Written evidence submitted by the London Fire Brigade (PRMB08)

1. London Fire Brigade (LFB) is London's fire and rescue service - one of the largest firefighting and rescue organisations in the world and we are here to make London a safer city. Decisions are made either by the London Fire Commissioner, the Mayor of London or the Deputy Mayor for Planning, Regeneration and the Fire Service. A Fire Committee of the London Assembly holds the Commissioner, Mayor and Deputy Mayor to account.

Summary

2. LFB have long called for regulation to increase product safety and safeguards on online marketplaces to protect people from buying dangerous products that pose a fire risk, including e-bikes and e-scooters. The Brigade is a strong advocate of the Product Regulation and Metrology (PRAM) Bill and believes it provides an opportunity for the Government to better regulate such products and protect the public. LFB would like to see the Bill strengthened with clearer provisions set out on high-risk products and duties on online marketplaces in Secondary Legislation.

E-bike and e-scooter data and incidents

3. As set out in the King's Speech 2024, the rise in e-bikes and e-scooters incidents is a key motivation for the PRAM Bill. In 2022, e-bikes became the fastest growing fire risk in London and have remained a priority issue. Since January 2023 to the present day, there has been one e-bike or e-scooter fire every two days. Sadly, in 2023 three people lost their lives, and since 2023 around 120 people have been injured because of these fires.

Year	Total	E-bike	E-scooter	Injuries	Fatalities
2025 to 25 March	44	35	9	Data not available at present	
2024	171	142	29	60	0
2023	179	143	36	60	3
2022	116	87	29	56	0
2021	78	48	30	33	0
2020	31	13	18	Reliable data not available	
2019	12	10	2		
2018	5	3	2		

4. Although the majority of e-bike and e-scooter incidents have occurred in London, this is a national issue. There have been at least 15 deaths as a result of e-bike and e-scooter fires since 2022 across the country, including tragedies occurring in Liverpool, Bristol, and Coventry. It is also an international issue, with a large number of incidents in New York, Australia and South Korea.

5. Sofia Duarte was the first Londoner to die because of an e-bike fire on New Year's Day 2023. She was asleep in her boyfriend's flat when his housemates heard an explosion, they raised the alarm and had to climb out a window to escape. Within minutes the fire

was out of control and Sofia was unable to escape. The fire started in a lithium battery power pack for an e-bike that had been placed at the bottom of the stairs, by the front door, to charge. Sofia's family have campaigned tirelessly to bring in new regulations to protect people from harmful products being sold online. In 2023, Bobby Lee and Mizanur Rahman also sadly died due to e-bike fires. In Mr Lee's and Mr Rahman's Prevention of Future of Deaths Reports (PFDR), both coroners called for action to be taken on e-bikes to prevent such tragedies occurring again in the future.

6. A number of recent incidents in London were 'near misses', and thanks to good luck and the heroic efforts of LFB firefighters we thankfully saw no fatalities in 2024. An example of one of these incidents includes Catford in December 2024, where a lithium battery exploded while it was being charged and destroyed a family home. Video footage from a doorbell camera showed how quickly the house became engulfed by flame. One occupant had to escape through the front door, and two others climbed through a skylight on to the roof. One fell from the roof and suffered serious injuries, while the other slipped but was caught by a firefighter. A further example is Whitechapel in February last year, where dramatic footage captured by a neighbour shows a firefighter rescuing a man dangling precariously from a window ledge after trying to escape an e-bike fire in a flat. Two men could not escape the third floor flat because their exit was blocked by fire and attempted to escape out of the window. They were rescued by firefighters from the window using ladders.

7. These examples of recent incidents are a snapshot into the why the Brigade has been campaigning for regulatory change and continues to promote safety advice under the #ChargeSafe campaign, to warn and inform the public about the risks.

Causes of lithium battery fires

8. LFB is not opposed to good quality, safe e-bikes and e-scooters; they can provide cheaper, sustainable transport for Londoners. However, poorer quality, non-compliant or damaged lithium batteries in these products, or the use of miss-matched batteries and chargers, can present unique fire safety challenges. If the batteries begin to fail, within seconds they can start incredibly ferocious fires that can spread quickly out of control, resulting in large volumes of hot, toxic, flammable gas, and explosions: this is commonly known as 'thermal runaway'.

9. This is a risk to the public and property within the vicinity and to attending firefighters. When batteries are charged in communal areas or escape routes, a fire breaking out can quickly block people's ability to escape. The tragic consequences of this are evidenced above.

