

# EU-Commission JRC Contribution to EVE IWG: In-vehicle battery durability

*MPRs: Additional Lifetime LDVs*

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# Euro 7 proposal

## Part B: Verification of Battery Durability

### ANNEX IV

#### LIFETIME REQUIREMENTS

Table 1: Lifetime of vehicles, engines and pollution control systems

Lifetime of vehicles, engines and replacement pollution control devices	M <sub>1</sub> , N <sub>1</sub> and M <sub>2</sub>	N <sub>2</sub> , N <sub>3</sub> <16t, M <sub>3</sub> <7.5t:	N <sub>3</sub> >16t, M <sub>3</sub> >7.5t
Main lifetime	Up to 160 000 km or 8 years, whichever comes first	300 000 km or 8 years, whichever comes first	700 000 km or <b>12</b> years, whichever comes first
Additional lifetime	After main lifetime and up to 200 000 km or 10 years, whichever comes first	After main lifetime and up to 375 000 km <b>or 10 years, whichever comes first</b>	After main lifetime and up to 875 000 km <b>or 15 years, whichever comes first</b>



Table 1  
**Battery Energy based (SOCE) MPR**

*Vehicle age/km for categories 1-1 and 1-2 in the scope of this GTR*

	<i>OVC-HEV</i>	<i>PEV</i>
From start of life to 5 years or 100,000 km, whichever comes first	80 per cent	80 per cent
Vehicles more than 5 years or 100,000 km, and up to whichever comes first of 8 years or 160,000 km	70 per cent	70 per cent

*Vehicle age/km for category 2 in the scope of this GTR*

	<i>OVC-HEV</i>	<i>PEV</i>
From start of life to 5 years or 100,000 km, whichever comes first	75 per cent	75 per cent
Vehicles more than 5 years or 100,000 km, and up to whichever comes first of 8 years or 160,000 km	65 per cent	65 per cent

