E-BIKE BATTERY FIRE SAFETY PROJECT REPORT

2023-25

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Newham Community Project
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NEWHAM COMMUNITY PROJECT

Newham London

E-Bike Battery Fire Safety Project Report

Duration: September 2023 – September 2025
Location: London Borough of Newham

Partnership Project

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1. Executive Summary

Lithium-ion battery fires involving e-bikes and e-scooters have surged in recent years, posing a serious public-safety challenge. In 2024, UK fire services responded to 211 e-bike and e-scooter fires, with eight deaths recorded; London accounted for 175 of those incidents[1]. The London Fire Brigade has warned that e-bikes (often modified or paired with incompatible chargers) are among the capital's fastest-growing fire risks, with fires occurring roughly every two days in 2023. In the London Borough of Newham, the London Fire Brigade has reported a sharp increase in battery-related fires, causing significant harm to residents and property. These trends indicate an urgent need for proactive measures to prevent further tragedies.

The E-Bike Battery Fire Safety Project was launched as an innovative, community-led response to this threat. A collaboration between Newham Community Project and the London Borough of Newham, with operational support from the London Fire Brigade (LFB) and its #ChargeSafe campaign, the project aimed to bridge critical gaps in outreach and education. While national efforts (e.g., National Fire Chiefs Council (NFCC)[2] and LFB's #ChargeSafe[3]) have raised general awareness, reaching the most at-risk groups required a grassroots approach. In Newham, many e-bike delivery couriers (often international students or dependents) had been missed by traditional messaging due to language and trust barriers. The project tackled this gap by leveraging Newham Community Project's established local networks to engage riders directly in their communities. Through multilingual workshops, outreach at rider hotspots, and peer-to-peer training via trained 'e-bike safety ambassadors,' the initiative delivered practical guidance on safe battery charging, storage, and maintenance. This focused engagement rapidly brought e-bike and e-scooter fire safety to the forefront of local awareness, equipping riders and residents with potentially life-saving information.

The impact of the pilot has been significant. Over 20 volunteer ambassadors were trained to champion battery safety, and more than 430 riders participated in training sessions and safety events. Post-workshop surveys showed over 80% of riders reported improved understanding of safe charging practices, with many adopting safer habits, including the use of legitimate chargers and avoiding overnight or prolonged charging. This community-driven approach has not only reduced risky behaviours in the short term but also built a sustainable model for ongoing awareness: ambassadors continue to disseminate safety tips through rider networks, and fire-safety messages have been integrated into local university induction packs to reach new student cohorts each year.

This local model sits alongside growing national policy attention. The All-Party Parliamentary Group for Cycling & Walking (APPGCW) report, *Unregulated and Unsafe: The Threat of Illegal E-Bikes* (June 2025)[4], highlights the proliferation of high-powered, non-compliant "fake

[1] https://www.theguardian.com/news/2025/jun/05/record-number-of-ebike-fires-in-uk-prompts-renewed-risk-warnings
[2] https://nfcc.org.uk/our-services/campaigns/charge-safe/
[3] https://www.london-fire.gov.uk/safety/lithium-batteries/
[4] APPGCW-Report-Unregulated-and-Unsafe-Final-V2.pdf

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e-bikes" and unsafe lithium-ion products, often sold online, and urges government, enforcement bodies, and marketplaces to remove hazardous products from sale and strengthen seizure and compliance powers. Official analysis from the Office for Product Safety and Standards (OPSS) the same year shows that 170 of the recorded incidents involved e-bikes, with 45% linked to post-market conversions[5], emphasising the risk profile of retrofit kits and mismatched components.

Taken together, these findings show that coordinated education and enforcement can meaningfully reduce risk, and that Newham's replicable community model offers a practical template for other authorities. The recommendations in this report are intended not only to sustain progress locally but also to inform wider policy action, helping ensure that the rapid growth of e-mobility does not outpace the safety measures needed to protect the public. The urgency is clear, and the opportunity to act is now. The project's success in Newham demonstrates how community-led education, supported by research, statutory collaboration, and informed enforcement, can be replicated nationally to improve rider safety and prevent e-bike fires.

Impact of new legislation

The new Product Regulation Metrology Act 2025[6], which received Royal Assent in July 2025, focuses on lithium-ion batteries following the LFB #ChargeSafe campaign and national widespread publicity on fire incidents. It does not directly change the rules regarding online sales of legal e-bike conversion kits. The government has made it clear that online marketplaces and unsafe products, particularly those with lithium-ion batteries such as e-bikes, are top priorities for new regulations to be introduced under this Act. At the time of publishing this report, the new specific rules and their enforcement will take effect after consultations and secondary legislation have been introduced. However, it significantly increases the accountability and safety obligations for online marketplaces, similar to those of high street retailers that sell these products. It requires them to provide adequate consumer information and cooperate closely with regulators.

There is an existing legacy of non-compliant EAPCs on the streets of Newham, as well as regular charging in London Borough of Newham properties, where awareness needs to be raised.

[5] Fires in e-bikes and e-scooters – 2024 - GOV.UK
[6] https://www.legislation.gov.uk/ukpga/2025/20

2. Current Regulations

2.1 E-bike vs. E-Scooter

The primary difference between an e-bike and an e-scooter lies in their structure and how they are ridden. E-bikes are essentially bicycles with an electric motor for pedal assistance, while e-scooters are stand-up vehicles with a handlebar and an electric motor. E-bikes generally offer a longer range, better terrain adaptability, and more exercise potential due to the pedalling aspect. E-scooters, on the other hand, are typically more compact, easier to store and manoeuvre, and may be more affordable.

E-bikes

According to the Driver and Vehicle Licensing Agency (DVLA) guidelines, e-bikes, which it classifies as Electrically Assisted Pedal Cycles or EAPCs, must adhere to the following rules:

- E-bikes must not exceed 25 kilometres or 15.5 miles per hour
- The battery output must not exceed 250 watts of power
- Must be pedal-assisted (propelled with a chain mechanism)

Failure to adhere to these rules will render the e-bike subject to motorbike regulations, requiring registration and licensing. In the UK, e-bikes that exceed the legal limits, more than 250 watts of power or speeds over 15.5 mph (25 km/h), cannot be ridden on public roads unless they are fully licensed. For bikes that exceed these limits, riders need to obtain the appropriate licensing, insurance, and registration, as they would then be considered electric motor vehicles. This includes meeting the legal requirements for both the bike itself and the rider, who must be over 14 years of age.

Conversion kits

Compliant DIY conversion kits for push bikes are available online, complying with EAPC (Electrically Assisted Pedal Cycle) rules and legally qualifying as e-bikes. DIY battery-powered motors can modify push bikes advertised online and legally imported; however, they do not adhere to the EAPC Driver and Vehicle Licensing Agency (DVLA) guidelines. This is often seen by consumers as a cheaper alternative to a new EAPC-compliant e-bike, though many are unaware that operating a non-compliant model on public roads is prohibited by law. Under UK law, non-EAPC vehicles can be legally ridden on private land, but the reality is that the majority are intended for use on the public highway[7].

E-scooters legal use

E-scooters are 'powered transporters' and are classified as motor vehicles under the Road Traffic Act 1998. This means that the rules for motor vehicles also apply to e-scooters, including the requirement for a licence and insurance[8]. Using privately owned e-scooters on roads or in public spaces, such as parks, street pavements, and shopping centres, is illegal. The exception is the trial of e-scooter hire schemes being trialled in particular local authority areas, including the City of London, London Borough of Camden, and the London Borough of Southwark, which require insurance and require the rider to hold a provisional or full driving license as a condition of hire.

[9]London Borough of Newham is omitted, so all e-scooters ridden on the public highway are illegal as outlined in the Road Safety GB campaign[10].

[7] https://www.gov.uk/electric-bike-rules
[8] Riding an electric scooter: the rules - GOV.UK
[9] https://www.gov.uk/guidance/e-scooter-trials-guidance-for-users
[10] https://roadsafetygb.org.uk/news/know-the-rules-on-privately-owned-e-scooters/

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Table 1: E-Bike and E-Scooter Comparison (UK legal status applies when ridden on the public highway)

Criteria	E-Bike (includes EAPC-compliant DIY conversions)	E-Scooter (Rental schemes)	Converted non-EAPC-compliant E-Bike
Legal Status (UK)	Legal if it meets EAPC rules when purchased or converted, and used on the public highway	Legal only if in a rental scheme and used on the public highway.	Illegal if not EAPC compliant (for speed limits, power & pedal assist) & used on the public highway
Speed Limit	15.5 mph (25 km/h)	15.5 mph (25 km/h)	Often exceeds legal limits (20–30+ mph)
Motor Power Limit	250W max	250W max	Often exceeds 250W (500W–1000W or more)
Pedal Requirement	Must be pedal & chain-assisted	No pedals	Often throttle-only, no pedal assistance
Insurance / Registration	Not required	Required for rental schemes	Not possible due to illegal status
Helmet Requirement	Not legally required (recommended)	Not legally required (recommended)	Not legally required, but high risk
Road Use	Allowed on roads and cycle paths	Rental scooters are allowed on roads	Illegal on public roads and cycle paths
Safety Standards	Must meet EAPC standards	Must meet rental scheme standards	No safety oversight; risk of fire & brake failure
Cost Range	£600–£3,000+	£300–£800	£200–£600 + base bike
Environmental Impact	Low emissions, sustainable	Low emissions, sustainable	Same, but less efficient or safe
Enforcement Risk	Low if compliant	Medium	High risk of fines, seizure, or prosecution

A table summarising the current UK requirements of legal status that apply when ridden on a public highway

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3. E-Bike Fire Safety Project

3.1 Project Launch and Objectives

The E-Bike Fire Safety Project was launched in September 2023 as a partnership between Newham Community Project (NCP), the London Borough of Newham, and the London Fire Brigade (LFB). The initiative responded to the growing number of lithium-ion battery fires linked to e-bikes and e-scooters in Newham's private rented sector and high-density housing. The project aimed to raise awareness, provide training, and reduce fire incidents through education, advocacy, and community collaboration.

The project primarily targeted two rider groups:

1. Delivery and courier riders working in the gig economy who use e-bikes professionally
2. E-scooter riders within the borough who use e-scooters for short-distance and recreational travel.

These audiences were prioritised due to their daily exposure to battery charging and storage risks in both home and work environments.

The project was designed as a practical intervention model for local authorities and voluntary sector organisations, combining grassroots engagement with regulatory enforcement and public education.

Table 2: Core Objectives of the E-Bike Fire Safety Project

Objective No.	Objective Description
1	Educate riders and residents on fire risks linked to lithium-ion batteries.
2	Train e-bike ambassadors to deliver safety information and model safe practices.
3	Engage universities, landlords, and local businesses through information campaigns.
4	Reduce fire incidents by promoting the London Fire Brigade's #ChargeSafe guidance.
5	Build a replicable model for national adoption by other local authorities.

This table outlines the core objectives that guided the design and delivery of the E-Bike Fire Safety Project, reflecting its educational, operational, and replicable focus.

3.2 Introduction and Context

Emerging trends, local data, and stakeholder insights collectively informed the creation of the E-Bike Fire Safety Project, forming the foundation for its design and delivery. This overview

summarises national trends in e-bike and e-scooter usage, the local conditions within the London Borough of Newham, and the factors that made the area a priority for targeted intervention. Early engagement activities between March and August 2023 with Newham Community Project, London Borough of Newham, and London Fire Brigade (LFB) identified emerging risks of lithium-ion battery fires in Houses with Multiple Occupation (HMO), student housing, and the gig economy. The official delivery phase commenced in September 2023 following these preparatory discussions, marking the beginning of a structured awareness and prevention model.

Evidence gathered during this planning phase included incident data from the London Fire Brigade, housing inspection findings from the borough's Private Rented Sector and HMO teams, and feedback from local universities, riders, and landlords. Collectively, these inputs provided a comprehensive picture of the local fire-safety landscape and informed the project's design priorities, as summarised in the *Evidence base for planning* callout below.