10. From our investigations, LFB know there are various causes of lithium battery fires such as unsafe or incompatible chargers and conversion kits, mechanical damage, and part defects.

11. This year the Government published new independent research into the safety of e-bike and e-scooter lithium-ion batteries, chargers and e-bike conversion kits. The Warwick Manufacturing Group (WMG) Research evidences LFB's concerns around the safety of e-bike conversion kits and the mixing of batteries and chargers.

12. The kits enable people to modify regular bikes to e-bikes, these can be fitted personally or by a provider. People often source a battery and/or charger separately, and often from online marketplaces, which may not meet the correct safety standards. People will fit these at home following 'DIY' videos online, and LFB has seen these poorly attached, sometimes with Sellotape, onto push bikes.

13. Poorer quality conversion kits are more susceptible to catastrophic failure if fitted incorrectly and if incorrect chargers are used. Their battery management systems do not prevent the batteries from exceeding current and temperature limits. Analysis of incidents showed that over three quarters of incidents involved a conversion kit compared to a pre-made e-bike.

14. Mixing batteries and chargers that are not supplied together increases the likelihood of safety incidents, especially if batteries are overcharged, overheated or damaged. WMG found that portion of e-bike owners who had experienced a safety incident was much higher in those that had purchased a separate battery or charger.

15. There is currently no dedicated standard for conversion kits, as the existing standards cover pre-made e-bikes or e-scooters. The Brigade agrees with the WMG research that because of the risks that conversion kits pose, a re-examination of the relevant risks and standards is vital.

Proposals for fast moving legislation

16. Alongside the introduction of a safety standard for conversion kits, effective regulation of e-bikes, e-scooters and conversion kits under the PRAM legislation will help to ensure safer products are available for consumers to buy and more dangerous products are removed from the market.

17. At Report Stage in the House of Lords, LFB welcomed Government amendments to the Bill so that the Secretary of State for Business and Trade will publish a statement setting out how they expect to identify and assess risks presented by regulated products. At this

time the Government also published a Code of Conduct on product safety to set out how it intends to use the proposed powers in the Bill.

18. The Brigade would now like Secondary Legislation introduced quickly that will set out how it will ensure regulation can effectively and quickly identify high-risk products and establish additional safety requirements for them.

19. The Brigade does not believe that this will create a burden for legitimate business, but rather support regulators if a dangerous trend is identified.

20. Currently action is taken by the Office for Product Safety Standards (OPSS) based on evidence from Fire and Rescue Authorities of unsafe products linked to incidents. An example is recent enforcement action on UPP batteries, which have been linked to a number of fires in London. Despite some Withdrawal Notices attached to this battery, LFB has continued to see these batteries being used.

21. Considerations should be made on the threshold to enforce regulation, on how quickly it can act to remove unsafe products and take action on those that are non-compliant. This could be considered in the same way the 'R-Rate' was during the Covid-19 pandemic when the threshold to take action was met as there was a sufficient threat to the public.

22. This process would need to be fast acting, as e-bikes in London demonstrate, from just 13 fires in 2020 to 143 in 2023, new technologies can very quickly present a real fire safety risk that requires immediate action.

23. Other recent examples of products that could be captured by this part of the regulation include heated clothing. iHEAT, an electrically heated jacket, was involved in an incident in January 2025. The jacket was purchased from Amazon in December 2023; it was used daily and the battery failed whilst on charge. LFBs Fire Investigation Team sent a Product Fire Notification to the local authority's trading standards department after the incident. It was then sent it for testing at a UK accredited test lab, where the jacket failed to meet the legal requirements for plugs and electrical items. Amazon then removed the listings for this product from sale.

24. Hoverboards are another example of a quickly emerging risk, in 2015 the Brigade had to issue warnings after a spate of hoverboard fires that were on charge at the time of the incidents, after a rise in popularity of self-balancing hoverboards. LFBs fire investigation experts sent the devices involved in both fires for further testing and concerns were raised about the plugs that were supplied with some hoverboards not being a standard British

plug. Investigations into the incidents found the plugs did not have fuses and could be at risk of overheating, exploding and catching fire.

