

**Report of the 9th Session of the
Electric Vehicles and the Environment Informal Working Group (EVE IWG)**

Location: Ann Arbor, Michigan, USA
Time / Date: 9:30 a.m. - 5:30 p.m. February 17, 9:00 a.m. - 5 p.m. February 18th, 2014
Chair: Mr. Michael Olechiw (USA)
Co-Chairs: Mr. Kazuyuki Narusawa (Japan, participated by phone)
Mr. Meng Xiangfeng (on behalf of Ms. Chen Chunmei, China)
Secretary: Ms. Erin Marchington (Canada, acting Secretary), Mr. Stéphane Couroux
(Canada, participated by phone),

1. Welcome, Introductions, Logistics and Agenda (item 1)

Mr. Michael Olechiw, Chair of the informal working group, welcomed participants to the meeting. The meeting was well attended, with over 25 participants from contracting parties, including Canada, China, Japan, Germany and the European Union, other WP.29 working groups, and industry organizations, including Honda, Toyota, Ford, the Global Automakers of Canada, and OICA. In addition to Mr. Olechiw, Ms. Marchington (acting Secretary) was present at the meeting, Mr. Narusawa (Co-Chair) and Mr. Couroux (Secretary) participated in the meeting by teleconference, and Mr. Meng Xiangfeng was present at the meeting and acted on behalf of Ms. Chunmei (Co-chair).

Mr. Olechiw outlined the primary goal for the meeting, which was to prepare the EV Regulatory Reference Guide (draft 4, EVE-09-03e, herein referred to as 'Guide') for submission as a formal document to the working party on pollution and energy (GRPE) Secretariat by March 7th, 2014.

The agenda for the meeting (EVE-09-02-Rev2e) was reviewed and accepted all participants. The final agenda for the meeting (EVE-09-02-Rev3e) contains an updated list of documents that were added during the meeting.

Mr. Olechiw noted that a proposal received from the European Commission (EVE-09-08e) on the future work of the EVE group and interaction with the Worldwide harmonized Light vehicles Test Procedure (WLTP) WLTP group would be discussed in the context of the development of a revised or new mandate document for the EVE working group (EVE-09-02-Rev3e, item 8). Mr. Olechiw also communicated to the group that a proposal was received by the EVE leadership from OICA which suggested that the Guide be separated into two documents, one comprising of Chapters 1-4 and the second comprising of Chapter 5. This separation could help facilitate agreement on the contents of Chapters 1-4 to ensure timely submission of the Guide to the GRPE, understanding there may be disagreement on the recommendations included in Chapter 5. Mr. Olechiw recommended this proposal be revisited after discussion of the Guide had commenced (EVE-09-02-Rev3e, item 5).

2. Review of EVE IWG #8 Meeting Report (item 2)

Speaking to agenda item 2, Mr. Couroux reviewed document EVE-08-07e with a focus on action items. Mr. Couroux detailed which action items were completed or ongoing, including:

- EVE-8 Action 1, completed: The EVE Secretariat will make the two minor revisions requested by China and OICA to draft 3 of the Guide prior to the submission of the document to the GRPE.
 - This action was completed by the EVE Secretariat prior to submission of the Guide to the GRPE (GRPE-68-13).
- EVE-8 Action 2, completed: The EVE Secretariat will adjust wording in Section 5.1, paragraph 2, by deleting “the following” and “at minimum” in the first sentence.
 - This action was completed in draft 4 of the Guide (EVE-09-03e).
- EVE-8 Action 3, completed: China will share research information related to recommendation 2 (method of stating energy efficiency) in draft 3 of the Guide with the EVE group via email or during a presentation at the next EVE meeting.
 - This action was completed during the EVE-9 meeting (EVE-09-02-Rev3e), item 6, presentation EVE-09-06-Rev1e.
- EVE-8 Action 4, completed (after EVE-9): The EVE Secretariat will consult the WP.29 forum for advice on recommendation 2.
 - This action item was to be completed if consensus was not reached during the EVE-9 meeting (see item 4 of this report).
- EVE-8 Action 5, completed (after EVE-9): The EVE leadership will consider EV utility factors as a potential area of future work.
 - This action item was discussed during the EVE-9 meeting (see item 3 of this report).
- EVE-8 Action 6, completed: The FEV consultant will work with the EVE Secretariat to adjust the EV terminology in the Guide to reflect definitions developed by the Vehicle Propulsion System Definition (VPSD) working group.
 - The VPSD working group provided the EVE leadership with comments that were incorporated into draft 4 of the Guide (EVE-09-03e).
- EVE-8 Action 7, completed: All interested parties should submit comments on draft 3 of the Guide by February 3rd, 2014 to the attention of Erin Marchington (Erin.Marchington@ec.gc.ca).
- EVE-8 Action 8, completed: All interested parties should submit comments on a new EVE mandate by February 3rd, 2014 to the attention of Erin Marchington (Erin.Marchington@ec.gc.ca).
 - Comments were received from the European Commission (EVE-09-08e).
- EVE-8 Action 9, ongoing: The EVE Secretariat will prepare and submit a mandate proposal document on March 1, 2014 for consideration by the GRPE.
 - This action item was discussed during the EVE-9 meeting (see item 6 of this report, renamed Action 4).
- EVE-8 Action 10, completed: The EVE Secretariat will revise the EVE-09 agenda as required and post meeting documents on the EVE website closer to the meeting.

3. Update on progress of related WP.29 working groups (item 3)

Mr. Olechiw led the discussion of work related to EVs occurring in five other WP.29 IWGs.

Mr. Narusawa gave an update on behalf of the Electric Vehicle Safety (EVS) IWG (see EVE-09-09e and EVE-09-10e). During discussion it was clarified that sound-related issues were not being addressed by the EVS IWG in response to a comment by OICA.

Mr. Per Ohlund gave an update on behalf of the WLTP IWG (see EVE-09-11e). It was clarified that under the new WLTP IWG structure, the EV sub-group is the only 'sub-group', as other work will be completed by 'task forces'. A review of the open issues to be examined by the EV sub-group during phase 1b of WLTP IWG work was reviewed, and it was noted that this group will be looking at EV utility factors. Knowing this, and given that the EVE IWG has limited time in their current mandate, the EVE IWG decided not to address utility factors, which closes EVE-8 Action 5. For the purposes of this report, Mr. Ohlund provided additional information on this point, which is included here. The task for phase 1b is to investigate the possibility for a globally harmonised utility factor. The process would be two parts: 1) the methodology to determine the utility factor curve, and 2) information regarding the use and daily charging event for PHEV.

Mr. Bill Coleman gave an update on behalf of the VPSD IWG (see GRPE-68-19). There has been little activity since the VPSD IWG meeting during the January GRPE session. A consolidated VPSD proposal document will be prepared, with the goal of introducing it as an annex into the R.E.3 and S.R.1 resolution documents. A request will be made to extend the VPSD mandate to June 2015 to complete this work.

Mr. Olechiw gave an update on behalf of the Heavy Duty Hybrid (HDH) IWG (see GRPE-68-14). The group aims to submit a formal document for discussion at the June GRPE session, which will be based on GRPE-68-12 (Proposal for draft Amendment 3 to global technical regulation (gtr) No. 4).

Ms. Marchington gave an update on behalf of the Environmental and Propulsion Performance Requirements for L-category vehicles (EPPR) IWG. The group has started to work on a harmonized test procedure for evaporative emissions from 2-wheeled vehicles (e.g. category L1 and L3) and the target is to have a draft text in the form of a GTR ready by spring 2014. The objective is then to amend the draft GTR in order to also cover three-wheeled vehicles in a later stage. The group has also started to discuss the on-board diagnostic (OBD) test procedure. The objective for the OBD procedure is to also have a draft ready by the end of spring 2014 for 2-wheeled vehicles and to continue with 3-wheeled vehicles at a later stage.

In closing, Mr. Olechiw asked if there were general comments on any other EV-related activities under WP.29 (none) and reminded the group that the EVE IWG wishes to continue collaborating and working with other IWGs.