Local relevance. Newham was prioritised due to its high concentration of delivery riders using e-bikes, combined with a growing number of lithium-ion battery fires relative to other London boroughs, ranking second only to Tower Hamlets[11] during 1 January 2020–15 June 2023. The borough includes major commercial and delivery hubs such as Westfield Stratford City and Gallions Reach, where food and retail delivery demand is particularly high. As in many more deprived local authorities, a higher density of fast-food outlets is associated with elevated food-delivery activity and increased likelihood of indoor storage and charging of e-bikes and batteries, with Newham among the top ten London Local Authorities for fast-food outlets per resident[12]. Dense housing conditions, including HMOs and private rented accommodation, contribute to increased indoor battery charging, heightening potential fire risks.

Access and Affordability Context (as of 2025): Public e-bike hire options in Newham offer limited coverage and capacity, with costs that remain expensive for riders, and, in practice, are not a viable solution for most couriers, including international students. Services available in the Stratford Olympic Park area (e.g., Santander) provide only a small number of e-bikes relative to demand, while other schemes have limited or no coverage in the borough.

[11] https://www.london-fire.gov.uk/media/7786/foia-75281-lithium-batteries-response.pdf
[12] https://www.gov.uk/government/statistics/wider-determinants-of-health-february-2025-update/wider-determinants-of-health-statistical-commentary-february-2025

Table 3: E-bike hire coverage and indicative costs (2025)

Scheme (operator model)	Area/zone	Coverage in Newham	Indicative cost (2025)
Santander (docked)	Stratford / Olympic Park	Partial, limited e-bike availability	£3 per hour (member rate)
Lime (dockless hire)	Borough-wide	No authorised zones; service ends at borough boundaries	£12.60 per hour (typical pay-as-you-go)
Forest (dockless hire)	Borough-wide	Limited or no coverage; availability concentrated in central London	£12.60 per hour (typical pay-as-you-go)
Voi (dockless hire)	Borough-wide	Limited or no coverage	£12.60 per hour (typical pay-as-you-go)

Implication: affordability and availability constraints sustain reliance on privately owned e-bikes, increasing the likelihood of indoor storage and charging in HMOs and PRS dwellings, the specific fire-safety risk this project targets.

Note: Coverage data based on operator mapping as of mid-2025. These schemes do not provide comprehensive borough-wide access.

Evidence Base for Planning

Planning inputs and rationale

LFB incident data: trend and severity signals
PRS/HMO inspections: indoor charging patterns and escape-route risks
Rider/landlord consultations: practical constraints and behaviours
University induction feedback: student awareness and communication channels

Together, these findings (Mar–Aug 2023) informed the September 2023 launch and the risk priorities in Section 3.3.

Table 4: Project Planning and Delivery Timeline

Phase	Dates	Lead Partners	Key Outputs
Planning, Development and Consultation	Mar - Aug 2023	NCP, London Borough of Newham, LFB	Stakeholder mapping, risk identification, and engagement planning
Delivery Launch	Sept 2023	NCP, London Borough of Newham, LFB	Ambassador recruitment, initial awareness sessions, and outreach initiation

Community Engagement and Training	Oct 2023 - Mar 2024	NCP, London Borough of Newham, LFB, Local Businesses, Community Ambassadors	Fortnightly workshops, rider training, ambassador development, and courier engagement
Expansion and Public Events	Apr - Nov 2025	NCP, LFB, Universities, Local Partners	Roadshows, borough-wide campaigns, student inductions, and public awareness events
Completion and Future Continuity	Nov 2025	NCP, London Borough of Newham	Evaluation, reporting, and integration of ambassador model into ongoing safety initiatives

This report was finalised in October 2025 to capture evaluation data, stakeholder input, and project outcomes ahead of national dissemination.

3.3 Rising Use and Emerging Fire Risks

In 2023, the London Borough of Newham observed a significant increase in the popularity of electric bicycles (e-bikes) and scooters (e-scooters), which substantially altered modes of transportation in the borough. E-bikes became vital for courier and delivery riders, particularly in the food and retail industries, while e-scooters gained popularity among young people and students for short-distance travel. While these developments contributed positively to economic mobility and environmental goals, they also introduced heightened fire, theft, and accident risks.

An emerging safety trend was the modification of e-bikes with non-compliant motors and batteries to extend delivery hours and reduce operational costs. Such practices often violated the Electrically Assisted Pedal Cycle (EAPC) standards and increased fire hazards during charging or storage in overcrowded HMOs. The London Fire Brigade's 2023 data indicated that e-bikes had become the capital's fastest-growing fire risk, with over 104 e-bike fires recorded by August 2023, surpassing totals for the entire previous year. Sadly, these incidents resulted in three fatalities and over fifty injuries across London[13].

Table 5: Comparative Fire Incident Data (2022–2023) Table

Area	2022 Fires	2023 Fires (to Aug)
London (overall)	116	123
East London (including Newham)	38	56
Newham Borough (est.)	14	23

[13] https://www.london-fire.gov.uk/news/2023/august/new-record-high-of-e-bike-and-e-scooter-fires-in-london/

3.4 Enforcement and Key Project Focus

Enforcement actions reinforced the necessity of the project. A City of London Police operation in early 2024 revealed modified e-bikes exceeding 1,900-watt motor capacity; legally classed as motor vehicles and subject to insurance and licensing requirements. Such cases highlight the prevalence of illegal modifications and the challenges for enforcement officers.

Key project activities

To address these issues, the E-Bike Fire Safety Project was delivered through a coordinated set of activities designed to increase awareness, strengthen compliance, and promote safer practices across the community:

Community engagement through outreach campaigns, workshops, webinars, and discussion forums.

Ambassador training sessions to equip volunteers to share safety information in hotspots and encourage riders to attend workshops.

Rider workshops providing practical instruction on staying safe and maintaining equipment.

Public workshops sharing fire-safety information with residents and local businesses.

Policy advocacy supporting enforcement measures, safer exchange and rental schemes, and discussion of new legislative provisions.

Awareness campaigns using London Fire Brigade #ChargeSafe materials, university induction packs, and borough-wide communications.

Project reporting consolidating findings, stakeholder input, and recommendations for future practice.

These activities ran alongside enforcement support from the London Fire Brigade and local partners to ensure consistent messaging and compliance across Newham.

Table 6: Stakeholder Roles and Contributions Table

Stakeholder	Primary Role	Value Added
Newham Community Project (NCP)	Community outreach and ambassador training	Built grassroots trust and peer networks
London Fire Brigade (LFB)	Technical fire-safety expertise	Delivered #ChargeSafe materials and demonstrations
London Borough of Newham	Policy and enforcement coordination	Integrated fire safety into housing inspections

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Universities	Student engagement and outreach	Distributed induction packs to 98 universities
Police & Trading Standards	Enforcement and compliance	Supported seizure of unsafe chargers and e-bikes

3.5 Identified Risk Factors and Local Relevance

Through research and engagement, the project identified several recurrent factors contributing to e-bike and e-scooter fires:

1. Use of modified or poorly converted e-bikes not compliant with EAPC standards.
2. Use of substandard or unregulated batteries purchased online.
3. Overcharging or incorrect charger use.
4. Overcrowded housing and blocked escape routes.
5. Charging in hallways or stairwells.
6. Overnight charging while occupants were asleep.
7. Lack of knowledge of fire risks and limited access to fire-safety information.

Table 7: Risk Mitigation Framework and Outcomes Table

Risk Factor	Scenario	Mitigation Action	Observed Outcome
Unregulated batteries	Courier buys a low-cost battery online	Ambassador training and LFB awareness leaflets	80% of riders reported improved charger safety awareness
Charging in hallways	Bikes are stored in narrow shared corridors	Landlord engagement and inspection advice	Fire risk added to over 22,000 property audits
Overnight charging	Riders charging during rest hours	Workshops and demonstration events	Shift towards daytime charging reported
Lack of awareness	Students unaware of fire risk	University induction campaigns	Wider reach to 72,000+ new students annually

The insights and findings outlined in this section formed the basis of the operational design implemented from September 2023. They shaped the ambassador model, workshop formats, and collaboration strategy described in Section 3.

Enforcement Context and National Examples

Enforcement activity across London has reinforced the need for community education and preventative engagement.

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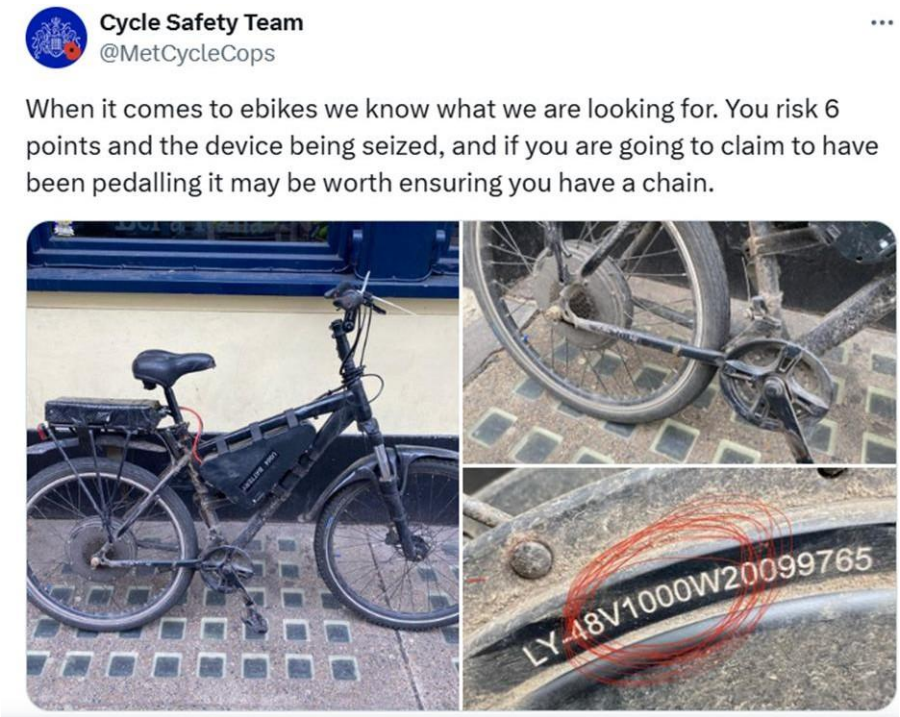
- City of London Police (2024): In February 2024, a rider was stopped with an illegal Electrically Assisted Pedal Cycle (EAPC) fitted with a 1,900-watt motor capable of 73 mph. The vehicle was seized under s.165 of the Road Traffic Act for no insurance. Following a repeat offence in August 2024, the rider was fined £660, ordered to pay a £352 surcharge, and received six penalty points[14].
- Metropolitan Cycle Cops: The Metropolitan Police Cycle Safety Team has also highlighted the widespread use of modified bikes that exceed legal motor limits. Examples include unpedalable cycles with 1,000-watt motors and oversized batteries, configurations that risk six penalty points and vehicle seizure.

Such cases highlight the importance of the E-Bike Fire Safety Project's strong emphasis on rider training, awareness, and safe equipment use in Newham's high-density delivery network.



4. The Need for the E-bike Fire Safety Project

Despite a growing concern over the increasing number of fire incidents in the borough, many riders and residents remained unaware of the risks associated with lithium-ion batteries. The London Fire Brigade's pan-London #ChargeSafe campaign provided critical guidance, materials, and technical input, which were localised and embedded within the E-Bike Fire Safety Project to address this gap. The initiative engaged key stakeholders, including delivery riders, local businesses, universities, and housing officers, through outreach, induction packs, and awareness campaigns. Stakeholders expressed gratitude for the collaborative model and interest in sustaining similar interventions in the future.

