

Report of the 6th Session of the Electric Vehicles and the Environment Informal Working Group (EVE IWG)

Location: Geneva, Switzerland
Time / Date: 14:30 - 17:30 (CET), June 3, 2013
Chair: Mr. Michael Olechiw (USA)
Co-Chairs: Ms. Chen Chunmei (China) and Mr. Kazuyuki Narusawa (Japan)
Secretary: Mr. Stéphane Couroux (Canada)

1. Welcome, Introductions, Agenda

Mr. Michael Olechiw, Chair of the informal working group, welcomed participants to the meeting. There were approximately 50 participants in the room representing Contracting Parties, vehicle manufacturers and industry organizations from around the world. Ms. Chen Chunmei, Co-chair, and a few others participated in the meeting by conference call.

The Agenda for the meeting (EVE-06-02-Rev2e) was reviewed. Upon request from China, an additional agenda item (3) was added to discuss logistics for the upcoming EVE-07 meeting in Beijing. The revised and final Agenda for the meeting is document EVE-06-02-Rev3e.

2. Review of EVE IWG #5 Session Report

The Secretary reviewed document EVE-05-15e covering Agenda item 2 with a focus on action items. The Secretary detailed which action items were completed or ongoing, including:

- EVE-5 Action 1, ongoing: The Secretary continues to invite participants to present on standardization at the EVE IWG meetings.
- EVE-5 Action 2, ongoing: The Secretary continues to coordinate input to the VPSD document from EVE IWG membership.
- EVE-5 Action 3, completed: Participants were invited to submit any further comments to the Reference Guide Outline to the Secretary prior to the EVE-6 meeting.
- EVE-5 Action 4, completed: Mr. Michael Olechiw provided further clarification on utility factors for California in response to a question by Mr. Kazuyuki Narusawa.
- EVE-5 Action 5, completed: The Secretary invited the chairs of other IWGs to participate in a discussion on priorities for EVE at the EVE-6 meeting.
- EVE-5 Action 6, ongoing: Mr. Stéphane Couroux continues to inquire on available EV test data in Canada.
- EVE-5 Action 7, completed: The leadership committee discussed what information will be made available as part of the Reference Guide; participants were informed that questionnaire information submitted by contracting parties will not be made available.
- EVE-5 Action 8, completed: The Secretary modified document EVE-04-06e (EVE IWG roadmap) to include deadlines for submitting draft and final versions of the Reference Guide to EVE IWG, GRPE and WP.29. The revised roadmap is EVE-06-03e.
- EVE-5 Action 9, ongoing: Funding is secured by the US EPA to hire a consultant to support continued development of Reference Guide; the contracting process was nearly complete at the time of the EVE-6 meeting. Once a consultant is secured, drafting of the reference guide will begin.

- EVE-5 Action 10, completed: The Secretary sought participation of volunteers to develop draft Reference Guide; OICA has planned to review the first draft. There were no other volunteers.
- EVE-5 Action 11, completed: The Secretary posted and sent the EVE-6 agenda to EVE participants ahead of the meeting. The Secretary arranged for a conference call line at the EVE-6 meeting.
- EVE-5 Action 12, completed: Ms. Chen Chunmei gave an overview of the EVE-7 meeting location and date during EVE-6 agenda item 3.
- EVE-5 Action 13, completed: Participants were informed of the EVE-7 meeting date at the EVE-6 meeting during agenda item 3.

ACTION 1: Mr. Michael Olechiw will provide updates on the contracting process to secure a consultant for Reference Guide drafting as needed.

3. Presentation of EVE-07 meeting information

EVE IWG co-chair, Ms. Chen Chunmei (China), presented detailed information in document EVE-06-08e concerning the venue, hotel and travel information for the upcoming EVE-7 meeting in Beijing, China. The meeting is scheduled for October 17 - 18th, 2013 and follows the Electric Vehicle Safety (EVS) IWG meeting, which is scheduled for October 14 - 16th, 2013 in Beijing. A request was made to Ms. Chen Chunmei to provide contact information for the EVE-7 meeting invitation, which will be prepared by the EVE Secretary following the EVE-6 meeting.

ACTION 2: Ms. Chen Chunmei will provide contact information for the EVE-7 meeting invitation.

ACTION 3: The Secretary will work with Ms. Chen Chunmei to prepare and distribute the EVE-7 meeting invitation.

4. Update on status of EVE IWG Progress Report and ToR for AC.3

The Secretary provided an update similar to that given at the EVE-5 meeting on the approval of the terms of reference by AC.3. The Secretary reminded participants that at the 158th session of the WP.29, held in November 2012, the AC.3/WP.29 requested that the Terms of Reference and a Progress Report for the EVE be presented at the 159th session, to be held in March 2013. The EVE Secretariat has submitted and obtained approval of documents GRPE-65-03 and GRPE-65-04 by GRPE in January 2013. The Terms of Reference were subsequently added to the GRPE 65th session report for presentation at AC.3. The GRPE report was, however, not submitted in time for presentation to AC.3 at the 159th session in March 2013 and will instead be considered at the 160th session in June.

