

# Review of Battery Durability

EVE-36 teleconference

29 June 2020

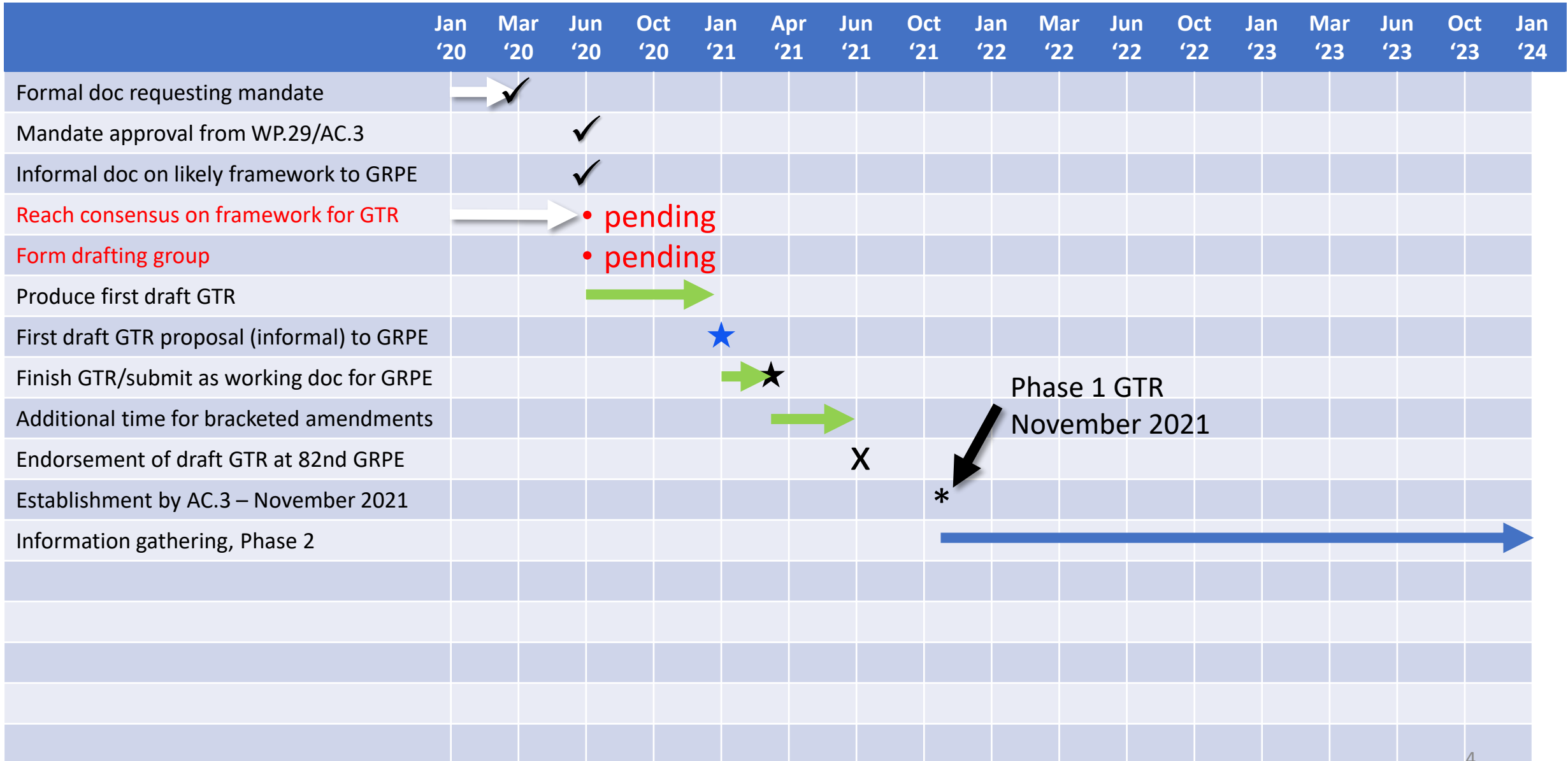
# Battery Durability GTR: Draft framework for Phase 1

