

Insurance POST

Blog: electric vehicles spark concerns around fire and safety



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As the cost of fuel soars, and with the move towards a greener lifestyle, the popularity of electric cars is exceeding all expectations. However, attention is now turning to their safety, in particular the fire risks that come with e-vehicles, writes Tim Short, partner at Plexus Law.

The Locomotive Act 1865 required any vehicle pulling multiple wagons to be preceded by a person waving a red flag, and limited the speed of any road going locomotive to four miles per hour. Our perception of vehicle safety has of course changed over time, but how might the increasing prevalence of electric vehicles on our roads alter the risk to road users and insurers?

Speed alone might be a reason for concern. Not so long ago the only vehicles that could accelerate to 60mph under four seconds were eye-wateringly expensive 'super cars'. Now, a mass-produced entry-level Tesla Model 3 can match that due to the efficient way the electric motor delivers power to the vehicle's wheels. Might faster-accelerating vehicles lead to more road traffic collisions, and might this in turn lead to more cases of severe injury and death, especially to pedestrians, who may be caught unaware by fast-approaching, near-silent electric vehicles? A greater

number of high-performance vehicles on our roads surely cannot make those roads safer.

Risk of fire

Well before EVs became common on UK roads, vehicle fires were a regular occurrence. The Fire and Rescue Service recorded more than 27,000 roadside vehicle fire call outs in 2011. A fast-moving composition of an internal combustion engine, a tank of explosive fuel and a lead-acid battery is always going to create some risk of fire. But engineering progress has minimised the risk, and experience has taught drivers and fire and rescue services how to manage the risk.

Cooling down

The Tesla 3 Emergency Response Guide warns that it can take approximately 11,000 litres of water, applied directly to the battery, to fully extinguish and cool down a battery fire, and it can take up to 24 hours to extinguish. A typical fire engine might carry just 1000 litres of water, and firefighters might expect to use just half of that to extinguish a regular combustion engine vehicle fire.

General Motors recalled 142,000 EV Chevrolet Bolt electric cars in 2021 after 13 vehicle fires. GM acknowledged in its recall that two rare manufacturing defects in the same battery cell were the root cause of the battery fires. Pending replacement of the defective batteries, GM advised owners to park their vehicles outside immediately after charging, and not to charge their vehicles indoors at night.



Most EVs are powered by re-chargeable lithium-ion batteries. If the battery is damaged or overheated, there is a risk of thermal runaway, where the battery generates excess energy that may lead to a fire or even an explosion.”

Hybrid electric vehicles are perceived to be a greater risk than conventional combustion engine vehicles and EVs. Hybrids have all the risk of both, and the risk of the combination of the two energy production systems.

Charging points

In addition to the inherent fire risk of the EV, there is a growing risk from the charging process itself. The Climate Change Committee reported in 2021 that there were less than 26,000 **public charging points** in the UK. It estimated that by 2032, a UK fleet of 23 million EVs will require 325,000 public charging points.

Some motor insurers have publicly acknowledged that claims from EV charging cables on public highways, which create trip hazards and risk of electrocution to the unwary or over curious, will fall to them. However, questions remain over the extent of the risk of property fires from poorly installed, or badly maintained, chargers and how confident insurers can be in the regulation of manufacturers and installers of EV charging points.



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