[14] City of London Police Prosecution

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The E-Bike Fire Safety Project was conceived in response to the rapidly growing number of fire incidents caused by lithium-ion batteries in e-bikes and e-scooters across London, particularly within the London Borough of Newham. These devices became increasingly popular as an affordable means of transport for delivery riders, students, and residents, but their use outpaced public awareness of safe charging, storage, and maintenance practices. Newham Community Project (NCP), the London Borough of Newham, and the London Fire Brigade (LFB) recognised an urgent need to address the emerging fire risk through education, prevention, and community engagement. Grounded in this evidence and collaboration, the E-Bike Fire Safety Project was conceived to deliver a practical, community-led intervention.

The project's overarching aim was to reduce the likelihood of e-bike and e-scooter fire incidents in high-density housing and to protect vulnerable residents, riders, and the wider community. Its objectives were to raise public awareness, train community ambassadors, strengthen local collaboration, and create a replicable model that could inform national fire-safety interventions.

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[15] https://researchbriefings.files.parliament.uk/documents/SN00708/SN00708.pdf

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4.1 Aims and Objectives

The aim of this project is to reduce the likelihood and impact of e-bike and e-scooter battery fires in the London Borough of Newham by improving public awareness and behaviour, strengthening local collaboration, and developing a model that can be replicated nationally.

Overarching aims

- Improve public knowledge of lithium-ion battery safety (charging, storage, and disposal).
- Support sustained behaviour change among riders and residents through education and engagement.
- Build a peer-led, community-based mechanism (ambassador model) for ongoing fire-risk reduction.
- Enhance coordination between statutory, voluntary, and academic partners to embed consistent practice.

Operational objectives

- Develop and sustain a rider-led ambassador network to deliver peer education and recruit participants into workshops.
- Deliver practical training (workshops and focus groups) for riders, residents, and students on safe charging and fire-risk mitigation.
- Co-produce multilingual resources aligned with LFB #ChargeSafe guidance and distribute them through community and education channels.
- Integrate fire-risk checks and guidance into PRS/HMO housing engagement, and support landlord communications on safe charging and escape routes.
- Engage universities (e.g., via induction packs and campus activity) to reach new student cohorts and courier communities.
- Establish and maintain digital peer-support channels (e.g., WhatsApp groups) to reinforce learning and share timely safety updates.
- Provide clear guidance on legal compliance (e.g., modifications, chargers, battery purchases) in partnership with enforcement and safety bodies.
- Coordinate messaging and activity across partners (NCP, LONDON BOROUGH OF NEWHAM, LFB, universities, police, local businesses) to ensure consistent, scalable delivery.

4.2 Understanding Fire Risk and Local Conditions

Between 2022 and 2023, London experienced a substantial increase in e-bike and e-scooter fires, with incidents rising from 116 in 2022 to 123 by August 2023[16]. East London, including Newham, recorded 56 of these incidents, up from 38 the previous year. Within Newham itself, an estimated 23 fires occurred in 2023, a 64% increase from 2022. These figures underscore the borough's heightened vulnerability, given its large number of delivery riders and residents living in Houses in Multiple Occupation (HMOs)[17].

Local evidence from the London Fire Brigade and Newham's Private Rented Sector (PRS) inspections highlighted recurring fire risk factors: indoor charging in confined hallways, modified or unregulated batteries, and limited understanding of charger safety. This data informed a targeted prevention strategy focusing on rider education, landlord engagement, and community awareness[18].

Beyond incident frequency, contextual data revealed that Newham hosts a high concentration of food-delivery riders due to the borough's economic structure[19], dense housing, and major commercial areas such as Westfield Stratford City[20]. Many riders are international students or low-income residents who depend on cost-effective transport but face limited access to safe charging spaces or insurance-protected vehicles.

The following risk factors are derived from the E-Bike Fire Safety Project's own research and discussions (internal evidence gathered through workshops, focus groups, ambassador outreach and PRS liaison). They are presented together to reflect the project's local insights.

Project-Identified Risk Factors (Internal Evidence)

1. Use of modified e-bike/e-scooters or poorly converted pedal bikes into e-bikes, which are illegal to ride on the public highway.
2. Use of sub-standard batteries, which are often cheaper and do not adhere to the UK regulatory standards.
3. Overcharging the battery or using the wrong or an unsafe imported battery charger.
4. Overcrowded multiple occupancy homes increase the risk of a fire occurring.
5. Often, bulky bikes/scooters are stored and charged in hallways or stairwell areas, which often block the primary means of escape in the event of a fire for all the occupants.
6. Charging batteries on property escape routes, such as hallways/stairs.
7. Batteries left charging unattended or when the user is asleep.

[16] https://www.london-fire.gov.uk/news/2023/august/new-record-high-of-e-bike-and-e-scooter-fires-in-london/
[17] https://www.london-fire.gov.uk/news/2023/august/new-record-high-of-e-bike-and-e-scooter-fires-in-london/
[18] https://www.london-fire.gov.uk/safety/lithium-batteries/
[19] https://www.newham.gov.uk/downloads/file/5388/newham-characterisation-study-chapter-5-socio-economic-analysis
[20] https://www.urw.com/portfolio/westfield-stratford-city

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Source: Internal project evidence (workshops and survey, Mar–Nov 2024; ambassador field notes; PRS liaison).

This is an example of one of the multi-stakeholder presentations and engagement sessions, which included couriers, mainly international Students or their dependents, Newham Community Project, London Fire Brigade, Metropolitan Police, London Borough of Newham, University of East London, and the local press (April 2024)

4.3 Partnership and Collaborative Delivery

Collaboration between statutory agencies, voluntary organisations, and educational institutions was central to the project's success. Each partner contributed unique expertise, ensuring that fire safety messages reached diverse audiences through trusted community networks.

Table 8: Partnership and Collaborations

Stakeholder	Purpose	Key Contribution
Newham Community Project (NCP)	Lead community organisation coordinating design, delivery, and evaluation of the project.	Initiated the Charge Safely model; designed outreach and workshop frameworks; managed ambassador recruitment and training; coordinated research, survey, and reporting activities;

		facilitated collaboration across all partners.
London Borough of Newham (LONDON BOROUGH OF NEWHAM)	Local authority partner providing policy alignment and operational support.	Integrated fire-risk awareness into local housing inspections and community safety plans; supported event delivery, communications, and local outreach; strengthened borough-level engagement through its networks.
London Fire Brigade (LFB)	Technical authority on fire safety and public education partner.	Delivered #ChargeSafe materials, fire-safety demonstrations, and risk-mitigation guidance; provided data and expert input into project design; co-branded materials for borough-wide dissemination.
University of East London (UEL)	Anchor educational partner ensuring student engagement and academic dissemination.	Hosted on-campus workshops and pop-up battery checks; issued all-student safety alerts; embedded project messaging into induction timetables and newsletters; shared feedback to refine project delivery.
Universities (regional and national)	Education sector partners supported student awareness and safety behaviour change.	Distributed safety induction packs to 98 universities; reached over 72,000 students through national student networks; promoted e-bike safety and courier awareness among first-year and international students.
Metropolitan Police (Cycle Safety Team)	Law enforcement partner supporting compliance and safety enforcement.	Attended workshops and local engagement events; raised awareness of legal modification limits and enforcement measures; collaborated with riders to encourage lawful and safe practice.
Local Businesses	Community-level partners facilitated information access and visibility.	Displayed safety posters, distributed leaflets, and hosted demonstrations; local e-bike

		retailers and service shops reinforced safe charging and battery purchasing guidance.
E-bike Riders and Ambassadors	Primary beneficiaries and peer educators contributing lived experience.	Twenty-three riders trained as community ambassadors to promote safe practices; over 500 riders participated in the project, with 432 participating in workshops and a quantitative study; ambassadors shared insights into courier conditions influencing unsafe modifications.
E-scooter Riders	Secondary user group with shared risk awareness needs.	Participated in select sessions to understand safe charging and storage; contributed perspectives on mobility safety and public awareness gaps.

Regular meetings with key stakeholders were essential to ensure close collaboration between partners, share ideas, and achieve the overall objectives of the project. Represented in this photograph are Newham Community Project, University of East London, Metropolitan Police, BBC, London Fire Brigade and Courier Riders.

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4.4 Engagement and Awareness Activities

Engagement and awareness activities focused on building local capacity, improving fire safety knowledge, and encouraging safer e-bike charging practices across Newham.

Ambassador mobilisation (Oct 2023–Mar 2024): Community ambassadors were recruited and trained between October 2023 and March 2024 to provide peer-to-peer education, signpost riders to support, and help recruit participants into the project's workshops and focus groups.

Workshops and focus groups (Mar–Nov 2024): From March to November 2024, the project delivered 18 workshops and six focus groups, engaging 432 participants. Sessions focused on safe charging practices, correct handling of lithium-ion batteries, and recognising and mitigating fire hazards in shared and high-density housing.

Ongoing communications and materials: A WhatsApp group was established in November 2023 to disseminate safety updates and answer rider queries; when it reached capacity, a second group was created, and two active groups now support ongoing peer learning. From March 2024 to Spring 2025, the project distributed over 5,000 informational leaflets across Newham, including printed LFB #ChargeSafe materials, through courier hubs, community venues, landlords, and local partners.

University outreach: Universities shared induction packs and circulated project information to students during the 2024/25 intake, further extending campaign reach.

(Associated flyers and the email sent to universities appear below)

Charge Safe

2023 London Fire Brigade have been called out, on average, at least once every two days for fires caused by lithium batteries that also charge e-bikes and e-scooters.

Are You a Delivery Driver?

You are six times more likely to die in a fire if you live in a house with multiple occupancy, compared to a single-family house.

#ChargeSafe

- Never leave your device charging unattended or when you're asleep.
- Do not attempt to modify or tamper with your battery. Always follow the manufacturer's instructions.
- Converting pedal bikes into e-bikes using DIY kits bought online can be very dangerous and poses a higher risk of fire.
- Never block your escape routes with your e-bike or e-scooter.
- Ensure you have a working smoke alarm.

Join our WhatsApp Group to keep up to date with latest information

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The contribution of the Community Champions cannot be overstated. They were the bridge between the Project and the delivery riders. The Community Champions ensured the Project was able to reach out to the riders on the road, establish trust and encourage them to attend workshops and training sessions.

E-Bike Fire Safety Project distributed over 5000 #ChargeSafe LFB campaign leaflets locally in the London Borough of Newham, and emailed to 98 Universities during students' induction period in September 2024

#ChargeSafe

- Never leave your device charging unattended or when you're asleep.
- Do not attempt to modify or tamper with your battery. Always follow the manufacturer's instructions.
- Converting pedal bikes into e-bikes using DIY kits bought online can be very dangerous and poses a higher risk of fire.
- Never block your escape routes with your e-bike or e-scooter.
- Ensure you have a working smoke alarm.

Scan the QR code for more information on keeping your e-bike and home safe or visit:

london-fire.gov.uk/chargesafe

LFB
LONDON FIRE BRIGADE

Student e-bike fire safety advice

The following content was communicated to partners from educational institutions and shared with their students:

Dear University Student Induction Contact,

As the new academic year approaches, I would appreciate your assistance in informing your students about the fire hazards associated with electric bike batteries.

We note that some of your rider students, mainly international students, reside in the London Borough of Newham. This area is experiencing an increasing number of e-bike fire incidents, which have displaced students from their homes.

We are working closely in partnership with the London Borough of Newham, the London Fire Brigade, Newham Community Project, and the University of East London to raise fire safety awareness. We would like to ask you to please raise awareness of this issue with all students.

The lithium batteries used in e-bikes and e-scooters can burn with ferocious speed (NFCC 2023), causing large fires that put lives at risk. In the capital this year, the London Fire Brigade has, on average, been called out to an e-bike or e-scooter fire once every two days.

Electric-powered personal vehicles are popular among students, especially those with jobs in the gig economy, such as food or parcel deliveries, so the risk from failing batteries, overloaded chargers or blocked fire exits is high.

