



HM Government



**INDUSTRIAL
STRATEGY**

Electric Vehicle Charging in Residential and Non-Residential Buildings

July 2019

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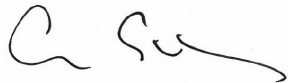
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Ministerial Foreword

Last year the government published the Road to Zero strategy, which set out a comprehensive package of support to reach our mission for all new cars and vans to be effectively zero emission by 2040.

Since then, the government has worked to implement this strategy to improve the air we breathe, help ensure we meet our future carbon budgets and build a new market for zero emission vehicle technologies in the UK. Progress has been made, but further work is needed to drive electric vehicle uptake, deliver our Industrial Strategy mission and rise to the new challenge of net zero greenhouse gas emissions by 2050.

This consultation is central to delivering these aims. This consultation proposes regulatory changes which will result in thousands more chargepoints across the UK, in homes and at key destinations, like new office blocks and supermarkets. The policies outlined will ensure new buildings are ready for the future. They represent the most ambitious regulatory package in the world for electric vehicle infrastructure and will help ensure the UK has one of the best electric vehicle infrastructure networks in the world.



RT HON CHRIS GRAYLING MP



RT HON GREG CLARK MP

Executive summary

Introduction

- 1 Last year the government published the Road to Zero strategy, which set out a comprehensive package of support to reach our mission for all new cars and vans to be effectively zero emission by 2040. This transition is vital if we are to clean up the air we breathe and shift to an economy with net zero greenhouse gas emissions by 2050.
- 2 Charging cars at home overnight using a dedicated chargepoint is generally cheaper and more convenient for consumers and ensures that EVs can play a full part in our future smart and flexible energy system. For these reasons, today the majority (around 80%) of all electric car charging happens at home and we expect the home to be central to the future charging ecosystem.
- 3 That is why in the Road to Zero strategy, the government set out its intention for all new homes to be electric vehicle (EV) ready and committed to consult on requirements for every new home to have a chargepoint, where appropriate.
- 4 This consultation sets out how we propose to deliver this commitment. It also outlines how we propose transposing the requirements from the EU Energy Performance of Buildings Directive (EPBD) to also set minimum requirements for electric vehicle charging infrastructure in new and existing non-residential buildings.
- 5 Alongside this consultation document, we are publishing:
 - a draft Approved Document for the proposed changes to the Building Regulations (see Annex C).
 - an impact assessment covering the proposed requirements for new residential buildings (Annex D).
 - an impact assessment covering the proposed requirements for new and existing non-residential buildings (Annex E).
- 6 Through the consultation, we are seeking views on our policy position and whether the technical specifications are clear and meet the intended policy aims. We would also like to invite further information on costs and benefits associated with the policy. This consultation applies to England only. The Building Regulations and wider EPBD transposition are a devolved matter.

Summary of proposed policy positions

Policy position: Residential Buildings

The government proposes every new residential building with an associated car parking space to have a chargepoint. We propose this requirement applies to buildings undergoing a material change of use to create a dwelling.

The government proposes requiring every residential building undergoing major renovation with more than 10 car parking spaces to have cable routes for electric vehicle chargepoints in every car parking space.

Policy position: New Non-Residential Buildings

The government proposes every new non-residential building and every non-residential building undergoing a major renovation with more than 10 car parking spaces to have one chargepoint and cable routes for an electric vehicle chargepoint for one in five spaces.

Policy position: Existing Non-Residential Buildings

The government proposes a requirement of at least one chargepoint in existing non-residential buildings with more than 20 car parking spaces, applicable from 2025.

Building Regulations changes

- 7 This consultation proposes the creation of a new part to the English Building Regulations requiring electric vehicle charging infrastructure in new buildings and buildings undergoing material change of use and major renovation.

Residential buildings

- 8 For residential buildings, the Road to Zero strategy set out that the government wants every new home to have a chargepoint, where appropriate. This includes newly built homes and homes created through a material change of use of an existing building. We propose a requirement of a chargepoint in every new home with an associated parking space. We propose specifying that the chargepoints must have a minimum power rating output of 7kW, be fitted with a universal socket that can charge all types of electric vehicle currently on the market and meet relevant safety and accessibility requirements.
- 9 Installing chargepoints in residential buildings will add an additional cost of approximately £976 per car parking space for an average home. However, the government's uptake ambitions mean that we expect millions more electric vehicles on UK roads in the coming years. We need chargepoint infrastructure to support these vehicles, particularly in homes where today most electric vehicle charging takes place. As the cost of installing chargepoints up-front is significantly lower than retrofitting once a home has been built (c.£976 for upfront installation in an average home compared to c.£2,040 for a retrofitted chargepoint), there are considerable cost savings for society if the infrastructure is installed upfront (see Impact Assessment in Annex D).
- 10 However, we recognise that the cost of installing chargepoints can be high in areas

where significant electrical capacity reinforcements are needed. To mitigate any potential negative impact on housing supply as a result of these regulations, this consultation seeks views on an appropriate exemption from the chargepoint installation requirement based on the grid connection cost. The consultation proposes the threshold for the exemption is set at £3600, which is three times the high scenario cost of the average electrical capacity connection required for one chargepoint.

- 11 The EPBD also sets out requirements for residential buildings undergoing major renovation with more than 10 parking spaces. As a starting point, the government proposes to transpose the EPBD requirements for major renovations - i.e. the installation of cable routes in all parking spaces in scope as we think this is a proportionate requirement. However, the consultation seeks views on the possibility of going further than the EU requirements.

Non-Residential Buildings

- 1.1 For new non-residential buildings, we propose introducing a requirement for new non-residential buildings and non-residential buildings undergoing major renovation with more than 10 parking spaces to have at least one chargepoint and cabling routes for one in five spaces¹. These requirements will mean that it is easier to install chargepoints in the spaces with cabling routes in the future and drivers can have confidence the building will have at least one chargepoint. Installing a chargepoint upfront in an average non-residential carpark is around £1,100² less expensive than retrofitting a chargepoint at a later point. Furthermore, the installation of cable routes at the time of construction in non-residential car parks can make the installation of chargepoints at a later date around £1,000 less expensive than a retrofitted chargepoint.
- 12 The government does not think it is necessary to go further than this at this stage. The demand for chargepoints and the type of chargepoints needed at non-residential buildings is mixed, and will depend on how the building is used and the wider provision of chargepoints in the local area. The government does not therefore consider it appropriate to set a more prescriptive standard for all non-residential buildings through Building Regulations. We are, through this consultation, seeking views on this position.

Draft Approved Document (Annex C)

- 13 We are publishing a draft of the technical guidance (the 'Approved Document') that will accompany new regulations alongside the consultation. Through the consultation the government is seeking views on whether the draft Approved Document meets the intended policy aims and whether it is clear for developers and enforcement bodies.

Requirements for existing buildings

- 14 The EPBD sets out that all Member States must set a minimum requirement for electric vehicle chargepoints for existing non-residential buildings with more than 20 car parking spaces, to be enforced from 2025.
- 15 This requirement cannot be transposed through the Building Regulations as these regulations only apply when building work (as defined in the Regulations) is being

¹ This is in line with the EPBD requirement.

² £4,925 for retrofit installations, and £3,822 for new build installations (central case).

carried out. These requirements will therefore be transposed through separate legislation and an appropriate enforcement regime must be identified.

- 16 Government proposes to require one chargepoint in existing non-residential buildings with more than 20 car parking spaces. This will help create certainty for drivers that their destination will have at least one chargepoint, while not overburdening building owners or leading to an over-supply of chargepoints. In the consultation we are asking for views on this requirement and the appropriate enforcement body, as well as input on how we can best implement the requirements to mitigate the burden on landowners.

Data and analysis

- 17 The government is also publishing two impact assessment with this consultation which assess the impact of the requirements on residential (Annex D) and non-residential buildings (Annex E) respectively.
- 18 The residential impact assessment shows an average positive installation cost saving of c.£1,064 per new home for requiring the installation of a chargepoint upfront compared to retrofitting the chargepoint, resulting in a net benefit of the regulations of £434.6 million over the 31 year appraisal period. The non-residential impact assessment shows a total cost of the regulations of £255.9 million over the appraisal period.
- 19 Data on costs associated with the policy has been collected through extensive engagement with industry stakeholders and are based on a report produced by Steer, an infrastructure consultancy. There is a degree of variation associated with these costs. Through the consultation we would like to invite further data on costs of installing EV chargepoints in new and existing buildings.

How to respond

The easiest way to respond is to use the online response form. This form also allows you to:

- save your progress so you don't need to complete it all at once
- save or print a copy of your response for your records once you have submitted it

The consultation period began on 15th July and will run until 7th October. Please ensure that your response reaches us before the closing date. If you would like further copies of this consultation document, it can be found at <https://www.gov.uk/dft#consultations> or you can contact chargepointsinbuildings@dft.gov.uk if you need alternative formats (Braille, audio CD, etc.).

Please send consultation responses to:

Office for Low Emission Vehicles

Department for Transport

Great Minster House

33 Horseferry Road

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Territorial extent

England.

When responding, please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of a larger organisation, please make it clear who the organisation represents and, where applicable, how the views of members were assembled.

If you have any suggestions of others who may wish to be involved in this process please contact us.

Privacy Information Notice: Confidentiality and data protection

The Department for Transport is carrying out this consultation on proposals to introduce new regulations for new and existing buildings. It is being carried out in the public interest to inform the development of policy.

As part of this consultation we are asking for your name and email address. This is in case we need to ask you follow-up questions about any of your responses. You do not have to give us this personal information. If you do provide it, we will use it only for the purpose of asking follow-up questions. DfT is the controller for this information and we will not share it with any other organisation.

The Department for Transport's privacy policy has more information about your rights in relation to your personal data, how to complain and how to contact the Data Protection Officer. You can view it at <https://www.gov.uk/government/organisations/department-fortransport/about/personal-information-charter>.

To receive this information by telephone or post, contact us on 0300 330 3000 or write to Data Protection Officer, Department for Transport, Ashdown House, Sedlescombe Road North, St Leonards-on-Sea, TN37 7GA.

