

Japan's Position on Battery Durability

Background

At the 17th EVE IWG meeting (11 January 2016, Geneva) the item "Battery Performance and Durability" was reported and discussed based on the following two documents:

EVE-17-05e DRAFT - EVE IWG Status Report on Battery Performance and Durability

EVE-17-11e Battery Durability in Electrified Vehicle Applications: A Review of Degradation Mechanisms and Durability Testing - DRAFT 2

(The updated version EVE-18-04e was issued for the current meeting.)

* The document EVE-17-05e lists the following three options for future proceedings:

Option 1: Recommend that a GTR is appropriate for electrified vehicle durability, and note that it will take time to obtain the information required. For example, information relating to the effect of vehicle duty cycle, vehicle charging, operating temperature, and calendar time will need to be collected to inform this action. Proceeding in this direction may require initiating a new mandate and/or forming another IWG.

Option 2: Extend the mandate of the EVE to continue research into electrified vehicle durability. This would involve gathering data to inform a potential future GTR.

Option 3: Recommend to the GRPE that it is premature at this time to develop a GTR for electrified vehicle durability, but the question should be revisited in the future.

* Each Contracting Party is expected to present its position with regard to these options in the current EVE IWG meeting.

Japan's Position

1. It should be clearly recognised that the battery durability evaluation itself is not the purpose of the EVE IWG. After clarifying how battery durability would affect the environment, we should address those items for which the government considers it necessary to establish regulations or evaluation procedures as information for consumers.

2. The EVE IWG should work in line with the WLTP IWG. The WLTP IWG is scheduled to discuss durability requirements for the emissions performance of gasoline and diesel vehicles, etc. and has made it clear that its purpose is to address the issue of deterioration of the emissions control systems. In contrast, the purpose of our current discussion regarding battery durability for electrified vehicles has not been fully clarified. Therefore, the purpose should be clarified first. For example, should we discuss the effect of electrified vehicle battery durability on running range as information for consumers, or on the charge depleting cycle range in the Charge Depleting mode of plug-in hybrid vehicles, or on the exhaust emissions?

3. The durability relating to emissions performance of gasoline and diesel vehicles, etc. is evaluated based on the vehicle. For electrified vehicles as well, the durability evaluation should be based on the vehicle.
4. According to the battery durability report (A Review of Degradation Mechanisms and Durability Testing, EVE-18-04e), a great variety of batteries are currently being developed, and their deterioration mechanisms vary as well. It is questionable whether we would be able to establish general durability evaluation procedures that can be adopted as a regulation while battery development is still progressing.
5. Test procedures for type approval are required to have, in particular, robustness, repeatability, and fairness. Thus, we must avoid introducing test procedures that evaluate only a part of the functions of batteries under development. As far as the current battery development status is concerned, it is premature at this time to discuss the introduction of procedures for testing the durability of the battery itself as a type approval test.
6. Accordingly, Japan prefers Option 3, although we would like to continue to discuss the issues described in 1, 2 and 3 above as well as to investigate relevant technological developments and testing procedures.
