evfiresafe.com

PASSENGER EV LIB FIRE INCIDENTS

Global, as of 30th JUNE 2023

EV HV battery fires are very rare...here's what we've been able to track & verify. Data is not exhaustive.

Why EV FireSafe?

Transport emissions account for:

25%

of global greenhouse gas emissions, which has led to the rapid electrification of vehicles

EV battery fire incidents have led to concerns about emergency responder safety when attending

EV lithium ion battery fires

To enhance emergency responder safety, we researched plug-in (BEV & PHEV) passenger electric vehicle battery fires from

2010 - 2023

breaking down our findings here & at evfiresafe.com

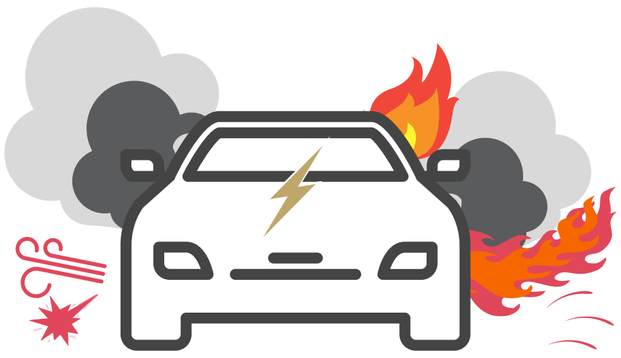
How many EV battery fires?

Since 2010, the EV FireSafe research team found:

393 verified* EV traction battery fires globally

+ 74 investigating - online rumour, tip off, clickbait

+ 21 unverified - from a reliable source, waiting on further info

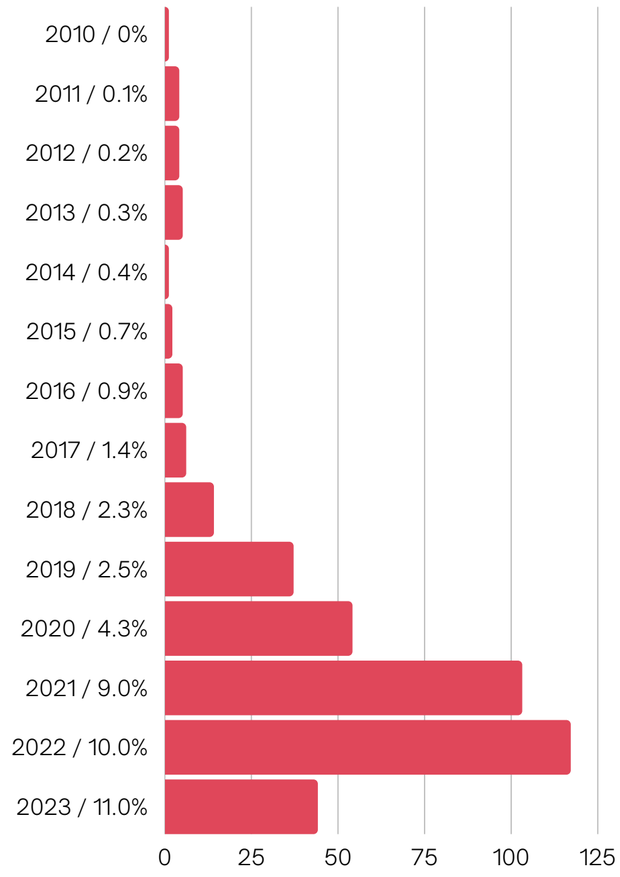


'...more than 10 million electric cars were sold worldwide in 2022 and...sales are expected to grow by another 35% this year (2023) to reach 14 million.

International Energy Agency, April 2023

When did they occur?

By year & EV global market share:



*Not exhaustive. From more than one online source, interviews, first hand accounts, videos, images, academic & fire agency reports & online training

EV HV battery fires are very rare, but present new risks & challenges for emergency responders. From these verified incidents, we found:

Cause

Battery cell abuse, leading to thermal runaway & ignition or explosion, caused by:

Location*

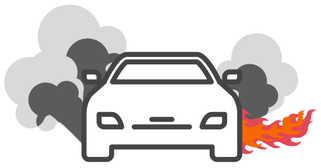
*16% unknown

25% Underground / enclosed spaces

31% Outside & parked

29% Outside & driving

Ignition vs explosion



95% Ignition
Jet like, directional flames

5% Vapour cloud explosion
Violent deflagration

Vapour cloud explosion

Of total vapour cloud explosion incidents:

70% Underground / enclosed space

30% Open air

Charging

Of total EV battery fire incidents:

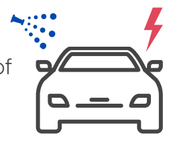
18% EV connected to energised charging

2% EV disconnected from energised charging within 60 minutes of incident

Electrocution

We found NO reports or evidence of electrocution or near miss of emergency responders from:

Direct stream of water on HV



Submersion

Extrication of occupants

Stranded energy

But electrocution is still a risk!

Enhancing emergency responder safety at electric vehicle traction battery fires