



Department
for Transport

Consultation Response: EV Charge points in Residential and Non-residential Buildings

November 2021

Department for Transport
Great Minster House
33 Horseferry Road
London
SW1P 4DR



© Crown copyright 2021

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit www.nationalarchives.gov.uk/doc/opengovernment-licence/version/3/ or contact,

The National Archives at www.nationalarchives.gov.uk/contact-us.

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

This publication is also available on our website at www.gov.uk/government/organisations/department-for-transport

Any enquiries regarding this publication should be sent to us at www.gov.uk/government/organisations/department-for-transport

Contents

Foreword.....	4
Executive Summary.....	5
1. Introduction	6
Background	6
Response formats	7
Profile of respondents	7
Analysis methodology.....	8
Summary of Final Policy Proposals	8
2. Building Regulations changes: New residential buildings and residential buildings undergoing major renovation	12
Proposed policy position.....	12
Summary of responses.....	12
Final Policy Position	20
3. Building Regulations changes: New non-residential buildings and non-residential buildings undergoing major renovation	21
Proposed policy position.....	21
Summary of responses.....	21
Final Policy Position	22
4. Existing non-residential buildings	24
Proposed policy position.....	24
Final Policy Position	24
Summary of responses.....	25
5. Technical specifications for Building Regulation requirements.....	28
Proposed technical specifications.....	28
Summary of responses.....	28
6. Exemptions and Adjustment Period	38
Proposed and Final exemptions.....	38
Summary of responses.....	40
7. Evidence and Analysis	50
Proposed evidence and analysis	50
Summary of responses.....	51
8. What will happen next?	59

Foreword

The UK is at the forefront of the global response to climate change. Our recent hosting of COP26 and the publication of the Net Zero Strategy have underlined this government's commitment to ending our contribution to climate change. Decarbonising our transport sector – which accounted for 27% of the UK's total emissions in 2019 – is a priority and electric vehicles are a key part of the solution.

We want to make switching to an electric vehicle easier than ever before. Alongside the £1.3bn of funding government has committed to electric vehicle charging infrastructure rollout, and an additional £620m committed at Spending Review 2021 to targeted vehicle grants and infrastructure, the government's vision is to put in place a regulatory framework for charging that supports a nationwide network of reliable, accessible and easy-to-use infrastructure. This will support further, sustained growth from the 650,000 plug-in vehicles already on our roads, the 250,000 home and workplace chargers the government has supported, and the 26,000 public charge points already available in the UK.

The regulations set out in the document help cement our position as a world leader in the transition to electric vehicles. England will lead the world by legislating for new homes to have charge points. This will future-proof residential buildings ensuring people buying or renting new homes can start every day with a fully charged vehicle. The regulations will also ensure drivers without off-street parking at home can charge conveniently as they go about their lives at new offices and shops, contributing to our rapidly expanding charging network. The regulations directly support our levelling up agenda, making electric vehicles increasingly accessible for all. We expect up to 145,000 charge points to be installed every year as a result of introducing these regulations.

These regulations are just one example of the government delivering on the promises of the Prime Minister's Ten Point Plan for a Green Industrial Revolution as we build back greener. We will continue to deliver world firsts, create green jobs and growth, and level up across the country.



The RT Hon Grant Shapps MP



The RT Hon Kwasi Kwarteng MP

Executive Summary

From July - October 2019, the UK Government consulted on proposals to introduce new building regulations, in England, which would mandate charge point infrastructure in new homes, new non-residential buildings, and when some buildings are renovated. The Government has reflected on the diverse consultation responses and has decided to introduce new measures requiring:

- Every new home, including those created from a change of use, with associated parking within the site boundary to have an electric vehicle charge point;
- Residential buildings undergoing major renovation, which will have more than 10 parking spaces within the site boundary after the renovation is complete, to have at least one electric vehicle charge point for each dwelling with associated parking within the site boundary and cable routes in all spaces without charge points;
- All new non-residential buildings, with more than 10 parking spaces within the site boundary of the building, to have a minimum of one charge point and in addition to this, cable routes for one in five of the total number of spaces;
- All non-residential buildings, undergoing a major renovation, which will have more than 10 parking spaces within the site boundary after the renovation is complete, to have a minimum of one charge point and in addition to this, cable routes for one in five spaces.