Your information will be kept securely and destroyed within 12 months after the consultation has been completed.

Freedom of Information

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the Freedom of Information Act 2000 (FOIA) or the Environmental Information Regulations 2004.

If you want information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

When responding, please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of a larger organisation, please make it clear who the organisation represents and, where applicable, how the views of members were assembled.

There will be alternative consultation events. If you would be interested in attending these events, please contact chargepointsinbuildings@dft.gov.uk. If you have any suggestions of who may wish to be involved in this process please contact us.

1. Introduction

Background and scope of the consultation

- 1.1 The government's ambition is for 50-70 per cent of new car sales to be ultra low emission by 2030 and for all new cars and vans to be effectively zero emission by 2040 to improve the air we breathe, deliver our Industrial Strategy and help ensure we make the shift to net zero greenhouse gas emissions by 2050. The Road to Zero strategy set out a £1.5 billion package of support for the transition.
- 1.2 In the Road to Zero strategy, the government announced that it wants every new home to have a chargepoint, where appropriate, to help future proof homes for the transition to electric vehicles. This consultation seeks views on introducing this requirement in the English Building Regulations. It also seeks views on our proposals to transpose the requirements of the European Union (EU) Energy Performance of Buildings Directive (EPBD)³, including:
 - introducing minimum infrastructure requirements for new non-residential buildings with more than 10 parking spaces in the Building Regulations.
 - introducing minimum requirements for existing non-residential buildings with more than 20 parking spaces.

The Road to Zero

- 1.3 In order to meet our medium and long-term ultra low emission vehicle uptake ambitions, the UK needs an accessible, affordable and safe charging infrastructure network for electric vehicles (EVs). A lack of chargepoints is often cited in consumer research as a key reason as to why some people will not consider buying an EV⁴. Increasing access to and availability of chargepoints is therefore key to encouraging people to make the switch. A key attraction of an EV is that it can be charged wherever it is parked, provided there is a suitable electrical outlet. We expect to see a range of charging options for drivers - at destinations (e.g. supermarkets), workplaces and en route (e.g. motorway service areas).
- 1.4 Research indicates, however, that for those that have a suitable parking space, the vast majority of electric vehicle charging happens at home. For these drivers, home charging will provide the most convenient option and will often be cheaper than using the public network⁵, particularly when charging overnight and taking advantage of off-peak tariffs. Given 98 per cent of journeys in the UK are less than 50 miles (National Travel Survey, 2016), many drivers with access to a chargepoint at home may never need to use the public chargepoint network.

³ Directive (EU) 2018/844 on the energy performance of buildings, 30 May 2018. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2018.156.01.0075.01.ENG

⁴ In a recent (April 2018) Go Ultra Low attitudinal tracking survey, when asked why you wouldn't consider buying an EV, 64% of respondents cited a lack of chargepoints.

⁵ Home charging can cost as little as 3p per mile (Go Ultra Low)

- 1.5 Charging cars at home overnight using a dedicated chargepoint also has wider system benefits by enabling EVs to play their full part in our future smart and flexible energy system⁶, charging at times when there is less demand on the electricity system and when it is cheaper to do so. For these reasons, we expect home charging to continue to be central to the charging ecosystem in the future⁷.
- 1.6 Despite this, many of the homes built today do not have a chargepoint installed as standard. This means that retro-fitting of a chargepoint will be required at a later date. This is more expensive than installation at the time the house is built and could cause disruption to local community and residents at a later date if roads and pavements have to be dug up again to reinforce the local electricity network.
- 1.7 Some local authorities have begun to make chargepoint provision in new buildings a planning condition, but there is an inconsistent approach across the country. By introducing a requirement within Building Regulations, government can help ensure consistent and comprehensive provision for all new homes with associated parking facilities, future-proofing our building stock.

European Energy Performance of Buildings Directive

- 1.8 This consultation also covers England's transposition of the electromobility requirements in the most recent recast of the EPBD, which came into force in July 2018. This Directive sets requirements for 'ducting' or routes for electric vehicle chargepoint cabling and chargepoints in new residential and new and existing non-residential buildings⁸, as summarised in Table 1.
- 1.9 On 23 June 2016, the EU referendum took place and the people of the United Kingdom voted to leave the European Union. Until exit negotiations are concluded, the UK remains a full member of the European Union and all the rights and obligations of EU membership remain in force. During this period the government will continue to negotiate, implement and apply EU legislation. The outcome of these negotiations will determine what arrangements apply in relation to EU legislation in future once the UK has left the EU.

Table 1: EPBD Requirements

Scope⁹	Building Type	Member State obligation	Transposition date
Parking spaces in new buildings and buildings undergoing	Residential buildings with more than 10 parking spaces	Ensure the installation of ducting infrastructure ¹⁰ for every parking space	10 March 2020

⁶ Note that government plan to consult separately on introducing regulatory requirements for chargepoints to be smart enabled, enabling electric vehicles to be integrated into our future smart and flexible energy system.

⁷ The government also provides support for those drivers without access to off-street parking. We are providing up to £4.5 million grant funding to 2020 for the On-street Residential Chargepoint Scheme, we have launched a £40 million R&D programme to develop and trial innovative, low cost wireless charging and on-street solutions, and we government funding and leadership, alongside private sector investment has supported the installation of more than 20,000 public chargepoints all across the UK including more than 1500 rapid chargepoints.

⁸ The EPBD use the concepts residential and non-residential buildings. In the context of the Building Regulations residential building is interpreted to mean dwelling and non-residential buildings is interpreted as buildings other than dwellings. See section 2 for further information.

⁹ Where the car park/parking space is located inside the building, and, for major renovations, renovation measures include the car park or the electrical infrastructure of the building; or the car park is physically adjacent to the building, and, for major renovations, renovation measures include the car park or the electrical infrastructure of the car park.

¹⁰ The EPBD uses the concept of 'ducting' to refer to cable routes. We will be using the term "cable routes".

major renovation			
Parking spaces in new buildings and buildings undergoing major renovation	Non-residential buildings with more than 10 parking spaces	Ensure the installation of at least one chargepoint. Ensure the installation of ducting infrastructure for at least one in five parking spaces.	10 March 2020
Parking spaces in existing buildings	Non-residential all buildings with more than 20 parking spaces	Lay down requirements for the installation of a minimum number of recharging points.	Requirement to be set by March 2020. Applicable from 2025

Future Homes Standard

- 1.10 Introducing EV chargepoints in residential and non-residential buildings also forms a part of the Government's wider ambition to make buildings in Britain fit for the future.
- 1.11 In the 2019 Spring Statement, the Chancellor announced that by 2025 the government will introduce in Building Regulations a Future Homes Standard for new build homes to be future-proofed with low carbon heating and world leading levels of energy efficiency, to create healthy homes that are fit for the future, have low energy bills, and are better for the environment. This forms a part of the Industrial Strategy Clean Growth Grand Challenge which aims to use new technology and modern construction practices to at least halve the energy usage of new buildings, both commercial and residential, by 2030.
- 1.12 The Future Homes Standard does not include transport, but EV chargepoints will become a common feature in homes across the country and the transition to a smart and flexible energy future will mean EVs will become an integrated part of homes in the future.
- 1.13 The introduction of chargepoints in new buildings will impact the electricity demand from these buildings as will wider changes, such as the use of heat pumps in the future. There has been discussion in the industry about whether the use of three-phase connections for new buildings would help to mitigate this impact. This consultation does not cover this issue as it is a matter for Ofgem and electricity network operators and outside the remit of the Building Regulations.

Technological Scope

- 1.14 The proposed changes to the Building Regulations are limited to electric vehicle chargepoints. This consultation does not consider requiring alternative technologies,

such as hydrogen refuelling options, because recharging these vehicles does not happen in domestic settings.

- 1.15 The market for hydrogen fuel cell electric vehicles is at an earlier stage than for plug-in hybrid or battery electric vehicles. Our approach in considering the appropriate government support to the development of hydrogen as a transport fuel in the UK has been based on moving in step with international progress on standards and technology, ensuring that the UK retains its position in the forefront of the adoption of zero emission vehicle technologies whilst retaining flexibility and managing risk to secure the opportunities at this early stage of the market.
- 1.16 The government will keep the policy under review and continually review whether these policies allow us to deliver against our ambitions.

The Building Regulations

- 1.17 The government proposes to implement the changes proposed in this consultation relating to new residential and non-residential buildings, and residential and non-residential buildings undergoing major renovation or a material change of use, through the Building Regulations 2010¹¹.
- 1.18 The Building Regulations 2010 offer an established route for setting requirements for new buildings. Including EV charging requirements within the Building Regulations 2010 will also introduce a standardised approach to EV charging equipment in new buildings across the country, helping to provide consistency. The requirements we are proposing apply to car parking spaces in or adjacent to buildings. Local Plans may therefore still need to consider the wider provision of electric vehicle charging, such as for areas that rely on on-street parking.
- 1.19 Once requirements are set in the Building Regulations 2010, developers will be required to demonstrate their compliance to Building Control Bodies, which enforce the Building Regulations. Our preferred option is to introduce a new functional requirement under Schedule 1 to the Building Regulations 2010.

Territorial extent and devolved administrations

- 1.20 Building Regulations are a devolved matter. This consultation therefore applies to England only. Responsibility for implementing the electromobility requirements of the EPBD in Northern Ireland, Wales, Scotland and Gibraltar rests with the respective Devolved Administrations who will be making their own arrangements for implementation. Please note that any responses to this consultation could be shared with the Devolved Administrations for information.

Timings and implementation

- 1.21 The consultation period began on 15th July and will run until 7th October. The government will then review the responses before responding formally. The government will also produce a detailed economic impact assessment based on the consultation responses before laying the Statutory Instrument in Parliament. Draft

¹¹ The requirements for the existing non-residential buildings will be transposed through s.2(2) of European Communities Act 1972

impact assessments are published alongside this consultation. The regulations are expected to come into force in the first half of 2020.

