

Predicted electric range does not meet customer's expectations

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Validity	Plug-in hybrid and electric vehicles
Reason for change	Revision of validity

Complaint

The electric range does not meet customer's expectations.

Cause

The following information is being provided for educational purposes only:

At Mercedes-Benz, we believe that our vehicles should display to the driver a range that in all probability can actually be achieved. These ranges are predictions - the range actually achieved may therefore differ from the range shown. The calculation for the predicted range takes into account the **current outside temperature**, the **set temperature** of the air conditioning system, the **battery capacity** and the **characteristics of previous journeys** (sporty/anticipatory driving style). Where previous journeys are concerned, factors given particular consideration are **individual driving style** and the **use of other power consumers** (seat heating, lights, charging function for smartphones, etc.). It is therefore possible that data from the last few hundred kilometers driven is also used in the calculation. Consequently any change in usage behavior will only slowly affect the predicted range. If **active navigation** or **active commuter route** is used, additional information about the route ahead (for example elevation profile, traffic volume) can be included in the range calculation.

Display of range and share of consumers in model series 243 (EQB):

On electric vehicles in model series 243 (EQB), the share of individual consumers in the overall energy consumption can be tracked in the head unit.



Range display in EQB in instrument cluster:



(C) Maximum range (potential range) ("Pot. Range")

(D) Individual range based on current consumption level ("Indiv. Range")

Display of range and share of consumers in model series 297 (EQS) and following EQ models:

On electric vehicles in model series 297 (EQS) and the following EQ models (295), the share of individual consumers in the overall energy consumption can be tracked in the head unit.



The following range details are shown on the instrument cluster:



- (B) Minimum range ("Min. Range")
- (C) Maximum range (potential range) ("Pot. Range")
- (D) Individual range based on current consumption level ("Indiv. Range")

B

Min Range

Available energy HVB – ' max consumer

max consumption E – Maschine

C

Pot. Range

Available energy HV_Battery

Consumption E – Maschine (constant)

D

Indiv. Range

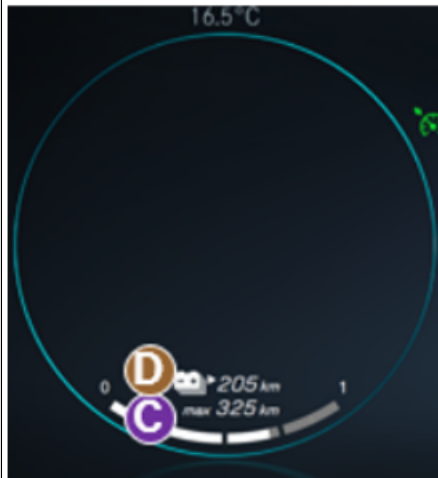
Available energy HV_Battery – consumer

Consumption E – Maschine (customer – related)

Attachments	
File	Description
Consumption.jpg	



RW EQA.PNG



Potenziale EQS.PNG



RW-Anzeige KI.PNG



Berechnung.PNG

B	$\text{Min Range} = \frac{\text{Available energy HVB} - \text{'max consumer}}{\text{max consumption E-Maschine}}$
C	$\text{Pot. Range} = \frac{\text{Available energy HV_Battery}}{\text{Consumption E-Maschine (constant)}}$
D	$\text{Indiv. Range} = \frac{\text{Available energy HV_Battery-consumer}}{\text{Consumption E-Maschine (customer-related)}}$

MicrosoftTeams-image (3).png



MicrosoftTeams-image (1).png



MicrosoftTeams-image (3).png



MicrosoftTeams-image (4).png



MicrosoftTeams-image (2).png



Remedy

The customer's individual input to the range can be reset. Depending on the vehicle, the reset can be done in the instrument cluster or the head unit.

For plug-in hybrid vehicles of model series **166 (all), 205 (up to modification year 18/1), 213 (up to modification year 17/2), 222 (up to modification year 17/2), 253 (up to modification year 19/1)**, the range can be reset by **resetting the trip computer** ("From reset", "From start" and "Day cycle counter"). After the reset, a value based on the certified range will be shown.

For electric and plug-in hybrid vehicles of model series **205 (from modification year 18/2), 213 (from modification year 18/1), 222 (from modification year 18/1), 253 (from modification year 19/2)** and model series **118, 167, 177, 206, 223, 247, 293, 295, 297** a reset is only possible by **resetting the head unit to the factory settings**. This will delete all saved customer data and any settings made (e.g. radio settings, navigation destinations). If necessary, therefore, back up the customer data onto a USB flash drive using the Backup function before performing a reset. As from vehicles with NTG 7, Mercedes me is used for the making the backup. After the reset, an empirical value is displayed that is based on normal use of the vehicle and the current climatic conditions (set temperature and outside temperature - commensurately higher values will be achieved if the air conditioning system is switched off). Depending on driving style, outside temperature and which power consumers are actually switched on, the achieved range may significantly exceed this range, but likewise may also fall significantly short of it.

Further information on battery capacity and aging can be found in document SI47.70-P-0070A.

Disclaimer

NOTE: The information contained in this document is intended for use by trained, professional technicians with the knowledge to properly and safely perform diagnosis and repairs on Mercedes-Benz vehicles, using Mercedes-Benz approved tools and equipment. It informs service technicians about conditions that could occur in certain vehicles and provides information that could assist in proper vehicle diagnosis, service, or repair. It does not indicate that a defect is present in any vehicle referenced in this document nor does it imply warranty coverage. DO NOT assume that a symptom or condition, or a described cause of a symptom or condition, affects any particular vehicle or groups of vehicles, or that a described repair applies to any particular vehicle or groups of vehicles. There can be multiple causes resulting in the same or similar symptoms or conditions described in this document, and trained professional service technicians must use their diagnostic skills to make evaluations on a case-by-case basis. The information contained in this document does not guarantee warranty coverage nor does it extend the vehicle’s warranty in any way.

Symptoms				
Power generation > Engine management > Electric drive > Electric machine > Range reduced				
Power generation > Engine management > Electric drive > Electric machine > Display message				
Operation numbers/damage codes				
Op. no.	Operation text	Time	Damage code	Note