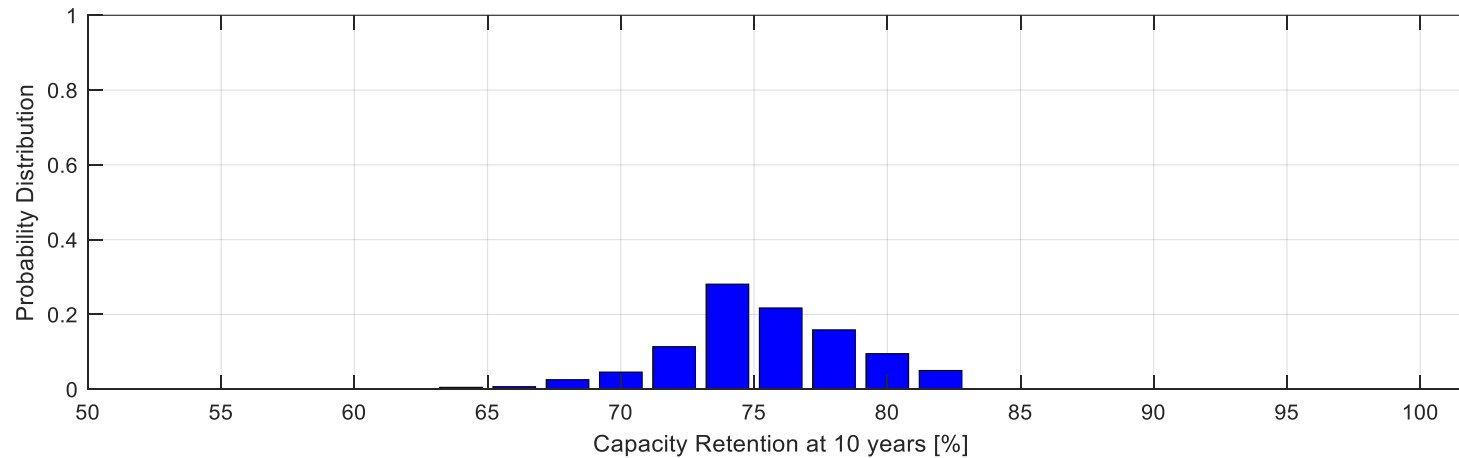
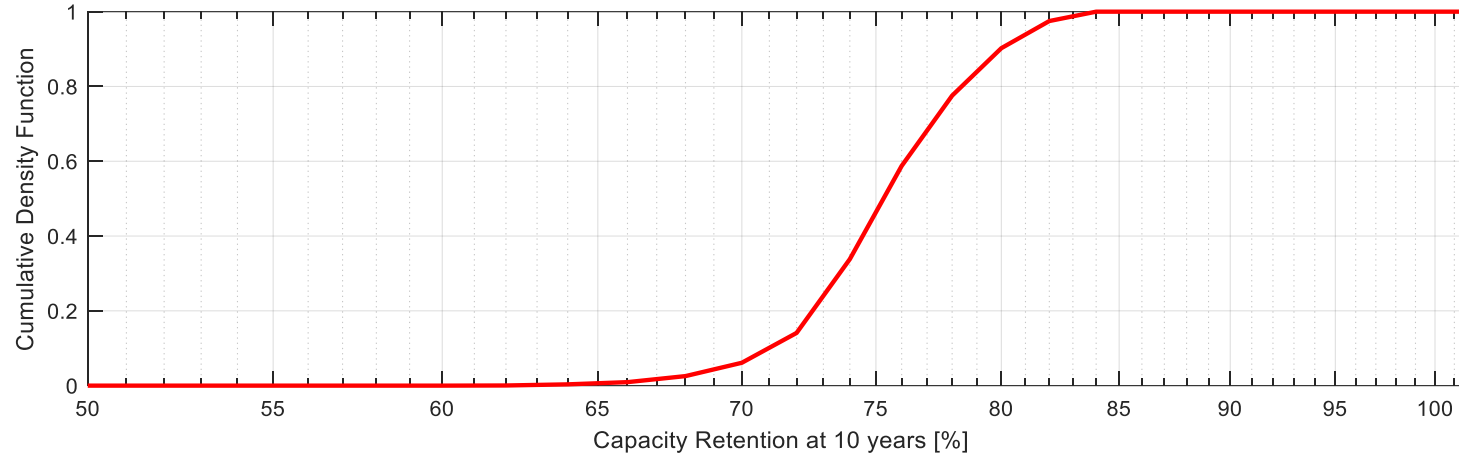


# Back to MPRs for LDVs

- Presentations of JRC TEMA implementation of the performance-based models for e-passenger vehicles and e-vans and related MPRs predictions (EVE 57<sup>th</sup>, 41<sup>st</sup>, etc...)
- Results for 10 years and 200,000 km already presented
  - Summary in the next slides



# Capacity retention at 10 years – Van-2 Str.6 & Str.7



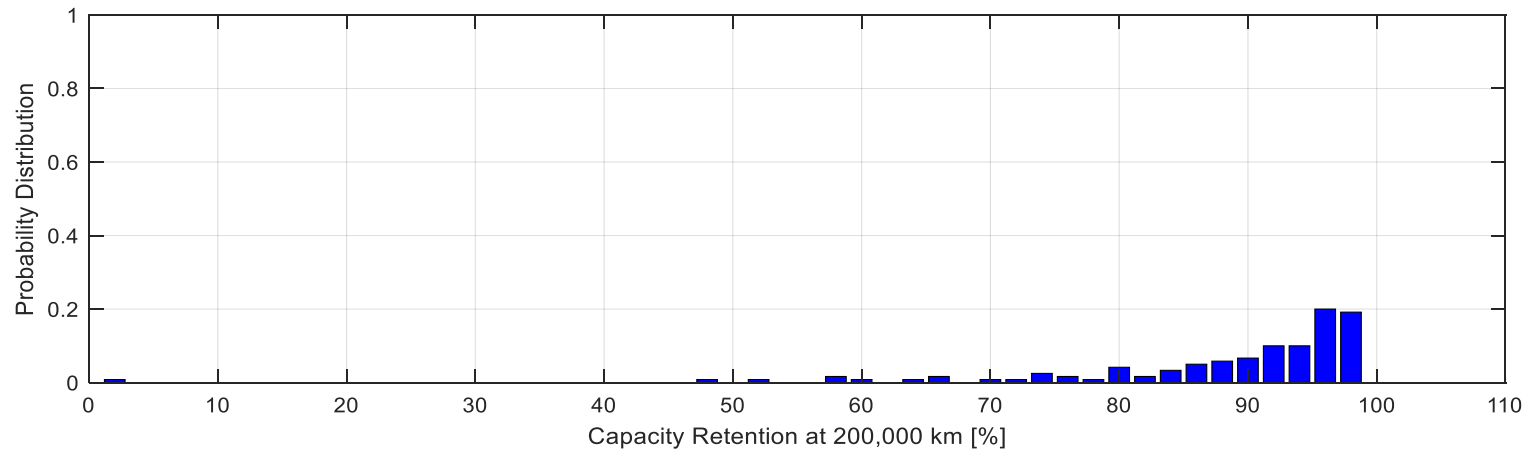
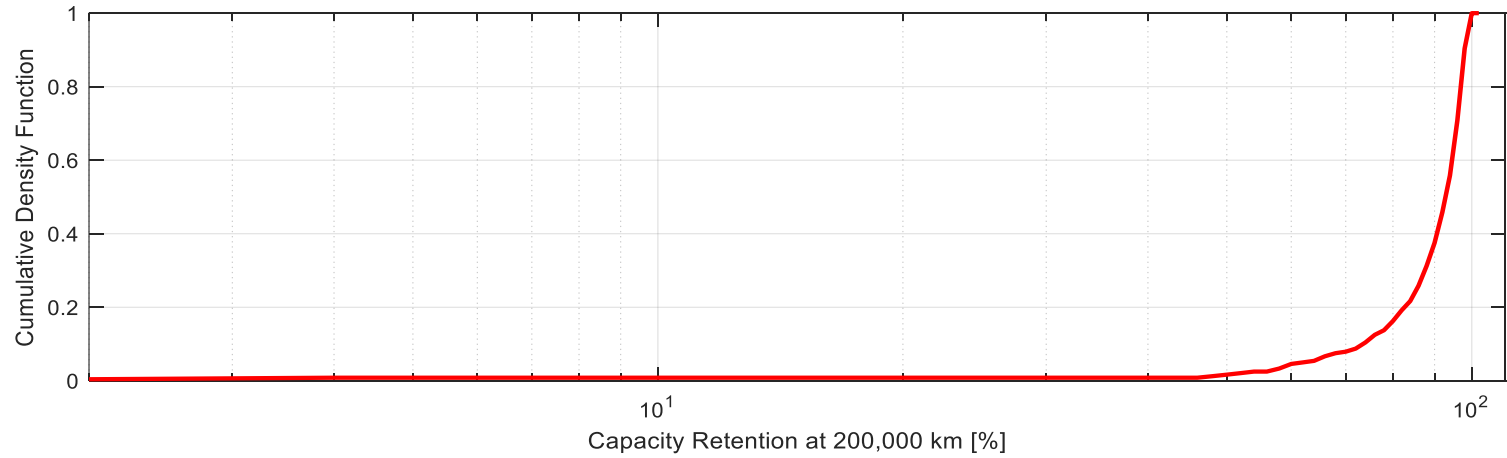
>60% ?

