

Report of the 75th session
Electric Vehicles and the Environment Informal Working Group (EVE IWG)

Location: Virtual - Webex

Date: October 08, 2024

Time: 05:30 – 08:00 EDT

Chairs: Mr. Michael Olechiw (United States of America)
Ms. Elena Paffumi (European Commission)

Vice-Chairs: Ms. Chen Chunmei (China)
Mr. Nobunori Okui (Japan)

Secretariat: Mr. Leeson Guay (Canada)

Day 1 – October 08, 2024, 05:30 JST

1. Introduction, review of agenda, and meeting recap

Documentation

- EVE-74-23e
- EVE-75-01e

Context

The EVE IWG co-chairs addressed members and welcomed everyone to the virtual meeting.

The co-chairs presented the meeting agenda to EVE IWG members, which can be seen below. The agenda was reviewed and adopted by the EVE IWG prior to beginning discussions.

Day 1 – October 08, 2024, 05:30 EDT

- Introduction, review of agenda, meeting recap
- WP.5 E-Mobility Task Force update
- UN GTR 21 – Comment on definitions
- UN GTR 21 – Discussion on the inclusion of system bench in third phase
- HDV GTR – Comments on open items
- HDV GTR – Open items and discussion points
- UN-R 154 – SOCE and SOCR additions
- Closing remarks

The EVE IWG secretary briefly reviewed the *Report of the 74th EVE IWG session*, highlighting action items and key decisions from the discussions, held in a hybrid format, on September 18-19, 2024.

Discussion

The co-chairs reminded members that there will be no EVE IWG session in Geneva, alongside the 91st session of the Working Party on Pollution and Energy (GRPE).

The Secretariat for the GRPE asked whether charging power curves were discussed at the previous EVE IWG session. The EVE IWG secretariat expressed that this was previously discussed and updated as part of the EVE IWG Terms of Reference (ToR). The co-chairs indicated that Society of Automotive Engineers (SAE) standards and California were also topics of discussion that occurred at the previous EVE IWG session.

2. WP.5 E-Mobility Task Force update

Context

The GRPE Secretariat offered an update on the WP.5 E-mobility Task Force, explaining that a survey had been sent out and that at the annual session and decided on its key fall priorities.

Discussion

The GRPE Secretariat expressed that the expertise of the EVE IWG would be very helpful in the WP.5 and asked whether there was interest in a collaboration on electric vehicle (EV) charging power curves starting towards the end of the calendar year. The co-chairs explained that they understand the importance of the charging power curves and asked whether the WP.5 was targeting light-duty vehicles (LDV) or heavy-duty vehicles (HDV) to begin with. The GRPE Secretariat clarified that the initial focus would be on LDV and this can be discussed further at the first meeting, establishing priorities with HDV likely to be a later priority. The co-chairs explained that at this time the HDV experts are participating in the EVE IWG and very focused on battery durability work, so it would be desirable to maintain the focus of these experts on the upcoming electrified heavy-duty vehicle (eHDV) global technical regulation (GTR); however, the LDV group may have more bandwidth at time. Regardless, this is an important activity, and we can try to sort some of the logistics at the first meeting. The co-chairs both expressed a positive response to the request for WP.5 participation and collaboration with EVE IWG HDV and LDV experts.

The Organisation Internationale des Constructeurs d'Automobiles (OICA) asked how industry could participate in this activity. The GRPE Secretariat stated that it would be similar to WP.29, however the main difference with WP.5 is that it does not have legal instruments attached to it, so whatever is developed will eventually need to go through GRPE and WP.29. This is why the sooner the EVE IWG is involved the better. Ideally, groups are put together that will report on progress to WP.5, GRPE and EVE.

Action items

- The EVE IWG Secretariat to send email to EVE members, soliciting interest for participation in the WP.5 E-mobility Task Force.

- The EVE IWG Secretariat to add an item on WP.5 to the EVE IWG update presentation at the 91st GRPE session.

3. OICA – Comments on definitions

Documentation

- EVE-75-04e

Context

OICA offered a presentation highlighting a proposal to modify some of the definitions in United Nations (UN) GTR No.21, specifically peripheral devices and simulators.

The definition of peripheral devices is no longer aligned with the UN GTR No.15 amendment 6 and UN-Regulation No.154.

The definition of simulators only appears in the definition of system bench and not the regulation text.

Discussion

The drafting coordinator highlighted that a complete revision to UN GTR No.21 was completed in Ottawa at EVE 65 in October 2023. Here, the definitions were developed and why they are not aligned with UN GTR No.15. Moving from an International Organization for Standardization (ISO) standard to a GTR, the group took the original definition and following subsequent amendments, the definitions were then never updated in UN GTR No.21. Therefore, there is a need for the EVE to discuss whether the updated definitions in UN GTR No.15 are compatible. For the UN Regulation, it may be appropriate to use the UN GTR No.15 definition, but this has not been discussed so it may be worth proceeding with caution. Regarding why there are two definitions present, at the 63rd and 64th EVE IWG sessions, Japan had proposed text to incorporate the system bench, but no one had realized that the proposed text contained a second definition on peripheral devices. I do not have an explanation as to why it would be different. With respect to the definition of simulators, this should remain if moving towards system bench implementation. OICA requested clarification on whether this means that simulators are proposed as being included in the system bench definition; taking the second part and moving it to the system bench definition and keeping the remainder as-is. For peripheral devices the recommendation is to follow UN GTR No.15 definition in the UN Regulation and further discuss for UN GTR No.21. The drafting coordinator clarified that yes this is correct. The EC supplemented that the updated definition for peripheral devices came from an update to Mutual Resolution No. 2 in 2018. It was therefore used in UN-Regulation 154 and UN GTR No.15 Amendment 6. The amendment to the definition of ‘peripheral devices’ in paragraph 1.4. of Section B of M.R.2. reflects the principles laid down in the descriptive text in paragraphs 37 and 38 of Section A - which could be misinterpreted by the definition text in paragraph 1.4. In particular, the use of the word “primarily” (in paragraph 1.4.) meant that it was not clear whether a system which contributes to propulsion but is not its original function (e.g. belt driven stator/generator) might be considered incorrectly as a peripheral device rather than a propulsion energy convertor and therefore as a hybrid system. The amendment was proposed by the United Kingdom because the word primarily was used in the definition. Please see ECE/TRANS/WP.29/GRPE/2019/5.

The EC stated that in relation to definitions, they have been approached by industry regarding max power condition definition. Perhaps this may be something worth considering for future technologies where an accelerator pedal is no longer existing. OICA asked whether this would target a UN GTR or a UN Regulation. EC clarified that it would be aimed at the UN Regulation at this point. OICA expressed that in almost everything situation in the text, the word pedal can be replaced by the max accelerator command, but we will need to review further and get back to the group on this and may prepare something to raise at GRPE.

OICA offered to provide assistance and a document outlining the modifications made to the transposition of UN GTR No.21 to a UN Regulation. The drafting coordinator indicated that the EVE IWG would be interested in considering any of the additional changes that have been made and that it is well within our mandate to be considering them for incorporation into UN GTR No.21. The co-chairs echoed that we need to have further discussions on UN GTR No.21 with the objective of aligning with the UN Regulation transposition.

Action items

- EVE IWG to discuss and consider adoption of the modifications made to the UN Regulation transposing UN GTR No.21.

4. UN GTR 21 – Discussion on the inclusion of system bench in third phase

Context

This item was set with the objective of discussing the implementation of the system bench test for all vehicles in UN GTR No.21, rather than only vehicles that are too powerful for the dynamometers.

Discussion

The co-chairs began the discussion by recalling that in the previous EVE IWG session, there were concerns regarding the verification of the system bench test.

The drafting coordinator reminded the group that the system bench test is permitted in UN GTR No.21 already but only in the case when a vehicle cannot be tested on a chassis dynamometer. The question for the group remains, should the system bench be opened for use in all situations. Unless there are concrete proposals on the verification, perhaps this can be pushed to another meeting due to time constraints. The EC indicated that they were interested to hear the opinions of the United States (U.S.) but overall, we agree with the conversation from the previous EVE IWG session, that it comes down to verification of the system bench. Seeing the demonstrations was helpful and there has not been any objections from member states to this point, so perhaps it would be worth raising at the 91st GRPE session to see whether there are any concerns. The American delegation commented that from a technical standpoint we think it is a robust way to determine system power but reproducing and verifying the test may pose challenges. The co-chairs expressed that raising this at the 91st GRPE session would be a good idea, and perhaps more detail can be offered on this topic using a slide, outlining objective, how to achieve it and the concerns that exist with the procedure. OICA stated that if a manufacturer wants to use this system bench procedure, it is in their best interest to do so accurately because of the in-service conformity testing, as raised by Sweden at the previous EVE IWG session.

Action items

- Secretariat to include a slide on system bench test as part of the EVE IWG update at the 91st GRPE session.

Decisions

5. HDV GTR – Comments on open items

Documentation

- EVE-75-04e

Context

This item was set with the objective of allowing OICA to speak to any remaining open items of the draft eHDV GTR.

Discussion

OICA stated that they have expressed everything at the previous meeting and have nothing further to speak to at this time but will comment as the group proceeds through the draft text.

6. HDV GTR – Open items and discussion points

Documentation

- EVE-75-03e

Context

This item was set with the objective of discussing and resolving outstanding topics of the eHDV GTR draft text.

The drafting coordinator returned to items that were discussed at the previous EVE IWG session, reiterating what was discussed, what remains outstanding and verifying whether any further developments have been made since the previous session.