- 1.22 The government will work with stakeholders alongside this consultation to test and refine our proposals and ensure that any potential changes are implemented smoothly.

2. The installation of electric vehicle chargepoints in buildings

- 2.1 This section provides an overview of electric vehicle charging and the process to install a chargepoint in residential and non-residential settings.

Background on electric vehicle charging

- 2.2 Electric vehicle charging can happen at different speeds depending on the type of vehicle, usage pattern of the location and type of chargepoint. The table below sets out the key charging types, where they normally are found and an indicative charging time.

Table 2: Electric Vehicle Charging

Chargepoint Power	Current	Connector	Mode	Typical Location	Example charging time ¹²
3.6kW	AC	Type 1/ Type 2 ¹³	Mode 3	Homes, on-street locations, destinations	c. 11 hours
7kW	AC	Type 1/ Type 2	Mode 3	Homes, on-street locations, destinations	c. 5 - 7 hours
22kW	AC	Type 1/ Type 2	Mode 3	Destinations	c. 2 hours
50kW	DC	CCS/ CHAdeMO	Mode 4	Motorway Service Areas / destinations	<1 hour
150kW+	DC	CCS/ CHAdeMO	Mode 4	Motorway Service Area / destinations	<30 minutes

¹² From 0 to 100 per cent, 40kWh Nissan LEAF. Note that this is for illustration only - a 40kWh Nissan LEAF cannot charge at ultra-rapid (150kW+) speed.

¹³ Type 2 connectors is becoming the standard across the vehicle manufacturing industry for charging at slower speeds.

Box 1: EV chargepoint definitions

Current: Charging can be AC, where alternating current (AC) is supplied to the vehicle and vehicle converts the current to direct current (DC) to charge the battery. Or the charging current can be DC, where the alternating current is converted to DC within the chargepoint before it is supplied to the vehicle.

Connector: The type of connector varies from vehicle to vehicle and also depends on whether they are for low (AC) or high (DC) power use. The CHAdeMO and CCS connectors are both DC, and the Type 2 and Type 1 chargers are AC. On the vehicle side, European models (e.g. VW, Volvo, Audi) usually have a CCS connection, whereas Asian models (e.g. Nissan and Mitsubishi) usually have a CHAdeMO connection.

Mode: BS EN 61851-1 standard defines the different modes for electric vehicle charging. Mode 3 and 4 are specialised systems for EV charging running from a dedicated circuit. Mode 1 and 2 use non-specialised infrastructure (e.g. the domestic socket). Mode 1 provides no residual-current device (RCD) protection and is not considered safe, whilst Mode 2 provides RCD protection but charging power will often be limited by vehicle protocols to charging at 1.4kW to 2.3kW

Building types

- 2.3 There are a number of different types of buildings which might have associated car parking spaces.
- 2.4 A **building** is defined in the EPBD as "a roofed construction having walls, for which energy is used to condition the indoor climate"¹⁴. However, the English Building Regulations use a different definition of building, for purposes outside of the EPBD requirements, as "any permanent or temporary building but not any other kind of structure or erection, and a reference to a building includes a reference to part of a building"¹⁵ For the purpose of this consultation, building is therefore defined more broadly in line with the English Building Regulations, and is not defined in relation to the use of energy to condition the indoor climate. We propose that the requirements should also apply to buildings which are multi-story car parks, which in certain cases could be left out of the EPBD requirements.
- 2.5 The EPBD uses the term **residential building**. In the context of the Building Regulations this is interpreted to mean dwellings. In Regulation 2 of the Building Regulations a dwelling is defined to include both "a dwelling-house" and "a flat".
- 2.6 A residential building can therefore either be a building that is a dwelling ("dwelling house" in the Building Regulations), such as a detached or semi-detached house, which for the purpose of this consultation is referred to as a **single-dwelling building**.

¹⁴ Directive (EU) 2010/31 on the energy performance of buildings, 18 June 2010. https://eur-lex.europa.eu/legal-content/EN/ALL/;ELX_SESSIONID=FZMjThLLzfxmmMCQGp2Y1s2d3Tjwtd8QS3pqdkhXZbwqGwlgY9KNI!2064651424?uri=CELEX:32010L0031#ntr4-L_2010153EN.01001301-E0004

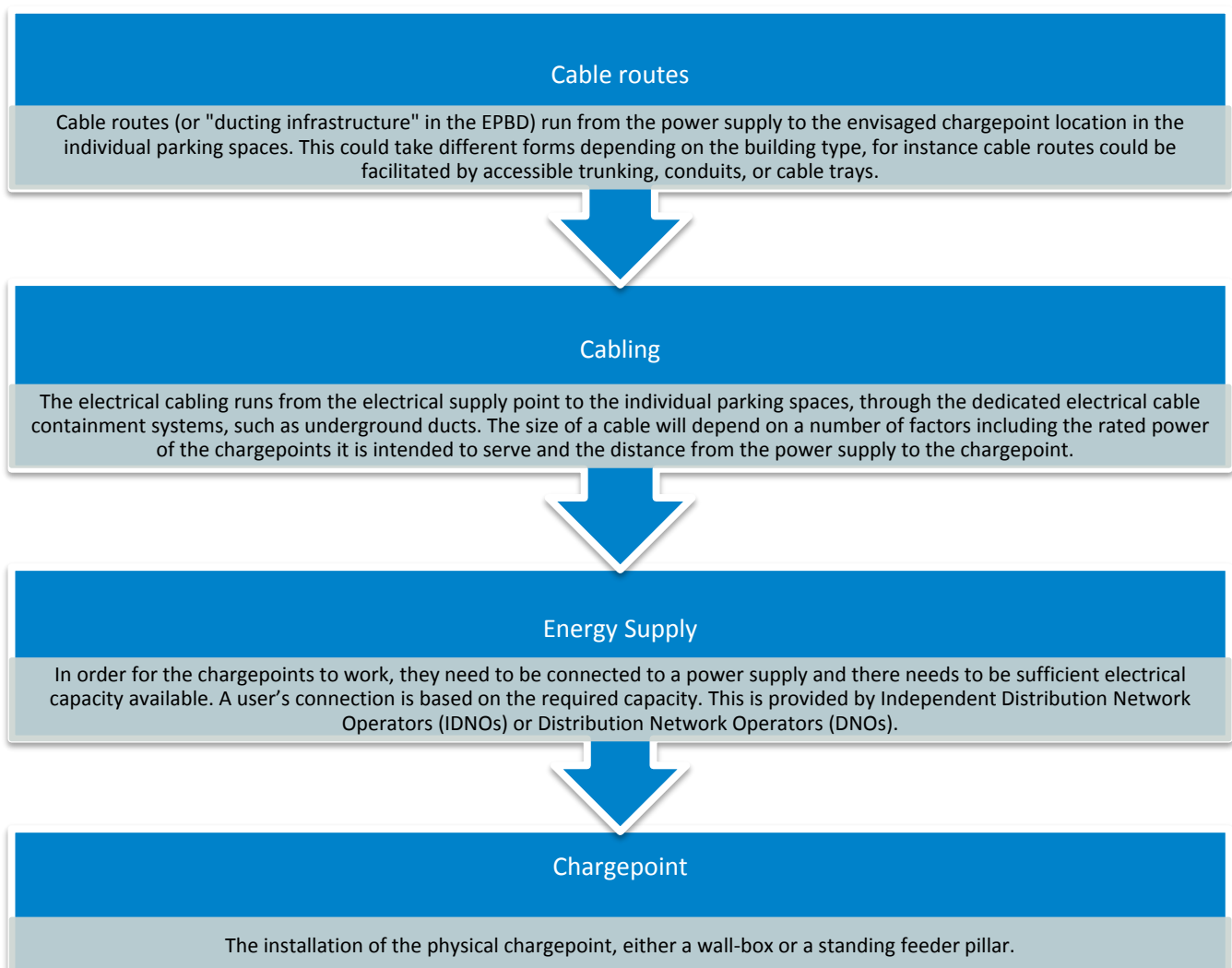
¹⁵ The Building Regulations (2010). <http://www.legislation.gov.uk/ukSI/2010/2214/regulation/2/made>

- 2.7 A residential building can also be a building that contains several dwellings or "flats". A flat is defined in the Building Regulations to mean a "separate and self-contained premises constructed or adapted for use for residential purposes and forming part of a building from some other part of which it is divided horizontally". For the purpose of this consultation a block of flats is referred to as a **multi-dwelling building**.
- 2.8 The EPBD uses the term **non-residential building**. In the context of the Building Regulations this is interpreted to mean a building other than a building containing a dwelling. Whilst the Building Regulations contains exemptions for buildings owned by statutory undertakers, to fully transpose the EPBD requirements, we cannot apply this exemption. Non-residential buildings therefore include Crown buildings and buildings such as airports and train stations.

Chargepoint installation in buildings

- 2.9 There are a number of steps that needs to be taken to install a chargepoint in a new building. Figure 1 outlines the key steps for installing EV infrastructure in new buildings.

Figure 1: Process for Installing Electric Vehicle Charging in Buildings



3. Building Regulations changes: New residential buildings and residential buildings undergoing major renovation

- 3.1 This section seeks views on our proposal for the installation of chargepoints in parking spaces physically adjacent, defined legally as "within the site boundary of the dwelling", to new residential buildings and residential buildings undergoing major renovation or a material change of use.
- 3.2 In some cases, the EPBD requires the installation of 'ducting', or cable routes, for every parking space for new residential buildings and residential buildings undergoing major renovation. This is intended to enable the installation, at a later stage, of EV chargepoints. The requirements apply where:
 - a. the building has a car park with more than 10 parking spaces
 - b. the car park is located inside the building, and, for major renovations, renovation measures include the car park or the electric infrastructure of the building; or
 - c. the car park is physically adjacent to the building, and, for major renovations, renovation measures include the car park or the electrical infrastructure of the car park.
- 3.3 In the Road to Zero strategy, the government committed to go further than these requirements domestically and to consult on introducing requirements in the Building Regulations to ensure every new home has a chargepoint, where appropriate. Our proposed policy position is outlined in Box 2.

