

Report of the 67th session
Electric Vehicles and the Environment Informal Working Group (EVE IWG)

Location: Room #1
Permanent Delegation of the European Union to the United Nations Office and other
international organizations in Geneva,
Rue de Grand Pré 64-66,
Geneva, Switzerland

Date: January 09, 2024
Time: 14:30 – 17:30 CET

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 – January 09, 2024, 14:30 CET

1. Introduction, review of agenda, and meeting recap

Documentation

- EVE-67-02e

Context

The EVE IWG co-chairs addressed members and welcomed everyone to the hybrid meeting, thanking the European Commission for hosting the meeting in-person.

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 – January 09, 2024, 14:30 CET

- Introduction, review of agenda, meeting recap
- HDV GTR – Position on proposed timelines
- HDV GTR – Energy throughput and verification method proposal

- HDV GTR – Chassis dyno alternative test method proposal
- HDV GTR – Battery durability test of HD-OVC-HEV proposal
- HDV GTR – Review of draft text and discussion of open items
- UN GTR 21 – COP data supporting proposal
- UN GTR 21 – Finalize open items for working draft
- UN GTR 22 – Finalize open items for working draft
- EVE IWG Terms of Reference review and renewal
- Future planning

The EVE IWG secretary briefly reviewed the *Report of the 66th EVE IWG session*, highlighting action items and key decisions from the discussions, held virtually, on December 06-07, 2023.

Discussion

Action Items

Decisions

2. HDV GTR – Position on proposed timelines

Documentation

- EVE-67-03e

Context

The Japanese delegation offered their comments on proposed timelines which were briefly mentioned during the 66th EVE IWG session, specifically in reference to the proposed delay of approximately six months to the development of the electrified heavy-duty vehicle (eHDV) United Nations (UN) Global Technical Regulation (GTR).

The Japanese delegation, depending on the outcomes of the 90th Working Party on Pollution and Energy (GRPE), suggested submitting the draft eHDV GTR as an informal document to the 91st GRPE session in May, followed by a working document submission of the proposed eHDV UN GTR to the 92nd session in October, with final submission to the Executive Committee of the 1998 Agreement (AC.3) of the World Forum for Harmonization of Vehicle Regulations (WP.29) in March of 2025.

Discussion

The co-chair posed a question to the group and to the secretary of GRPE, regarding whether the EVE IWG should target submission of the eHDV UN GTR in its October 2024 session and what the purpose of this session may be. The GRPE secretary explained that the June session of GRPE was advanced to May, and as a result, this leaves less time for informal working groups to prepare for submission and so the option of an October special session was brought about. Ultimately there are still ongoing discussions regarding the schedule between the two sessions and timelines will become clearer following the 90th GRPE session. The GRPE certainly does not want to delay any informal working groups and so if there is a contracting party with an urgent need for advanced timelines, do not delay.

Action items

Decisions

3. HDV GTR – Energy throughput and verification method proposal

Documentation

- EVE-67-04e

Context

The Organisation Internationale des Constructeurs d'Automobiles (OICA) gave a summary presentation on their energy throughput and verification method proposal and support data previously presented.

Discussion

The Japanese delegation requested clarification on why OICA prefers to use a full cycle equivalency in a throughput cycle energy method instead of an energy mileage. Japan indicated that this energy cycle method could result in batteries getting larger without a motivation for improvement in battery performance. OICA commented that in general it would not be fair to look at the battery from only a mileage perspective due to the unique eHDV mission profiles.

The co-chairs commented that if the group is going down the path of minimum performance requirements (MPR) with full-cycle equivalency, there needs to be a relation made between the battery, the vehicle and the use case, in order to properly establish an MPR. There are some concerns where a single full cycle equivalency is set, and this will result in battery capacity being increased in the vehicles and consequently increased cost and weight of the vehicles as well. Maybe closer attention needs to be paid to increasing efficiencies in the use cases. The American delegation commented that it appears the group is looking to have full cycle equivalency and number of years as an MPR, whichever occurs first in the useful life. The years are a part of every vehicle, and it appears that it would then all depend on the size of battery in the vehicles. This regulation seems to be designed to ensure that a vehicle has a minimum number of years of useful life and using a full cycle equivalency would then introduce an option to the manufacturer of just putting a smaller battery to negate the years of useful life. So generally, is it important to establish a minimum useful life of the vehicle using the regulation? The European Commission (EC) indicated that calendar aging and the amount of use of the battery in combination may lead to a single parameter that best describes the performance. The group needs to look at this from a use case and customer perspective to determine how deterioration impacts the vehicles and their uses. The drafting coordinator commented that if there are different mission profiles for the same category of vehicle, then there will be different energy consumptions. This problem will require the group to determine the most robust way to approach this because it needs to be the same and applied fairly. The information presented to date has also been preliminary, so we need more data and further consideration. Perhaps long-haul trucks should be treated separately than the other use cases. OICA stated that their customers do not want to see big batteries in their vehicles to compensate for the regulations. Manufacturers also cannot afford to build the biggest possible batteries in trucks for

