

Lancashire Combined Fire Authority

Performance Committee

Meeting to be held on 11 March 2026

An Overview of Lithium Battery-related Fires

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Executive Summary

This paper supports the presentation to Performance Committee and provides an overview of lithium battery-related Accidental Dwelling Fires (ADFs) in Lancashire, including scale, trends, product types, locations, casualty impact, and the implications for prevention and risk management activity.

Recommendation

The Performance Committee is asked to note the report.

Context

The increasing prevalence of consumer products powered by lithium-ion batteries presents an emerging and distinct fire risk within domestic settings. These products are widely used, frequently charged within living spaces, and are often associated with poor charging practices, battery degradation, or non-compliant devices.

The presentation summarises Lancashire Fire and Rescue Service's (LFRS) analysis of lithium battery-related ADFs using enhanced incident recording and retrospective data interrogation.

Methodology and Data Confidence

- A custom incident recording question set was introduced into the Incident Recording System (IRS) in June 2023 to improve identification of lithium battery-related fires.
- To ensure earlier incidents were captured, keyword searches of free-text fields were also applied, recognising that many lithium-powered products are described inconsistently (e.g. vapes, e-cigarettes, electronic cigarettes).
- This combined approach strengthens confidence that lithium battery-related incidents are being consistently identified across the dataset.

Scale and Trend of Activity

- Over the most recent three-year period, LFRS attended 93 lithium battery-related accidental dwelling fires.
- Incident levels have remained broadly static, averaging 31 incidents per year.
- During the same period, LFRS attended 2,123 accidental dwelling fires in total, meaning lithium battery-related fires accounted for 4.4% of all ADFs.

Product Types Involved

- In 58% of incidents (54 fires), the product involved was recorded generically as lithium- ion batteries, reflecting limitations in the information available at incident level.
- Other identified product types included:
 - E- bikes,
 - E- scooters,
 - E- appliance chargers,
 - E- cigarettes and similar devices,
 - Portable electronic equipment.

This indicates risk across a wide range of consumer products, not limited to any single category.

Location of Fire Origin

- The most common locations for fire ignition were:
 - Bedrooms – 23.7% (22 incidents),
 - Living rooms – 19.4% (18 incidents),
 - Kitchens – 16.1% (15 incidents).

These findings demonstrate that lithium battery fires most frequently originate in occupied living and sleeping areas, increasing the potential for life risk.

Geographic Distribution

- The three highest- incident districts together account for 45.2% of all lithium battery–related ADFs.

Casualties and Severity

- There were 13 recorded casualties from 8 incidents:
 - 61.5% (8) resulted in slight injuries,
 - 23.1% (3) resulted in serious injuries,
 - 15.4% (2) resulted in fatalities.

Although the overall number of incidents is relatively modest, the proportion of serious injury and fatal outcomes indicates that lithium battery fires can have severe consequences, particularly when fires develop rapidly in domestic settings.

Key Risk Insights

Analysis highlights several important risk characteristics:

- Lithium battery fires are consistently occurring year- on- year, rather than emerging as a short- term spike.
- Incidents predominantly occur in habitable rooms, increasing life risk.
- A wide range of everyday consumer products are involved, many of which are used and charged without formal safety oversight.

Implications for Prevention and Risk Management

The findings reinforce the importance of:

- Targeted public safety messaging on safe charging, storage, and disposal of lithium battery products,
- Integration of lithium battery risk into home fire safety check advice and campaigns,
- Continued improvement in data quality and incident identification,
- Ongoing monitoring to identify any future growth linked to increased uptake of electric mobility and portable devices.

Business Risk

Medium – Failure to recognise and act on lithium battery–related fires exposes LFRS to avoidable life- risk, assurance, and reputational challenge.

Environmental Impact

None.

Equality & Diversity Implications

None.

HR Implications

None.

Financial Implications

None.

Legal Implications

Medium.

Local Government (Access to Information) Act 1985

List of background papers

Paper:

Date:

Contact: