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## **Report from IWG EVE**

- System Power Determination
- Battery Performance and Durability

Subgroup EV meeting, The Hague

04.10.2016

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# Report from IWG EVE

## Status: System Power Determination

### General

- System Power Determination is one out of four work items from Part A of the current mandate of the IWG EVE
- Initial findings and recommendations were compiled and presented into a single report and presented to GRPE in June 2016 (GRPE-73-24)

### IWG EVE recommendation to WP.29 on proceeding with this topic:

- The work of EVE IWG during Part A of the mandate indicates that sufficient knowledge and capability exists to develop a suitable procedure for determining powertrain performance of electrified vehicles
- A procedure for determining the powertrain performance has been requested by the IWG WLTP
- Membership of both IWGs have been regularly communicating during Part A of the current EVE mandate to ensure that each group's work is complimentary and not duplicative
- EVE IWG is seeking AC.3 authorization to develop an amendment to GTR15 to establish a procedure for determining the powertrain performance of electrified vehicles
- EVE IWG proposed a detailed working plan to WP.29 (see next slide)

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# Report from IWG EVE

## Status: System Power Determination

### Proposed work Plan:

- I. Consideration of the concepts:
  - Reference Method – Chassis dyno
  - Candidate Method – Component testing and calculation
- II. Consideration of the open points
  - Load Collectives and Maximum Power
  - Reference Method => Chassis Dyno Testing with completed vehicle
  - Candidate Method => Component Testing and calculation to determine System Power
  - Customer Information and other information with added value
- III. Determination of work plan with task list and including allocation of work load
- IV. Proof of concepts: Studies with different types of HEVs including. series HEV, REX and PEVs
- V. Test, refine / improve and validation of the method(s)
- VI. Drafting of the gtr
- VII. Proposal for a draft amendment to GTR No. 15
- VIII. Approval at GRPE, voting at WP.29 AC.3

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# Report from IWG EVE

## Proposed target timeline: system power determination

### Timeline

- I. November 2016: Approval of the authorization to develop an amendment to gtr No. 15 by AC.3;
- II. June 2018: Draft gtr available, guidance on any open issues by GRPE;
- III. June 2018 – January 2019: Final drafting work on gtr text;
- IV. January 2019:
  - a. Endorsement of the draft gtr based on an informal document by GRPE;
  - b. Transmission of the draft gtr as an official document twelve weeks before the June 2019 session of GRPE.
- V. June 2019: Recommendation of the draft gtr by GRPE;
- VI. November 2019: establishment of the gtr by AC.3 in the Global Registry.

\*NOTE\* Because this procedure may involve developing a candidate method (based on component testing) which must be validated against a reference method (based on chassis dyno testing), the EVE IWG is also asking AC.3 to allow up to 1 extra year beyond the timelines above for gtr development, if initial validation testing of the candidate method proves promising, and more time is needed to fully validate the candidate method.

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# Report from IWG EVE

## Status: Battery performance and durability

### General

- Battery performance and durability is one out of four work items from Part A of the current mandate of the IWG EVE
- Initial findings and recommendations were compiled and presented into a single report and presented to GRPE in June 2016 (GRPE-73-24)

### IWG EVE recommendation to WP.29 on proceeding with this topic:

- The work of EVE IWG during Part A of the mandate indicates that while sufficient knowledge and capability exists to evaluate specific electrified vehicle designs for battery performance and durability, it is not clear that a vehicle-level test procedure which fairly compares all types of battery chemistry and constructions in all applications could be developed
- There is some concern among IWG EVE members that developing a procedure prematurely may unduly influence battery design and material choice while the technology is still evolving
- For these reasons, the IWG EVE is seeking AC.3 authorization to continue research on the topic of battery performance and durability, which influences vehicle performance, with the goal of returning to AC.3 seeking authorization for relevant activities (including GTR development)

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# Report from IWG EVE

## Proposed target timeline: battery performance and durability

### Timeline

- I. November 2016: Approval to continue research on the topic of battery performance and durability;
- II. November 2016 – June 2018:
  - a. EVE continues research on battery performance and durability, which influence vehicle performance, such as pollutant emissions, fuel/energy consumption and range. EVE develops a detailed work plan and drafts request for relevant activities (including gtr development);
  - b. EVE continues consultation with the WLTP, including the WLTP-E-Lab sub-group and WLTP co-sponsors (Japan and the European Commission) as well as the EPPR IWG.
- III. June 2018:
  - a. EVE IWG presents a first draft on the status of research work and proposal(s) for subsequent work (if appropriate) to GRPE;
  - b. EVE IWG presents informal documents on the status of research work and proposal(s) for subsequent work (if appropriate) for review by AC.3.
- IV. November 2018: Approval of the authorization to develop a gtr by AC.3, if appropriate;