Key messages for students:

- The amount of energy in e-bikes/e-scooters battery packs is sufficient to set a double bedroom on fire in 10–15 seconds

One of the latest major fires occurred inside a flat on New Orleans Walk in Highgate on 12 September. An e-bike caught alight inside a bedroom and its owner tried to put the fire out with an extinguisher. He sustained burns to several parts of his body as a result before firefighters attended and safely put out the blaze.

- Often, bikes are charged up in hallways, but if a fire occurs, it will prevent the means of escape from the property for all occupants.
- If batteries are charging in bedrooms whilst the exhausted student falls into a deep sleep, then other flatmates are put at risk. Retrofit kits are unregulated and have not been tested for fire safety.

How you can help

We aim to inform all students about the dangers associated with lithium batteries, especially when they are defective or damaged.

London Fire Brigade has produced posters and leaflets outlining simple steps for e-bike owners to reduce the risk of fire.

You can help to raise awareness by:

- Printing and displaying the attached posters on campus and in halls of residence: Including links to the London Fire Brigade's LFB #ChargeSafe website, https://www.london-fire.gov.uk/safety/lithium-batteries/charging-electric-bike-and-electric-scooter-lithium-batteries/
- Printing the attached leaflet and including it in new student packs or sharing with student groups and societies
- Posting the attached graphics to student-facing social media accounts or sharing via internal computer systems
- Sharing the assets with registered landlords to share with students living in privately rented accommodation

Thank you for your support in sharing this important information with as many of your students as possible.

Regards

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5. E-Bike Rider Safety Training

A cornerstone of the Newham E-bike Fire Safety Project initiative is the series of training sessions designed specifically for e-bike riders. These sessions, led by fire safety experts from the London Fire Brigade, aimed to equip riders with the knowledge to maintain and charge their e-bikes safely.

Training included:

Use of recent NFCC videos, such as Devon and Somerset Fire and Rescue Service, advice campaign[21].

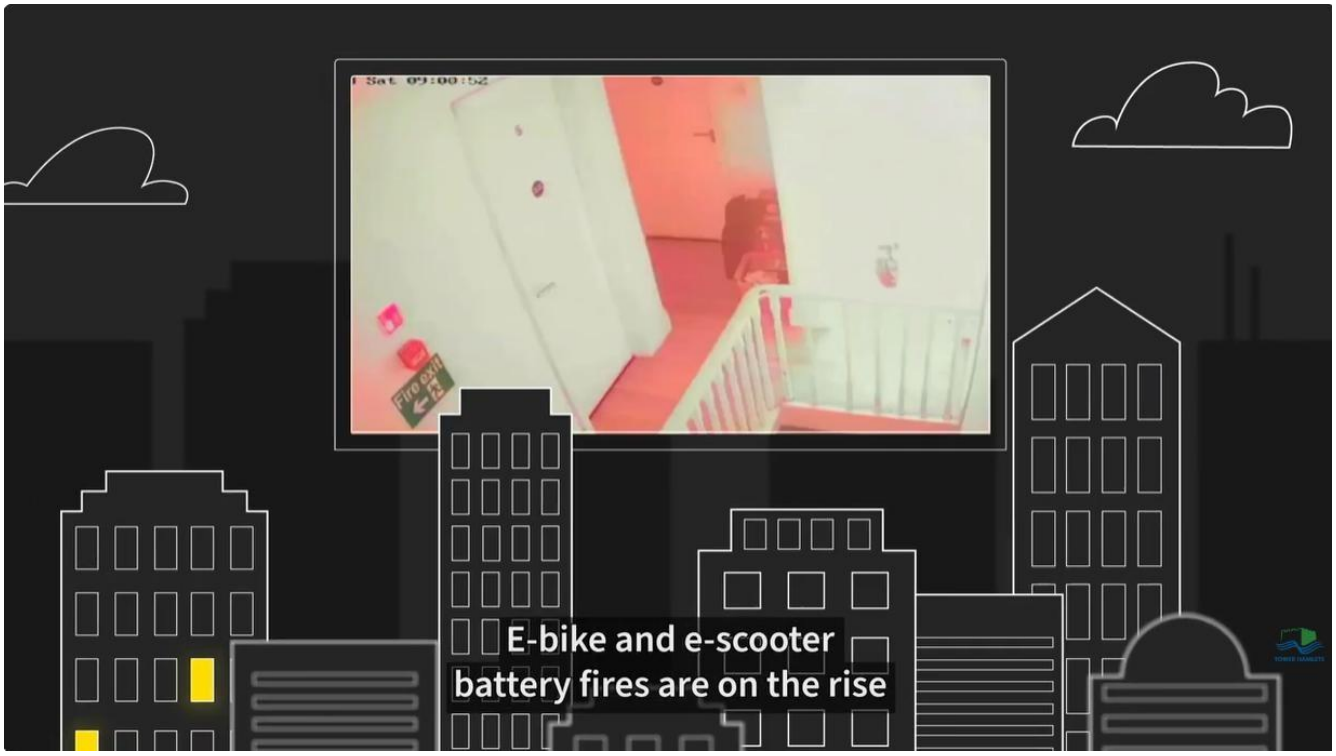
1. **Charging Protocols:** Riders were trained on the correct way to charge their e-bike batteries, including advice on choosing the right charger, avoiding overcharging, and the importance of monitoring the charging process.
2. **Battery Safety:** The sessions highlighted how to spot signs of faulty or damaged batteries and what to do in the event of a battery malfunction. Riders were also educated on the risks of using unregulated or modified batteries, which can pose significant fire hazards.
3. **Fire Response Training:** Participants were trained on how to respond to an e-bike fire, including the proper use of fire extinguishers, when to call emergency services, and how to safely evacuate the area in case of fire.

[21] https://www.youtube.com/watch?v=LAYLER3aQr8

Public Safety Workshops and Events

In addition to the e-bike rider-specific training, public workshops were organised to engage the wider community in fire safety education. These workshops aimed to help residents understand the risks of e-batteries and how to identify and mitigate any potential hazards.

1. **Fire Safety Demonstrations: London Fire Brigade** firefighters demonstrated how quickly e-bike batteries can overheat and cause fires, emphasising the importance of proper charging and maintenance as shown in LFB's London-wide campaign and specific project they did with LB Tower Hamlets[22].



2. **Public Seminars:** Seminars were held to educate residents about the dangers of e-bike fires and provide them with practical tips on what to do if they encounter a fire.

Outreach and Advocacy

The project also focused on advocacy and policy engagement, seeking to ensure that fire safety issues related to e-bikes and e-scooters were incorporated into local policies and regulations and tailored to the needs of Newham residents. The project also scrutinised deficiencies in the existing legal regimes, and areas of improvement were explored, particularly around enforcement actions.

[22] https://www.youtube.com/watch?v=lYjJaPTvhTg

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Key activities/proposals included:

1. **Collaboration with the London Borough of Newham:** Working with the London Borough of Newham, a key partner in the project, policy change and effective implementation strategies were discussed. Further engagement will enable these strategies to be implemented.
2. **Engagement with Law Enforcement:** The Metropolitan police were consulted to explore ways to combat illegal modifications of e-bikes and the sale of unregulated batteries online.
3. **Delivery Riders:** E-bike delivery riders eagerly expressed their vulnerabilities surrounding pay, working conditions and susceptibility to exploitation. Policy changes by delivery companies and local law enforcement agencies that could improve the working conditions of the riders were explored.
4. **Battery exchange scheme:** A battery exchange scheme was proposed, allowing riders who use illegally modified e-bikes or batteries to exchange them for legally compliant ones, which could be implemented in close collaboration with the London Borough of Newham. Proactive engagement and support from delivery platforms, including employers or contractors of e-bike courier riders, are also crucial for this initiative to succeed.

Project Outcomes and Impact

Increased Awareness and Behavioural Change

The project has made a substantial impact on fire safety awareness among residents and e-bike riders in the London Borough of Newham. Targeted education initiatives, including safety workshops and ambassador-led community training sessions, have enhanced the community's understanding of fire risks associated with improper e-bike charging. Post-event surveys of participating e-bike riders reveal that 80% reported a significantly improved understanding of the dangers associated with battery overcharging, faulty equipment, and the use of unregulated components. This behavioural shift is evidenced by riders' adoption of safer charging practices, such as using certified chargers and avoiding overnight or unattended charging.

Safety Improvements and Fire Prevention

The project has directly contributed to measurable safety improvements within the Borough. Safety packs (containing London Fire Brigade LFB #ChargeSafe leaflets) were distributed to local businesses, and public safety workshops were held. These interventions have provided residents and riders with essential tools to identify and mitigate fire risks. Anecdotal evidence from community champions indicated a growing safety culture, as riders actively discouraged the use of illegally modified batteries and shared fire safety tips within their networks. This proactive approach is expected to significantly reduce the incidence of e-bike and e-scooter fires.

Positive Feedback and Community Response

The project initiative has received widespread praise from the community. Residents and delivery riders have expressed their appreciation for the practical and accessible nature of the training sessions. Testimonials highlighted the value of hands-on guidance, such as fire response protocols and battery safety demonstrations. Local businesses and universities also acknowledged the effectiveness of the outreach efforts, which included distributing safety induction packs to students and people in the community. The community's enthusiasm is reflected in the high levels of participation, with over 430 e-bike riders attending training sessions and joining ongoing advocacy groups.

There is an urgent need for food delivery platforms to encourage riders working with them to comply with e-bike safety standards. Although delivery riders are regarded as 'self-employed' by the delivery companies, many feel pressured to deliver at a certain pace, incentivising illegal e-bike modifications that enable riders to travel faster than the legal speed limit, and for longer.

Habib (pseudonym) explained why he feels under pressure to deliver on time:

> "*I know that as a delivery rider, I am very vulnerable. I am under constant pressure from Uber to deliver within a specified time. Sometimes it's possible, but other times it's impossible because of congestion on the road and the speed of my e-bike. I wish Uber and the customers understood this better."*

Kamran (pseudonym) further highlighted the vulnerabilities expressed by many other delivery riders:

> *"I deliver for Deliveroo. I am always afraid that my account can be blocked at any time, even though it's not my fault, and then I'd have no income. If I'm blocked, it will be a nightmare to get unblocked. I am always on edge; earning from food delivery is my only income. This is why I felt I had to modify my bike to go faster, so I can work long hours to pay my bills and deliver on time.*

Capacity Building and Sustainability

The project's success has been directed by its emphasis on capacity building. By training over 20 ambassadors and establishing rider-led WhatsApp groups, the project has created a sustainable model for continued fire safety education. The ambassadors serve as peer educators and rider community Champions, fostering a ripple effect of knowledge dissemination across rider communities.

Furthermore, incorporating fire safety messages into university induction packs ensures the project's legacy among new residents and students in the borough, which could be repeated at the start of the next academic year to help new students benefit from this. Newham Community Projects' collaborative efforts with the London Borough of Newham and the London Fire

Brigade have also laid the groundwork for more vigorous policy enforcement and the potential introduction of battery exchange schemes.

By embedding safety consciousness into the community's fabric and addressing the systemic issues associated with e-bike fires, the project has achieved its immediate objectives and positioned Newham as a leader in fire safety innovation. This foundation provides an excellent platform for scaling similar initiatives across other high-risk areas in London.

6. Key Issues and Data Analysis

E-Bike and e-scooter Fires: A Growing Concern

Newham has seen a sharp rise in e-bike fires, with many incidents caused by improper battery charging and the use of modified bikes fitted with non-compliant parts bought online and imported from abroad. When these parts are installed on the bike and ridden on public highways, such as roads/pavements, it is illegal to ride them.

The LFB has frequently highlighted this growing problem through the LFB #ChargeSafe campaign, noting a strong link between the increase in e-bike and e-scooter use and the number of fires in London. The City London News report from February 2024 shows footage of an e-bike battery exploding and the ferocity of the resulting fire[23]. The London Fire Brigade has warned of the e-bike fire risk, following a second explosion in two weeks.