It was confirmed that a member of the EVE leadership committee would present an update on the EVE IWG activities at the 160th WP.29 session, which the Secretary will help coordinate.

ACTION 4: The Secretary will coordinate with the EVE leadership committee who will present at the 160th WP.29 session and provide appropriate materials for the update.

5. Information-sharing presentations and results from research activities completed since EVE 5.

Two EV information-sharing presentations were made during the EVE-6 meeting that overlapped with priority areas of interest identified by the group in Reference Guide development (EVE-06-04e). First, Denis Naberezhnykh (Senior ITS Consultant, Sustainable Mobility Group, TRL, United Kingdom) presented on the impact of inductive charging of electric buses on the distribution network (EVE-06-06e). The presentation was well received and some

follow-up questions were posed concerning practicality of plug-in charging, wireless charging during motion, and types of bus routes.

Second, Jean-Pol Wiaux (Director General, Recharge, The European Association for Advanced Rechargeable Batteries, Belgium) presented on Service Life Parameters of lithium ion batteries (EVE-06-05e). This presentation was also well received with a few follow-up questions concerning the impact of temperature of storage on range, costs, and battery chemistries.

ACTION 5: The Secretary will follow-up with Mr. Wiaux concerning cold temperature data for inclusion in Reference Guide analysis.

6. Reference guide development

a. Report drafting progress

Timelines for the report drafting process were reviewed under item 6.c. Participants were informed under item 2 that at the time of the EVE-6 meeting a consultant was being hired to complete this work.

b. Discussion: Analysis of guide information in the context of conclusions and recommendations to the GRPE.

Using document EVE-06-04e, EVE IWG Prioritization Discussion Points, the Chair informed participants that the intent of the document was to prioritize issues identified during the Reference Guide questionnaire completion phase that could be suitable for focusing the conclusions and recommended areas for future work in the Guide; such conclusions and recommendations could include the development of a gtr. Priority areas may also be used to identify where future EV testing and data gathering efforts could be focused.

The Chair sequentially went through each issue identified in the document, asking participants to provide comments and indicate if they do not agree with the inclusion any of the issues in the priority list. EV energy efficiency and range (issue 1) and EV battery performance and durability (issue 2) were noted to be higher priority items than regulatory incentives, regulatory standards and EV charging (issues 3 - 5). Participants were requested to submit any relevant EV data and/or literature to support the development of Guide conclusions and recommendations.

Concerning issue 1.a., Cabin heating, the group was asked if anyone could confirm that this issue would be covered in the WLTP gtr phase 2; as no confirmation was given, the Secretary agreed to follow-up with the WLTP IWG.

Concerning issue 1.b., Air Conditioning, It was noted by the Mobile Air Conditioning IWG Chair that EVs are not included in their proposal. Andrew Oneski (Canada) clarified that Zeolite is a thermal storage chemical that can be used to improve efficiency.

There were no comments concerning issue 1.c. and d. With respect to issue 1.e., road gradient, the Chair asked the group whether EV test cycles and procedures are reflective of regenerative energy captured over the tests. No answer or comments were made.

During discussion of issue 1.f., energy equivalency conversion methods, it was suggested by China to consider adding energy consumption limits. The Chair noted that this was more of a regional issue, and that to set an energy consumption threshold would be outside of the EVE IWG mandate. A representative from Ford and Christoph Albus (Germany) supported the EVE Chair in his view and do not support limit value discussions.

Concerning issue 2), there were no comments or discussion on a) battery durability effect on range and b) potential battery durability effect on kWh/km. For issue 2c) battery performance effect on emissions, there was some discussion about certification of electric-only range by EV manufacturers.

There was limited discussion on regulatory incentives and regulatory standards (issues 3 and 4). There was brief discussion as to whether EV charging (issue 5) should be moved up in the priority list as it is linked to vehicle performance. Christoph Albus (Germany) clarified that charging is not under the WP.29 mandate, but the effects of charging on vehicle performance do need to be considered; the Secretary noted performance-related charging issues would be integrated into issues 1 and 2.

A clarification was made by the Chair in response to a question from OICA about the origin of the issues in the document; the issues were derived from the attributes outlined in the questionnaire submitted to contracting parties for completion (EVE-05-03e).

As a result of this discussion the document EVE-06-04e, EVE IWG Prioritization Discussion Points, was accepted in principle by the EVE IWG.

ACTION 6: The Secretary will follow-up with the WLTP IWG to identify which issues in document EVE-06-04e, EVE IWG Prioritization Discussion Points, will be addressed by the WLTP gtr in phase 2.

