXIV
SG EV	6 <sup>th</sup> June, 9:30 ~ 11:30	NTSEL European Office**

\*) Rue du Grand-Pré 64, \*\*) Rue de Lausanne 80, only up to 22 seats are available

Documents: <https://wiki.unece.org/display/trans/WLTP+23rd+session>

**< > indicates the purpose of each agenda**

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

**\*\*\*\*\* Day\_1 (4<sup>th</sup>) \*\*\*\*\***

**Meeting location : EU Commission Building**

1. **Welcome & Organization <IS>** (10:10-10:25)
  - R. Cuelenaere (Chair, TNO) welcomed the group. He announced that M. Bergmann (TS, Audi) is resigning as Co-Technical Secretary. On behalf of leading team, he asked if anyone wished to volunteer to be secretary.
  - R. Cuelenaere (Chair, TNO) expressed gratitude to EU delegation to hold a meeting at EU commission building.
  - R. Cuelenaere (Chair, TNO) explained the venue of Subgroup EV meeting which will be held on 6th Jun in the NTSEL European Office.
  
2. **Adoption of Minutes & Agenda <IS>** (10:25-10:45)
  - ✧ Proposed Agenda (WLTP-23-02e) was **adopted**. R. Cuelenaere (Chair, TNO) thanked N. Ichikawa (TS, Japan) for making the agenda.
  - ✧ Minutes of 22<sup>nd</sup> WLTP IWG meeting (WLTP-22-14e\_rev2) were **adopted with slight modifications**. R. Cuelenaere (Chair, TNO) thanked M. Morimoto (Japan) and the Japanese delegation for making the minutes.
  
3. **Report of each TF <IS & D & RC>**  
 (10:45-15:00 including coffee break and lunch)
  - ✧ Current Status of each TF (WLTP-23-04e)
    - C. Astorga-Llorens (JRC) announced there will be a small drafting meeting for Low Temp. TF in the morning of 7<sup>th</sup> June, one hour before GRPE meeting.
    - J. Dornoff (ICCT) announced he will host a meeting on family definitions on 13<sup>th</sup> June and all members are invited.
  - ✧ Discussion Items
    - N. Ichikawa (TS, Japan) explained the document number with “WLTP-23-04e” which indicates discussion documents and “WLTP-23-06e” means concrete text proposals.

- ✓ Gear Shift (WLTP-23-04e\_Appendix01, WLTP-23-06e\_Appendix01)
  - H. Steven (Consultant, ACEA) explained WLTP-23-04e\_Appendix01 to review discussion at 22<sup>nd</sup> WLTP IWG. With same document, he also discussed the round-robin tests and differences between GTR15 Amend.4 and EU-WLTP 2<sup>nd</sup> Act.
  - H. Steven (Consultant, ACEA) mentioned round-robin test is to test the tools and no physical test will be done. The round-robin test will be done with latest version of gearshift tool on UN-ECE website.
  - (<https://wiki.unece.org/display/trans/Gearshift+calculation+tool>) At this point, the latest version is 29<sup>th</sup> May 2018. According to him, technical authorities and testing labs are joining this test.

<Coffee break 11:16 – 11:40>

- ✓ Drive Trace indices (WLTP-23-04e\_Appendix02)
  - T. Haniu (Japan) explained WLTP-23-04e\_Appendix02 on proposal of the method to apply the drive trace indices to the electrified vehicles by Japan.
  - A. Marotta (EC) said that EC is currently checking internally a proposal by Japan. He said EC will have position by 24<sup>th</sup> WLTP IWG in September.
  - B. Coleman (VW Group) asked the background of RMSSE. He mentioned that there are some trend between CO<sub>2</sub> and RMSSE and but that is not a correlation. He showed chart in WLTP-23-04e\_Appendix02a to show RMSSE in Asian round-robin test. He proposed to have different analysis with exceeding speed and under speed. N. Ichikawa (TS, Japan) made a comment about the reasons to having 2 indices. He said IWR have a correlation with cycle energy demand. And RMSSE have relation with discrepancy from target speed and this is to prevent intentional deviation from target speed. He also made comment that we should think of balance between test burden and accuracy.
  - M. Nägeli (VW Group, TS of Subgroup EV) said WLTP-23-04e\_Appendix02 will be reviewed during Subgroup EV meetings, especially at the meeting on 6<sup>th</sup> June.
  - Drive trace indices TF will be held on 4<sup>th</sup> Sep.
- ✓ Evap. (WLTP-23-04e\_Appendix03, WLTP-23-06e\_Appendix03 rev1)