This response document also details the Government's final policies on exemptions and technical details, such as charge point standards. The Government will not introduce the proposed requirement for one charge point in all existing non-residential properties with more than 20 parking spaces. We believe a more tailored approach is needed for existing non-residential properties and therefore we will work to introduce an alternative policy.

These decisions are in line with the majority of respondents who were supportive of the Government's proposals. We have reflected carefully on the comments made by respondents and have made several changes to the details of our proposed policies and the associated Approved Document and Impact Assessments. The Approved Document will be published alongside the regulations later this year.

The Government has faced delays in publishing this response due to the coronavirus pandemic and the need to ensure our final policies: reflect a full consideration of diverse consultation responses; are appropriate and enforceable; and meet Government ambitions. Despite this delay, we do not believe that there has been a material change in circumstances to warrant re-consultation and that the policies should be introduced as set out.

Overall, the Government believes these new measures are a vital step towards decarbonising England's transport system and will pave the way for the mass transition to zero emission vehicles. We would like to thank all stakeholders for their time taken in responding to this consultation.

1. Introduction

Background

In July 2018 the Government published the Road to Zero Strategy, which set out an initial package of support to achieve the mission of decarbonising car and van transport. Since the publication of the Strategy the UK was the first major economy in the world to pass a law to end its contribution to global warming by 2050. In June 2019 the UK set a target to bring all greenhouse gas emissions to net zero by 2050, compared with the previous target of at least 80% reduction from 1990 levels.

To reflect the new net zero target, in 2020 the Government announced a phase out date for the sale of new petrol and diesel cars and vans of 2030. From 2035, all new cars and vans must be zero emissions at the tailpipe and between 2030 and 2035, any new cars and vans sold that emit from the tailpipe must have significant zero emission capability, which would include some plug-in and full hybrids. To support this ambitious target, Government has also announced a £2.8 billion package of measures to support industry and consumers to make the switch to cleaner vehicles. This includes measures to incentivise the purchase of electric vehicles (EVs) and support for EV charging infrastructure rollout.

Charging cars at home overnight using a dedicated charge point 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. 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. This is why the Road to Zero Strategy set out its intention for all new homes to be electric vehicle ready and committed to consult on requirements for every new home to have a charge point, where appropriate. During the public consultation, we sought the views of key stakeholders on the policy proposals set out to deliver this commitment alongside proposals to transpose the charge point infrastructure requirements from the European Union Energy Performance in Buildings Directive (EPBD)¹. The United Kingdom has now left the European Union and is therefore no longer bound by EU law or the requirements of this Directive. However, the Government believes it is within England's interests to proceed with these policy measures to support the transition to electric vehicles in line with our ambitious commitments to address climate change. The EPBD set requirements for cable routes only in residential properties with more than ten parking spaces, and for one charge point and cable routes for at least one in every five parking spaces in non-residential properties with more than ten parking spaces. However, for residential properties, the Government has decided to adopt a more ambitious policy to meet our decarbonisation ambitions. Our final policy positions are detailed below.

Key stakeholder groups included charge point manufacturers and operators, property developers (incl. housing associations), distribution network operators (DNOs), local councils and the automotive sector. Officials also presented and discussed the proposals with the Building Regulations Advisory Committee for England.

¹ Directive (EU) 2018/844 on the energy performance in buildings, 30 May 2018. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2018.156.01.0075.01.ENG

The consultation document outlined the aims of the policy and the proposals put forward to achieve these aims, which was accompanied by draft impact assessments and draft technical guidance for building regulations requirements for electric vehicle charging.

Response formats

The consultation document and supporting information was made available online via GOV.UK. Participants were invited to attend consultation events and/or read the consultation documents online. They were then able to share their views by either completing an online survey (also available in word format for those requiring alternative formats) or submit written responses by email or on paper. Accessible formats were available to participants if requested.

During the public consultation, the Department for Transport (DfT), in partnership with the Ministry of Housing, Communities & Local Government (MHCLG) and the Department for Business, Energy and Industrial Strategy (BEIS), delivered two consultation events which took place in London and York. Officials from the DfT, MHCLG and BEIS also presented the proposals and highlighted the consultation at industry events and conferences throughout the consultation period.