4. Reference Guide Development (item 4, 5, 7)

Discussion on the Guide under agenda items 4, 5, and 7 was based on draft 4 of the Guide (EVE-09-03e). This draft incorporated comments received from the EVE-08 meeting (EVE-08 Action items 2 and 6) and those received after the EVE-08 meeting (comments were received from China, the VPSD Chair, and OICA).

The approach to review the Guide was to go through each chapter line-by-line to review comments received, to check if any meeting attendees had any new comments, and to ensure concurrence with wording from the EVE IWG. Details of this review, including all comments, the originator of each comment, and action taken as a result of the comment to produce a revised Guide (draft 5) are summarized in Appendix 1 of this report.

Discussion of all chapters, including proposed wording changes to the recommendations in chapter 5, occurred on Day 1 of the meeting and a draft of the Guide containing the proposed revisions was distributed to the EVE IWG to allow for continued discussion and comment over the evening. It was clarified during discussion and in the text that the purpose of the Guide is not

to assign future work, especially concerning the recommendations in chapter 5; this agreement closes EVE-8 Action 4. On Day 2 in the morning, the recommendations in chapter 5 were revisited and new wording was proposed and agreed upon. After this discussion, the EVE-9 participants agreed in principle with the whole document, so it was agreed to not follow OICA's proposal to split the Guide into two separate documents.

It was agreed that the revised Guide resulting from the EVE-9 discussion (draft 5) would be distributed soon after the meeting to the EVE IWG to allow for a one-week review and submission of any additional comments, especially from those who could not attend the EVE-9 meeting. The final version of the Guide (draft 6) would then incorporate these comments and be submitted to the GRPE Secretariat by March 7th, 2014.

ACTION 1: The EVE Secretariat will revise draft 4 of the Guide according to EVE-9 discussion to produce draft 5, which will then be distributed to the EVE IWG for one week to allow for final comments.

ACTION 2: The EVE Secretariat will revise draft 5 of the Guide according to comment received, prepare a final draft of the Guide, and submit this to the GRPE Secretariat by March 7th, 2014.

5. Information sharing presentations (item 6)

Mr. Olechiw led the discussion of several EV information sharing presentations. Mr. Aaron Loiselle-Lapointe (Canada) gave a presentation on testing a rear-wheel drive xEV on a two and four wheel dynamometer, where 'xEV' is a generic term to indicate all hybrid EVs, plug-in hybrid EVs and battery EVs (EVE-09-05-Rev1e). Mr. Meng Xiangfeng gave a presentation on a vehicle energy consumption evaluation system developed by China and the European Union Cooperative Research Program (EVE-09-06-Rev1e). Mr. Zoltan Jung gave a presentation on the calculation of upstream CO₂ emissions for EVs (EVE-09-04e). All presentations were very interesting and well received.

6. Discuss extension of EVE mandate (item 8)

Mr. Olechiw initiated the discussion on the possible extension or new mandate request for the EVE IWG. The EVE IWG's current mandate goes until November 2014.

The European Commission also presented their proposal (EVE-09-08e), which suggests the development of an 'EV expert group'. The expert group would consist of members from the EVE IWG and the WLTP EV sub-group. The group would then proceed to develop WLTP and EVE GTRs, reporting both to the WLTP IWG and the GRPE. The Commission clarified the proposal is preliminary, with the goal of avoiding duplication of future work on EVs at WP.29. The European Commission indicated more work was needed to define the reporting structure, so it was agreed to leave this discussion until after the new EVE IWG mandate (see below).

After some discussion, the EVE IWG agreed to pursue a new mandate post-2014 to continue research and information sharing on the Guide recommendations in the short term, with possible gtr development in the long-term. The new mandate proposal will be informed by the European Commission's proposal (EVE-09-08e), with the goal of developing the proposal with consensus; the USA and China agreed to lead drafting of the proposal. At the time of the EVE-9 meeting, the timeline and process for completing such a mandate request were unclear, so the EVE leadership committed to following-up with the GRPE Chair to clarify.

ACTION 3: The US and China will draft a new EVE mandate proposal, informed by the European Commission's proposal (EVE-09-08e) and share this with the Commission prior to the next EVE meeting.