Li-Ion NCM-LMO (2015)  
Wien province area



# Capacity retention at 200,000 km – Van -2 Str.1 & Str.2

All km/month bins distributions



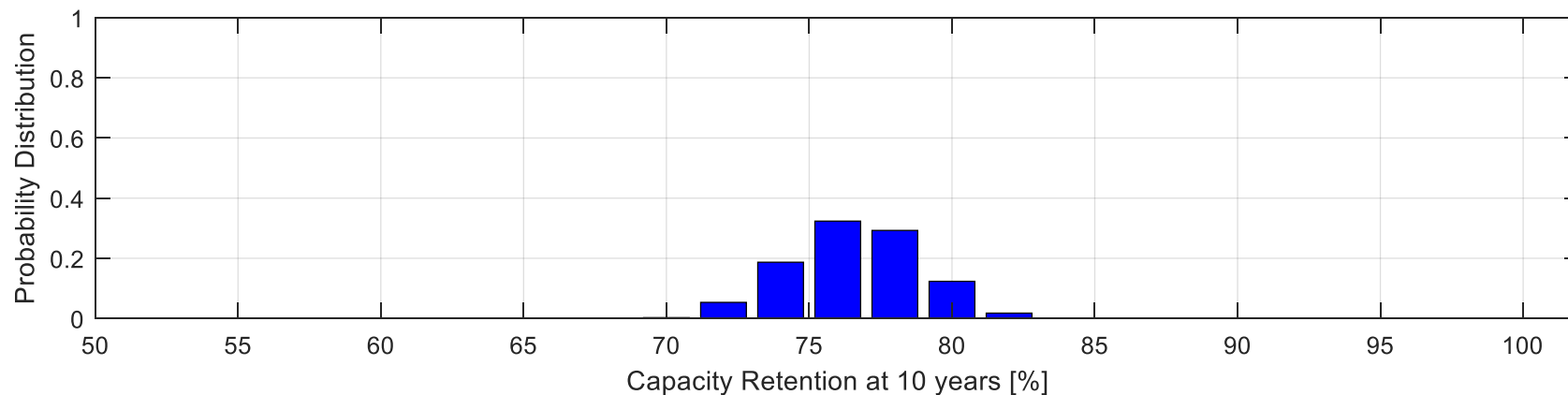
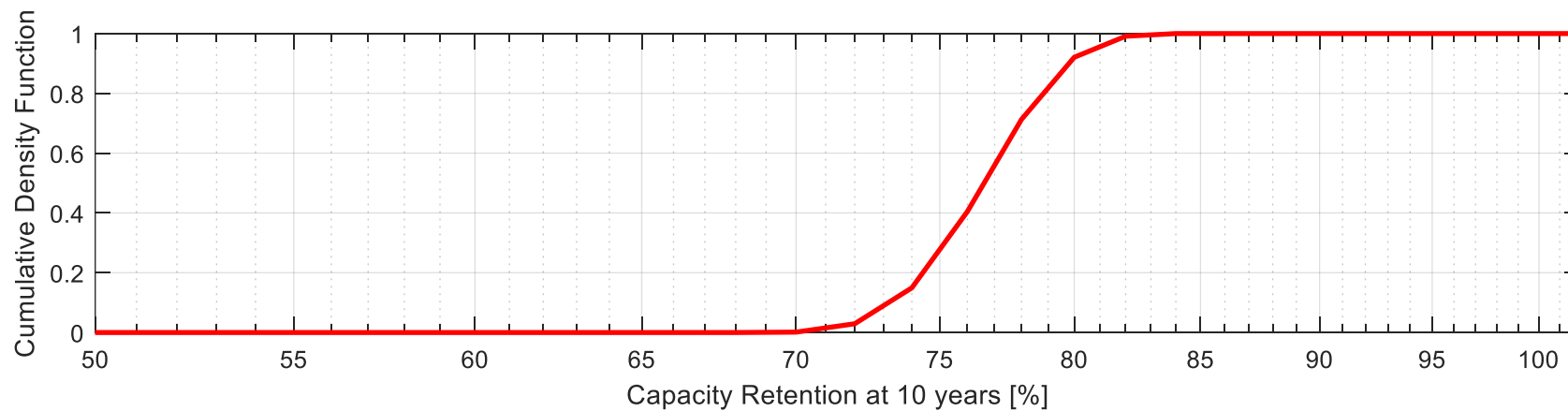
>60% ?