Box 2: Policy Position (Dwellings)

The government proposes new regulations for every:

- new dwelling,
- buildings undergoing material change of use to create a new dwelling

with an associated dedicated car parking space that are within the site boundary of the building to have a chargepoint.

And for every residential building undergoing major renovations with more than 10 car parking spaces within the site boundary of the building to have cable routes for electric vehicle chargepoints in every space.

Proposed requirement

- 3.4 The Building Regulations will provide an overarching functional requirement for the provision and safety of EV charging infrastructure, set out in Schedule 1 to the Building Regulations, and a number of new regulatory requirements for the specific matters transposing the EPBD. Guidance for achieving compliance with the regulatory requirements for the provision and safety of EV charging points will be set out in an Approved Document. Further technical requirements are detailed in section 6.

Infrastructure requirement

- 3.5 Requiring the installation of a chargepoint in new dwellings has a number of benefits:
- ensuring that homes have the necessary infrastructure to support future EV uptake, which is not currently being routinely provided in new homes.
 - providing the best value for money, by avoiding more costly retrofitting and unnecessary disruption in the future. For the average home, the cost of installation of a chargepoint upfront is £976 compared to £2,040 for retrofit. This makes an average cost saving of £1,064 per chargepoint.
 - providing a 'nudge' to help support our ultra low emission vehicle uptake ambitions. If chargepoints become readily available in the homes, a key barrier to purchasing an EV is removed, driving further uptake of EVs.
 - creating increased demand for chargepoints to bring down their cost.
 - the provision of adequate and safe chargepoints will help deter customers from defaulting to dangerous solutions to charge their vehicles, such as extension leads plugged into standard socket outlets trailing across walkways.
- 3.6 Surveys shows that there is strong support for EV chargepoints to be installed as standard in new buildings - 68% of respondents to a recent AA survey¹⁶ supported the government's proposals.
- 3.7 There are risks associated with introducing this requirement. Some of the chargepoints may not be required immediately. However, we expect electric vehicle uptake to ramp up significantly in the coming years, so many of the chargepoints required will be used within their estimated 15-30 year lifespan¹⁷. Considering our uptake ambitions, we assume that most chargepoints installed under the regulations are likely to be used. It is also key to note that the chargepoint cabling, cabling routes and required electrical capacity have a much longer lifespan.
- 3.8 This policy would increase yearly demand for domestic chargepoints significantly from c. 20,000¹⁸ to c.110,000¹⁹ in 2020. We want to see chargepoint manufacturers and operators to grow to meet this demand.

¹⁶ AA survey - April 2019 - Electric Vehicles

¹⁷ Indicative economic life expectancy is given in Appendix 12.A1 of CIBSE Guide M. There are no specific guidelines for electric vehicle chargepoints, but reasonable inferences could be made based on general electrical equipment.
<https://www.breeam.nl/sites/breeam.nl/files/hulp/CIBSE%20Guide%20M.pdf>

¹⁸ An approximation of the EVHS applications which were submitted for processing in 2018/2019.

¹⁹ Assuming 88,000 new homes in scope of Regulations, in addition to homes retrofitted.

Alternative options

Cabling routes

- 3.9 An alternative option to facilitate chargepoint installation is to only require the installation of routes for electric vehicle cabling (in line with the minimum EPBD requirements for residential buildings). The EPBD refers to these routes as 'ducting infrastructure'.
- 3.10 This would be less costly for the developer than a full chargepoint (£609.4m over the 31 year appraisal period compared to £1,311.8m²⁰) and would help future-proof new houses by making the later instalment of chargepoints cheaper. However, the benefits to the consumer are also reduced. With cabling routes, the costs of installing the chargepoint at a later point will be higher and will require an electrician to visit the home, a potential barrier to future electric vehicle purchase. Furthermore, as the cabling routes are less visible to the individual consumer, the government do not consider there to be the same benefit with regards to EV uptake as with a physical chargepoint (see Impact Assessment in Annex D for further information).

Cabling

- 3.11 Another option is to set a requirement for the enabling electrical cabling for an EV chargepoint only (including cabling routes, cables and the necessary electrical capacity at the distribution board).
- 3.12 The government does not consider this an appropriate minimum requirement. It would add a cost for the developer at the time of construction of c.£453 for an average home, without offering the same 'nudge factor' benefit as a physical chargepoint. Furthermore, the home owner would still have to pay the additional (higher) cost of installing a chargepoint at a later point.

Optional requirement

- 3.13 Instead of including a universal, mandatory requirement for chargepoints, government could introduce an optional technical standard that could be pursued through planning policies at the local level²¹. This could take the form of:
- a. a minimum mandatory Building Regulation for installing cable routes (e.g. ducting) for an EV chargepoint in residential buildings with more than 10 car parking spaces (as required by the EPBD), and;
 - b. on top of this, the ability to use an optional technical standard for full chargepoint installation in every new home with an appropriate car parking space, where justified.
- 3.14 This would set a national standard for chargepoints in new dwellings but leave it to the discretion of each local planning authority (LPA) as to whether they want to apply it. If they wish to apply the standard they will have to make the case about the need for this policy in the local area.

²⁰ Costs given for the central cost scenario. See more detail in the Impact Assessment p.17.

²¹ There are currently two optional standards that apply two enhanced Building Regulations requirements: Part M (Access to and use of buildings) and Part G (Sanitation, hot water safety and water efficiency). Both leave it to the Local Planning Authority, based on evidence, to justify the need to apply specific requirements.

3.15 There are some benefits to this approach:

- it would allow LPAs to draw up requirements for EV chargepoints with the assurance that standards are evidence-based and technically achievable.
- it creates consistency and certainty for developers in the standards adopted by local authorities (but only if LPAs opted to adopt the standard).
- an optional standard would allow the LPA to weigh applications against other material considerations, which may mean that the requirement could be disapplied in specific cases. This could reduce any potential unintended impact on housing supply.

3.16 However, an optional standard is not the government's preferred option for four main reasons:

- access to electric vehicle charging is not a localised issue. People all over the country drive vehicles and will benefit from the transition to zero emission vehicles. The costs of installing a chargepoint are also determined by local electrical capacity on a street by street, rather than local authority level.
- an optional standard is only optional so may not have the intended outcome of creating a consistent national approach.
- the installation of chargepoints in new homes will happen at a much slower pace. Each LPA will only adopt the requirement, if they chose to adopt it at all, when they are reviewing their planning policies, which could take a number of years.
- an optional technical standard would not apply where new dwellings come into being through permitted development rights

3.17 The government's preferred option therefore is that the requirement should be mandatory and apply consistently across England. To limit the possible impact on housing supply we are consulting on introducing exemptions for developments where the requirements are not technically feasible (see section 7).

Consultation questions

Q1: Do you agree with our proposed policy position? Please note that we are legally obliged to transpose the EPBD minimum requirements for residential buildings with more than 10 parking spaces.

Q2: If no, please specify why, including what requirement you think would be suitable.

Q3: Do you agree that the proposed Building Regulation should mandate the introduction of electric vehicle charging points rather than set them as optional?

Q4: If you disagree, please explain why.

Q5: What other issues do you think, relevant to using Building Regulations to set standards for the provision and safety of electric vehicle chargepoints, we should consider?

Buildings within scope of the changes

3.18 The EPBD requirements apply to new residential buildings with more than 10 car parking spaces, which captures most car parks associated with multi-dwelling

buildings. The government proposes to go wider and include any residential dwelling with an associated car park space. The same benefits of installing chargepoint infrastructure in residential buildings with more than 10 car parking spaces apply to buildings with fewer associated parking spaces or even houses with only one associated car parking space. The requirement will also apply to the parking spaces associated with dwellings in mixed-use buildings.

3.19 The intention is for there to be one chargepoint per dwelling rather than per parking space. This means that for dwellings with more than one associated parking space, there will only be a requirement for one chargepoint to be installed²². We have drafted the technical guidance (see Annex C) to reflect this, requiring a chargepoint for new dwellings where parking spaces are provided within the site boundary of the building which are intended to be used by multiple dwellings. The number of parking spaces which have access to an electric vehicle chargepoint should be a minimum of either:

- a. the total number of parking spaces
- b. the total number of dwellings served by the car park

3.20 We will cover the possibilities for buildings to be exempt from the requirements in section 7.

Consultation questions

Q6: Do you agree that the government should mandate electric vehicle charging for all new dwellings with an associated car parking space (including both multi-dwelling and single-dwelling buildings)?

Q7: If no, please explain what you think would be the appropriate scope of the requirements.

Q8: Do you agree the requirements should be for one chargepoint per dwelling rather than for every parking space associated with the building?

Q9: If not, please explain what you think would be the appropriate requirement.

Material Change of Use

3.21 The government also proposes to apply the regulations to instances where a non-residential building is converted into a dwelling (including (a) and (b) in Box 3), what is known as "material change of use" in the Building Regulations. Material change of use is defined in Regulation 5 of the Building Regulations 2010 (see Box 3 below). According to the definition in a) and b) in Regulation 5 (Box 3), this involves the creation of a new home, and is therefore covered by the government's commitment in the Road to Zero strategy.

3.22 Acknowledging that a material change of use will not, in all instances, involve any changes to the associated car park the requirement will further also be restricted to cases where the material change of use works includes any of the following:

- a. The car park

²² Note that for residential buildings with more than 10 car parking spaces, cable routes must be installed for all parking spaces as per the EPBD.