"Ticking Time Bomb Chargers": Fire Brigade Warn Of Deadly E-Bike Explosions

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[23] https://www.youtube.com/watch?v=5brsX5UYjZg

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This video[24] shows how quickly an e-bike fire can erupt, produced by The Office for Product Safety and Standards.

Safety guidance

Royal Berkshire Fire and Rescue show the inside of an e-battery pack and highlight the dangers of buying cheap modified bikes as Christmas presents[25].

[24] https://youtu.be/7PCFAjGJ2bI?si=IUG4YKGMOcWrhQy4
[25] https://youtu.be/EY5hM826M9I?si=c8sXa-dH4WDKoSjF

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LFB #ChargeSafe has issued these warning signs for lithium batteries[26]

In summary:

- **Heat**: It is normal for batteries to generate some heat when charging or in use. However, if your device's battery feels extremely hot to the touch, there's a chance it is defective and may start a fire. (Fire Prevention and Control Fire Prevention Information Bulletin")
- **Bulging:** A battery bulging or swelling out of shape is a common sign of it failing. If your battery appears swollen, stop using it immediately. Similar signs include any lump or leakage from the device. ('Lithium Battery Fires: How to Spot the Warning Signs')
- **Noise**: Failing lithium batteries have also been reported to make hissing or cracking sounds.
- **Smell**: If you notice a strong or unusual smell coming from the battery, this could also be a sign that it is failing.
- **Performance:** A failure to fully charge or longer charge times can be a sign that your battery is failing. ("Charge Safe! - Royal Borough of Kensington and Chelsea")
- **Smoke**: If your battery or device is smoking, a fire has already started.

If the device starts smoking or catches fire, do not attempt to extinguish the fire yourself. Instead, get out, raise the alarm, and call 999.

Department of Business and Trade (November 2024) 'Buy Safe, Be Safe'[27] campaign urges the public to buy safe e-bikes and e-scooters and avoid rogue online sellers, and that e-bikes and e-scooters cause fires every two days, according to the London Fire Brigade.

Reported figures collated from 38 fire and rescue services suggest that total incidents in recent years were at least[28]:

- 2020: 77
- 2021: 159
- 2022: 227
- 2023: 338 (forecast)

[26] #ChargeSafe: Warning signs for e-bike and e-scooter fires | London Fire Brigade
[27] https://www.gov.uk/government/news/only-purchase-safe-and-legal-e-bikes-new-government-safety-campaign-urges-public
[28] E-cycle and e-scooter batteries: managing fire risk for premises - GOV.UK

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London Borough of Newham Trading Standards Campaign in 2024

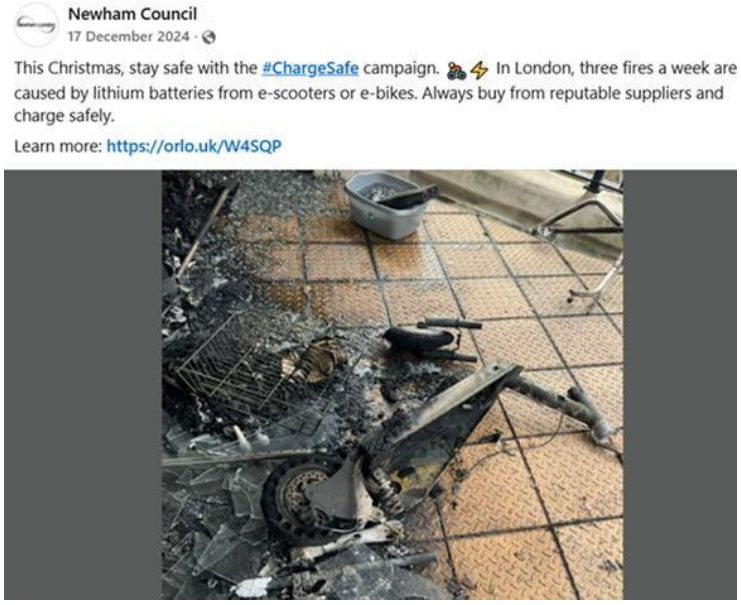
As part of the 'Stay Safe From Scams'[29] for Christmas 2024, the dangers of e-bikes and the LFB #ChargeSafe campaign were highlighted and summarised as:

Buying E-Bikes and E-Scooters

- Buy from reputable sellers: Only purchase e-bikes and e-scooters from trusted UK retailers who follow safety standards.
- Check for safety certifications: Ensure the product complies with battery and electrical safety and environmental protection requirements, including 'UKCA' for the British market and 'CE' in the European Economic Area.
- Avoid unbranded accessories and incompatible chargers: Do not purchase non-branded or incompatible chargers or batteries, as these can pose significant fire and safety risks.
- Follow charging guidance: Always follow the manufacturer's instructions for charging and never leave devices charging unattended or overnight.
- Understand the legal use: Be aware that most e-scooters are legal to ride only on private land unless part of an official rental scheme.
- Store and charge safely: Charge devices in well-ventilated areas, away from flammable materials, and keep them out of extreme temperatures.

For more advice on reducing risks associated with lithium batteries in e-bikes and e-scooters, visit the London Fire Brigade's LFB #ChargeSafe campaign: E-bike and e-scooters are London's fastest-growing fire trend[30].

Trading Standards Project and Investigation Outcomes



[29] Stay Safe from Scams This Festive Season – Advice from London Borough of Newham – London Borough of Newham

[30] #ChargeSafe: E-bikes and e-scooters – know the dangers | London Fire Brigade

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As part of an Office for Product Safety & Standards (OPSS) Surveillance Project during Autumn 2024, fourteen local businesses were identified and advised about selling non-compliant e-bike and e-scooter batteries and chargers. This was followed up with joint inspections, including those from the LFB, Metropolitan Police, and London Borough of Newham Trading Standards, at these business premises. Over forty chargers were seized during the inspection, and samples of which were sent to OPSS for formal testing in accordance with the local authority's sampling protocol.

The Consumer Awareness Project on LFB #ChargeSafe, part of the London Fire Brigade Campaign, was held over two days at Meridian Square, Stratford, Westfield. This initiative involved collaboration with the London Fire Brigade (LFB), Electrical Safety First (ESF), Newham Trading Standards, and Transport for London (TFL). Approximately 200 consumers and businesses received leaflets and advice on e-bikes, e-scooter safety, sale and supply (where applicable).

As a result of this project, one formal caution was issued to a business, and the campaign achieved significant public outreach, with BBC London evening news coverage (25/11/2024) and on LinkedIn; Published on London Borough of Newham's official LinkedIn page and reposted to 10,000 connections, generating over 1,500 impressions.

Examples of seized defective e-bike/e-scooter battery chargers

Chargers found to pose risks of electric shock, fire, and even explosion.	**Counterfeit plugs and fuses discovered not complying with UK safety standards.**

Lack of Critical Safety Information
Packaging lacked key details like the UK importer, power consumption, and necessary safety symbols.

Missing instruction manuals left users in the dark on essential safety warnings and usage information.

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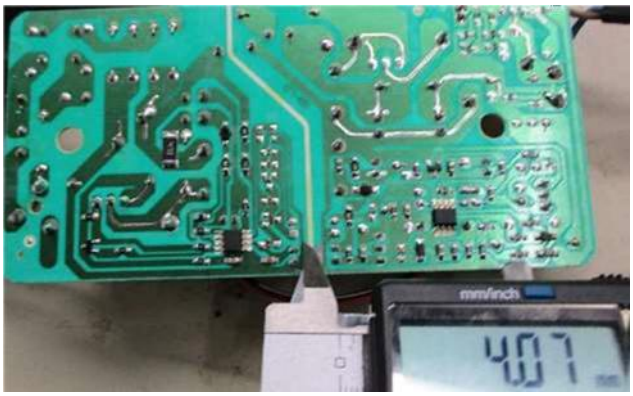

Soldering raised concerns about potential lead content, requiring further investigation.
Non-Compliant and Counterfeit Components: Counterfeit plugs and fuses discovered, increasing the risk of fire or explosion.
Cables lacked proper European approval markings, requiring additional checks.

Substandard Build Quality: Exposed wiring in some chargers creating serious electric shock risks.

Transformers failed key safety tests for creepage and clearance, putting consumers at risk of fire and shock.

Staying safe: the images or chargers and parts shown do not conform to the UK Electrical Equipment (Safety) Regulations 2016 or other applicable product-safety standards, creating a foreseeable risk of fire and electric shock. Always purchase e-bike batteries and chargers from trusted, regulated retailers and ensure they carry the correct conformity marking (e.g., UKCA/CE), match the manufacturer's specifications, and are supplied with clear instructions and warranty support.

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Charging Battery Safely Advice

The advice contained here summarises the guidance published by the Department for Transport on how to keep your home safe when charging your e-bike or e-scooter[31]. References are made to:

E-Bike conversion kits

- Conversion kits change standard bicycles into e-bikes.
- It is recommended that a professional carry out an e-bike conversion. They will be responsible for ensuring that the e-bike is safe and fitted with the correct motor, battery and charger.
- Installing a conversion kit yourself could lead to safety issues with your e-bike and increase the risk of fire.
- Furthermore, it could invalidate the manufacturer's warranty and make you responsible for any consequent damage or accident. If you modify an e-bike to increase its power or speed, then it may no longer be legal to use it on public roads

Disposing of a lithium-ion battery

- Lithium-ion batteries should not be placed in the same bins as your regular rubbish or recycling. They can cause a fire if they overheat or when crushed in bin lorries or waste and recycling plants.
- You can find out how to dispose of your lithium-ion battery safely by checking your local authority's website for information about the safe disposal of batteries in your area, or you can find your nearest recycling centre[32].

Using your e-bikes or e-scooter

- Currently, in the UK, only e-scooters participating in official rental e-scooter trials may be used legally on roads. Other e-scooters are classed as 'Powered Transporters'[33], and are not legal for use on the road. If you use an e-scooter illegally, you could face a fine and penalty points on your licence, and the e-scooter could be impounded. (Stark warning on safety measures for e-bikes and scooters, including battery considerations).

[31] How to keep your home safe when charging your e-bike or e-scooter | Fire England
[32] www.recycleyourelectricals.org.uk
[33] Powered transporters - GOV.UK

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Table 9: E-Scooter Usage and Safety Statistics in the UK

This briefing summarises key statistics related to e-scooter usage, safety incidents, and regulatory concerns in the UK, based on data from government and safety organisations.

E-Scooter Statistic	Details
Lawful Use	Only rental e-scooters from approved schemes are legal on public roads
Rental E-Scooters (2021)	23,000 rental e-scooters operated in 31 trial areas across England
Private E-Scooter Imports (2018-2022)	An estimated 1 million private e-scooters were imported into the UK
Fatalities (2022-2023)	18 deaths caused by private e-scooter use
Collisions (2022)	1,402 collisions involving e-scooters, up from 1,352 in 2021
Single Vehicle Collisions (2022)	341 collisions involved only one e-scooter
Casualties (2021)	Nearly 900 casualties from e-scooter collisions
Gender Distribution	71% of casualties were male, 29% female
E-Scooter Fires (2023)	19 fires in London caused by e-scooters

Table Data sources[34]

Table 10: E-bike Fire Statistics and Safety Concerns (2023–2025)

E-bike Statistic / Issue (source)	Key Details
Fastest-Growing Fire Risk	LFB identifies e-bike battery fires as London's fastest-growing fire risk (2024)
East London Fires (2023)	56 e-bike-related fires occurred in East London (LFB internal data)
National Fire Reports (2024)	211 fires involving e-bikes or e-scooters were reported by fire services; 170 involved e-bikes
Post-Market Conversions (International Fire Safety Journal)	45% of e-bike fires (77 incidents) involved DIY retrofit kits added to standard pedal bicycles
Unknown Build Fires	59 fire incidents involved e-bikes of unknown build
Manufactured E-Bike Fires	34 fire reports cited manufactured e-bikes.
Other Vehicle Fires	39 e-scooter fires, one e-unicycle fire, and one mobility scooter fire were reported

[34] Department of Transport 2022 national-evaluation-of-e-scooter-trials-report
Department of Transport 2023 national-evaluation-of-e-scooter-trials-report
Reported road casualties Great Britain: e-Scooter factsheet 2022
Pacts-The-safety-of-private-e-scooters-in-the-UK-October_2021
LFB_new-record-high-of-e-bike-and-e-scooter-fires-August_2023

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Conversion Kit Risks	Incompatibility, faulty products, and unsafe modifications increase fire risk
LFB Fire Response (2023)	143 e-bike fires and 36 e-scooter fires attended; 3 deaths and ~60 injuries reported
2024 Fire Count (Sept 2024)	131 e-bike and e-scooter fires were reported by the end of September 2024
Cause of Fires	Many incidents are caused by incompatible chargers or unsafe products bought online.
Regulatory Gaps	LFB highlights inadequate regulation for e-bike kits and accessories sold online
Legislative Support (December 2024)	The Mayor of London, the London Assembly, and the LFB support new legislation for better regulation and safeguards on online marketplaces
Conversion Kit Concerns	Kits allow personal or provider-based modifications, posing fire safety risks
Lithium-Ion Battery Fires	Fires linked to lithium-ion batteries increased 46% from 2022 to 2023; e-bikes caused nearly a third.