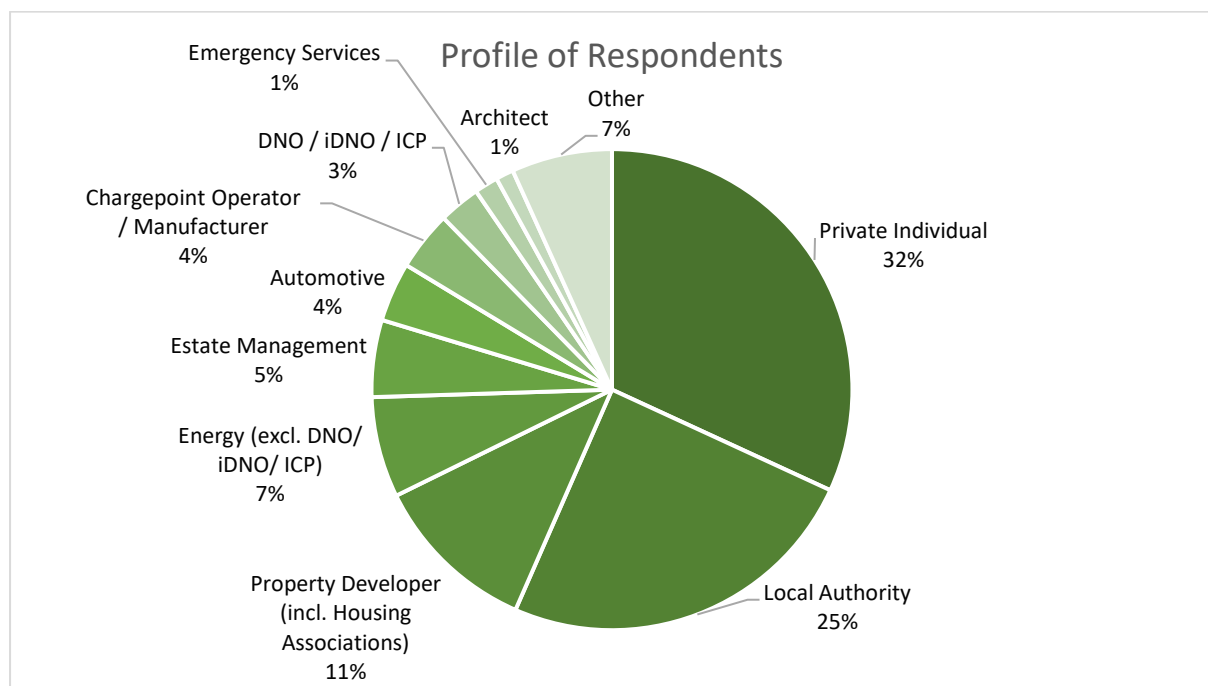
The Department for Transport delivered a communications campaign to support the launch of the consultation, raise awareness amongst the stakeholder community and encourage responses.

Profile of respondents

In total 251 responses were received. Questions 1 to 3 asked for details about the respondent and the organisation they represented, if applicable.

Respondents were categorised into 11 main groups. The groups reflected the industry sector that respondents belonged to.

The highest proportion of respondents to the public consultation (32%) came from private individuals, as seen in Graph 1 below.



Analysis methodology

The consultation document, online survey and pro forma set out questions covering the following topics:

- Proposed amendments to the Building Regulations;
- Transposition of the EPBD;
- Technical guidance for Building Regulation requirements;
- Impact Assessments for residential and non-residential buildings.

Although covering the same themes, the questions on the online questionnaire and MS Word pro forma differed slightly and appeared in a different order to those in the consultation document published on GOV.UK. All responses were collated and taken into account during consultation processing.

This consultation response will follow the question wording and numbering of the online questionnaire and MS Word pro forma as this was the format in which most responses were received. Note, questions 1 – 3 collated respondent personal information, including the sector they represent.

The analysis of the consultation included:

- Reviewing responses to all the questions in the consultation;
- Full thematic analysis of the key themes for each of the consultation questions based on the final online responses; and,
- Sentiment analysis, which looked at the differences in the emotional tone (negative and positive) of responses to each theme.

Summary of Final Policy Proposals

Full details of the final policy positions will be included in the Approved Document, which will be published with the laying of the regulations.

The table below sets out the Government's final policy proposals, to require buildings to have electric vehicle charging infrastructure. These proposals will be instrumental in supporting the transition to electric vehicles by ensuring the majority of new homes, where most people prefer to charge, will have a charge point and that infrastructure will also be available at destinations such as shops and workplaces.

The table also sets out the exemptions from the requirements that the Government will introduce. These exemptions are largely intended to ensure that developments remain viable, where installations would be disproportionately difficult or costly. The table also details the adjustment period between the laying and coming into force of the regulations where the requirement will not apply. This period will allow industry to prepare for the introduction of the regulations.

