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Study Design – Two Identical Model 2015 BEVs

Activity	Mileage Accumulation	Chassis Dyno testing
Location	On-road (Ottawa, CA)	ERMS Laboratory
Odometer	For 15,000 km (repeat)	Every 15,000 km (repeat)
Temp.	-20C up to + 30C	-7C, 25C and 35C
Route/Cycle	Artery/City/Highway	SAE J1634 MCT, SC03
	100 km/day	FDT and NYCC FDT

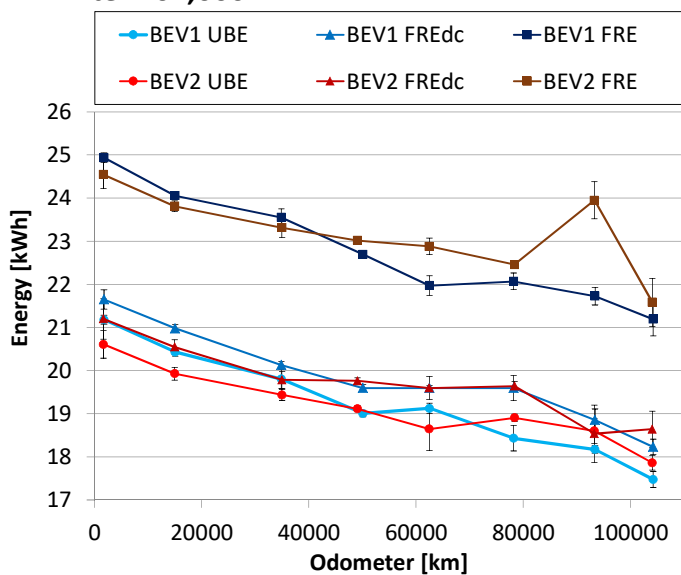


Instrumentation

HIOKI Power Analyzer	Dynamometer	Graphtec Data logger	ECU CAN logger
Traction battery energy	Time, distance, speed and accel	Ambient temperature	Battery SOC
12V accessories energy	Road load and roll force	Cabin temperatures	Motor & battery signals
A/C & heater energy	Vehicle metrics	Dyno speed	GPS

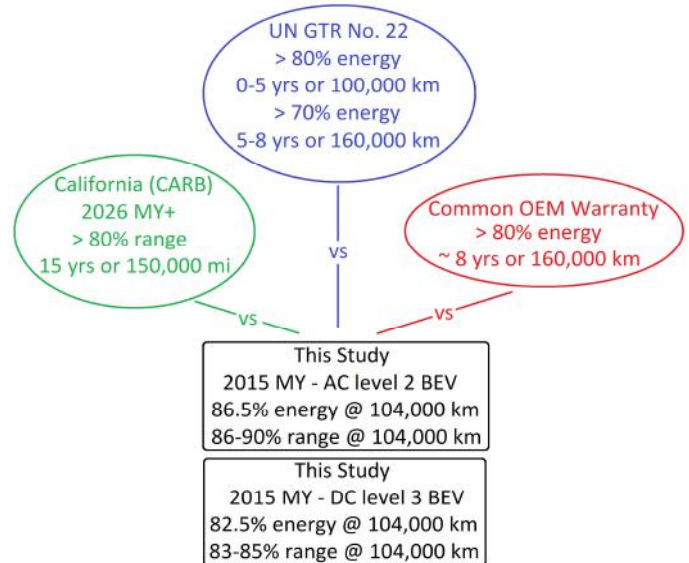
Energy Loss and Modelling

• After 104,000 km...



- JRC TEMA's calendar and usage fade model was accurate up to 50,000 km for the DC fast charge BEV, and 63,000 km for the AC level 2 charge BEV; possibly due to the BCMs resetting the capacity.

Comparisons



Conclusions

- National Research Council of Canada now has both BEVs, to conduct further testing
- Next study: Bi-directional charging and battery durability / range performance