payload and towing compromises. For these reasons manufacturers do not see concern with the possible trend of adding as much capacity as possible to circumvent the regulation requirements. The EC stated that they are not looking to set a single MPR for all vehicles.

Action items

Decisions

4. HDV GTR – Chassis dyno alternative test method proposal

Documentation

- EVE-67-05e

Context

The Chinese delegation presented a proposal for the use of chassis dynamometer testing as an alternative method for evaluating the on-board usable battery energy (UBE), used in the on-board battery state of certified energy calculation.

Discussion

The drafting coordinator communicated to the EVE IWG that the Chinese proposal and comments have been included in the draft text of the eHDV regulation.

The co-chairs expressed that in relation to the coast down and dynamometer alignment there must be something that can be referenced for the text. The drafting coordinator agreed that a cross-reference for text would make things much easier. OICA explained that for coast down provisions using a chassis dynamometer, there are several regulations that can be used as reference, however, the availability of chassis dynamometers in the United States and Europe is still very minimal. The American delegation mentioned that test procedures were on the books but not chassis-based standards for vehicles. There are also test procedures available for things not captured by the regulations, however, these are not items that are required or mandated, so it is an optional procedure. This is to say that there is language on the books for chassis coast down and dynamometer setup in the United States.

The Japanese delegation questioned whether timing would be a consideration or an issue for this topic. The co-chairs stated that there appear to be some questions on this topic and further consideration needs to be made on this.

Action items

Decisions

5. HDV GTR – Battery durability test of HD-OVC-HEV proposal

Documentation

- EVE-67-06e

Context

The Chinese delegation offered a proposal regarding heavy-duty off-vehicle charging hybrid electric vehicle (HD-OVC-HEV) battery durability testing. Data accompanied the proposal, comparing it to heavy-duty pure electric vehicles (HD-PEV).

Discussion

The co-chairs expressed that they were curious about some of the statements made regarding the endurance range of pure electric vehicles. OICA indicated that the use case in a hybrid truck is not really the use of full electric mode because the best way to save consumption is to support vehicle acceleration with the electric powertrain.

Action items

Decisions

6. HDV GTR – Review of draft text and discussion of open items

Documentation

- EVE-67-07e
- EVE-67-08e
- EVE-67-09e

Context

This item was set with the objective of continuing discussions on the draft UN GTR on battery performance and durability of eHDVs, for submission, as an informal document, to the 90th GRPE session in January 2024.

The drafting coordinator presented the latest draft version of the document, explained the current state of play and proceeded to offer an overview of open items. The drafting coordinator highlighted that minimal comments were received on the draft text and the latest versions have been posted for the EVE IWG.

Discussion

The drafting coordinator mentioned that a placeholder was implemented for Part C verification procedure, similar to that of UN GTR No. 22, however, no text has been added at this time.

OICA expressed that there is some confusion surrounding the test procedure and the recording frequencies of the different voltages during testing. Why is there a need for a testing frequency of 20 hertz (hz) when the load will not change much more than once per second? The drafting coordinator indicated that 20 hz was selected as a starting point to initiate discussions but there is room for further discussions on this topic. OICA indicated that they would be content to look at options around 1 hz resulting in equivalent outcomes. The drafting coordinator mentioned that the Japanese delegation may be able to inform this value from their current testing.

The co-chairs asked whether it was necessary to have chassis dynamometer options left in the draft text at this point, or if it was a little premature. The drafting coordinator stated that the text has been included at this point and perhaps a decision can be made at the next meeting once everyone has had a chance to review the document.