Since the original consultation, Government has conducted a further targeted consultation proposing an exemption for residential properties undergoing major renovation for the purposes of fire safety remediation due to historical fire safety deficiencies (i.e. cladding remediation). Following this consultation, Government has decided to introduce this exemption as this will ensure that

homeowners facing challenging circumstances due to remediation works do not face further costs. Government has also reflected on consultation responses calling for further research on appropriate safety measures in enclosed or open-sided car parks to mitigate and manage fires, on the rare occasion one might occur. The Government is not aware of any EV fires in enclosed or open-sided car parks in the UK, though they have occurred in other countries. Government believes it is right to take a precautionary approach and has decided that the charge points requirements will not apply in enclosed or open-sided car parks, while research is conducted into appropriate safety measures in these locations. Cable routes will be required in their place. Government will produce interim guidance for those responsible for enclosed or open-sided car parks.

Building Type	Final Policy Positions	Unless
<p>New dwellings (including flats), with associated parking within the site boundary <i>(e.g. a house or flat with an associated parking space)</i></p> <p>New residential properties with more than 10 parking spaces <i>(e.g. a block of flats or housing development with parking)</i></p>	<ul style="list-style-type: none"> At least one electric vehicle charge point per dwelling Cable routes in every space without charge points. 	<ul style="list-style-type: none"> The installation of a charge point would increase grid connection costs by more than £3,600 <p>In which case not all requirements will apply.</p>
<p>Buildings undergoing material change of use to create dwellings. <i>(e.g. a disused warehouse being developed into flats with parking)</i></p>	<ul style="list-style-type: none"> At least one electric vehicle charge point for each new dwelling with associated parking within the site boundary. 	<ul style="list-style-type: none"> The buildings are listed buildings, in conservation areas or in schedule of monuments which charge point installation would unacceptably alter Existing power supply is insufficient to install all charge points <p>In which case not all requirements will apply.</p>
<p>Residential buildings undergoing major renovation <i>(e.g. a block of flats undergoing largescale renovation of over 25% of the building's surface area, including parking areas)</i></p>	<ul style="list-style-type: none"> Have at least one electric vehicle charge point for each dwelling with associated parking within the site boundary; and Cable routes in every space without charge points. 	<ul style="list-style-type: none"> Building will not have more than 10 parking spaces within the site boundary after the renovation is complete Infrastructure costs exceeds 7 % of the total cost of the major renovation of the building Existing power supply is insufficient to install all charge points Property is undergoing major renovation for the purposes of fire safety remediation <p>In which case not all requirements will apply.</p>

<p>New non-residential building <i>(e.g. a newly built cinema complex with parking)</i></p>	<ul style="list-style-type: none"> • Minimum of one charge point; and • Cable routes for one in five of the total number of spaces. 	<ul style="list-style-type: none"> • Building will not have more than 10 parking spaces within the site boundary of the building.
<p>Non-Residential buildings undergoing major renovation <i>(e.g. a commercial shopping centre undergoing largescale renovation of over 25% of the building's surface area, including parking areas)</i></p>	<ul style="list-style-type: none"> • Minimum of one charge point; and • Cable routes for one in five of the total number of spaces. 	<ul style="list-style-type: none"> • Building will not have more than 10 parking spaces within the site boundary after the renovation is complete • Infrastructure costs exceeds 7 % of the total cost of the major renovation of the building <p>In which case not all requirements will apply.</p>
<p>Mixed Use Developments <i>(e.g. a skyscraper building with office space as well as flats, with parking)</i></p>	<ul style="list-style-type: none"> • In mixed-use developments, requirements for residential and non-residential buildings will apply as per the number of allocated spaces for different use types. 	
<p>Charge point requirements under regulations</p>	<ul style="list-style-type: none"> • Minimum power rating of 7kW • Minimum of Mode 3 or equivalent • Type 2 plug (where applicable) • Untethered (where applicable). 	

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

Proposed policy position

The Government proposed that new regulations would mandate that the following properties should have a charge point:

- New dwellings with associated parking within the site boundary of the building.
- New dwellings created through a material change of use, which have associated parking within the site boundary of the building.

For residential buildings undergoing major renovations, with more than 10 parking spaces after the renovation is complete, we consulted on two options:

- Transposing the minimum requirements of the EPBD, requiring properties within the site boundary of the building to have cable routes for electric vehicle charge points in every space.
- An extended approach, requiring a charge point per dwelling and cable routes in all further spaces.