- b. The electrical infrastructure of the building where the car park is inside the building
- c. The electrical infrastructure of the car park, where the car park is adjacent to the building

Box 3: Material change of use (Regulation 5, Building Regulations 2010)

For the purposes of paragraph 8(1)(e) of Schedule 1 to the Act and for the purposes of these Regulations, there is a material change of use where there is a change in the purposes for which or the circumstances in which a building is used, so that after that change—

- (a) the building is used as a dwelling, where previously it was not;*
- (b) the building contains a flat, where previously it did not;*
- (c) the building is used as an hotel or a boarding house, where previously it was not;*
- (d) the building is used as an institution, where previously it was not;*
- (e) the building is used as a public building, where previously it was not;*
- (f) the building is not a building described in classes 1 to 6 in Schedule 2, where previously it was;*
- (g) the building, which contains at least one dwelling, contains a greater or lesser number of dwellings than it did previously;*
- (h) the building contains a room for residential purposes, where previously it did not;*
- (i) the building, which contains at least one room for residential purposes, contains a greater or lesser number of such rooms than it did previously; or*
- (j) the building is used as a shop, where previously it was not; or*
- (k) the building is a building described in regulation 7(4)(a), where previously it was not.*

Consultation questions

Q10: Should the proposed Building Regulation requirement for electric vehicle chargepoint infrastructure apply where the building has undergone a material change of use as defined in paragraph a) or b) of Regulation 5 of the Building Regulations 2010?

Q11: If you disagree, please explain why.

Major Renovations

- 3.23 The EPBD requirement to install cabling routes applies to major renovations. The government will therefore apply the requirement for cable routes to be installed in all residential buildings with more than 10 parking spaces undergoing major renovation, with some exemptions (see section 7).
- 3.24 A major renovation is defined, in line with the EPBD and the Building Regulations, as a change where more than 25 per cent of the surface area of the building envelope

undergoes renovation. The requirement will further be restricted, as per the EPBD, to only apply in cases where the major renovation works includes any of the following:

- a. The car park
- b. The electrical infrastructure of the building where the car park is located inside the building
- c. The electrical infrastructure of the car park, where the car park is located adjacent to the building.

3.25 We are considering whether to go further than the EPBD requirements and require the installation of a chargepoint in dwellings undergoing major renovation. This would also go further than the commitment the government made in the Road to Zero strategy.

3.26 There are some benefits in mandating the installation of a chargepoint for major renovations, especially in relation to multi-dwelling buildings. The cost of retrofitting chargepoints in car parks connected to multi-dwelling buildings when no major renovation is underway is so high that this is not often delivered voluntarily by the market, which can create a barrier for EV uptake. Considering this, it could be favourable to introduce a requirement for chargepoints to be installed when a major renovation (involving the car park as per 3.24 above) is already taking place, to take advantage of the associated cost savings. We are mindful, however, that this requirement would increase the capital cost of major renovations, and that this capital cost might ultimately fall on existing leaseholders. We also do not wish to discourage major renovations taking place by adding unacceptable additional costs to works. The same cost challenge is not usually present in single dwelling settings, and there are more potential problems where a renovation of a separate part of the dwelling could result in the requirements being triggered.

3.27 If we were also to apply the chargepoint requirements to residential buildings undergoing major renovations we would look to apply some limitations (see discussion in section 7). The definition of major renovations used in this part overall, combined with these limitations, means that the requirement is likely to only apply in a very limited number of circumstances.

Consultation questions

Q12: Should the proposed Building Regulation requirement to install an electric vehicle chargepoint in every new home also apply to residential buildings undergoing a major renovation?

Q13: If so, do you think the requirement should apply only to residential buildings undergoing major renovation with more than 10 car parking spaces?

Q14: Please provide an explanation for your answer, including any evidence or costings if relevant.

4. Building Regulations changes: New non-residential buildings and non-residential buildings undergoing major renovation

- 4.1 This section seeks views on our proposal for car parks physically adjacent²³ to new non-residential buildings and non-residential buildings undergoing major renovation.
- 4.2 Updating the Building Regulations to include provisions for electric vehicle charging infrastructure in non-residential buildings will ensure that places like workplaces and retail car parks have a minimum level of EV charging infrastructure to support future EV uptake. The provision of chargepoints in key non-residential locations will provide a further 'nudge' to help support EV uptake and remove a key barrier to purchasing an EV.
- 4.3 The government's intention is to transpose the EPBD requirement directly (see Table 1 above). This section seeks views on our proposals.

Box 4: Policy Position (New Non-Residential Buildings)

The government wants every new non-residential building, and every non-residential building undergoing a major renovation, with more than 10 car parking spaces within the site boundary of the building to have one chargepoint and cable routes for electric vehicle chargepoint cabling for one in five spaces.

- 4.4 The requirements will apply to new non-residential buildings and non-residential buildings undergoing major renovation with more than 10 car parking spaces. In situations where the building is mixed-use, i.e. the building contains both dwellings and non-dwellings, the requirement will apply to the parking spaces dedicated to the parts of the building which are not dwellings, if this is more than 10 spaces.
- 4.5 These requirements will mean that it will be easier to install chargepoints in the spaces with cable routes in the future; and visitors can have confidence the building will have at least one chargepoint. This requirement would lead to the installation of thousands of more public chargepoints in destinations such as supermarkets, workplaces and public car parks, which will help support the development of an accessible and convenient charging infrastructure for drivers. The proposed technical requirements for the chargepoint and cable routes are set out in section 6.
- 4.6 Installing chargepoints and cable routes at the time of construction will also be less costly than retrofitting. Installing a chargepoint upfront in an average non-residential

²³ Defined legally as "within the site boundary". See detail in section 6.

carpark is around £1,100²⁴ less expensive than retrofitting a chargepoint at a later point. Furthermore, the installation of cable routes at the time of construction in non-residential car parks can make the installation of chargepoints at a later date around £1,000 less expensive than a full retrofitted chargepoint.

- 4.7 We do not think it is necessary to go further than the EPBD minimum at this stage. The demand for chargepoints and the type of chargepoints needed at non-residential buildings is mixed, and will depend on how the building is used (i.e. rapid chargepoints may be needed for buildings with short dwell times, whereas slower chargepoints will be more suitable for workplaces) and the wider provision of chargepoints in the local area. The government therefore does not consider it appropriate to set a more prescriptive standard for all non-residential buildings through Building Regulations. Where there is a commercial case, we anticipate businesses will install more chargepoints than the minimum requirement in the Building Regulations.
- 4.8 We will cover the possibilities for buildings to be exempt from the Regulations in section 7.

Consultation questions

Q15: Do you agree with our proposed policy position? Please note that the proposed requirement is a minimum requirement that the government is legally obliged to transpose under the EPBD.

Q16: If no, please specify why, including what alternative requirement you think would be suitable.

²⁴ £4,925 for retrofit installations, and £3,822 for new build installations (central case).

5. Existing non-residential buildings

- 5.1 This section seeks views on our proposal for existing non-residential buildings with more than 20 car parking spaces.
- 5.2 The EPBD includes a requirement for the government to lay down requirements for the installation of a minimum number of chargepoints in all existing non-residential buildings with more than 20 parking spaces. This requirement must be set by March 2020 and will come into force by 1st Jan 2025 (see Table 1).
- 5.3 This requirement will not be transposed through the Building Regulations. The Building Regulations only apply to buildings undergoing building work (as defined in the Building Regulations). The requirements will therefore be transposed under s.2(2) of European Communities Act 1972.
- 5.4 The government proposes requiring one chargepoint in existing non-residential buildings with more than 20 car parking spaces. The government considers this requirement will help create certainty for drivers that their destination will have at least one chargepoint, while not overburdening building owners or leading to redundant chargepoints in locations they are not needed. In places where there is a commercial case for it, we expect that businesses will chose to install more chargepoints as a result of this requirement.
- 5.5 This is a sweeping change which will affect a wide range of property owners, from supermarkets and retail parks, to workplaces with car parks, to public buildings such as schools, churches and community centres. As there is no central registry of private and public car parks in England, it is difficult to determine the exact impact of the requirements. However, we have made reasonable assumptions based on the evidence available. The Impact Assessment assumes the economic impact will be approximately £5,000 per car park in the central scenario, which amounts to a total impact of c. £250m. The EPBD allows an exemption for small and medium enterprises from the requirement (see section 7).
- 5.6 Government will seek to identify an appropriate enforcement body which can operate at a local level to monitor the implementation of the regulations. It is proposed that enforcement bodies will be able to apply a scheme of penalties. This under consideration and will be designed on a sliding scale to reflect the scale of any non-compliance that is identified.
- 5.7 Local Weights and Measures Authorities already have a responsibility to enforce the Energy Performance of Buildings Regulations and may be well placed to assume responsibilities for the enforcement of new regulations we will introduce for the development of the EV charging network.
- 5.8 An alternative to enforcement by Local Weights and Measures Authorities would be to place a responsibility upon Local Authority Building Control which is responsible for ensuring compliance with the Building Regulations.

5.9 The government is concerned that requiring more than one chargepoint could disrupt the market for public electric vehicle chargepoints by over-providing for chargepoints in locations where they are not required. Through this consultation, the government is therefore also looking to hear how we can best apply this requirement without disrupting the market for public chargepoints.

Consultation questions

Q17: Do you agree that one chargepoint per existing building with more than 20 car parking spaces is a suitable minimum requirement to transpose the EPBD?

Q18: If you disagree, please explain why.

Q19: How can the government apply these regulations in a way which balances the benefit to EV drivers and the requirements of the EPBD, with the burden on landowners?

Q20: Do you agree that the appropriate enforcement regime for this power should set a sliding scale of penalties for non-compliance?

Q21: If you disagree, what do you think would be the appropriate enforcement regime for these requirements?

Q22: Do you have a view on which organisation should be defined as an enforcement body for compliance with the new regulations for EV charging infrastructure?

Q23: What steps should we take to mitigate against any potential negative impact of the implementation of these regulations?

6. Technical specifications for Building Regulation requirements

- 6.1 Approved Documents (ADs) are provided alongside the Building Regulations to provide guidance about how to comply with the regulations. The government is publishing a draft version of the AD text alongside this consultation (Annex C).
- 6.2 Please note that government is consulting separately on introducing regulatory requirements for chargepoints to be smart enabled, enabling electric vehicles to be integrated into our future smart and flexible energy system. Therefore, while we do not plan to specify smart functionality for the chargepoints in the AD, in practice, this is likely to be required through other means.
- 6.3 The government intends to keep the AD under review to ensure that the specifications continue to be appropriate in the coming years.

