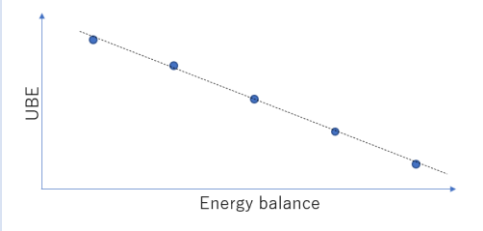


Correction* Methods of UBE_{certified} for OVC-HEV

* : Annex 3 or Definition 3.x “ be corrected to a energy neutral balance level”

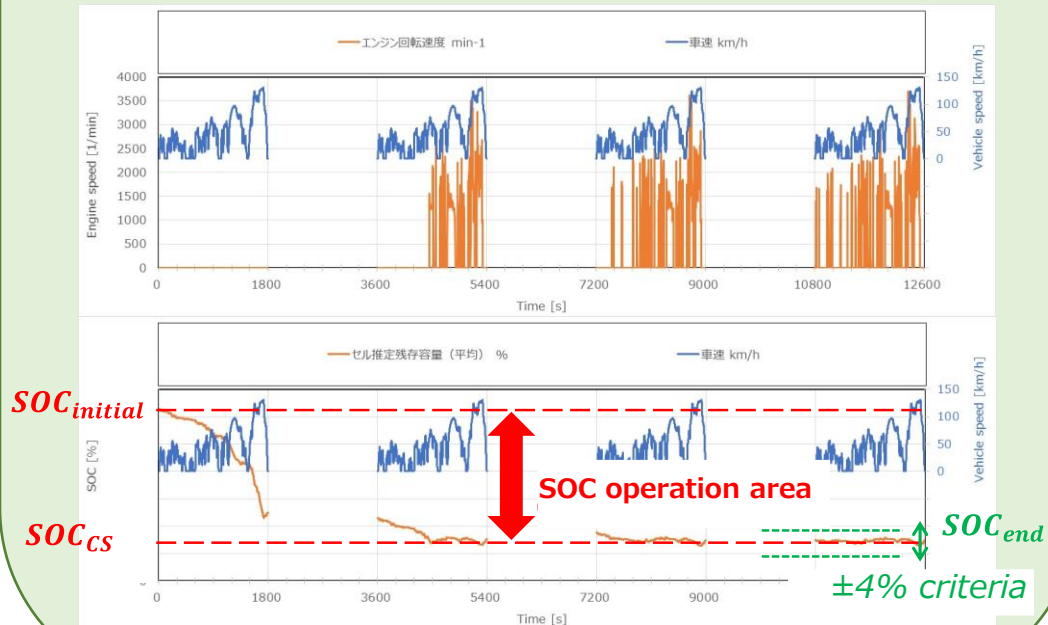
methods	description	Accuracy	Practicability	JPN Proposal
no correction	←	NG (2.7 ~ 6.9% error depend on the battery size)	OK (no additional resource)	NG
Derive the correction factor per interpolation family	same procedure defined in GTR#15 Annex8 Appendix 2 	should be OK (no data is available)	NG (additional huge testing burden)	NG
Correction by SOC profile	please refer next slide	OK (0.5 ~ 2.3% error regardless the battery size)	NG (no authority is able to confirm the charge balance SOC, OEM support is MUST)	NG
Correction by ΔE_{REESS} profile	please refer next slide	OK (0.7 ~ 2.4% error regardless the battery size)	OK (one additional data processing is required but no additional data acquisition is necessary)	OK

Correction by SOC profile

$$UBE_{\text{corr}} = UBE_{\text{meas}} \times \frac{(\text{SOC}_{\text{initial}} - \text{SOC}_{\text{CS}})}{(\text{SOC}_{\text{initial}} - \text{SOC}_{\text{end}})}$$

SOC_{xxx} : obtain from ECU (need OEM support)
 SOC_{CS} : Average SOC during Confirmation cycle
 (may differ per each system configuration)

【First cycle to Confirmation cycle】

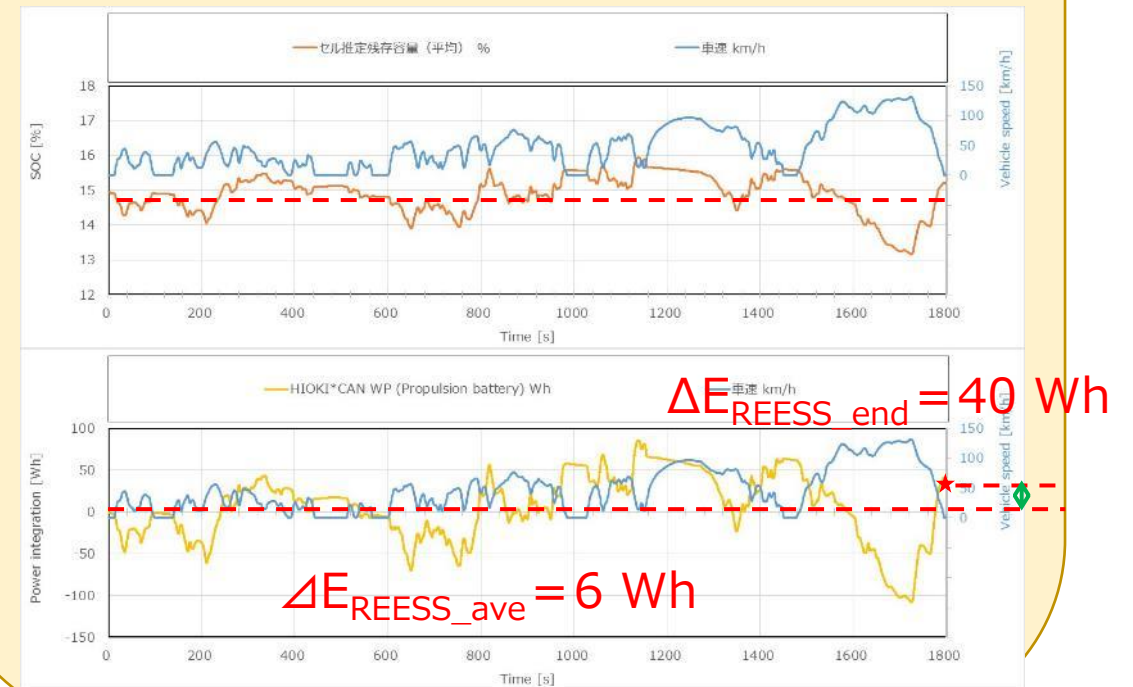


Correction by ΔE_{REESS} profile

$$UBE_{\text{corr}} = UBE_{\text{meas}} + (\Delta E_{\text{REESS}_{\text{end}}} - \Delta E_{\text{REESS}_{\text{ave}}})$$

ΔE_{REESS} : Electric energy change of propulsion battery
 $\Delta E_{\text{REESS}_{\text{end}}}$: ΔE_{REESS} of Confirmation cycle
 $\Delta E_{\text{REESS}_{\text{ave}}}$: Average ΔE_{REESS} during Confirmation cycle

【Confirmation cycle】



$$\Delta E_{\text{REESS}_{\text{end}}} - \Delta E_{\text{REESS}_{\text{ave}}} = 34 \text{ Wh}$$