[Conclusions]

- **IWG agreed to add the calculation method for variable volume SHED**, which is in US EPA regulation, as an option.
- **IWG agreed to discuss discussion points in WLTP-23-04e\_Appendix03b and the evaporative emission family written in EU-WLTP 2<sup>nd</sup> Act for GTR 19 Amendment 2.**

- B. Coleman (VW Group) explained WLTP-23-04e\_Appendix03a and WLTP-23-06e\_Appendix03\_rev1 on calculation method for variable volume SHED. This method is also allowed in US EPA regulation. Y. Inoue (MLIT, Japan) asked if G. Martini (JRC) have same understanding as B. Coleman (VW Group). If so, he said Japan can accept the proposal to add the calculation method as an option. After check within EC, this proposal was agreed to add to GTR 19 Amendment 2.
- H. A. Nakhawa (ARAI, India) asked about the fixed value “1.42m<sup>3</sup>” which is subtracted from SHED volume during calculation. B. Coleman (VW Group) replied this value stands for the outside volume of test vehicle and came from US EPA regulation. M. Olechiw (EPA, US) said that he will check the background of this number. This will be discussed during next TF meeting.
- M. Morimoto (Japan) explained WLTP-23-04e\_Appendix03b and WLTP-23-06e\_Appendix03\_rev1 on possible revision points for upcoming GTR 19 Amendment 2. There were no objection to discuss those topics.
- B. Coleman (VW Group) mentioned to add the evaporative emission family requirements which is adopted in EU-WLTP 2<sup>nd</sup> Act as another discussion point. There were no objection to discussing this topic.
- EVAP TF will be held on 28<sup>th</sup> June and 3<sup>rd</sup> September.

**<LUNCH 12:45 – 14:00>**

- ✓ Durability & COP
  - IWG agreed to discuss these topics in conjunction with Transposition TF.
- ✓ Road-load Determination (WLTP-23-04e\_Appendix05)
  - N. Ichikawa (TS, Japan) announced that Japan is internally discussing topics on WLTP-23-04e\_Appendix05. He also said the concrete proposals will be presented at 24<sup>th</sup> WLTP IWG.
- ✓ Split Run during Coastdown Method  
(WLTP-23-04e\_Appendix06, WLTP-23-06e\_Appendix06)
  - N. Ichikawa (TS, Japan) explained his counter proposal on skipping overlap requirement of split run during coastdown method. This topic will be discussed at next New Issues TF meeting.
- ✓ Wind Tunnel Method (WLTP-23-06e\_Appendix08)
  - M. Morimoto (Japan) mentioned the latest text proposal on wind tunnel method. She asked if there are any comments on this, let New Issues TF members know by next meeting.

- ✓ Vehicle\_M Concept (WLTP-23-06e\_Appendix09)
  - C. Lueginger (BMW) explained WLTP-23-06e\_Appendix09 on text proposal for increasing CO2 range between VL and VH by measuring VM. He said this is basically on what was agreed. However, the linearity criterion for VM is a new proposal. Since there were comments on VM CO2 mass emission difference, he added "1% of interpolated value " to the text.
  - A. Marotta (EC) said EC will have answer to apply VM concept also for ICE vehicles by 24<sup>th</sup> WLTP IWG.
  - N. Ichikawa (TS, Japan) said Japan agrees with applying the VM concept also for ICE vehicles, but on selection of VM, he said he wants to discuss at next New Issues TF meeting.
  - M. Nägeli (VW Group, TS of Subgroup EV) mentioned that after this is agreed, Annex 6 and Annex 8 should be aligned. No one against his comment.
  