This table summarises key statistics and safety concerns related to e-bike fires in London and the UK between 2023 and 2025, based on data from the London Fire Brigade (LFB), the Office for Product Safety & Standards (OPSS), and other sources. Table data sources[35]

Thermal Runaway

Thermal runaway is one of the primary risks related to lithium-ion batteries. It is a phenomenon in which the lithium-ion cell enters an uncontrollable, self-heating state; typically initiated by over-charging, physical damage, use of incompatible chargers, internal faults, or exposure to heat. Once initiated, it can propagate rapidly to adjacent cells, is difficult to extinguish, and may re-ignite.

Thermal runaway can result in:

- Ejection of gas, shrapnel and/or particulates (violent cell venting)
- Extremely high temperatures, reaching greater than 300°C
- Smoke
- Fire

[35] https://www.newhamrecorder.co.uk/news/23784864.look-back-east-london-e-bike-fires-incidents-spike/
LFB #ChargeSafe campaign
https://www.london.gov.uk/who-we-are/what-london-assembly-does/london-assembly-press-releases/assembly-calls-third-party-certification-e-bike-and-e-scooter-batteries
Nearly half of e-bike fires in 2024 linked to post-market conversions
SS systems related-fires-triggers-UK based on Fire services data May 2025

Table 11: ● Thermal Runaway: Causes & Reactions

Cause	Description
Electrical	Overcharging
Climate	Cold
Thermal	Moisture
Physical	Crush
Physical	Penetration
Fault	Malfunction
Fault	Short Circuit

Reaction	Description
Smoke	Battery emitting smoke
Explosion	Battery bursting
Fire	Battery on fire

This table shows a summary of the thermal runaway causes and typical reactions:

As part of the APPG enquiry[36], in June 2025, they released the report 'Unregulated and Unsafe: The Threat of Illegal E-Bikes.'[37] Tests were carried out on different e-bike batteries at various price points by Warwick Manufacturing Group on behalf of the Office for Product Safety and Standards (OPSS). They concluded that it was "very hard to induce a legitimate product to enter thermal runaway". However, they found that this was different with the 'bottom end' of the unregulated products available online: "they would go up very quickly. You would connect the wrong charger, for example, and it would, over a short space of time, cause a problem in the battery management system that would heat up, that will then cause a further problem down the line, and that's when you get severe thermal runaway."

Case Studies of Lithium e-Battery Fires in Newham

Several case studies underscore the urgency of raising public awareness, as highlighted by the London Borough of Newham's emergency planning response to the increasing number of e-bike/e-scooter lithium battery-related fires. These case studies highlight the need for urgent action to mitigate the risks associated with e-bikes and e-scooters in Newham[38]. Battery fire incidents were more likely in private rented overcrowded older Victorian-type properties, occupied by international students working as couriers, with no recourse to public funds. Some of the fire victims were injured, lost their money, valuable documents and personal belongings.

[36] https://appgcw.org/wp-content/uploads/2025/07/APPGCW-Report-Unregulated-and-Unsafe-Final-V2.pdf
[37] APPGCW-Report-Unregulated-and-Unsafe-Final-V2.pdf
[38] https://www.london-fire.gov.uk/incidents/

London Borough of Newham Property Licensing scheme

There is a large-scale property licensing scheme at London Borough of Newham covering privately rented property for 2023-2028[39], which covers around 40,000 properties. The service conducts approximately 650-800 compliance inspections/audits of rented properties monthly, focusing on licensing conditions, overcrowding, and electrical safety certificates. Over 22 thousand compliance inspections have been completed in the first half of the scheme's duration. Compliance officers provide LFB #ChargeSafe advice and leaflets in areas where e-bikes/e-scooters are present and verify that the risk has been included in a fire risk assessment, where applicable. Below are examples of the devastation that can be caused by an e-bike battery fire for the residents, the landlord and the impact on LFB resources. This prompted this collaborative project to raise awareness at a community level amongst private rented sector tenants.

Newham Case Study 1: In October 2022, four fire engines attended in the early hours to a fire in Manor Park, E12, where ten international students were living in a ten-bedroom two-storey end-of-terrace house with a loft conversion, converted into a House in Multiple Occupation (HMO) and shared communal areas. Fire originated around an electric bike in the communal stairs area. Residents smelled burning, and the smoke built up in the hallway, which blocked the front exit. Seven residents escaped by kicking out windows, and two residents were rescued from the bay window canopy by firefighters using a ladder. This resulted in four adult males being injured, three of whom were hospitalised due to smoke inhalation and escape injuries. Ten residents required rehousing. A four-gang extension lead and charger transformer were found and sampled, and although hard-wired smoke detectors were installed, some had been removed from bedrooms

[40]

[39] https://www.newham.gov.uk/landlords-newham/rented-property-licensing
[40] https://www.london-fire.gov.uk/incidents/2022/october/house-fire-manor-park/

Published by Newham Community Project and London Borough of Newham (October 2025)

Newham Case Study 2: In June 2024, the ground floor of a two-storey house in Shakespeare Crescent, Manor Park E12, was partially damaged by a fire caused by a 'catastrophic failure of a battery pack on a converted e-bike that was charging.' Two adults and one baby were rescued and treated in the hospital for smoke inhalation.

41

Newham Case Study 3: In December 2023, four fire engines and 25 firefighters rushed to a mid-terraced house in Marlborough Road, Forest Gate E7. The fire was caused by an e-bike battery and damaged most of the home's ground floor, injuring a man who was treated at the scene.

42

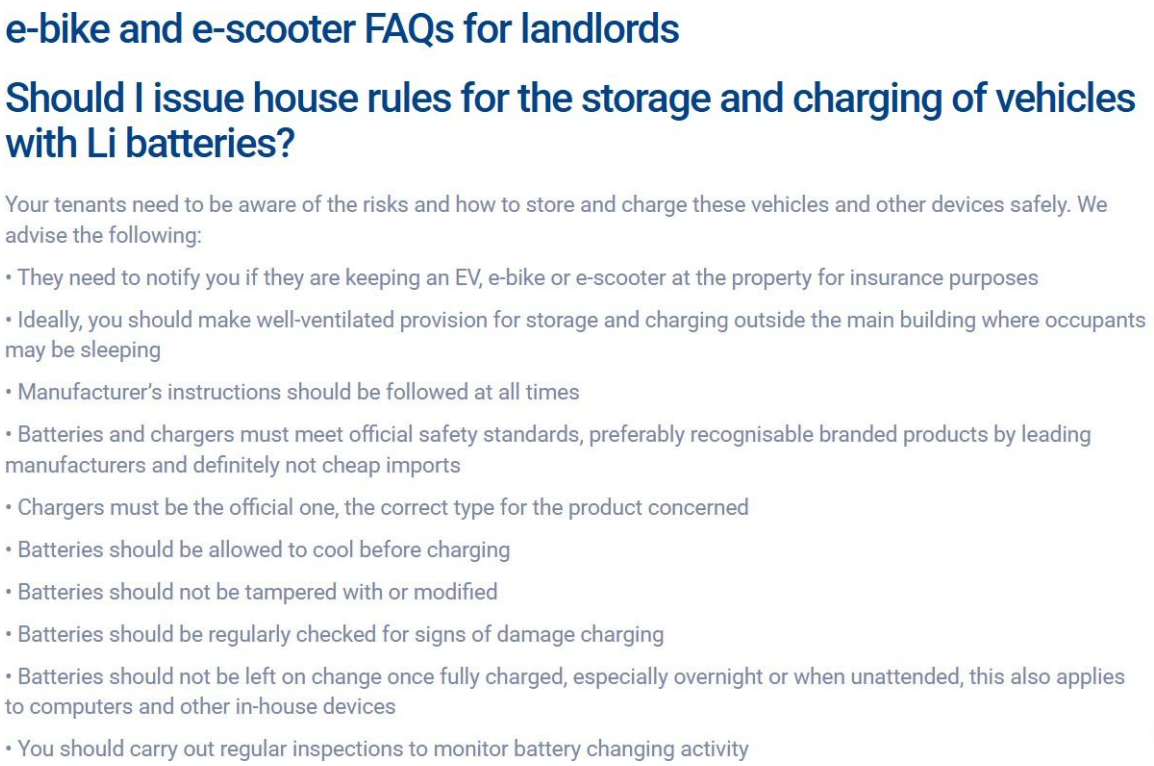
Guidance for Landlords

In July 2024, Total Landlord Insurance, in partnership with the London Fire Brigade, published guidance for landlords on managing the risks of tenants storing and charging e-bikes and e-scooters[43]. The advice emphasises that charging should never take place in communal areas or on escape routes, and only manufacturer-approved batteries and chargers should be used. Landlords are encouraged to clearly communicate safety expectations to tenants, conduct regular electrical checks, and ensure their insurance policies cover the presence of e-bikes or e-scooters. The guidance reinforces key #ChargeSafe messages: store safely, charge responsibly, and never leave batteries charging unattended.

41 https://www.london-fire.gov.uk/incidents/2024/june/house-fire-manor-park/

42 House fire - Forest Gate | London Fire Brigade

43 Landlord and tenant guide to preventing e-bike and e-scooter lithium battery fires



e-bike and e-scooter FAQs for landlords

Should I issue house rules for the storage and charging of vehicles with Li batteries?

Your tenants need to be aware of the risks and how to store and charge these vehicles and other devices safely. We advise the following:

- They need to notify you if they are keeping an EV, e-bike or e-scooter at the property for insurance purposes
- Ideally, you should make well-ventilated provision for storage and charging outside the main building where occupants may be sleeping
- Manufacturer's instructions should be followed at all times
- Batteries and chargers must meet official safety standards, preferably recognisable branded products by leading manufacturers and definitely not cheap imports
- Chargers must be the official one, the correct type for the product concerned
- Batteries should be allowed to cool before charging
- Batteries should not be tampered with or modified
- Batteries should be regularly checked for signs of damage charging
- Batteries should not be left on change once fully charged, especially overnight or when unattended, this also applies to computers and other in-house devices
- You should carry out regular inspections to monitor battery changing activity

7. Key Legislation & Guidance for Regulating E-Bike Fire Safety in the UK

Since the launch of this project, and with national awareness and publicity on e-battery fire safety, a new legislation has now been enacted, gaining Royal Assent in July 2025. Known as the **Product Regulation and Metrology Act (2025)[44].** This provides the UK government with broad powers to address emerging product safety risks, including those posed by lithium-ion batteries in e-bikes and e-scooters. This Act enables authorities to impose mandatory safety standards, such as thermal runaway prevention mechanisms, and strengthens enforcement against unsafe products sold online. It also holds online marketplaces accountable for ensuring the safety of products they facilitate, marking a significant shift in regulatory oversight.

