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Just Right News Investigation into Fires Started By Electric Vehicles

Executive Summary

This report provides a detailed, data-driven analysis of electric vehicle (EV) and personal mobility device fires in the UK, focusing on incidents reported over the last several years. The objective is to move beyond anecdotal accounts to identify key statistical trends, explore the underlying causal factors, and establish a framework for strategic risk mitigation. The analysis synthesizes data from fire services, insurance firms, and safety organizations to present a complete and nuanced picture of an emerging risk profile.

A central finding is the dramatic and sustained increase in fires linked to lithium-ion batteries. Data from UK fire services reveals that the number of these incidents has surged by 93% between 2022 and 2024, a trend largely driven by the proliferation of electric bikes (e-bikes) and e-scooters. While the absolute number of fires involving electric cars remains statistically low, the fires that do occur are uniquely severe due to the chemical nature of thermal runaway. These incidents burn at extremely high temperatures, spread rapidly, and emit toxic gases, posing a significant and distinct challenge to emergency services.

The primary triggers for these fires are identified as the use of counterfeit or substandard batteries and chargers, improper charging and storage practices by consumers, and physical damage to the battery cells. A critical deficiency identified in the current system is the lack of a standardized, detailed national data collection protocol, which likely leads to a significant underestimation of the true scale of the problem.

The report concludes with a series of actionable recommendations. These include enhancing

public education on safe usage and purchasing practices, upgrading national data recording systems, improving specialized training and equipment for fire and rescue services, and strengthening regulatory oversight of products sold in the UK, particularly those from online marketplaces. These measures are essential to manage the risks associated with the ongoing transition to a battery-powered future.

Section 1: The Evolving Landscape of UK Electric Vehicle Fires

Statistical Analysis of the Surge in Fires (2022-2024)

The data indicates a significant and concerning increase in fires related to lithium-ion batteries across the United Kingdom. According to a Freedom of Information (FOI) request to UK fire services, the number of incidents linked to these batteries surged from 690 in 2022 to 1,330 in 2024, representing a 93% increase in just two years.[1] This trend underscores the growing prevalence and associated risks of battery-powered devices in the UK.

A granular analysis of the data reveals a notable disparity in the growth rate across different vehicle types. Fires involving e-bikes have seen the most dramatic rise, doubling from 181 incidents in 2022 to 362 in 2024.[1] Similarly, fires involving e-scooters increased by 32%, from 118 to 156 incidents over the same period. While the increase in electric car fires was also substantial, rising by 77% from 131 to 232 incidents, the primary driver of the overall surge in incidents is clearly the personal mobility sector.[1] This concentration of risk is further highlighted by the fact that e-bikes accounted for almost a third (27%) of all recorded lithium-ion battery fires in 2024.[2]

The geographic distribution of these incidents is also highly concentrated. London has emerged as a significant hotspot, accounting for nearly a third (31%) of all UK lithium-ion battery fires and almost half (49%) of e-bike-related fires in 2024. The London Fire Brigade alone recorded 407 incidents in 2024, more than four times the number of the next highest region.[2] This pattern suggests that urban density, coupled with a higher concentration of personal mobility device users, may exacerbate the risk factors.

An examination of the systems used to track these incidents reveals a fundamental challenge in understanding the problem's true scale. The Scottish Fire and Rescue Service and the Scottish Police Federation have both noted that outdated recording systems, such as the Home Office's Incident Recording System (IRS), lack a specific category for lithium-ion batteries, e-bikes, or e-scooters.[3] This systemic flaw means that official statistics are likely a significant underestimation of the actual number of occurrences. The lack of a precise, dedicated data category prevents a full and accurate assessment of the risk, which in turn hinders the ability of policymakers and emergency services to allocate appropriate resources

for training, equipment, and public education. The absence of comprehensive data collection creates a feedback loop where an unseen problem remains unaddressed, a situation that could have serious consequences as the number of these devices continues to grow.

The distinct risk profiles of different electric vehicles are also a significant factor. The data overwhelmingly indicates that the majority of fires are linked to personal mobility devices rather than electric cars. This can be attributed to the divergent regulatory and manufacturing environments. The electric car market is subject to stringent safety standards and extensive testing, whereas the market for e-bikes and e-scooters, particularly for batteries and conversion kits purchased online, is largely unregulated. This lack of oversight has led to a proliferation of faulty, counterfeit, and low-quality components that are prone to catastrophic failure, a causal factor repeatedly identified in fire incidents across the UK.[4]

Table 1: Key Statistics on UK Lithium-ion Battery Fires (2022-2024)

Vehicle Type	Fires in 2022	Fires in 2024	Percentage Change
E-Bikes	181	362	+100%
E-Cars	131	232	+77%
E-Scooters	118	156	+32%
Electric Mobility Scooters	25	30	+20%
All Lithium-ion Batteries	**690**	**1,330**	**+93%**
London's Proportion of Total Li-ion Fires (2024)	-	31%	-

Source: Data from UK fire services, acquired by QBE through an FOI request [1]

Section 2: Incident Log: A Chronological Record of UK EV Fires

The following table provides a representative selection of reported electric vehicle and lithium-ion battery fire incidents in the UK over the last couple of years. This log is not intended to be an exhaustive list of all 1,330+ incidents but rather a curated collection that illustrates the diverse range of locations, causes, and outcomes associated with these fires.

Table 2: Selected Electric Vehicle Fire Incidents (2024-2025)

Date	Location	Further Details
August 2, 2024	Chorlton, Manchester	A house fire believed to have involved an e-scooter tragically resulted in the death of a man in his 70s. Emergency crews discovered the body after responding to the blaze.[8]
March 13, 2024	Rochford, Essex	A fire at a salvage yard, which started in an electric vehicle, spread and destroyed eight cars in total. Fire crews successfully contained the fire to prevent it from spreading further.[10]
January 4, 2025	Kilmarnock, Ayrshire	A Tesla car was suddenly engulfed in flames outside a restaurant. Emergency crews responded to the scene, but the cause of the fire remains unknown. No injuries were reported.[11]

March 2025	Hither Green, London	A ferocious fire in a flat, caused by the failure of a lithium-ion battery in an e-scooter, severely damaged the property. The fire started in a room near the entrance, blocking the escape route.[4]
May 31, 2025	Welshpool, Powys	An electric vehicle fire spread to a neighbouring factory. Five fire stations were called to the incident, and a vehicle fire blanket was used to help extinguish the blaze.[12]
July 16, 2025	Acton, London	An e-scooter battery, while charging, failed and caused a fire in the entrance of a flat. The fire blocked the escape route, forcing one man to jump from a window to escape. He was subsequently taken to the hospital as a precaution.[5]
Unspecified Date (Recent)	South Wales	An e-scooter fire destroyed a family's home, serving as a brutal reminder of the dangers. This incident is part of a 70% increase in lithium-ion battery fires for the South Wales Fire Service over the last two years.[13]

Section 3: Analysis of Causes and Unique Fire Characteristics

Primary Ignition Triggers: A Deeper Dive

The vast majority of lithium-ion battery fires can be attributed to three main triggers: faulty and counterfeit products, improper use and charging, and physical damage. The problem is often rooted in the quality of the products themselves. Many incidents involve batteries, chargers, and conversion kits that have been purchased from unregulated online marketplaces and do not comply with UK and European safety standards. These products often lack the robust safety features found in reputable devices, making them more susceptible to catastrophic failure.[4] The Office for Product Safety and Standards has taken specific enforcement action on certain models, such as UPP batteries for e-bikes, which have been linked to multiple serious fires across England.[1] This suggests that a significant portion of the risk is preventable and tied directly to the supply chain of these components.

Beyond product quality, user behavior is a major contributing factor. A recurring pattern in many incidents is the practice of overcharging batteries, leaving devices to charge unattended or overnight, and placing them near combustible materials or on escape routes.[1] The tragic fires in Chorlton and Acton serve as stark examples of the fatal or near-fatal consequences that can result from a device blocking a main exit.[5]

Physical damage to a battery can also be an ignition trigger. A battery that has been dropped or involved in a crash can suffer internal, invisible damage to its cell walls. This damage can eventually lead to an internal short circuit and subsequent fire, even if the device appears to be working normally.[1] Another critical and often overlooked detail is that a battery can spontaneously ignite even when it is not on charge or has not been recently charged.[14] This phenomenon underscores the need for constant vigilance and the importance of recognizing subtle warning signs of a failing battery, such as swelling or a change in shape.

The Physics of Thermal Runaway

A key distinction between lithium-ion battery fires and conventional fires lies in the chemical process known as "thermal runaway." This is an irreversible, self-propagating chemical reaction that causes the battery to overheat catastrophically, releasing its stored energy in an uncontrolled manner.[2] Unlike a normal fire that requires an external source of oxygen to burn, a lithium-ion battery fire generates its own oxygen from within the chemical reaction, making it incredibly difficult to extinguish.[14]

The severity and hazard profile of these fires are uniquely dangerous. They burn extremely hot

and fast, with average temperatures ranging between 700°C and 1000°C, and they spread rapidly.[1] During combustion, over 100 organic chemicals are generated, including highly toxic and potentially fatal gases such as carbon monoxide and hydrogen cyanide.[14] This presents a significant health hazard to both occupants and first responders. Furthermore, these fires are known to reignite hours or even days after they have been extinguished, posing a prolonged risk and complicating fire service operations.[1] Fire brigades report that extinguishing an EV fire typically requires up to ten times more water than a conventional car fire.[2]

