PEV low temp family concept

Revised ACEA EV proposal taking discussions and feedback of SG EV meeting on February 13th

Status: 18.02.2020

Proposal PEV Low Temperature Family concept

ACEA TF EV proposal

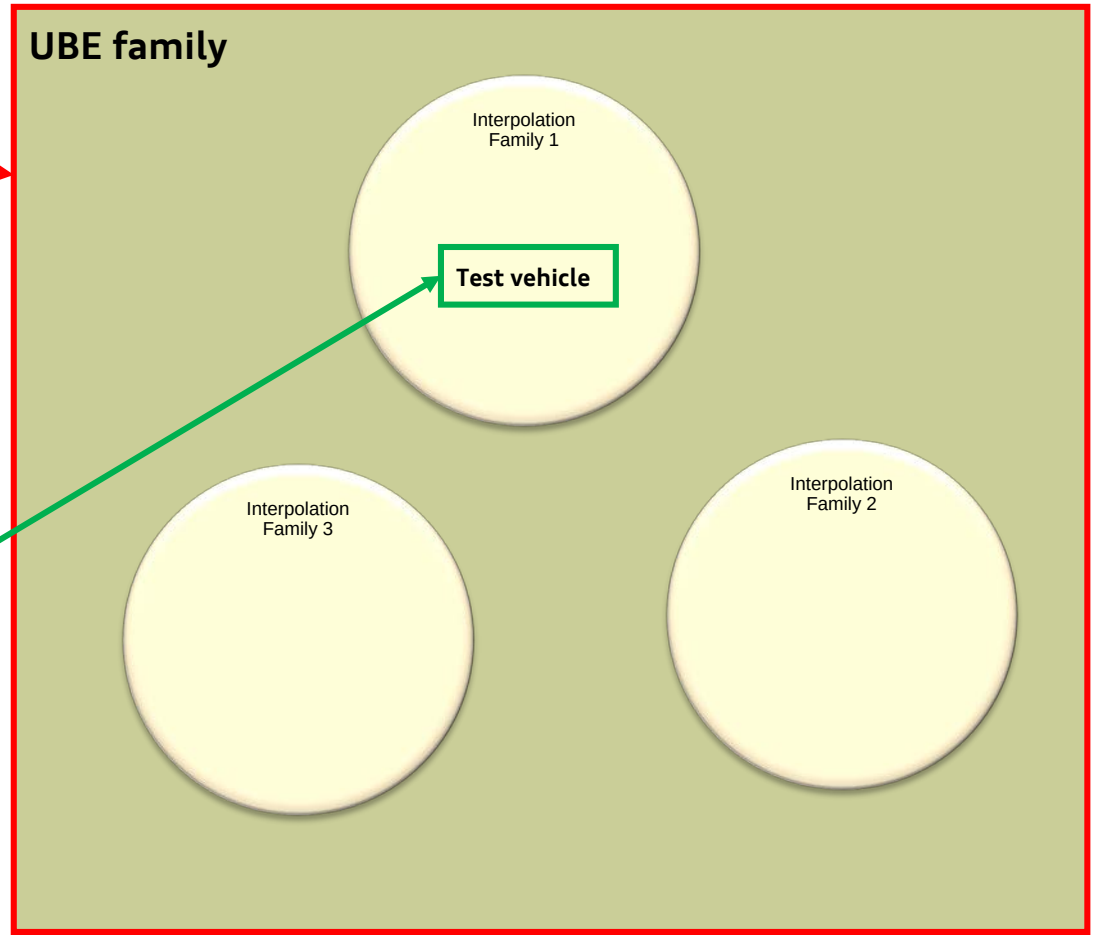
UBE family:

Parameter	Example	Requirement
Capacity of battery	x kWh	Same
Battery preheating	Available/not available	Same

-7°C test vehicle selection (out of UBE family)

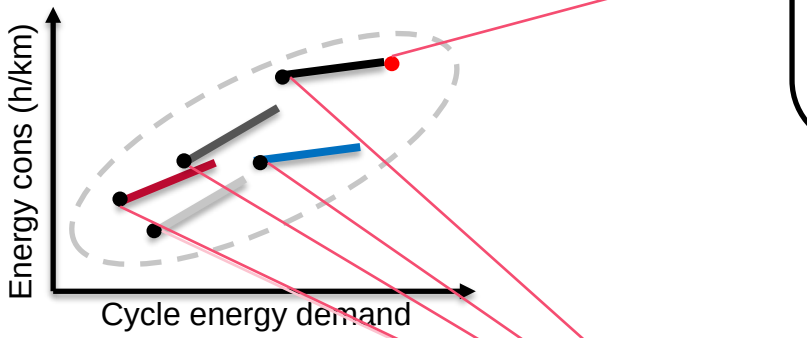
Parameter	Example	Requirement*
Vehicle x	Vehicle L	Worst case
Cabin size (for EV)	Cabin volume/weight (TBC)	Biggest volume is worst case
Auxiliaries (Heating system)	Resistive / Heat pump/ Fuel heating etc.	Less efficient one is the worst case
Battery thermal management system	(TBC)	Less efficient one is the worst case

*Worst case need to be identified, worst case mandatory to be measured within UBE family, all other cases can be measured at the option of the manufacturer

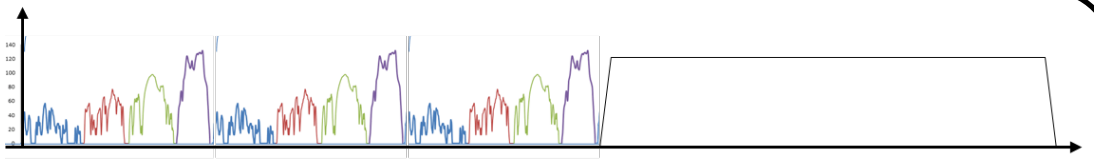


Proposal PEV Low Temperature Family concept

Potential solution for the future



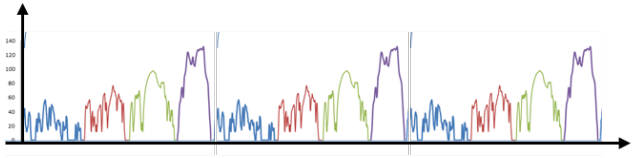
UBE Family: Determination of UBE coefficient at -7°C



- Test vehicle: worst-case vehicle in the family
- Used only to define the UBE correction factor

UBE ratio: UBE23°C/UBE -7°C
Example:
- Kangoo ZE: 0.93
- GM Bolt with preheating :0.97
- GM Bolt w/o preheating :0.94
- Nissan Leaf:
- Tesla Model 3:

Determination Range, Energy consumption at -7°C



- Test vehicle: vehicle high (or vehicle low)
- Used to get ‘Range ratio’ , ‘energy ratio’
- Used for each interpolation family , extension of family, equivalency etc.

- Measure energy consumption
- Calculate Range from UBE ratio
- 50-70% test burden reduction