Complementary to this is the prior **General Product Safety Regulations (GPSR) 2005[45]**, which requires all consumer products placed on the UK market to be safe. These regulations apply to e-bike batteries and conversion kits, and they form the legal basis for product recalls, bans, and criminal prosecution in cases of serious non-compliance. The GPSR remains a foundational piece of legislation for consumer protection and is often used in conjunction with newer laws to enforce safety standards.

[44] https://www.legislation.gov.uk/ukpga/2025/20
[45] https://www.legislation.gov.uk/uksi/2005/1803/contents

In response to the growing number of fires linked to e-bike batteries, the Office for Product Safety and Standards (OPSS), specifically addressing lithium-ion battery safety, issued **Statutory Guidance** in 2024[46]. This guidance outlines best practices for manufacturers, importers, and distributors, including the need for robust battery management systems, safe charging protocols, and clear product labelling. While not legislation itself, this guidance carries legal weight under the GPSR and is used to assess compliance.

The OPSS and Local Authority Trading Standards are responsible for enforcing the GPSR and have powers to impose penalties, including criminal sanctions, for non-compliance.

London Borough of Newham Trading Standards welcomes the new Product Regulation and Metrology Act 2025, as this targets the growing problem of fires caused by faulty e-bikes and e-scooters and aims to hold online platforms to the same standards as physical retailers, imposing criminal sanctions for non-compliance. Most riders in the borough would purchase parts from online retailers. However, it does not address the large number of non-compliant modified bikes, which are associated with increased fire risk, collisions at speed, and theft concerns. Future steps would involve partnership working as part of the Police borough plan, focusing on congregation points of courier riders in High Street locations to continue the education programme, as well as enforcement against the existing supply of modified, non-compliant e-bikes and e-scooters. Sponsorship through the main delivery platform companies could fund initiatives such as an electrical safety tester kit and pop-up shops to instantly test e-bike batteries and offer safety advice to e-bike owners.

Fire safety in buildings where e-bikes are stored or charged is governed by the **Regulatory Reform (Fire Safety) Order 2005[47],** which was updated by the **Fire Safety Act 2021[48]**. These laws place responsibility on building owners and managers to assess and mitigate fire risks, including those from e-mobility devices. This is particularly relevant in residential settings, where improper charging or storage of e-bike batteries has led to serious incidents.

E-Bike and e-Scooter Batteries: Managing Fire Risk for Premises

A fire risk assessment and subsequent fire mitigation measures are a legal duty under the Regulatory Reform (Fire Safety) Order 2005. The potential introduction of a new fire hazard would require a review of the fire risk assessment.

Fire risk assessments should be carried out by a competent person or by a professional fire risk assessor with relevant technical expertise. It will involve a holistic evaluation of the premises for fire risk, fire safety systems and control measures, and potential consequences should a fire occur.

[46] https://www.gov.uk/guidance/statutory-guidelines-on-lithium-ion-battery-safety-for-e-bikes
[47] https://www.legislation.gov.uk/uksi/2005/1541/contents
[48] https://www.legislation.gov.uk/ukpga/2021/24/contents

Premises managers can support this work initially by monitoring or surveying premises users to establish the current and likely future numbers and types of e-cycles and/or e-scooters stored, used and/or charged on the premises, and any particular requirements or behaviours that may need to be accommodated (for example, use of non-standard e-cycles by disabled residents)[49].

Additional support comes from non-legislative but widely adopted resources, such as the London Fire Brigade's **GN103 Guidance Note**[50], which provides practical advice on the safe use and storage of e-bikes and e-scooters. Campaigns like Electrical Safety First's Battery Breakdown[51] have also played a role in raising awareness and pushing for stronger regulations, influencing the development of the 2025 Act[52].

Electrical Safety-First Campaign

The Electrical Safety-First campaign 'Battery Breakdown' report in 2023 was in response to the rise in fatalities, injuries and devastating fires from electric bikes (e-bikes) and electric scooters (e-scooters). Fires from lithium-ion batteries used to power these devices had already taken four lives in the UK in the first quarter of 2023, left others hospitalised or seriously injured, and caused extensive property damage. Their national campaign gathered support, leading to the Product Regulation and Metrology Act (2025). They had support across all sectors of industry: "from the emergency services to insurance groups, major fire and rescue services and local councils, as well as e-bike and conversion kit manufacturers, who recognise the benefits new laws will bring to both consumers and those reputable operators in the industry."

Chartered Institute of Environmental Health Campaigns

As well as supporting the Electrical Safety-First Battery Breakdown campaign, the Chartered Institute of Environmental Health (CIEH) has given evidence at the All-Party Parliamentary Group for Cycling & Walking (APPGCW) who "warns of a growing public safety and fire risk caused by the widespread use of unsafe, illegally modified e-bikes, referred to as "fake e-bikes", purchased through online marketplaces and frequently used in the gig economy[53]."

They have recently flagged battery fires as an epidemic (October 2025)[54]. This highlights the improper disposal of lithium-ion batteries, which is leading to an "epidemic of fires" (as stated in the report), in refuse vehicles and waste facilities, according to a report[55] from the Environmental Services Association (ESA).

[49] More government advice at E-cycle and e-scooter batteries: managing fire risk for premises - GOV.UK
[50] https://www.london-fire.gov.uk/media/q1ygpvjg/gn_103-charging-and-storage-for-electric-powered-personal-vehicles.pdf
[51] https://www.electricalsafetyfirst.org.uk/battery-breakdown/
[52] E-bike and e-scooters - guidance for responsible persons | London Fire Brigade
[53] https://appgcw.org/resources/inquiries/unregulated-and-unsafe-the-threat-of-illegal-e-bikes/
[54] Battery fires: an 'epidemic' demanding urgent action
[55] 1 Asset from ESA Publications | Brandfolder

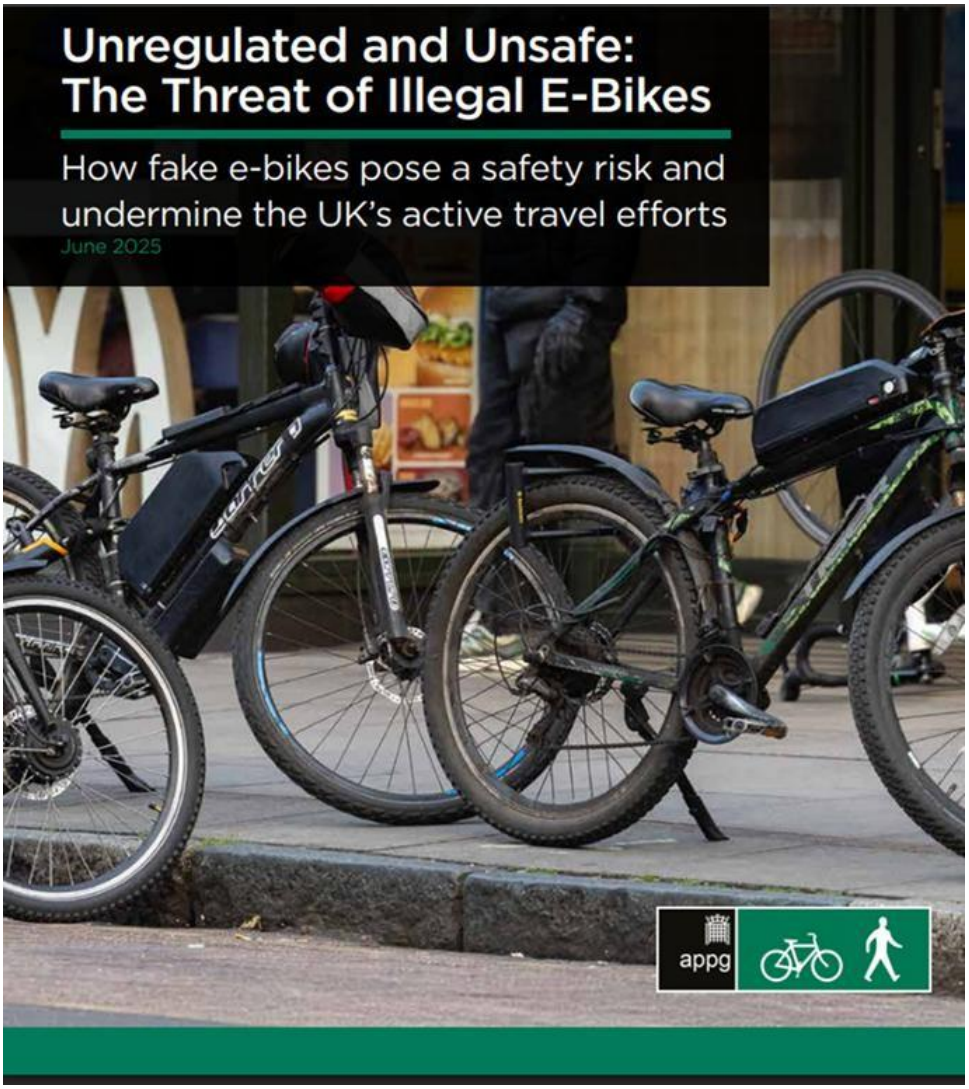
NEWHAM COMMUNITY PROJECT Newham London
Published by Newham Community Project and London Borough of Newham (October 2025)

Around six billion batteries were thrown away across the UK last year, said the ESA, including smaller electrical devices such as electric toothbrushes, razors, mobile phones and electronic vapes.

According to the National Fire Chiefs Council, there were more than 1,200 battery-related fires[56] in refuse vehicles or waste facilities over 12 months between 2023/24: a 71% increase in similar incidents on the preceding 12 months.

There has also been steep growth in the costs associated with battery-related fires, from £150 million per annum in 2021 to over £1 billion in the current day. CIEH are campaigning for labelling on devices to inform users that they must be disposed of via an approved route; more public information campaigns; and urgently considering how a safe and convenient disposal route can be introduced so that people do not use regular household bins.

All-Party Parliamentary Group published Unregulated and Unsafe: The Threat of Illegal E-Bikes[57]



[56] CIEH joins Electrical Safety First's Battery Safety Campaign - CIEH
[57] APPGCW-Report-Unregulated-and-Unsafe-Final-V2.pdf

The All-Party Parliamentary Group for Cycling & Walking (APPGCW) published the report, 'Unregulated and Unsafe: The Threat of Illegal E-Bikes Report' in June 2025. This highlights "mounting concern about e-bike safety, from a sharp rise in battery fires to increasing numbers of illegally modified bikes on our roads." Behind these headlines lies a deeper issue: the lack of oversight, accountability, and protection for some of the most vulnerable individuals using these vehicles - gig economy workers striving to make a living under intense pressure.

This inquiry aimed to understand the current situation from the perspectives of fire services attending dangerous blazes, police officers frustrated by unclear powers, unions representing gig economy riders, and industry bodies committed to responsible manufacturing. What emerged was a regulatory system failing to keep pace with technology, with work, and with the needs of people trying to get by.

This briefing outlines seven key recommendations to improve the safety and regulation of e-bikes in the UK. It addresses urgent concerns around fire risks, unsafe conversion kits, and the lack of oversight in the gig economy. The proposed actions focus on withdrawing hazardous products from sale, closing legal loopholes, empowering enforcement agencies, and ensuring delivery platforms take greater responsibility for rider safety and vehicle compliance. Together, these measures aim to create a safer, more sustainable and accountable e-bike transport delivery industry.