Definitions

- 6.4 The draft Approved Document contains a list of key terms. The government is seeking views on whether these are accurate, clear and provide the intended meaning.
- 6.5 One significant term used is "within the site boundary of the dwelling or building containing the dwelling" with reference to the relationship between the car park and the building. The EPBD uses the term "physically adjacent to the building" to determine the car parks within scope of the requirements, although allows for due consideration of diverse conditions such as ownership of buildings and adjacent parking lots. This has been interpreted as "within the site boundary" for the purpose of these regulations. We propose to define site boundary as "the boundary of the land or buildings belonging to and under the control of the building owner". This is consistent with the definition of 'boundary' in Approved Document J.
- 6.6 It will be up to the individual building control authorities to determine whether the car park is within the site boundary. Some diagrams with examples of what should be understood as within the site boundary is included in the draft Approved Document.

Consultation questions

Q24: Are the definitions in the draft Approved Document accurate, clear and do they provide the intended meaning?

Q25: If you think the definitions could be improved please suggest how.

Q26: Do you agree with using the concept "within the site boundary" to define which parking spaces which are in scope of the regulations?

Q27: If not, please explain what you think an appropriate definition would be.

Chargepoint Power

- 6.7 Government proposes specifying a minimum 7 kW chargepoint both for residential and non-residential buildings. Some early home installations are 3.6 kW chargepoints, however, today the majority of the installations are 7 kW and expected increases in battery sizes and technology developments could make chargepoints less than 7 kW obsolete for future car models. Our discussions with industry indicate 7 kW is a sufficiently future-proofed standard for home charging.
- 6.8 A 7 kW standard also better enables some of the smart charging benefits (i.e. managing of the supply of electricity to the vehicle over time) than slower speed chargepoints because any modulation in charge can be more quickly compensated for at other times. This reduces the impact on the local network and could reduce the spare capacity needed to operate the chargepoint.
- 6.9 Most new homes have a 100 Amp connection as standard. In most cases, it is possible to accommodate a 7 kW chargepoint within this connection, even when assuming the minimum diversity factor²⁵. This means that in single houses there is often no additional electrical capacity cost as a result of adding a 7kW chargepoint.
- 6.10 The situation is different for car parks in multi-dwelling buildings. A requirement for a large number of chargepoints will require a larger connection to the development and will introduce a power supply requirement which may otherwise not be needed. The level of upgrade needed is dependent on the capacity available in the local network, and will result in additional costs in relation to chargepoint instalment (see more information in the Impact Assessment). There are new products coming to market which offer load management services and battery storage that can modulate the charge amount or shift the timing and therefore decrease the diversity factor²⁶ the (Independent) Distribution Network Operators can apply to a development. This reduces the size of the connection needed and therefore the connection cost.
- 6.11 In new non-residential buildings, the government will specify that the chargepoint must be *at least* 7 kW in order to both allow for the provision of higher powered chargepoints e.g. rapids being installed if this suits the use of the building.

Consultation questions

Q28: Do you agree that the government should specify a minimum charging power of 7 kW?

Q29: If no, please specify what specification would be suitable and give your reasons.

Chargepoint Mode

- 6.12 The government proposes to specify that chargepoints cannot be Mode 1 or 2, i.e. so that a three-pin plug would not be considered to be a suitable chargepoint. This is

²⁵ Required capacity is defined in terms of the maximum amount of power (in kW or kVA) that can be imported or exported onto the distribution system. Standard connection of a new dwelling is 100A at 230V (23kW or kVA). A 7kW EV chargepoint operates at 32A and adds 7kW to the normal power load of the dwelling, which in most cases can be accommodated even when assuming the minimum diversity factor of 1 is applied. IDNOs and DNOs are increasingly allowing higher diversity factors on developments with EV chargepoints, given the potential of smart chargepoint operation, reducing the peak load requirement and size of connection the chargepoint adds to the dwelling further.

²⁶ The diversity factor decreases as individual loads within a development are less coincidental. It is possible to assume a reduction in the theoretical peak demand of a development on the basis that chargepoints won't necessarily be used at the same time as each other or other household appliances.

because Mode 1 charging does not guarantee RCD protection and limits the charging power. A Mode 2 cable that connects the vehicle to the electrical supply provides RCD protection²⁷ downstream of the unit, but the charging power will often be limited by vehicle protocols to charging at 1.4 kW to 2.3 kW, making them unsuitable for 7kW charging.

- 6.13 In residential settings, the government proposes specifying that the chargepoint must be at least Mode 3 or equivalent. Although innovations are coming to market that use different types of chargers and charging speeds, such as wireless and ultra-rapid charging, these are unlikely to be used in residential settings. However, allowing for equivalence with Mode 3 chargepoints should allow for future innovation. We propose this approach is mirrored for non-residential settings.

Consultation Questions

Q30: Do you agree that the government should specify that chargepoints installed under the Building Regulations should be at least Mode 3 or equivalent?

Q31: If no, please explain your answer.

Chargepoint connector

- 6.14 Electric vehicles are connected to a chargepoint via a cable, with the option of having a cable permanently attached to the chargepoint (tethered) or not (untethered). Untethered units will have a socket and the user must provide the cable. On the other hand, tethered units have a cable permanently attached to the charging unit, like the hoses at fuel station pumps.
- 6.15 The government proposes that all chargepoints installed under the Building Regulations should be un-tethered. This will allow for different connectors for different cars (i.e. Type 2 and Type 1) and ensure that any EV can be used by the chargepoints that are being installed.

Consultation Questions

Q32: Do you agree that the government should specify that chargepoints installed under the Building Regulations must be untethered?

Q33: If no, please explain you answer.

Location and accessibility requirements

- 6.16 The location of the chargepoint must comply with the Equality Act 2010 and the accessibility requirements set out in the Building Regulations Part M. Section 1.24 of the draft Approved Document also requires minimum location and accessibility requirements.

Consultation questions

Q34: Do specifications with regards to location of the cabling route as outlined in the draft Approved Document sufficiently consider accessibility requirements?

²⁷ An RCD, or residual current device, a sensitive safety device that switches off electricity automatically if there is a fault. An RCD is designed to protect against the risks of electrocution and fire caused by earth faults.

Q35: Please provide any reasoning, and any details of potential other specifications that would be needed.

Q36: Do the proposed accessibility requirements in section 1.24 of the draft Approved Document sufficiently consider accessibility requirements?

Q37: Should we include any additional accessibility requirements?

Safety requirements

- 6.17 The installation of EV chargepoints and enabling infrastructure needs to meet relevant safety standards. These include requirements for physical and weather protection, adequacy of electric supply and protection against electric shock and circuit overloading and also earthing and bonding to reflect existing arrangements in the building and location of the EV chargepoint.
- 6.18 Electrical safety is likely to be outside the scope of the particular regulation which implements the EV charging requirements because electrical safety requirements are dealt with by other legislative requirements. In the draft Approved Document we propose making reference to the regulations, statutory guidance and codes of practice that relate to electrical safety. These include Approved Document P: Electrical safety – dwellings, Electricity at Work Regulations HSR25, BS7671:18th edition (2018) and the IET Code of Practice for EV Charging.
- 6.19 Mindful of the particular safety aspects of installing EV chargepoints we also propose to amend the Building Regulations to make clear that the installation, addition or alteration of dedicated circuits and earthing and bonding arrangements for EV chargepoints is notifiable building work²⁸. This means that the work, where it is under the scope of Part P of the Building Regulations, would either have to be carried out by an installer registered with an approved Competent Person Scheme or, where the work is carried out by an unregistered installer, this would need to be checked by a building control body or a registered third party certifier.

Consultation questions

Q38: Are the specifications with regards to safety standards as outlined in the draft Approved Document appropriate?

Q39: If no, please specify which further safety specifications we need to include.

Q40: Do you agree that the installation, addition or alteration of dedicated circuits and earthing and bonding arrangements for electric vehicle chargepoints should be notifiable building work?

Scope

- 6.20 The government welcome views on the Approved Document at Annex C, particularly whether it would be helpful to include any additional information to support developers and building control bodies. The Approved Document does not specify arrangements, such as the maintenance or warranty of chargepoints, design of chargepoints and ducting, and metering arrangements as this is in part covered by

²⁸ Currently the installation of a new circuit is notifiable under the Building Regulations.

other regulations (e.g. consumer protection) and is best determined by the developer and the building owner.

Consultation questions

Q41: Is the proposed guidance in the draft Approved Document clear and fit for purpose and provide sufficient detail in order to comply with the requirements?

Q42: If you think the guidance could be improved, please suggest how.

Q43: The diagrams in the draft Approved Document are illustrative only. Are they accurate and do they provide sufficient detail?

Q44: If you think the diagrams could be improved, please suggest how.

Q45: Does the draft Approved Document meet our proposed policy intent?

Q46: Is there any information missing from the draft Approved Document?

7. Exemptions

7.1 Our intention is to only include buildings where it is appropriate to install EV chargepoints. This section seeks views on appropriate exemptions for our proposed policy positions.

Exemption options

7.2 Article 8 of the EPBD allows for certain building types to be exempt from the minimum EPBD requirements.

Table 3: Potential exemptions permitted under the EPBD

Exemption	Residential	Non-Residential	Existing Non-Residential
Buildings owned and occupied by small and medium enterprises ²⁹	N/A	Option to include this as exemption	Option to include this as exemption
In cases where the initial building notice or full plans application under the Building Regulations have been submitted by 10 March 2021	Option to include this as exemption	Option to include this as exemption	N/A
The infrastructure required would rely on micro isolated systems or the buildings are situated in the outermost regions ³⁰	N/A	N/A	N/A
A public building is already covered by comparable requirements as a part of the transposition of the Alternative Fuels Infrastructure Directive ³¹ .	N/A	N/A	N/A
For major renovations, the cost of the chargepoint and cable routes installations exceeds 7 per cent	Option to include this as exemption	Option to include this as exemption	N/A

²⁹ Enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million (<https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:124:0036:0041:EN:PDF>)

³⁰ No buildings in England fall within these categories as defined in Article 349 TFEU.