ACTION 4: The EVE Secretariat will follow-up with the GRPE Chair to clarify the timeline and process for completing a new EVE mandate request and ensure the proposal developed following the correct procedure.

7. Discuss draft EVE-10 meeting agenda (item 9)

Ms. Marchington led the discussion of the draft EVE-10 meeting agenda (EVE-09-07e). It was agreed that the agenda should be revised to allow for a longer EVE mandate discussion and a shorter Guide discussion.

ACTION 5: The EVE Secretariat will revise the EVE-10 agenda as required and post meeting documents on the EVE website closer to the meeting.

8. Tour of Environmental Protection Agency (EPA)'s facilities and concluding remarks (item 10 and 11)

Mr. Jeff Cherry (US EPA) took the EVE IWG on a tour of the EPA's National Vehicle and Fuel Emissions Laboratory (NVFEL) and battery test facility. The tour was very interesting and well received by all participants. Afterwards, Mr. Olechiw thanked all for attending and closed the meeting.

APPENDIX 1: EVE-9 meeting Guide review process (EVE-09-03e, draft 4)

#	EVE-09-03e (Draft 4) comment (page, section, paragraph)	Comment originator	Action as a result of discussion at EVE-9 meeting (incorporated into Draft 5)
1	p.5, section 1.1, paragraph 1	VPSD Chair and OICA	New text added after EVE-9 Comment accepted; table is included and VPSD definitions used throughout text; PHEV changed to OVC-HEV to ensure consistency with WLTP
2	p.6, section 1.1, paragraph 4, point b	OICA, European Commission	New text added after EVE-9 Deletion of EFV IWG accepted, addition of EPPR IWG accepted.
3	p.6, section 1.1, paragraph 5	Japan	Addition of text concerning GTR recommendations not accepted because of addition of paragraph 2 under section 1.2.2 (future work not assigned by Guide)
4	p.7, section 1.2.1, paragraph 1	OICA	Minor change to wording accepted
5	p.7, section 1.2.1, paragraph 2	OICA	Comment that EVE should address noise attributes not accepted; clarification by GRPE Chair that this issue is under the control of GRB and under the mandate for the informal working group QRTV. Noise sentence deleted.
6	p.7, section 1.2.2, paragraph 2	EVE Chair	New text added during EVE-9 Addition of text concerning scope of guide and future work; accepted by EVE-9 meeting attendees
7	p.9, section 2, Figure 3	OICA	Comment accepted and Figure 3 revised
8	p.9, section 2.2, title and p.10 Figure 5, title	Japan	New text added during EVE-9 Minor change to wording accepted
9	p.9, section 2.2, paragraph 1	FEV	Minor change to wording accepted
10	p.10, section 2 Figure 4	OICA	Comment was addressed verbally during EVE-9; only WP.29 contracting parties were contacted for EV information, so as most Central and South American governments (i.e. Brazil) are not WP.29 contracting parties, they were not contacted.
11	p.11, section 2.2, paragraph 3	FEV and VPSD Chair	Minor change to wording accepted
12	Section 3, use of 'traffic light colours' problematic (pre-judgement that the regulatory method is the correct approach)	OICA (justification document)	New text added after EVE-9 Comment was addressed by adding text to p.11, section 3, paragraph 2 which clarifies that colours indicate the presence or absence of regulation only.
13	Section 3, comments by parties on the information of other contracting parties or	OICA (justification document), etc.	Comments by parties on the information of other contracting parties or working groups was clarified by the EVE Chair to be difficult to