1. Minimum performance requirement (MPR)
  - Percentage retention of certified range [or capacity] after “x” years and/or “y” distance
  - MPR is applicable to all manufacturers
  - Individual manufacturers can declare a better performance (declared PR, or DPR)
2. Onboard battery state-of-health (SOH) metric
  - Definition of SOH = (Remaining range / certified range) [or based on capacity?]
  - OEMs responsible for their own algorithm
  - Readable by responsible authority (via OBD or similar)
3. In-service conformity (ISC) and data collection
  - Part A: Establish reliability of SOH metric
    - Small sample of 3-10 vehicles via ISC
    - Use checklist/survey to exclude vehicles with abnormal usage
    - Measure range via range test used for type approval (commonly, WLTC)
    - Verify accuracy of SOH metric by comparing to measured range
  - Part B: Determine conformity with MPR / DPR
    - Large sample of unspecified number of vehicles (large sample may remove need for NUIs or survey)
    - Routine collection of SOH metric, e.g. at safety inspections or via telematics
    - Determine conformity by reference to collected SOH
4. Establish mechanism for ongoing data collection to inform Phase 2
  - Primarily SOH collection
  - Identify simple NUIs that can be implemented now, if any
  - Discussion may be started in Phase 1 under limited samples

# Timeline in mandate request

- (i) January 2020: Approval of mandate from GRPE
- (ii) June 2020: Approval of mandate from AC.3
- (iii) January 2020 – June 2020: EVE IWG formulates new drafting group, and begins drafting GTR with elements agreed upon by EVE IWG
- (iv) June 2020: EVE IWG provides update to GRPE outlining details of draft outline of GTR
- (v) June 2020 – December 2020: EVE begins validation testing of relevant aspects of the proposed procedure, assesses results and makes changes to GTR
- (vi) January 2021: EVE IWG submits first draft proposal for the GTR as an informal document to January 2021 session of GRPE for further discussion and recommendation.
- (vii) January 2021- March 2021
  - a. EVE revises draft proposal based on recommendations from GRPE
  - b. Transmission of the draft GTR as an working document twelve weeks before the June 2021 session of GRPE;
  - c. Endorsement of the draft GTR based on an informal document by GRPE.
- (viii) June 2021: EVE presents the final GTR to GRPE
- (ix) November 2021: establishment of the GTR by AC.3 in the Global Registry.
- (x) January 2022-January 2024: EVE IWG continues information gathering on possible modifications to the GTR and develops amendments to the GTR for consideration by WP.29 and AC.3, as deemed appropriate.
- **Mandate request includes possibility of one additional year**

# Visual timeline (without use of additional year)



# The proposed schedule is very ambitious

- Progress is conditional on many things, including:
  - Ability of monthly meetings to increase the pace of development
  - Ability to reach consensus on the remaining details of Phase 1, among a growing group of stakeholders who have recently expressed interest in the work
  - Availability and suitability of any existing regulatory text (e.g., ISC statistical method and questionnaire/survey) that can be adapted to the GTR
  - No need to develop prescribed NUI algorithms
  - No need for a technical validation program
  - Any prior notice needed to establish outside services to support the program (e.g. application for any new OBD PIDs)

# Meeting roadmap

- Recent meetings:
  - EVE 34 teleconference (March 23-26, 2020)
  - EVE 35 teleconference (May 19, 2020)
  - This meeting (June 29-30, 2020)
- Six monthly meetings possible before 82<sup>nd</sup> GRPE:
  - July 2020
  - August 2020
  - September 2020
  - October 2020
  - November 2020
  - December 2020

# Status of DEVP/Power Determination GTR

- 17 March 2020:
  - GTR submitted to the GRPE Secretary, and became working document GRPE/2020/12
  - <https://www.unece.org/fileadmin/DAM/trans/doc/2020/wp29grpe/ECE-TRANS-WP29-GRPE-2020-12e.pdf>
- 9-11 June 2020 (81<sup>st</sup> GRPE):
  - Working document amended by informal document GRPE-81-27e
  - [https://www.unece.org/fileadmin/DAM/trans/doc/2020/wp29grpe/GRPE-81-27e\\_track.pdf](https://www.unece.org/fileadmin/DAM/trans/doc/2020/wp29grpe/GRPE-81-27e_track.pdf)
- 24 June 2020:
  - Relevant content extracted from GTR to form separate technical report
- November 2020:
  - UN GTR on DEVP will be considered by WP.29/AC.3