

# MAINTAINING YOUR BEV'S HEALTH DURING LOCKDOWN



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If your vehicle is parked up for a long period of time, as it will be for most people across the UK during the pandemic lockdown, what is the best way to look after your vehicle? If left stationary for long periods of time, battery electric vehicles (BEVs) can suffer some issues. During this time, BEV owners need to monitor the state of both the main traction battery pack and the 12-volt accessory battery need to be kept in good condition to ensure the vehicle will start. Below we highlight some top tips for drivers to try and minimise any potential risk to your vehicle's health during periods of non-use.

## **Important:**

Do not break the Government's lockdown rules to look after your car, please carry out any maintenance in line with regulations in line with regulations.

## **BEV health top tips:**

- The key to keep your battery healthy when parked for long periods of time, is keeping it in an optimum charge range (usually between 50%-80% of charge). Lithium-ion batteries do not cope well with extreme states of charge be it 0% or 100% for extended periods of time so leaving it in a middle range of charge is recommended.
- Striking the balance can be challenging. If you keep your BEV plugged in and have your battery constantly at 100% charge, this can degrade the battery (the electrolyte will degrade against the cathode). However,

if you leave your BEV unplugged, this can lead to battery discharge due to the electronics in the vehicle draining the battery e.g. Jaguar I-Pace range loss 2-3%\* overnight.

- For vehicles that don't indicate the percentage of charge, you can estimate how long your vehicle will need to be charged to reach the optimal charge percentage using the following calculation:

Charging time (hours) = Energy required/Charge Power

(Target % Charge – Current % Charge/100 x Battery Capacity)/  
Charging power (kW)

90kWh battery pack and the current level is 30% and the owner wishes to top it up to 80 % and they have a 7kW home charger and the vehicle has a 22kw onboard charger. You must use the lesser of these two values in the calculation due to it limiting the maximum charging power received by the battery.

$(80\%-30\%/100 * 90\text{kWh})/7 \text{ kW} = 5.1$  which is 5 HOURS 8 MINS

- We would recommend a periodic top-up of this charge once a week.
- Some BEVs have Apps which allow you to check the battery levels on your smart phone, some can also allow you to adjust the charge limits so set the limits to a medial range. For other vehicles this configuration can be found on the console.
- Ultimately, you should follow manufacturer guidelines on whether you should keep your car plugged in constantly or not.

\* Green Car Reports 21/03/2019



### State of Charge (SOC) recommendation:

**80%-100%** Avoid storing in this SOC range

**50%-80%** Leave stored in this SOC range

**20%-50%** Consider charging car

**0%-20%** Avoid storing in this SOC range

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