Table 12: Seven Key Recommendations to Improve E-Bike Safety and Regulation

Recommendation	Summary
Withdraw Unsafe Products from Sale	Remove uncertified or overpowered e-bike kits, batteries, and chargers. Utilise legislation to enforce seller verification, ensure product safety, and hold sellers liable for unsafe listings.
Fix Gig Economy Loopholes	End substitution practices and reintroduce 'worker' status for riders to ensure fair pay and safety rights. Mandate pay structures that discourage risky riding.
End the Road-Legal Loophole	Ban high-powered e-bikes marketed for off-road use without legal justification. Fast-track regulation for safe, certified e-scooters.
Lift E-Bike Bans Through Certification	Create a government-backed kitemark for safe, fire-tested e-bikes. Accelerate the adoption of PAS 7250 safety standards for batteries and conversion kits.
Empower Police for Enforcement	Grant police powers to seize unsafe e-bikes. Enhance collision data collection and allocate additional resources to DVSA and Trading Standards.
Enforce Delivery Platform Compliance	Require platforms to run real-time compliance checks and verify bike safety using GPS and geotagged photos.

Fund a National Scrappage Scheme	Launch a scheme to remove dangerous bikes and batteries, funded by delivery companies.

London Councils Report on Unsafe and Illegally Modified E-Bikes

London Councils, representing the 32 London boroughs and the City of London Corporation, have raised serious concerns at the All-Party Parliamentary Group for Cycling and Walking (APPGCW) about the increasing risks posed by illegally modified and unsafe e-bikes, particularly those used in the gig economy. Reported in The Evening Standard, they reiterated that London Transport Chiefs, "dodgy e-bikes should come with cigarette-style health warnings".[58]

These vehicles often present fire hazards and road safety threats. Retailers are not currently required to inform buyers that specific models are illegal for public road use, and there is a lack of clear communication distinguishing legal e-bikes from illegal ones. Dockless e-bikes left on pavements obstruct pedestrian access, especially for vulnerable groups.

Key Issues

- Illegally modified e-bikes pose significant fire and road safety risks
- Lack of consumer awareness and retailer responsibility regarding legal compliance
- Dockless e-bikes obstruct public spaces and pedestrian pathways
- Fragmented regulatory framework across boroughs hinders enforcement
- Gig economy riders are often incentivised to use unsafe modifications
- Delivery platforms classify riders as self-employed, avoiding safety obligations
- Enforcement is costly and often outside the council's remit
- In 2023, London recorded 143 e-bike fires, resulting in 3 deaths and 60 injuries.

Proposed Solutions

- Mandatory cigarette-style warning labels on e-bikes that are illegal to ride in public spaces/highways
- Stricter regulations require retailers to inform buyers of the legal status and intended use
- Enhanced police powers to seize non-compliant e-bikes and address anti-social behaviour
- Licensing and regulation of the e-bike hire industry by TfL and local authorities
- Unified London-wide regulatory approach
- Government-backed 'Help to Buy' scheme for legal e-bikes
- Inclusion of self-employed riders in the Cycle to Work scheme
- Clearer enforcement of motor vehicle classification for non-compliant e-bikes

[58] Dodgy e-bikes should come with cigarette-style health warnings, say London transport chiefs | The Standard

Good practice example: Greater Manchester Food Delivery Charter to Improve Road Safety

In July 2025, the three leading delivery platforms of Deliveroo, Eat, and Uber Eats signed the Greater Manchester Food Delivery Charter,[59] alongside the Greater Manchester Combined Authority (GMCA), Transport for Greater Manchester, Greater Manchester Police, and Greater Manchester Fire and Rescue Service.

This charter is the first dedicated set of safety standards for bike-based food couriers, including those using e-bikes and Electrically Assisted Pedal Cycles (EAPCs). It aims to reduce road incidents and promote legal, responsible riding across the region. With an estimated 460,000 people working in the UK gig economy, and 18% involved in food delivery (approximately 82,600 individuals), the charter recognises the vital role couriers play in supporting the hospitality sector and enabling fast, reliable delivery of meals, groceries, and retail items.

[59] Greater Manchester Food Delivery Charter

The charter is built on nine core Health and Safety principles (summarised in 5 key areas in the table below) specific to e-bike deliveries. It is aligned with Transport for London's Meal and Grocery Delivery Company Motorcycle Road Safety Charter (2023). GMCA will continue to engage with the central government to advocate for national safety standards in food delivery.

Table13: Charter Focus Areas from Greater Manchester Food Delivery Charter

Charter Commitment	Charter Key Points
Bike Safety and Compliance	Company-owned/leased bikes must be legally compliant and roadworthy. Couriers using personal bikes (EAPCs/e-bikes) receive support and guidance. Non-compliance may lead to enforcement by GMP. Insurance is recommended, though not mandatory. Cycle training is offered.
Delivery Practices	Delivery schedules must be realistic and not encourage unsafe riding. Couriers are encouraged to report injury-related collisions to police.
Fire Safety	Modified battery e-bikes/EAPCs fire safety advice given. Not to be charged or stored in Cycle Hub facilities due to fire risk.
Substitute Courier Compliance	Substitute couriers must comply with Home Office rules. Platforms conduct periodic checks to ensure compliance.
Vision Zero Support	Supports Greater Manchester's Vision Zero goal to eliminate serious road injuries by 2040. Data reviewed during Days of Action to reduce collisions and identify hotspots.

This initiative responds to the growing number of couriers and residents in Manchester city centre, aiming to balance rising demand with public safety and sustainability. It is encouraging that the Delivery Platforms have signed up to show their commitment to safe streets for the e-bike couriers as well as pedestrians, with regular collaboration to tackle any issues that emerge.

The BBC reported on one of the first combined Days of Action[60] in September 2025, headlining "Illegal e-bikes seized in gig economy crackdown." One person was arrested for a visa violation, and 19 e-bikes were taken off the streets during the action, run in conjunction with the Home Office. The operation targeted food delivery riders suspected of riding dangerously on illegally modified e-bikes in the city centre, according to Greater Manchester Police. It followed the government's announcement of stricter laws aimed at cracking down on illegal working and the abuse of the gig economy. By working with their partners, also including the

[60] Manchester: Illegal e-bikes seized in gig economy crackdown - BBC News

Published by Newham Community Project and London Borough of Newham (October 2025)

Greater Manchester Combined Authority, they were "sending a clear message; if you're operating illegally or dangerously, you will be stopped". The operation took place on Sunday, following reports from members of the public concerned for their safety while out in congested and heavily pedestrianised areas, the force said. A total of 45 e-bike riders were stopped, with 19 non-compliant e-bikes seized, and officers also issued six traffic offence reports and eight summonses.

Market Context and Trends in the UK Food Delivery Market (2024/25)

Table 14: UK Food Delivery Market Overview (2024/25)

Category	Key Points
Market Size & Growth	Projected to reach £14.3 billion in 2025, with 15% compound growth reaching £63.75 billion by 2029.
Growth Drivers	Consumer demand for convenience; Expansion of delivery-only kitchens; Advancements in mobile app technology; Preference for healthier, high-quality meals; Stronger household spending.
Platform Market Share	Just Eat: 45%; Deliveroo: 27%; Uber Eats: 27%.
Technology & Innovation Trends	Use of AI to optimise routes, predict demand, and personalise recommendations; Drone delivery trials underway; E-bike usage increasing due to insurance exemptions for compliant EAPCs; Deliveroo provides insurance while riders are connected to the app and for up to an hour after logging out; Safety videos lack awareness messaging around e-bike battery fire risks.

Source[61]

[61] Food Delivery Statistics https://www.zego.com/food-delivery-statistics/

8. Conclusion

The E-Bike Battery Fire Safety Project has effectively raised awareness of fire safety related to e-bikes and e-scooters in the London Borough of Newham. Delivery riders living or working in the borough, one of the key stakeholder groups, actively engaged with the project, significantly strengthening its impact and outcomes. Their involvement, supported by the London Borough of Newham and the London Fire Brigade's #ChargeSafe campaign, ensured that the initiative had the necessary resources, expertise, and credibility for successful implementation. Collaboration with local universities further extended its reach, allowing engagement beyond the borough and promoting fire safety awareness among students and international communities.

This report consolidates current UK research, legislation, and guidance on this rapidly evolving issue, recognising that the popularity of food delivery and the use of e-bikes will continue to grow in the coming years. It aims to serve as a practical resource for local authorities, housing officers, universities, and community organisations facing the challenges of lithium-ion battery safety and regulation.

The recommendations below expand on the project's findings and the All-Party Parliamentary Group for Cycling and Walking (APPGCW) report Unregulated and Unsafe: The Threat of Illegal E-Bikes (2025), outlining clear, evidence-based next steps for coordinated local and national action.

Recommendations and Next Steps

- **Adopt national legislation** to incorporate the key recommendations summarised in Table 12 from the APPGCW report *Unregulated and Unsafe: The Threat of Illegal E-Bikes*, addressing illegal modifications, unsafe batteries, and gaps in enforcement.
- **Develop a Greater Manchester–style Charter** for food-delivery riders, led by the **Mayor of London** and supported by major delivery platforms, requiring greater responsibility for rider safety and vehicle compliance while incentivising the use of pre-approved, safe e-bike models.
- **Strengthen the legislative framework** by introducing tighter quality controls, stronger consumer protections, and clearer enforcement powers. London boroughs should lead this call, supported by other regions such as Greater Manchester.
- **Introduce a government-backed "Help to Buy" scheme** for legal e-bikes and expand the Cycle to Work scheme to include self-employed riders, making safe, compliant equipment more accessible.
- **Require delivery platforms** to promote LFB #ChargeSafe messaging alongside company e-bike instructional materials and use geotagging or in-app verification to exclude riders using non-compliant or modified bikes, ensuring fairness for compliant riders.

- **Scale the Newham Community Project model nationally:** apply its **place-based, ambassador-led approach** to train local community ambassadors who can deliver safety awareness and rider engagement within their own neighbourhoods. This should be combined with the use of **LFB #ChargeSafe materials** to share consistent safety messages with riders, residents, and international students (and their dependants).
- **Commission a detailed adaptation framework:** the **Mayor of London** and the **Greater London Authority (GLA)** should fund Newham Community Project to produce a structured implementation guide demonstrating how this model can be replicated across other London boroughs and scaled nationwide, ensuring consistency, community participation, and measurable impact.
- **Adopt the toolkit locally:** local authorities and partner organisations should use this best-practice approach to train community ambassadors to raise safety awareness among couriers, international students and dependants, and other target groups.
- **Improve official statistics:** ensure national road-collision data distinguishes between standard bicycles and e-bikes, clearly recording whether e-bikes have been illegally modified.
- **Continue LFB data-sharing:** the **London Fire Brigade** should maintain regular data exchange with local authorities on e-bike and e-scooter fire trends through the #ChargeSafe campaign.
- **Embed within Fire Risk Assessments (FRAs):** FRAs should explicitly consider the risks from e-bike storage, reference APPGCW research findings, and make recommendations aligned with LFB Guidance Note GN103.
- **Run coordinated social-media campaigns** highlighting delivery companies' social responsibility and supporting relevant policy reforms.
- **Encourage delivery-company sponsorship** of "Dr Bike" e-bike safety sessions, in partnership with local police and Trading Standards. Sponsorship could help fund Trading Standards electrical-testing kits and pop-up battery-testing advice points.
- **Support safe battery-exchange schemes:** encourage delivery platforms to provide discounts or assistance for riders to replace unsafe or damaged batteries with certified alternatives.
- **Strengthen enforcement** with police and Trading Standards to identify and remove from the public highway any modified or "fake" e-bikes that fail to meet EAPC guidelines or lack required insurance, registration, or safety compliance.
- **Coordinate action on illegal e-scooters:** police and local authorities should continue awareness and enforcement operations to remove privately owned e-scooters used unlawfully on public roads, except where authorised rental trials are in place.

The E-Bike Battery Fire Safety Project demonstrates that community-led education, supported by statutory collaboration and informed enforcement, can significantly reduce fire risk. The practical, evidence-based model developed in Newham provides a clear framework for broader adoption. Implementing these recommendations will not only protect residents and riders but also strengthen national resilience to the growing risks associated with lithium-ion battery use.

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