Discussion

The use of atmospheric pressure was accepted in Annex 3, without objection.

The measurement accuracy found in Table 3 of Annex 3 contained added text labeling external measuring devices. The Japanese delegation stated that they so need to deviate from what is done in UN GTR No.22. OICA commented that as long as there is no evidence regarding onboard sensors, they remain in favour of the external device text. During the pilot phase testing, it was shown that it will be challenging to mount external measuring devices, so we want to leave the choice of measuring equipment. The accuracy is appropriate for external devices but not for onboard devices. The drafting coordinator stated that they felt the external device was a compromised solution. The Japanese delegation expressed that no authority allows onboard measurements because no authority can verify it. This is why external devices are being proposed. The American delegation supported Japan and supplemented that it is helpful to have the language in the table and the accuracy of onboard and external sensors should be the same unless there is overwhelming data to

show proof of an alternate position. OICA responded that they have been collecting data and will present in the coming meetings the available sensors on the market displaying the accuracy so keep in square brackets for now. The technical services representative stated that including external measurement devices implies there are different requirements for onboard sensors and there does not seem to be challenges coming from LDV, but it may be different for the HDV sector. The American delegation asked to revise their previous statement and stated that the external device language added to the table implies there is a difference between onboard sensors and external measurement device accuracy, so we would be in favour of removing the external devices language.

The drafting coordinator proposed deleting the extra table on selection of test methods, in Annex 3. No comments so it was deleted.

The drafting coordinator proposed deleting the struck text under the *General test requirements of Method 1a Discharge by driving on a test track by characteristic regional speeds* found in Annex 3. No objection so text was removed. OICA commented that they were hesitant regarding the text referring to the European Regulation and will need to double check this reference. The technical services representative suggested removing the text referring to the European Regulation. The EC stated that they would also support removing the reference if it is going to become convoluted. The American delegation stated that airstrip surfaces are typically smoother than roads so it is not really relevant for Usable Battery Energy measurement but may be more useful for range. Ultimately, we are unclear why this language exists so we would support deleting it. OICA clarified that road conditions can impact the loading of the vehicle and this should be considered during the test. An impact on load impacts the whole test procedure. The drafting coordinator acknowledge the discussion and will make revisions to the text to accurately reflect what has been said.

The drafting coordinator asked whether a technical working group should be established on the break-off criterion or perhaps a group that looks at all the technical details of the regulatory text and develops proposals for the larger EVE IWG. Moreover, there were suggestions related to the alternative method section, where aside from referring to the regional regulations, there are detailed descriptions reported as examples, which have not yet been discussed within the group. The EC commented that they have reservations about going into detail on these topics in the first phase of the eHDV GTR. It may be good to have a general description or a reference to following regional regulations but we would ask that this not be included in the informal document being submitted to the 91st GRPE session. There is very limited experience on this and more time is needed to fully evaluate it. OICA expressed that China is currently not present in the meeting and it may be best to consult them on anything regarding the alternative method. Regardless, OICA is in favour of shifting anything of uncertainty to the second phase of the eHDV GTR. The eco-chairs reiterated that it would be a good idea to follow up with China on items regarding the alternative test method to ensure agreement prior to submitted to the GRPE. OICA agreed with a breakout session on technical topics.

Action items

- Drafting coordinator to modify text and post the revised version to the wiki page for others to review prior to submission to the 91st GRPE session.

- Drafting coordinator to contact the Chinese delegation to verifying position on the removal of text details outlining the chassis dynamometer settings.
- The Secretariat to organize a breakout session regarding the breakoff criterion and other related technical topics.

Decisions

- Use of language around *atmospheric pressure* was accepted in Annex 3.
- Duplicate table on *Testing methods for UBE determination* was deleted in Annex 3.

7. UN-R 154 – SOCE and SOCR additions

Context

This item was set with the objective of discussing the additions of state of certified energy and state of certified range to UN-R 154.

Discussion

This item was passed to the next session due to time limitations.

Action items

- Secretariat to add this item to the agenda of the 76th EVE IWG session.

8. Closing remarks

Documentation

- EVE-75-02e

Context

This item was set with the objective of closing the meeting and looking forward to the next, addressing logistics and miscellaneous topics.

Discussion

Terms of Reference update

The Secretariat provided a brief update on the ToR and indicated that the latest version has been posted on the wiki and targeting submission to the 91st GRPE session.

Future in-person sessions

The co-chairs indicated that this topic will need to be revisited at a future meeting and discussions can be had on the sidelines of the 91st GRPE session.

Next session

The next session will be held on November 05-06, 2024, from 05:30 – 08:00 EST.

Action items

- Secretariat to include discussion on future in-person session to the 76th EVE IWG session agenda.

Decisions

- 76th EVE IWG session will be held on November 05-06, 2024, from 05:30 – 08:00 EST