

Item 3:

Electrified Vehicle Battery Performance & Durability

EVE-14-08e

Presented by: USA, Canada

EVE-14 meeting

April 20, 2015

Outline

1. Meetings to date
2. Literature review progress report
3. USA discussions with manufacturers on battery durability
4. Open discussion
5. Next steps

Meetings to date

- EVE-13 meeting, Jan. 12, 2015
 - Proposed development of a literature review on EV battery durability, to be used to inform the decision of GTR development in Part B of the EVE mandate
 - This was supported by the group, others were invited to participate
 - Roadmap for work established (EVE-13-06e)
- Conference call, Feb. 19, 2015
 - Attendance: USA, Canada, Japan
 - USA confirm funding secured for literature review
 - Discussion on draft contract for the literature review
- Conference call, March 25, 2015
 - Attendance: USA, Canada, Japan, FEV (consultant)
 - USA introduce consultant, FEV and discuss the contract details and initiation
 - USA report on discussions with some manufacturers about battery durability

Literature review progress report

- Update to be provided by FEV

USA discussions with manufacturers on battery durability

- USEPA has met with four manufacturer of electrified vehicles sold within the United States.
 - The information that was shared is considered Confidential Business Information and as such cannot be distributed, however we can discuss the general trends that we heard.
- What we have learned:
 - Every manufacturer has adopted strategy for assuring that their vehicles are durable over a useful life period.
 - Each manufacturer's procedures are different – no industry standard
 - The durability procedures take into account:
 - Temperature – for both usage and storage
 - Drive cycle
 - Recharging
 - Time

USA discussions with manufacturers on battery durability continued ...

- Manufacturers reported that because they are addressing the effects of battery aging within the vehicle's control systems that there is:
 - No increase in criteria pollutants
 - No increase in overall vehicle energy consumption
- However, manufacturers did acknowledge that there could be a reduction in overall vehicle range as the battery aged, including a reduction in the all-electric range of a plug-in hybrid electric vehicle.
- Many vehicles are just now reaching high mileage in the field and the manufacturers are closely monitoring their products to understand how they age in the hands of actual customers.

Open discussion

- Comments on literature review?
- Anticipated challenges with this work?
- Additional resources for FEV to examine?

Next steps

- FEV continues work on literature review (April – June 2015)
- EVE-15 meeting (June 8, 2015), Geneva
 - Discuss draft literature review, recommendations
- FEV literature review completed end June 2015
- Potential work on review recommendation (June – Dec 2015)
- EVE-16 meeting (Fall, 2015), Ottawa
 - Status report from all EVE sub-groups
- EVE-17 meeting (Jan, 2016), Geneva
 - Status report from all EVE sub-groups
 - Initiate EVE discussions on recommendations for GTR development