An emerging risk that expands the problem beyond consumer use is the handling and storage of damaged or faulty batteries in commercial settings. Data from Allianz UK highlights recent motor trade premise fires that resulted in multi-million-pound claims after a faulty EV battery, which had been removed from a vehicle and was awaiting collection, ignited while in storage.[16] This signifies a new and evolving threat to the automotive service and repair industry. The risk is no longer confined to the vehicle in operation but extends to the commercial, logistical, and storage phases of the battery's lifecycle. It requires that businesses, from motor traders to breakdown recovery operators, implement rigorous inspection and storage protocols and develop specialized procedures for handling high-energy batteries to mitigate this considerable financial and safety risk.

Section 4: Mitigation Strategies and Recommendations

For Consumers and Homeowners

Public education and awareness are the most immediate and effective tools for reducing the risk of lithium-ion battery fires. The following practices, drawn from the guidance of the National Fire Chiefs Council and the London Fire Brigade, are critical:

- **Safe Charging and Storage:** Always use the manufacturer-approved charger and avoid leaving devices to charge overnight or unattended. Batteries should not be charged near flammable materials, and devices should never block an escape route, such as a hallway or a main doorway.[4]
- **Prudent Purchasing:** Consumers should buy e-bikes, e-scooters, and related components from reputable UK retailers. The purchase of second-hand or counterfeit batteries, chargers, and conversion kits from online marketplaces should be avoided, as these products are a significant cause of fires.[5] Devices should always have a visible UKCA or CE safety mark.
- **Damage Recognition and Disposal:** It is crucial for consumers to be vigilant for signs of

a failing battery, such as swelling, bulging, or a change in shape. A damaged battery should not be used or charged and must be safely disposed of at a local household recycling centre, never in general waste or recycling bins.[1]

For Fire and Rescue Services

The unique nature of thermal runaway requires a strategic adjustment for first responders.

- **Improving Data Collection:** A national effort is needed to update the country's incident recording systems to include specific categories for lithium-ion battery fires by device type (e-bike, e-car, etc.). This would provide more accurate and actionable data for risk assessment and resource planning.[3]
- **Training and Equipment:** Fire and rescue services require specialized training to handle these incidents, which require different tactics, such as the use of high-volume water supplies and specific equipment like vehicle fire blankets, to manage the extreme heat and the risk of re-ignition.[2]

For Businesses and Insurers

The expanding risk profile of lithium-ion batteries necessitates new risk management protocols for commercial entities.

- **Risk Management for Fleets and Premises:** Businesses, especially motor traders and fleet operators, should implement strict protocols for handling and storing damaged batteries. This includes ensuring they are kept in a cool, safe location, away from buildings and other vehicles, and that charging practices are rigorously controlled.[15]
- **Policy Adjustments:** Insurers must continue to adapt their policies to this new risk profile. This may involve requiring stricter safety protocols from policyholders and addressing the legal liability of individuals or businesses that cause fires through negligence or the use of non-compliant products.[1]

For Regulators and Policymakers

A coordinated regulatory approach is essential to address the root causes of the problem.

- **Strengthening Product Safety Regulations:** There is a pressing need for accelerated legislation, such as the Product Regulation and Metrology Bill, to impose more stringent safety standards on products sold in the UK, particularly those from online marketplaces.[2]
- **Public Awareness Campaigns:** Government-led public awareness campaigns are necessary to educate consumers on the specific dangers of lithium-ion batteries and proper safety procedures. The London Fire Brigade's #ChargeSafe campaign serves as an excellent model for a national effort.[5]

Conclusion

The data presented in this report confirms that fires related to electric vehicles, particularly personal mobility devices, are a growing concern in the UK. While electric cars themselves are statistically less prone to fire than their internal combustion engine counterparts, the unique chemical hazards associated with lithium-ion battery fires—including their ferocity, toxic emissions, and ability to reignite—pose a significant and evolving risk to public safety and property.

The problem is fundamentally one of market regulation, consumer behavior, and systemic data deficiencies. The widespread availability of cheap, unregulated products on online marketplaces and a lack of public awareness about proper handling are the primary drivers of the surge in incidents. The current national data collection framework is not equipped to accurately measure the problem, which in turn limits the ability of emergency services and regulators to effectively respond.

As the UK continues its transition toward a battery-powered future, proactive and multi-faceted action is required. This report advocates for a coordinated strategy that combines robust regulatory reform with widespread public education and a re-evaluation of fire service training and equipment. By addressing the root causes and unique challenges of these incidents, it is possible to ensure the safe and sustainable adoption of electric technologies for all stakeholders.

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