ACTION 7: All EVE participants were requested to submit as soon as possible any relevant EV data and/or literature to support the development of the Reference Guide conclusions and recommendations. The Secretary will include this request in the EVE-7 meeting invitation.

ACTION 8: The Secretary will integrate performance-related charging issues into priority issues 1 and 2 for drafting of the reference guide.

c. Review EVE IWG roadmap, Next Steps

Using document EVE-06-03e, Revised EVE Roadmap - May 2013, the Secretary went over the key dates and deadlines. The first draft of the Reference Guide will be reviewed by the EVE IWG at the EVE-7 meeting in Beijing, China (October 17 - 18, 2013), a revised second draft of the Guide will be submitted to the GRPE for first review at the January 2014 session and approval at the GRPE session in June 2014, with the goal of submitting the Guide in August 2014 for WP.29 approval at the November 2014 session. A comment was noted by OICA that the date in item 3.8 needs to be changed from October 2012 to October 2013; the date in item 4.0 also needs to be adjusted to January 2014.

ACTION 9: The Secretary will revise and post the revised version of document EVE-06-03e.

7. Roundtable on progress of related WP.29 working groups:

The EVE Secretary led a roundtable discussion of relevant work occurring in other GRPE IWGs:

a. Electric Vehicle Safety (EVS) IWG- update given by Kazuyuki Narusawa (Japan)

The 3rd EVS meeting was held in Tokyo, Japan on April 16 - 18, 2013 and meeting minutes are in document EVS-03-25e. The meeting was successful, with over 50 participants. An important outcome of the meeting was that the proposed gtr outline (EVS-03-02e) was accepted and a draft gtr justification document was presented by OICA. The EVS terms of

references defines that a gtr will be produced in three years, but this gtr would likely need to be revised; there is no consensus on whether to produce a more complete gtr in a longer timeframe, or to remain consistent with the timeline in the terms of reference.

b. Worldwide harmonized Light duty Test Procedure (WLTP) IWG- update was given by Per Ohlund (Sweden)

At the time of the EVE-6 meeting, an updated draft of the WLTP gtr was posted as an informal document (GRPE-66-02e). There has been progress made by the EV WLTP subgroup, who concluded open issues for this draft of the gtr at their last meeting in Brussels, May 16 -17, 2013. The WLTP IWG meetings that were scheduled after the EVE-6 IWG meeting were expected to provide more detail as to which open issues remain in finalizing the gtr.

c. Heavy Duty Hybrid (HDH) IWG- update was given by Petter Asman (Sweden)

The HDH group was also having an IWG meeting after the EVE-6 meeting and invited the EVE group to attend. The 13th HDH IWG meeting was held on March 21 - 22, 2013 in Sweden and a drafting group was established, but without a technical secretary. The new Annex 8 to gtr No. 4 will include HILS method based on Japanese regulation and a powertrain method based on US EPA procedure. Validation test program 1 is largely completed, and validation test program 2 started in May 2013, which will include vehicle testing, and will be finalized by September 2013. The next HDH IWG meeting is on October 24 - 25, 2013 in San Francisco, hosted by ICCT.

d. Vehicle Propulsion System Definitions (VPSD) IWG- update was given by Christoph Albus (Germany)

Two documents are currently available for review: VPSD-02-03e contains all comments received from other IWG on proposed draft definitions, while VPSD-02-04e contains comments from the European Commission. The draft WLTP gtr contains some of the agreed upon VPSD definitions, and the EVE IWG is invited to comment on the latest proposed draft definitions. It was noted by the EVE IWG Secretary that the group intends on using VPSD definitions in the EVE Reference Guide as appropriate.

e. Environmental and Propulsion Performance Requirements of L-category vehicles (EPPR)- update was given by Petter Asman (Sweden)

The EPPR IWG initiated work during the January 2013 GRPE session and held a second meeting in Brussels in April 25 - 26, 2013. The focus of work has been on developing a terms of reference and mandate to develop a gtr; updated versions of these documents (GRPE-66-11 and GRPE-66-12) were to be discussed at the 3rd EPPR IWG meeting on June 7th, 2013 in Geneva and presented during the 66th GRPE session. The fourth EPPR session is scheduled for October 8 - 9, 2013 in India.

The EVE Secretary closed this discussion by emphasizing that the EVE group is open to assisting and collaborating with other IWGs on EV issues.

8. Discuss draft EVE-07 meeting agenda

The Chair presented the draft EVE-07 meeting agenda (EVE-06-07e). There were no changes or comments to the proposed agenda.

ACTION 10: The Secretary will finalize and post the agenda ahead of the EVE-07 meeting.

9. Concluding remarks, Closing: The Chair thanked EVE members for their participation.