	working groups		address, as all information in the Guide was received by contracting parties directly; thus, where information was questioned by other parties, an attempt will be made to confirm information, but the information received from the contracting party will be considered correct.
14	Section 3, attribute definitions	OICA, etc.	Comments related to attribute definitions included in the text were addressed, but definitions were not modified because they are derived from the questionnaire used to gather information from contracting parties.
15	p.12, section 3.1, title and attribute definition	VPSD Chair	Minor changes to wording accepted. Comment was not accepted; definitions in the Guide adjusted to align with VPSD definitions (see first comment above).
16	p.13, section 3.1, paragraph 2	OICA	New text added after EVE-9 Comment was accepted and a clarification sentence was added under section 3.1, and Figure 7 and 8 were updated with revised Swiss information; deletion of incorrect Swiss information in paragraph 3 (confirmed by Switzerland).
17	<i>New comment during EVE-9</i> p.13, Figure 8 colour for European Commission should match Figure 7	OICA	Comment accepted; for all attribute snapshot figures, if a contracting party has an attribute that is partially regulated, the corresponding attribute map figure was adjusted to show both colours corresponding to the partial regulation (revise Figure 15, 21)
18	p.13, Figure 8, title	VPSD Chair	Minor changes to wording accepted.
19	p.13, section 3.1, paragraph 2	VPSD Chair	Minor changes to wording accepted.
20	p.13, section 3.1, paragraph 3	OICA	Minor changes to wording accepted.
21	p.14, section 3.2, paragraph 1 and 2	VPSD Chair	Minor changes to wording accepted.
22	p.14, section 3.2, paragraph 2	OICA	Comment accepted; change confirmed by Switzerland; Figure 9 was updated.
23	p.14, section 3.2, paragraph 2	VPSD Chair	Deletion of PHEV (now OVC-HEV) not accepted; wording adjusted to clarify what J1711 covers on advice of expert at EVE-9.
24	p.14, section 3.2, paragraph 3	VPSD Chair, OICA	Minor changes to wording accepted.
25	p.15, section 3.3, title and attribute definition	OICA	New text added after EVE-9 Comment that EV driver-user information is outside GRPE scope was not accepted; the EVE Chair clarified the impact of this attribute

			on vehicle emissions could be significant, but also that the guide includes information not traditionally discussed under GRPE. Comment that the attribute definition is unclear was accepted and an example was added for clarification; the definition was not changed because it was used in the questionnaire (see comment above, 'Section 3, attribute definitions').
26	p.15, section 3.3, Figure 10 (and Figure 7)	OICA	Driver-user information for the European Commission confirmed, Figures 10 and 7 will be updated to yellow (voluntary).
27	p.15, section 3.4, attribute definition	VPSD Chair	Minor change to wording accepted.
28	p.16, section 3.4, paragraph 1, comment that EU should be included with South Korea	OICA, Japan	Comment was discussed, the European Commission cannot confirm this information, so the comment will not be accepted. At the request of Japan, Japan was deleted from inclusion in the OICA comment.
29	p.16, section 3.4, comment that corporate standards should be reflected	OICA	Comment was not accepted; the EVE Chair clarified the guide does not make an attempt to capture this type of information.
30	p.16, section 3.4, comment that South America information should be included	OICA	Comment was not accepted; as noted above, no South American countries are WP2.9 contracting parties and thus they did not complete the questionnaire.
31	p.16, section 3.4, comment that USA has the same material standards as the rest of the world	OICA	Comment was not accepted by USA.
32	p.17, section 3.5, vehicle labeling	OICA	Comment was not accepted; EVE Chair verbally addressed this with a discussion during the EVE-9 meeting.
33	p.17, section 3.5, paragraph 2	FEV, China, OICA	Minor changes to wording accepted.
34	p.17, section 3.5, paragraph 2	OICA	Comment was clarified; this does not apply to l-category vehicles, rather light duty vehicles.
35	p.18, section 3.5, paragraph 2	VPSD Chair	Minor changes to wording accepted.
36	<i>New comment during EVE-9</i> p.18, section 3.5, paragraph 2, the term 'relative excellence' is not appropriate (specifically the word 'relative')	OICA	Comment was accepted; Switzerland, USA and Korea provided additional information.
37	p.18, Battery Attributes	OICA	Comment was discussed during EVE-9 meeting and no action was required as a