Li-Ion NCM-LMO (2015)  
Modena province area



# Capacity retention at 10 years - BEV-1 Str.1&Str.2

All km/month bins distributions



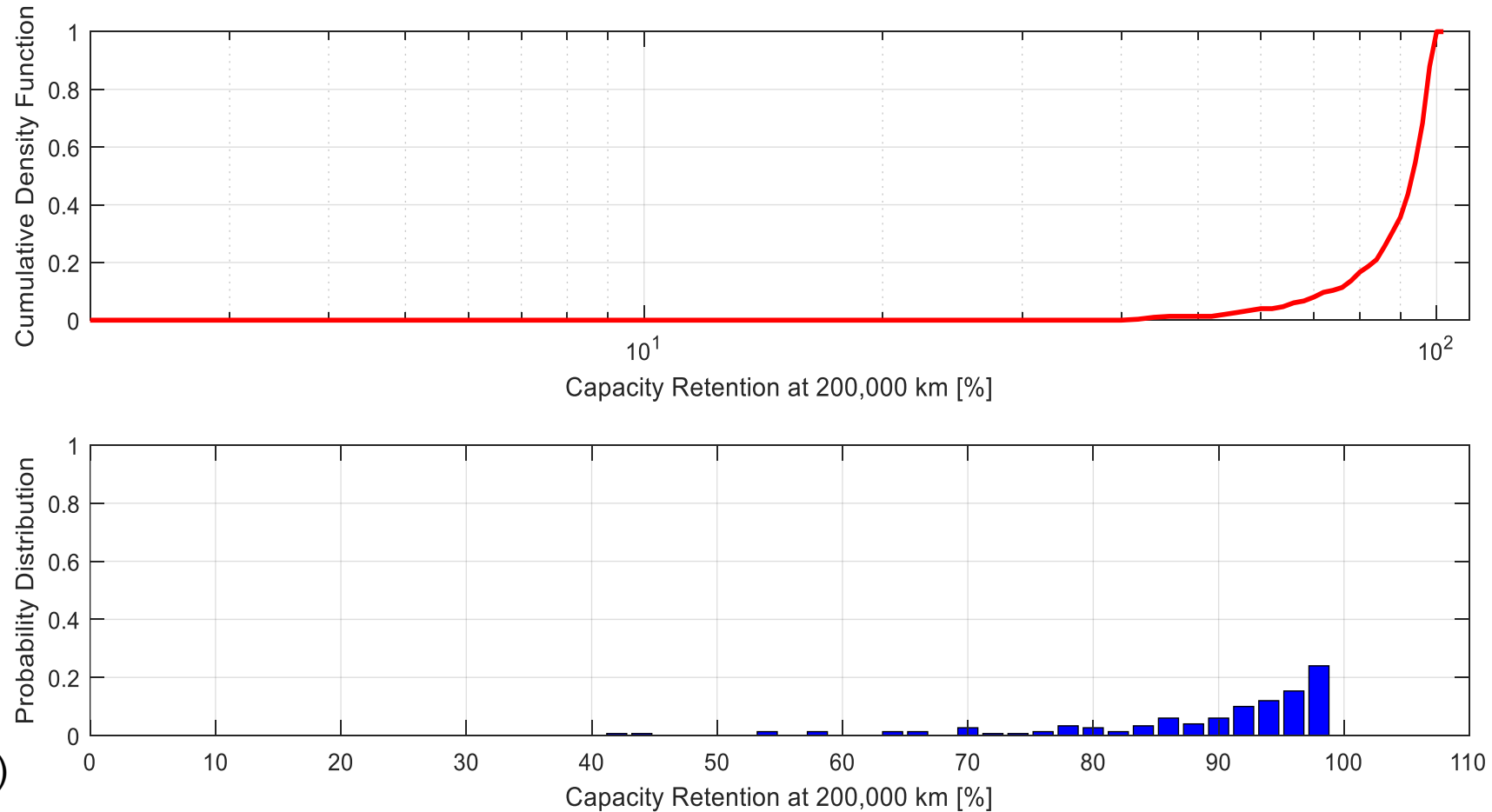
>65%

Li-Ion NCM-LMO (2015)  
Modena province area



# Capacity retention at 200,000 km - BEV-1 Str.1&Str.2

All km/month bins distributions



>65%

Li-Ion NCM-LMO (2015)  
Modena province area



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# Thank you

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