The drafting coordinator referred to document EVE-66-18e and highlighted that there is still opportunity to provide further comment.

Action items

- EVE IWG members to offer the eHDV drafting coordinator feedback and comment on the eHDV UN GTR draft text.

Decisions

7. UN GTR 21 – COP data supporting proposal

Documentation

- EVE-67-10e

Context

OICA presented a document supplementing their proposal, EVE-66-13e, made at 66th EVE session, with supporting data.

Discussion

The drafting coordinator indicated that the proposal seems clear, reasonable and the data appears to support the original proposal. We propose to continue moving forward and accepting the 5 % tolerance.

Action items

Decisions

- The tolerance outlined in paragraph 6.9.2.1. has been modified to +/- 5 % from +/- 2 %. Changes were included as part of the amendments submitted to the 90th session of the GRPE, for consideration.

8. UN GTR 21 – Finalize open items for working draft

Documentation

- EVE-67-11e
- EVE-67-12e

Context

This item was set with the objective of continuing discussions on the draft UN GTR No. 21, for submission, as a formal document, to the 90th GRPE session in January 2024.

The drafting coordinator presented the status report and amendment text, highlighting modifications that were made in preparation for the submission to the 90th session of the GRPE.

Discussion

Action items

Decisions

9. UN GTR 22 – Finalize open items for working draft

Documentation

- EVE-67-13e
- EVE-67-14e

Context

This item was set with the objective of continuing discussions on the draft UN GTR No. 22, for submission, as a formal document, to the 90th GRPE session in January 2024.

The drafting coordinator presented the latest draft version of the document and proceeded to offer an overview, prior to beginning discussions, with the goal of reaching consensus for final submission.

Discussion

The secretary of the GRPE requested clarification of whether there have been any discussions surrounding the European Union’s Euro 7 proposal and whether that needs to be included as part of the amendments. The co-chairs indicated that this has been discussed briefly but further discussions will occur as the group moves forward with the new Terms of Reference and the timelines listed therein. As more experience is gained with the implementation of these UN GTRs, the EVE IWG is anticipating more issues to arise.

The secretary for the GRPE indicated that there is an upcoming press release on vans that will be shared at GRPE, referencing the work of the EVE IWG.

Action items

Decisions

10. EVE IWG Terms of Reference review and renewal

Documentation

- EVE-67-15e

Context

This item was set with the objective of presenting the draft Terms of Reference (ToR) document for the EVE IWG. The ToR requires renewal in January 2024 and will be presented to the GRPE at its 90th session, to extend the EVE IWG’s mandate.

The secretariat went through the draft ToR document, highlighting key items and ensuring all members were supportive of the new additions and had consensus on the proposed timelines.

Discussion

The co-chairs of the EVE IWG suggested that phase 3 of UN GTR No. 21 development should include reference to highly integrated systems, in addition to keeping reference to a potential candidate method open. Co-chairs also expressed that due to uncertainty surrounding timelines of future GRPE sessions, the timelines for the eHDV GTR development may need slight modification to align with the new GRPE proposed session dates.

Action items

- Secretariat to modify the ToR to include timelines that align with the new GRPE session dates.
- Secretariat to submit the finalized ToR to GRPE and post a final copy for the EVE IWG to be able to reference.

Decisions

11. Future planning

Documentation

- EVE-67-16e

Context

This item was set to discuss EVE IWG planning and coordination going forward.

The co-chairs highlighted the current timelines of the EVE IWG moving forward in addition to upcoming meetings scheduled.

Discussion

The secretariat highlighted the upcoming in-person meeting dates on the schedule and requested confirmation of who would be the main contact for these sessions. The Korean delegation and the Japanese delegation both offered representatives as point of contact for the secretariat to coordinate with.

The Japanese delegation requested that the secretariat confirm which dates would be best to host the EVE IWG session in person in Tokyo, Japan. The secretariat agreed to send out an email and provide the Japanese delegation with the results for date selection.

Action items

- Secretariat to work with the Korean delegation to create a meeting schedule and invitation for the 69th EVE IWG session.
- Secretariat to work with the Japanese delegation to create a meeting schedule and invitation for the fall EVE IWG session.

- Secretariat to send out poll to EVE IWG members regarding potential dates for the Tokyo, Japan meeting and provide the results to the Japanese delegation for confirmation.

Decisions