			result.
38	p.18, Battery Attributes, REESS definition	Multiple	Definition for REESS was corrected.
39	p.19, Battery Attributes, paragraph 1	OICA comments	Comments are repeated in the appropriate sections (battery durability and battery performance), so they were deleted.
40	p.19, section 3.6, Battery Performance, Attribute definition and p.20, paragraph 2	OICA	Comment was discussed and this information was confirmed with the European Commission to ensure it properly addresses the battery performance attribute definition.
41	p.20, section 3.6, paragraph 2	China and VPSD Chair	Minor changes to wording accepted.
42	p.21, section 3.7, paragraph 2	VPSD Chair	Minor changes to wording accepted.
43	p.21, section 3.7, paragraph 2, comment on full useful life	OICA	Comment not accepted, action required was unclear.
44	p.21, section 3.7, paragraph 2, comment on ZEV	OICA	Comment not accepted; it is understood that the California ZEV mandate remains under discussion.
45	p.22, section 3.7, paragraph 3	OICA	Minor changes to wording accepted; as a result, WLTP information was revised in Figure 13 (check mark was deleted).
46	p.22, section 3.8, Battery Recycling, attribute definition	OICA	Comment was discussed during EVE-9 meeting and no action was required as a result.
47	p.24, Infrastructure Attributes	FEV	Minor changes to wording accepted.
48	p.26, section 3.10, paragraph 2 and 3	FEV and China	Minor changes to wording accepted.
49	p.27, section 3.11, paragraph 3	FEV and China	Minor changes to wording accepted.
50	p.28 and 29, section 3.12, paragraph 2	FEV and China	Minor changes to wording accepted.
51	p.29, section 3.13, vehicle as electricity supply, attribute definition	OICA	Comment accepted; change of wording in paragraph 2 from 'not yet legislated' to 'no legislated'
52	p.30, section 3.13, paragraph 2	FEV	Minor changes to wording accepted.
53	p.31, section 3.14, attribute definition and paragraph 1	FEV, VPSD Chair	Minor changes to wording accepted.
54	p.31, section 3.14, paragraph 2	OICA, VPSD Chair, FEV	Minor changes to wording accepted.
55	p. 32, section 3.14, paragraph 2	OICA	New text added after EVE-9 Comment accepted; HOV and HOT definitions clarified in the text.
56	p.34, section 4.2, paragraph 2	OICA	New text removed after EVE-9 Comment was accepted and text was

			adjusted to reflect EVE-9 discussion, it is unclear if WLTP IWG will address battery durability.
57	p.35 and 36, section 4.3.1, paragraph 1	OICA, VPSD Chair	Minor changes to wording accepted.
58	p.36, section 4.3.2., paragraph 3	OICA	Comment was discussed during EVE-9 meeting and no action was required as a result.
59	p.37, Section 5	VPSD Chair	Comment accepted; however, as agreement in principle was reached during the EVE-9 meeting on wording for Section 5.2, and it was clarified in Section 1.2.2. that future work is not assigned in the guide, no further action is required.
60	p.37, Section 5.1	OICA and Japan	Significant text modifications during EVE-9 Comments were accepted, discussed, and text was revised to the satisfaction of both parties.
61	p.37, Section 5.2	All (OICA, Japan, European Commission, China, USA, Canada, etc.)	Significant text modifications and new text added during EVE-9 Comments were accepted, discussed, and text was revised to the satisfaction of all parties participating in the EVE-9 meeting.
62	p.38 -40, Section 5.3	OICA and VPSD Chair	Minor changes to wording accepted.
63	p.38, Section 5.3	OICA	New text added after EVE-9 Comment was discussed during EVE-9 meeting and text was adjusted to reflect discussion.
64	p.38, Section 5.3	Japan	Comment was discussed during EVE-9 meeting and no action was required.
65	<i>New comment during EVE-9</i> p.39, Section 5.3, Figure 32, comment that information in the figure is not up to date	Japan, China	Comment was accepted and as a result of discussion during the EVE-9 meeting, the figure was removed.
66	p.40, Section 5.4	VPSD Chair	Minor changes to wording accepted.
67	<i>New comment during EVE-9</i> p.40, Section 5.4, paragraph 1, comment that they did not support recyclability work under WP.29	Japan	Comment was accepted and as a result wording was adjusted to remove 'recycling lies within the mandate of WP.29'.
68	p.40, Section 5.4, paragraph 1	Japan	New text removed after EVE-9 Comment was accepted and as a suitable definition for 'manufacturing for recyclability requirements' was not found, this portion of the sentence was deleted.
69	Section 6, Annex	VPSD Chair, FEV	Minor changes to wording accepted.