- ✓ Mystery#5 (WLTP-23-04e\_Appendix11, WLTP-23-06e\_Appendix11)
  - N. Ichikawa (TS, Japan) explained WLTP-23-04e\_Appendix11 and WLTP-23-06e\_Appendix11. C. Lueginger (BMW) mentioned that f1 coefficients in the same road load family should be same. Otherwise, the family concept would not work. B. Coleman (VW Group) said he support simple idea raised by C. Lueginger (BMW), to average f1 coefficients of VH and VL and use it as new f1 coefficient. He also mentioned that we need to ensure past WLTP approvals will not require to re-test. A. Marotta (EC) also said that he is afraid of side effects by this proposal. To avoid cherry picking, he said to apply only one procedure or apply this proposal only to the special case.
  - **This will be discussed at next New Issues TF meeting.** Before that, new name linked to issue will be given to this topic, instead of Mystery #5.
  
- ✓ Rounding (WLTP-23-04e\_Appendix15)
  - S. Dubuc (Drafting coordinator, EC) explained WLTP-23-04e\_Appendix15 on rounding. In this document, there were so called ASTM/ISO method and normal "high school" rounding method. B. Coleman (VW Group) mentioned that rounding method should be consistent with EPPR.
  - Since EPPR did not have any conclusion on rounding, **WLTP IWG agreed to use the normal "high school" rounding method.** This method will be written to GTR 15 Amendment 5 and all the rounding will be referred to this paragraph.
  
- ✓ Significant number (WLTP-23-04e\_Appendix12)
  - M. Morimoto (Japan) explained WLTP-23-04e\_Appendix12 about concern on number of significant between the results of VL, VH, and Vind.
  - C. Lueginger (BMW) said those differences in digits of declared value and

final test value is intentional, to avoid rounding more than once.

R. Cuelenaere (Chair, TNO) asked if writing the background to the technical report would help. However, M. Morimoto (Japan) said it would not. She said she understand rounding more than once should be avoided. However, she claimed that her concern is on confusion of customer with final values with different digits of VL, VH and Vind.

- B. Coleman (VW Group) mentioned that there are inconsistency in Annex 8 Appendix 5/1 about UF.
  - **Japan will prepare proposal by New Issues TF meeting at the end of August.**
- ✓ Response Factor (WLTP-23-04e\_Appendix13, WLTP-23-06e\_Appendix13)
- M. Morimoto (Japan) explained WLTP-23-06e\_Appendix13 about measurement of propylene and toluene response factors which are never used in GTR 15. This proposal was to clarify those measurements after major maintenance which does not affect those response factors as a recommendation. K. Engeljehring (AVL) made comment that these measurements are needed at both introducing analyser into service and at major maintenance.
  - **This topic will be discussed at New Issues TF meeting.**
- ✓ Span gases
- C. Astorga-Llorens (JRC) asked who is taking lead on this topic. M. Vasarhelyi (Air Liquide) said with discussion with JRC, he is preparing proposal to share within a few days. This will be the counter proposal to proposal presented by Japan at 22<sup>nd</sup> WLTP IWG.
  - R. Cuelenaere (Chair, TNO) asked to contact him, if anyone is interested in this topic. **A span gas workshop will be held.**

<Coffee Break 16:15-16:35>

- ✓ Description of 3g/km extension (WLTP-23-06e\_Appendix14)
- M. Morimoto (Japan) explained WLTP-23-06e\_Appendix14. Her proposal was to harmonise Annex 6 and Annex 8 descriptions. A. Marotta (EC) said he and R. Gardner (Consultant, EC) will check the proposed text. **No decision was made.**
- ✓ Peripheral devices
- B. Coleman (VW Group) identified that the peripheral devices definition from M.R.2., which is used in GTR15, does not align with the introductory text in M.R.2 and this has caused some issues at type-approval relating to what is a peripheral device and what is a propulsion energy converter

which then affects whether a vehicle is defined as a hybrid vehicle or not. Therefore, a change to definition text will be proposed. A. Marotta (EC) said his intention is first to change Mutual Recognition No.2 (M.R.2) and then change GTR 15 to avoid misunderstanding. His plan was to get adoption at Nov. WP29.