³¹ There are no comparable requirements in the Alternative Fuels Infrastructure Regulations.

of the total cost of the major renovation of the building			
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- 7.3 For our domestic requirement, i.e. the requirement for the installation of a chargepoint in every new dwelling, the government can apply any exemption considered beneficial.

Lead-in times for new residential and non-residential buildings

- 7.4 The EPBD allows for an exemption for buildings that have submitted their initial building notice or full plans applications by 10 March 2021. This implies a period of one year between the implementation of the requirements in national building codes and the regulations coming into force. The government would like to hear opinions on what may be considered a reasonable lead-in time from the date of publishing the new regulations and guidance to the regulations coming into force, both for the minimum EPBD requirements and for the chargepoint requirements for domestic chargepoints. The government's intention is that the lead-in time should be sufficient for developers, consumers, building control bodies, and industry to fully understand the requirements, to set up the necessary training, access to expertise and skills, and to ensure the supply-chain can deliver.

Consultation questions

Q47: What is a reasonable transition period between publishing the new regulations and guidance and the requirements coming into force?

Further exemptions for new residential buildings and residential buildings undergoing major renovation

New residential buildings

- 7.5 In the Road to Zero strategy, we committed to consult on every new home to have a chargepoint where appropriate, mindful of the government's housing supply commitments. Our intention is to ensure that the introduction of this requirement does not add such a burden on developers that certain developments become unviable. We are therefore looking to include an exemption for buildings where it is not technologically feasible to include an EV chargepoint (in these cases only the minimum EPBD requirements would apply).
- 7.6 One factor that can drive up the cost of installation of chargepoints considerably is the cost of securing the necessary additional electrical capacity to a building (see the impact assessment at Annex D for more detail on grid connection costs and section 6 for more detail on electricity supply to buildings). The costs of installing the cables and the chargepoint hardware will vary considerably based site-specific conditions in relation to the local grid. In certain cases, the need to install chargepoints could necessitate significant grid upgrades which will be costly for the developer. Some costs would also fall on the distribution network operator. In the instances when this cost is exceptionally high, and likely to make developments unviable, it is the government's view that the chargepoint requirements should not apply and only the minimum EPBD requirements should.

- 7.7 A draft of this technical feasibility criteria has been outlined in section 1.27 of the draft Approved Document. We suggest for the threshold for the exemption to be set at three times the high scenario cost of the average electrical capacity connection required for a chargepoint in a multi-dwelling building, which according to the costs we have collected is at £3,600 per chargepoint because the high cost in our impact assessment is £1200³² (see Annex A4 in the residential impact assessment in Annex D). The intention of the threshold is to only exempt developments where the installation of chargepoints would result in developments not being taken forward as a result of this cost.
- 7.8 We consider that setting a relatively high threshold creates an incentive for developers to work with chargepoint operators and distribution network managers to find innovative solutions in circumstances where the electrical capacity is constrained. This could include load management and battery storage technologies, which are now widely available on the market.
- 7.9 The government welcomes views both on whether this is an appropriate exemption to apply and if so, what the appropriate threshold is for this exemption to be triggered.

Consultation questions

Q48: Do you think we should apply an exemption to the chargepoint requirement when the grid connection cost is high?

Q49: If no, please explain why including any potential exemption if relevant.

Q50: Does the draft text in the draft Approved Document (section 1.27) capture the intended exemption?

Q51: If no, please suggest an alternative drafting.

Q52: What do you think is a reasonable maximum cost for grid connection? Please provide any evidence to support your answer.

Q53: Does this exemption sufficiently mitigate any negative impact on housing supply?

Q54: Are there any other technical feasibility considerations that should be taken into account when determining the application of the requirements?

Q55: If yes, please outline what these technical considerations should be, including any supporting evidence.

Material change of use creating new dwellings

- 7.10 A requirement to install chargepoints in cases of material change of use³³ could, in some cases, trigger a need for a new power supply to the car park, which could be costly. The government does not want to create an unnecessary financial burden for developers that could restrict new dwellings being created from material change of use, and do therefore not intend for the requirements to trigger the need for a new power supply. The intention of the government is therefore to limit the application to

³² We are seeking further evidence on costs as a part of this consultation. Our intention is for the threshold to be based on the principle of three times the high scenario. If the estimated high scenario cost changes as a result of this consultation, we will move the threshold accordingly.

³³ Defined in Regulation 5, a) and b), see Box 3

instances where a new connection is needed, and to only require installation of the number of chargepoints that can be accommodated within the existing power supply.

- 7.11 There are some circumstances in which listed buildings and buildings in conservation areas could undergo a material change of use. In order to protect the characteristics of these buildings, it may be appropriate to exempt them from the chargepoint requirement where the requirement may prejudice the character of the building. We would like to seek views on whether any such exemption would be suitable and which buildings it would be appropriate to apply to. We suggest exemptions from compliance to buildings undergoing material change of use. These are:
- a. listed in accordance with section 1 of the Planning (Listed Buildings and Conservation Areas) Act 1990;
 - b. in a conservation area designated in accordance with section 69 of that Act; or
 - c. included in the schedule of monuments maintained under section 1 of the Ancient Monuments and Archaeological Areas Act 1979,
- 7.12 The exemption would apply when compliance with the chargepoint requirement would unacceptably alter their character or appearance.

Consultation questions

Q56: Should we apply an exemption to the requirements for material change of use in residential buildings in cases where there is adequate spare capacity in the incoming electrical supply to the car park?

Q57: If you disagree, please explain why.

Q58: Do you agree that we should apply an exemption for listed buildings and buildings in conservation areas as suggested above?

Q59: If you disagree, please explain why.

Residential buildings undergoing major renovations

- 7.13 For the minimum EPBD requirement of cable routes, we consider a 7 per cent cost cap to be a suitable exemption as we do not wish to put disproportionate costs on developers, and potentially stop needed major renovations. We therefore intend to add an exemption to the regulations for major renovations where the cost of installing the cable routes exceeds 7 per cent of the total cost of the major renovation of the building.
- 7.14 If we wish to apply a further chargepoint requirement for major renovation, we can also apply some further exemptions. The government welcomes views on appropriate exemptions. We are aware that the cost of installing a chargepoint in a car park can be very costly in cases where this means that a new electricity supply must be introduced to the building. Therefore, to ensure that we do not discourage important major renovation work from being undertaken as a result of these regulations, we propose to only apply the requirement in cases where there is adequate spare capacity in the incoming electrical supply to the car park. Even if the exemption is applied, the minimum EPBD requirement for cable routing would still apply.

Consultation questions

Q60: Should we apply an exemption to the requirements for major renovations in residential buildings where the cost of installing the cable routes exceeds 7 per cent of the total cost of the major renovation?

Q61: If you disagree, please explain why.

Q62: Should we apply an exemption to the requirements for major renovations in residential buildings in cases where there is adequate spare capacity in the incoming electrical supply to the car park?

Q63: If you disagree, please explain why.

Further exemptions for new non-residential buildings and non-residential buildings undergoing major renovations

- 7.15 Under the EPBD we can exempt SMEs from the requirements for new non-residential buildings and non-residential buildings undergoing major renovation. However, the Building Regulations apply to building work and do not differentiate requirements by ownership. This is therefore unprecedented and difficult to enforce in practice and we therefore do not propose applying this exemption.
- 7.16 Similar to residential buildings, we consider a 7 per cent cost cap for major renovations to be a suitable exemption as we do not wish to put a disproportionate cost onto developers, and potentially stop needed major renovations. We therefore propose adding an exemption to the regulations for major renovations where the cost of installing the cable routes and chargepoint exceeds 7 per cent of the total cost of the major renovation of the building.
- 7.17 It is of note that despite the 7 per cent cost cap being introduced, if the non-residential building undergoing major renovation has more than 20 car parking spaces and is not owned by an SME, the requirements relating to existing buildings will be triggered from 2025. These buildings will therefore have to install a chargepoint as a minimum at some point before 2025.

Consultation questions

Q64: Should we apply an exemption for the requirement for new non-residential buildings and non-residential buildings undergoing major renovations to small and medium enterprises?

Q65: If you disagree, please explain why.

Q66: Should we apply an exemption to the requirements for major renovations in non-residential buildings where the cost of installing the cable routes and chargepoint exceeds 7 per cent of the total cost of the major renovation?

Q67: If you disagree, please explain why.

Exemptions for existing non-residential buildings

- 7.18 The only exemption we can apply to the requirements for existing non-residential buildings is for SMEs. The government regards this as a suitable exemption to avoid

putting an unfair burden on small businesses who were unable to consider this requirement at the point of purchase of the building.

Consultation questions

Q68: Should we apply an exemption to the requirement for existing non-residential buildings to small and medium enterprises?

Q69: If you disagree, please explain why.

8. Evidence and Analysis

- 8.1 The government is publishing two consultation stage Impact Assessments alongside this consultation, to capture the residential and non-residential building requirements. The Impact Assessments are based on some key assumptions around the development of the EV and the EV chargepoint markets. Central to the Impact Assessment is also the extended appraisal period of 31 years, in line with our Road to Zero uptake projections (by 2050, we want almost every car and van on UK roads to be zero emission).
- 8.2 The data on the costs associated with EV charging in new buildings has been collected through extensive engagement with relevant stakeholders and through a report produced by Steer, an infrastructure consultancy. These costs have a large degree of variation, to reflect the range of real world circumstances likely to be encountered, particularly with regards to grid connection costs as these are highly location specific. As with any new market, there is uncertainty around how these costs are likely to develop in the future.
- 8.3 The government welcomes further evidence to inform the final stage impact assessments. In particular, we welcome views on the costings we are relying on and the robustness of our main assumptions. We also welcome views on any impacts or benefits not reflected in the impact assessment.