25. Current trends which could potentially need fast action include 'eco plugs', so called energy saving devices which claim to help consumers save on energy bills by 'stabilising' voltage and 'balancing' electric current to 'optimise' the performance of household appliances. These have been investigated by Which?, who have found they failed basic electrical safety standards, meaning they are illegal and potentially dangerous. These are available to buy on AliExpress, Amazon, eBay, Shein, Temu and TikTok Shop, despite similar products being recalled by the OPSS in 2022 for 'serious risk of fire and electric shock'.

Duties needed on online marketplaces

26. LFB has recently worked with online marketplace Amazon to include safety advice for consumers on how to use, store and charge the products on their website and in post-purchase alerts. This has been a welcome step forward in supporting consumers to make safer purchases. LFB would like to see more online marketplaces introducing similar processes to warn and inform their customers as part of this new regulation.

27. The Brigade welcomes the recent amendments by the Government to Clause 11 to update the duties on online marketplaces, including what marketplaces will be in scope. This is an important part of future proofing the Bill, as online marketplaces evolve over time, and will give clear responsibilities without over burdening businesses. As Which? sets out, current product safety laws were developed before the growth of online marketplaces or the rise in new platform like Temu or TikTok Shop, with many acting as distributors, importers or facilitating third-party sales. This leaves many online marketplaces with insufficient product safety processes.

28. In addition to this the Brigade is also concerned about second-hand products being sold or given away on online marketplaces such as eBay, Facebook Marketplace or Gumtree. From our investigations, LFB knows that unsafe products found on second-hand online marketplaces, including e-bikes, chargers, and batteries, may be more of a fire risk because they are older, modified or have become damaged.

29. The Brigade would like to see this area of legislation developed further and believes the Bill must set out what explicit duties will be placed on online marketplaces to ensure that they take the necessary steps to ensure the safety of products listed on their platforms. This includes establishing robust internal safety processes for the identification and ongoing monitoring to prevent dangerous products from being listed from any supplier, including third-party sellers, and ensure that they are swiftly removed if they are. This

should include measures to keep unsafe products off sale and taking down all identical lines.

30. Online marketplaces should also cooperate with relevant authorities, including enforcement bodies and fire and rescue services, on product recalls and other safety issues. To support this, they should also obtain and verify the identity and relevant activities of every seller on their platform, (where appropriate), as well as confirming the safety of the products sold to ensure accountability.

31. To help consumers feel confident that they have purchased a safe product, online marketplaces should provide clear information to consumers and notify customers who have been sold unsafe or illegal products in line with best practice such as PAS 7100 processes.

Liabilities and redress for consumers

32. LFB has campaigned to improve the PRAM Bill in coalition with the British Toy and Hobby Association, the Chartered Trading Standards Institute, Electrical Safety First and Which?. Alongside these organisations the Brigade believes the Bill must ensure that online marketplaces have appropriate liabilities for unsafe products sold through their platforms so that there is always a responsible person liable in the supply chain. This will ensure that consumers can always seek redress if they suffer harm from dangerous products, including through pursuing civil claims.

33. Currently, legal gaps allow online marketplaces to skirt responsibility, so consumers who purchase unsafe products face significant challenges in obtaining redress, especially if the seller or manufacturer is untraceable or overseas. While consumers are left out of pocket, online marketplaces profit from these sales while avoiding responsibility.

Continued promotion of safety advice

34. People from all backgrounds use e-bikes, however, people on low incomes are more likely to report being regular users of e-bikes and e-scooters.

35. LFB knows that certain people may be at higher risk based on their demographics and where they live. From our investigations we know that the most affected group is disadvantaged Londoners. This group can include people who work for food delivery companies using e-bikes for work, or people living in densely populated areas, HMOs or high-rise properties who are likely to charge them in hallways or in communal areas. Our data also shows that inner London Boroughs, including Tower Hamlets, Southwark and Newham, have higher numbers of incidents.

36. The Brigade's #ChargeSafe campaign addresses the possible inequalities for those most at risk of e-bike and e-scooter fires by targeting outreach and events towards those who use them as part of their work, in densely populated areas, and by translating important safety advice.

37. LFB welcomes the Government's promotion of safety messaging with its Buy Safe Be Safe campaign to warn and inform the public of the potential dangers that e-bikes and e-scooters pose.

38. Finally, there is work to be done by Government to address the poor quality and potentially dangerous products already in circulation. Lithium batteries cannot be disposed of in normal household waste or recycling collections. The Brigade asks people to contact their local authority for advice on how to dispose of products at the end of their life cycle. However, understanding and capacity varies greatly between local authorities. LFB would encourage a joined-up approach from Government to address this.

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