- Y. Inoue (MLIT, Japan) mentioned that it might have some impact also for other to GRPE which refers to M.R.2.

✓ Fuel-cell vehicles

- Y. Inoue (MLIT, Japan) mentioned that Japan found some points which need to be changed regarding fuel-cell vehicles. **This topic will be discussed by Subgroup EV.**

**4. Transposition to UNR <IS & D> (17:10-18:40)**

✧ Status report by **R. Gardner** (WLTP-23-03e)

- R. Gardner (Consultant, EC) explained WLTP-23-03e.
- B. Coleman (VW Group) raised the concern of where to put ATCT which is on CO2. This is because UNR 83 is for emission and UNR 101 is for CO2 and current plan is put everything in either UNR 83 or UNR WLTP. His main concern was can UNR83 08 have a different title and scope so that it can also cover CO2.

✧ Durability and CoP by EC (WLTP-23-03e\_Appendix03)

- A. Marotta (EC) explained WLTP-23-03e\_Appendix03. He said the durability test procedure and CoP to will be included to GTR 15 and to new UNR WLTP. However, currently India made a comment to have an independent GTR for durability, that he said this should be decided after Sep. WLTP IWG. For CoP, he said that EC is considering to require all requirement in Level 1 and 2.
- B. Coleman (VW Group) said for CoP, if there may be another option to include harmonized procedure directly to Level 2 of UNR WLTP and UNR 83-08. R. Gardner (Consultant, EC) and N. Ichikawa (TS, Japan) suggested to discuss at GRPE.

✧ How to handle the Optional Items in GTR#15&#19 by **ALL** (WLTP-23-03e\_Appendix01,02)

- R. Gardner (Consultant, EC) explained WLTP-23-03e\_Appendix01.
- N. Ichikawa (TS, Japan) asked if CO2 and fuel consumption correction need Level 1 and 2 concept, since it is not a requirement. However, A. Marotta (EC) said Europe needs it because the Type 1 test will not be described in UNR 83-08, but in UNR WLTP.
- R. Gardner (Consultant, EC) explained WLTP-23-03e\_Appendix02. A. De Maria (OICA) asked where CoP discussion will be take place. A. Marotta (EC) replied that initial solution to Level 1a to have EU-WLTP CoP and Level 1b to have

Japanese current CoP. B. Coleman (VW Group) mentioned that OICA is strongly against EU-WLTP CoP.

- ◇ Next Actions by **ALL** (WLTP-23-03e\_Appendix04)
  - No discussion on this topic.

\*\*\*\*\* DAY\_2 (5<sup>th</sup>) \*\*\*\*\*

**Meeting location : Palais des Nations**

**4. Transposition to UNR (Cont.) <IS & D> (09:35-10:35)**

- ◇ How to handle the Optional Items in GTR#15 & #19 by **ALL** (Cont.) (WLTP-23-03e\_Appendix01,02)
  - R. Gardner (Consultant, EC) started to compare requirements among Level 1a (EU) and Level 1b (Japan). B. Coleman (VW Group) raised concern regarding naming of strategies of families and transparency requirement in EU.
  - R. Gardner (Consultant, EC) mentioned that which auxiliary devices are to be on during test should be discussed. Also, he said 4WD requirement should be included for EU part.
  - R. Gardner (Consultant, EC) said his plan is to put EVAP test procedure, durability, and low temperature test procedure in Annexes. N. Ichikawa (TS, Japan) and C. Astorga-Llorens (JRC) mentioned whether to include Low Temp. test is not decided yet. B. Coleman (VW Group) said Transposition TF need guideline from EC on timeline of introducing new Low Temp. test to EU. N. Ichikawa (TS, Japan) clearly mentioned that the first step of UNR WLTP is focused on Type I and Type IV (EVAP). He also mentioned others not discussed in WLTP will go into UNR 83-08. And even the test procedure is discussed in WLTP, if any CP does not want that test procedure to be added to UNR WLTP, it should be a separate UNR. B. Coleman (VW Group) also said that UNR WLTP need to focus on not only current but also future CPs which would want to adopt UNR WLTP. A. Marotta (EC) confirmed that we should start with Type 1, Type 4, durability and CoP for now – it is not known when the new low temperature test will be developed.