New Residential Buildings

- 8.4 In order to assess the impact of the policy we have conducted an analysis on some policy scenarios. The scenarios we use for new residential buildings are:

Table 4: New Residential Buildings Impact Assessment Options

Option	Detail
Baseline	Retrofitting of 91.5 per cent of all residential buildings ³⁴ , with the installation rate rising with the proliferation of ULEVs. This illustrates the costs if we do not intervene, and provides a baseline against which to consider the other options. Note that this is not a legitimate option as we are bound to install cable routes along the lines of the EPBD as a minimum.
Policy Option 1	Mandate cable routes to be installed in all residential new builds with 10 or more parking spaces associated with the building, to allow easy charge point installation in the future (minimum EPBD requirements).

³⁴ This represents the number of households with off-street parking who owns a car. 8.5 per cent with off-street parking has no car.

Policy Option 2	Mandate full chargepoint installation in all residential new builds with a parking space associated with the building (Road to Zero commitment).
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New Non-Residential Buildings

- 8.5 Our preferred policy option is to transpose the requirements of the EPBD directly. The impact of this has been analysed relative to a baseline of no policy intervention, where the installation rate rises in line with the proliferation of ULEVs.

Table 5: New Non-Residential Buildings Impact Assessment Options

Option	Detail
Baseline	Retrofitting of all non-residential buildings, with the installation rate rising in line with the proliferation of ULEVs. This illustrates the costs if we do not intervene, and provides a baseline against which to consider the other options.
Policy Option 1	To require a chargepoint and cable routes for 20% of parking spaces to be installed in all non-residential new builds with 10 or more parking spaces associated with the building, as well as a chargepoint in all existing non-residential buildings with 20 or more parking spaces.

Consultation questions

Q70: Do you agree with the assumptions, costs and impacts set out in the Impact Assessment?

Q71: If you do not agree, please provide supporting evidence.

Q72: How are these costs likely to change over time?

Q73: What are the likely cost reductions from economies of scale?

Q74: Are these cost reductions likely to be relevant for both installation and hardware costs?

Q75: Are there any groups who would be impacted by these regulations that have not been captured by this assessment?

Q76: Would multiple single-occupancy developments (such as housing estates) be able to take advantage of economies of scale savings for chargepoint installation?

Q77: What are the likely technological learning rates that chargepoint hardware would experience?

Q78: Are you aware of a more suitable methodology for capturing the variation in grid connection costs?

Q79: Does the assessment of cost incidence seem accurate?

Q80: Are there likely to be disruption costs in a retrofit scenario, and if so how large are these likely to be?

Q81: Have we captured all the benefits, and if not, can you suggest any additional benefits?

Q82: What will be the impact on housing supply of introducing a requirement for chargepoint infrastructure on new dwellings?

What will happen next

A summary of responses, including the next steps, will be published within three months of the consultation closing. Paper copies will be available on request.

If you have questions about this consultation please contact:

Office for Low Emission Vehicles

Department for Transport

Great Minster House

33 Horseferry Road

London

SW1P 4DR

chargepointsinbuildings@dft.gov.uk

Annex A: Full list of consultation questions

Q1: Do you agree with our proposed policy position? Please note that we are legally obliged to transpose the EPBD minimum requirements for residential buildings with more than 10 parking spaces.

Q2: If no, please specify why, including what requirement you think would be suitable.

Q3: Do you agree that the proposed Building Regulation should mandate the introduction of electric vehicle charging points rather than set them as optional?

Q4: If you disagree, please explain why.

Q5: What other issues do you think, relevant to using Building Regulations to set standards for the provision and safety of electric vehicle chargepoints, we should consider?

Q6: Do you agree that the government should mandate electric vehicle charging for all new dwellings with an associated car parking space (including both multi-dwelling and single-dwelling buildings)?

Q7: If no, please explain what you think would be the appropriate scope of the requirements.

Q8: Do you agree the requirements should be for one chargepoint per dwelling rather than for every parking space associated with the building?

Q9: If not, please explain what you think would be the appropriate requirement.

Q10: Should the proposed Building Regulation requirement for electric vehicle chargepoint infrastructure apply where the building has undergone a material change of use as defined in paragraph a) or b) of Regulation 5 of the Building Regulations 2010?

Q11: If you disagree, please explain why.

Q12: Should the proposed Building Regulation requirement to install an electric vehicle chargepoint in every new home also apply to residential buildings undergoing a major renovation?

Q13: If so, do you think the requirement should apply only to residential buildings undergoing major renovation with more than 10 car parking spaces?

Q14: Please provide an explanation for your answer, including any evidence or costings if relevant.

Q15: Do you agree with our proposed policy position? Please note that the proposed requirement is a minimum requirement that the government is legally obliged to transpose under the EPBD.

Q16: If no, please specify why, including what alternative requirement you think would be suitable.

Q17: Do you agree that one chargepoint per existing building with more than 20 car parking spaces is a suitable minimum requirement to transpose the EPBD?

Q18: If you disagree, please explain why.

Q19: How can the government apply these regulations in a way which balances the benefit to EV drivers and the requirements of the EPBD, with the burden on landowners?

Q20: Do you agree that the appropriate enforcement regime for this power should set a sliding scale of penalties for non-compliance?

Q21: If you disagree, what do you think would be the appropriate enforcement regime for these requirements?

Q22: Do you have a view on which organisation should be defined as an enforcement body for compliance with the new regulations for EV charging infrastructure?

Q23: What steps should we take to mitigate against any potential negative impact of the implementation of these regulations?

Q24: Are the definitions in the draft Approved Document accurate, clear and do they provide the intended meaning?

Q25: If you think the definitions could be improved please suggest how.

Q26: Do you agree with using the concept "within the site boundary" to define which parking spaces which are in scope of the regulations?

Q27: If not, please explain what you think an appropriate definition would be.

Q28: Do you agree that the government should specify a minimum charging power of 7 kW?

Q29: If no, please specify what specification would be suitable and give your reasons.

Q34: Do specifications with regards to location of the cabling route as outlined in the draft Approved Document sufficiently consider accessibility requirements?

Q35: Please provide any reasoning, and any details of potential other specifications that would be needed.

Q36: Do the proposed accessibility requirements in section 1.24 of the draft Approved Document sufficiently consider accessibility requirements?

Q37: Should we include any additional accessibility requirements?

Q38: Are the specifications with regards to safety standards as outlined in the draft Approved Document appropriate?

Q39: If no, please specify which further safety specifications we need to include.

Q40: Do you agree that the installation, addition or alteration of dedicated circuits and earthing and bonding arrangements for electric vehicle chargepoints should be notifiable building work?

- Q41:** Is the proposed guidance in the draft Approved Document clear and fit for purpose and provide sufficient detail in order to comply with the requirements?
- Q42:** If you think the guidance could be improved, please suggest how.
- Q43:** The diagrams in the draft Approved Document are illustrative only. Are they accurate and do they provide sufficient detail?
- Q44:** If you think the diagrams could be improved, please suggest how.
- Q45:** Does the draft Approved Document meet our proposed policy intent?
- Q46:** Is there any information missing from the draft Approved Document?
- Q47:** What is a reasonable transition period between publishing the new regulations and guidance and the requirements coming into force?
- Q48:** Do you think we should apply an exemption to the chargepoint requirement when the grid connection cost is high?
- Q49:** If no, please explain why including any potential exemption if relevant.
- Q50:** Does the draft text in the draft Approved Document (section 1.27) capture the intended exemption?
- Q51:** If no, please suggest an alternative drafting.
- Q52:** What do you think is a reasonable maximum cost for grid connection? Please provide any evidence to support your answer.
- Q53:** Does this exemption sufficiently mitigate any negative impact on housing supply?
- Q54:** Are there any other technical feasibility considerations that should be taken into account when determining the application of the requirements?
- Q55:** If yes, please outline what these technical considerations should be, including any supporting evidence.
- Q56:** Should we apply an exemption to the requirements for material change of use in residential buildings in cases where there is adequate spare capacity in the incoming electrical supply to the car park?
- Q57:** If you disagree, please explain why.
- Q58:** Do you agree that we should apply an exemption for listed buildings and buildings in conservation areas as suggested above?
- Q59:** If you disagree, please explain why.
- Q60:** Should we apply an exemption to the requirements for major renovations in residential buildings where the cost of installing the cable routes exceeds 7 per cent of the total cost of the major renovation?
- Q61:** If you disagree, please explain why.
- Q62:** Should we apply an exemption to the requirements for major renovations in residential buildings in cases where there is adequate spare capacity in the incoming electrical supply to the car park?
- Q63:** If you disagree, please explain why.

Q64: Should we apply an exemption for the requirement for new non-residential buildings and non-residential buildings undergoing major renovations to small and medium enterprises?

Q65: If you disagree, please explain why.

Q66: Should we apply an exemption to the requirements for major renovations in non-residential buildings where the cost of installing the cable routes and chargepoint exceeds 7 per cent of the total cost of the major renovation?

Q67: If you disagree, please explain why.

Q68: Should we apply an exemption to the requirement for existing non-residential buildings to small and medium enterprises?

Q69: If you disagree, please explain why.

Q70: Do you agree with the assumptions, costs and impacts set out in the Impact Assessment?

Q71: If you do not agree, please provide supporting evidence.

Q72: How are these costs likely to change over time?

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Q74: Are these cost reductions likely to be relevant for both installation and hardware costs?

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Q80: Are there likely to be disruption costs in a retrofit scenario, and if so how large are these likely to be?

Q81: Have we captured all the benefits, and if not, can you suggest any additional benefits?

Q82: What will be the impact on housing supply of introducing a requirement for chargepoint infrastructure on new dwellings?

Annex B: Consultation principles

The consultation is being conducted in line with the Government's key consultation principles which are listed below. Further information is available at <https://www.gov.uk/government/publications/consultation-principles-guidance>

If you have any comments about the consultation process please contact:

Consultation Co-ordinator
Department for Transport
Zone 1/29 Great Minster House
London SW1P 4DR
Email consultation@dft.gov.uk