Written evidence submitted by The National Fire Chiefs Council (EVS0006)

NFCC welcomes the opportunity to respond to the Committee's inquiry seeking views on progress with the Electric Vehicle Infrastructure Strategy.

NFCC is the professional voice of UK fire and rescue services (FRS) and is comprised of a council of UK Chief Fire Officers. This response was drafted by NFCC's Strategy and Policy Team in consultation with NFCC subject-matter experts.

NFCC supports the UK ambitions to meet net-zero greenhouse gas emissions by 2050 and the need to ensure that adequate infrastructure is in place to support the growing uptake of Electric Vehicles (EVs). NFCC responded in April 2024 to the Department of Transport consultation regarding street works access for chargepoint operators.

NFCC therefore welcomes the inquiry to review the progress of the Electric Vehicle infrastructure strategy and wants to ensure that the Committee is cognisant of the fire safety risks that NFCC believe the Members of the Committee may wish to take into consideration during the Committee's inquiry.

When considering the progress of the Electrical Vehicle Infrastructure Strategy the Committee may wish to consider:

1. **Location of chargepoints:** While NFCC recognise the need for the availability for more charging points to address geographical disparities, local authorities and the public would do well to be aware that chargepoints should not be positioned so as to block access to a fire hydrant or so close as to render a hydrant unusable in the event of a fire. In addition, the provision of EV chargepoints must not hinder access or egress from buildings or have an adverse effect on access and facilities provided for FRSs such as (not exhaustive) rising main inlets.
   NFCC has previously raised concerns about the installation of EV chargepoints in places such as covered and enclosed car parks, without further research to support their safe use. Guidance published by ARUP[1] contains further detail on some of the potential risks associated with chargepoints that we would encourage the Committee to take into consideration.
2. **Fire water drainage:** An increase in charging points will mean more battery powered EVs, predominantly powered by lithium-ion batteries. Increasing awareness that EVs are powered by lithium-ion batteries which can cause severe and potentially explosive fires when they become faulty, damaged (mechanically or electrically) or are exposed to extreme heat is paramount. Thermal runaway can lead to the creation of toxic vapours and gases such as (not exhaustive) carbon monoxide, hydrogen fluoride and hydrogen chloride. EV fires present new challenges for FRSs as suppressing an EV fire requires large amounts of water and the fire can reignite hours or sometimes days later. Fire water that is contaminated with chemicals from battery fires is dangerous to the environment; polluting a water source is an offence under the Water Resources Act 1991 and polluting a sewer is an offence under the Water Industry Act 1991. As such, appropriate fire water drainage systems must also be in place for contaminated fire water in the event of an EV fire.

[1] ARUP – T0194 – Covered car parks – fire safety guidance for electric vehicles – July 2023

3. **Quality of materials and installation:** This will include the quality of the materials used in the installation, as well as the installation of the chargepoint itself, and any related junction boxes. FRSs have responded to several incidents where a junction box has exploded and caught fire[2],[3]. A regular inspection/quality assurance mechanism for EV chargepoint installations can assist public safety.

4. **Safety information for the public:** More clear public information regarding EV chargepoint fault reporting is needed. EV chargepoints can also provide information about the warning signs of an EV fire and what to do if an EV fire is suspected or happening. EV Fire Safe campaign from Australia is a good example of EV fire safety information with downloadable resources that include EV chargepoint posters, placarding and signage, pre-incident plans for EV charging sites, a safer home charging checklist and weekly and annual maintenance plans.

5. **Safety incident planning:** Plans need to be in place to ensure that EV chargepoints can be isolated and safely disconnected in the event of an incident, such as a collision or an adverse weather event which results in harsh environmental conditions which could compromise chargepoint safety (e.g. hazards posed by chargepoints being submerged by flood water).

6. **Review of Approved Documents**: The Grenfell Tower Inquiry Phase Two report has recommended that "Approved Document B (ADB) needs to be reviewed as a matter of urgency". The Independent Review of Building Regulations and Fire Safety conducted by Dame Judith Hackitt following the Grenfell Tower Fire, concluded that the regulatory system was not fit for purpose, even for traditional uses. Due to the different nature of EVs compared to traditional internal combustion engine vehicles (ICEVs), the firefighting approach to an EV fire can be different, particularly if the battery becomes involved in the fire. Modern cars' interiors also tend to contain substantial quantities of combustible material such as large quantities of cabling and interior and exterior elements made from plastics, compared to thresholds within ADB, many of which are based on post-war studies of the 1950s and 1960s.

   To ensure the industry is not creating legacy building safety and remediation issues, additional safeguards are needed to ensure there is not an influx of potentially unsafe chargepoint installations while necessary research and regulatory reforms are yet to be completed. Whilst covered car parks are exempt from the requirements of the new legislation, this does not necessarily prevent anyone from installing chargepoints in locations where they may be unsuitable.

   NFCC has called for more research into fires in car parks, the design of car parks and establishing improved requirements for suppression in car parks within ADB. A review of car parks classified as low risk within the guidance is required, particularly in basements. Current guidance does not take into consideration the fire loading of modern vehicles, electric vehicles, car stackers, LPG vehicles and the risk of running

[2] BBC: Regent Street – Shoppers flee electrical fire beneath pavement
[3] 'Exploding' pavement shocks shoppers with 'black debris and smoke' coming from manhole

fuel fires from plastic fuel tanks. Ensuring the guidance provides appropriate safety for both members of the public and firefighters is critical.

We welcome the opportunity to respond to this inquiry and would welcome further engagement from the Committee and Government on the progress of the Electrical Vehicle Infrastructure Strategy.

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