**5. Confirmation of Informal Document <RC> (10:35-10:15)**

- ◇ Drafting Report by **S. Dubuc** (WLTP-23-05e) including “definition”
  - S. Dubuc (Consultant, EC) explained WLTP-23-05e. IWG members made comments on each proposals.

<Coffee Break 10:35-11:25>

- ✧ Informal Document to be submitted to 77<sup>th</sup> GRPE (WLTP-23-05e\_Appendix01)
  - S. Dubuc (Consultant, EC) explained WLTP-23-05e\_Appendix01.
  - **Adding “Rounding” explanatory paragraph, correction of corrigendum to the equation on road load correction, and modification to text on time accuracy of test equipment to align with EPA regulation were agreed.**
  - See WLTP-23-05e\_rev1\_Nick\_Serge and WLTP-23-05e\_Appendix01-rev1 for details.

- ✧ Latest GTR can be seen @ <https://wiki.unece.org/display/trans/Latest+GTR+15>

## 6. Potential Amendment to be incorporated into Working Documents

<IS & D> (10:15-12:15 including coffee break)

- ✧ Summary (WLTP-23-06e)
  - N. Ichikawa (TS, Japan) presented WLTP-23-06e. R. Cuelenaere (Chair, TNO) noted that if there are any missing items, N. Ichikawa (TS, Japan) should be informed.
- ✧ Concrete Proposals (WLTP-23-06e\_Appendix01~14)

## 7. Meeting schedule <IS> (12:15-12:30)

- ✧ Schedule of upcoming task force meetings
  - <https://wiki.unece.org/display/trans/WLTP+2018+calendar>
  - New Issues TF: 5th July 9:00 to 13:00 and 29th Aug. 9:00 to 13:00
  - Drafting SG: 30th Aug 9:00 to 13:00
  - Durability TF: 11th July 9:00 to 11:00
  - Drive Trace Index TF: 4th Sep. 9:00 to 13:00
  - EVAP TF: Early July or Early Sep. Consult with TF members
  - Low Temp. Drafting meeting: 17th Sep. PM @ Japan near Tokyo station
  - SubGroup EV: 6th June 9:39 to 12:30
- ✧ 24<sup>th</sup> WLTP IWG meeting (18<sup>th</sup> to 21<sup>st</sup> September, 2018 @ Tokyo)
  - your participation should be confirmed by no later than 10<sup>th</sup> June, 2018.
- ✧ 25<sup>th</sup> WLTP IWG meeting (the week of 7<sup>th</sup> January, 2019 @ Geneva)
- ✧ 26<sup>th</sup> WLTP IWG meeting (in April, 2019 @ Zagreb, Croatia)

## 8. AoB <IS or D or RC>

No other business was discussed.

\*\*\*\*\* DAY\_3 (6<sup>th</sup>) \*\*\*\*\*

**Meeting location : NTSEL European Office**

**9. Sub-Group EV Meeting < IS & D > (9:30-11:30)**

✧ Agenda will be distributed by SG EV group

\*\*\*\* Meeting is facilitated by Leading Team and each TF Leaders \*\*\*\*  
(please refer to WLTP-19-04 for WLTP organization)

**Leading Team**

Rob Cuelenaere (Chair of WLTP IWG)  
Daisuke Kawano (Vice Chair of WLTP IWG)  
Nick Ichikawa (Technical Secretary of WLTP IWG)

**SubGroup EV Leading Team**

Per Ohlund (Chair of WLTP SG EV)  
Matthias Naegeli (Secretary of WLTP SG EV)  
Nick Ichikawa (Secretary of WLTP SG EV)