## Japan's Comment for GTR 21 Family definition

prepared by Japan

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## Definitions of families ('23/1 Draft)

| 7.   | Definitions of families←   |
|------|--|
| 7.1. | General↔   |
|      | Vehicles having the same characteristics with respect to their evaluation for<br>system power may be grouped into vehicle families for the purpose of<br>determining a system power rating considered to be applicable to all vehicles<br>in the family. $\Leftrightarrow$ |
| 7.2. | Family definition  |
|      | Only vehicles that are the same with respect to <u>all of</u> the following elements<br>may be part of the same family: $\leftarrow$   |
|      | (a) HEV system <u>configuration[</u> , including number, type, and mechanical<br>arrangement of power sources; operating strategy; etc.]; <sup>↓</sup>   |
|      | (b) ICE power <u>rating</u> ;↔   |
|      | (c) Net power and construction type (asynchronous, synchronous, etc) of all<br>electric machines in the HEV system, and type of electric energy converter<br>between the electric machine(s) and the <u>battery</u> ; <sup>↓</sup>   |
|      | (d) Type of battery cell, including <u>format[</u> , capacity, voltage,] and chemistry;  |
|      | [(e) Type of battery pack, including battery configuration (number of cells, mode of connection, etc.;]↔   |
|      | (f) Nominal voltage of the <u>battery</u> in addition to JAPAN proposals   |
|      | (g) Maximum current of the battery; and∉   |
|      | (h) Type of vehicle (PEV or OVC-HEV).↔   |
|      | [At the request of the manufacturer, with the approval of the responsible<br>authority and with appropriate technical justification, the manufacturer may<br>deviate from the above criteria.]<br>←  |

## <Latest Draft Text>

New family definition (e) was listed in addition to Japan proposals during drafting

## < Counter-Proposal >

Japan accepts new family definition (e) with slight modifications.

- ✓ delete "number of cells" since this is covered by battery cell voltage in (d) and nominal voltage of the battery (f)
- ✓ delete "etc." since this may lead unnecessary confusion due to multiple interpretation

(e) Type of battery pack, including battery configuration (mode of connection)