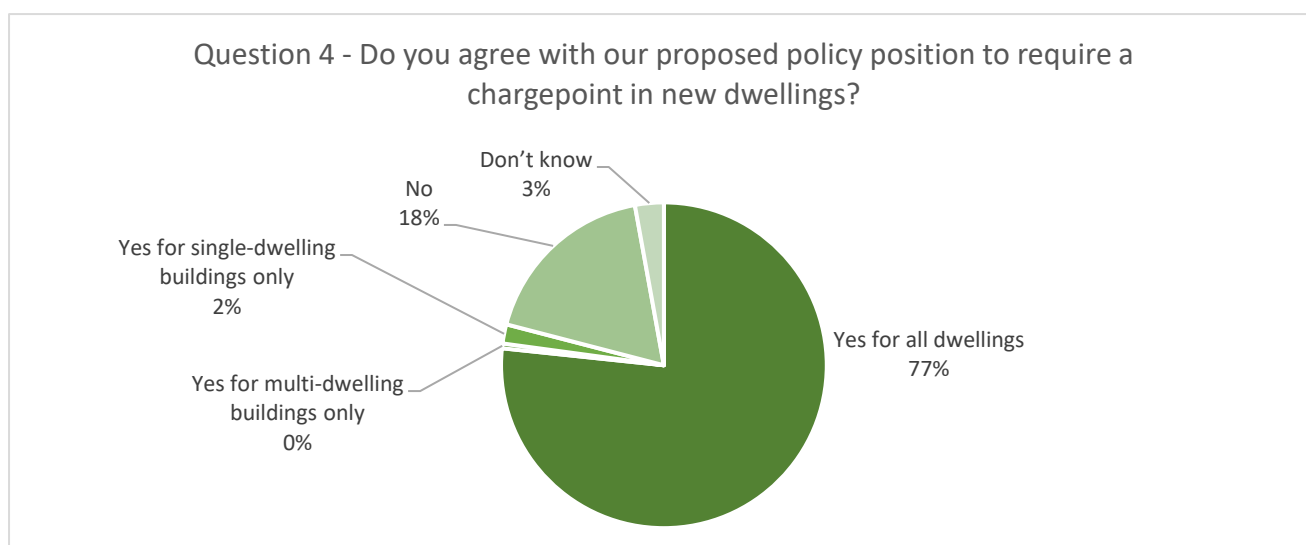
Summary of responses

Question: 4

Do you agree with our proposed policy position to require a charge point in new dwellings?

Question: 5

Why not, including what requirement you think would be suitable (include any evidence you may have)?



The majority of respondents (77%) supported the policy and agreed that charge point requirements should apply to all new dwellings. Some respondents agreed with the policy intent, but suggested that the policy should:

- Be more ambitious by extending the policy to all parking spaces associated with residential dwellings including multi-dwelling buildings;
- Be future-proofed by ensuring electrical infrastructure is capable of handling innovations such as vehicle-to-grid.

Some respondents agreed with our proposed policy but wanted to highlight areas they felt needed additional investigation to allow for the policy to be effectively implemented. These areas included considerations around ownership of parking spaces, charging for L-category vehicles and combining electric vehicle charging with other low carbon technologies.

Respondents who did not agree with the policy position cited two key themes for their opposition:

- That requirements should be set to require cable routes only; and
- That requirements should include both cable routes and cabling.

The most commonly cited reasons for these views were that:

- Homeowners should be able to decide which charge point they would like to be installed, rather than a developer;
- Unknown future technological developments may lead to charge points becoming redundant;
- The policy may lead to the overprovision and underutilisation of charging infrastructure.

Concerns were raised that the requirements would increase build costs for developments, with some posing a solution of incrementally increasing charge point provision requirements as demand rises.

Government response

The Government will progress its proposal to mandate, subject to the exemptions set out in table 02 and section 6, for every new dwelling which has associated parking within the site boundary to have a charge point. This was supported by the majority of respondents.

The Government has considered the points raised regarding the benefits of requiring only the installation of cable routes and/or cabling. While there are some advantages to these options (namely allowing residents to choose their charge point), requiring charge points will encourage and make it easier for more people to buy and own an electrical vehicle. Particularly those who do not own their home and may struggle to retrofit a charge point. Likewise, developers benefit from economies of scale in the purchasing of charge points and will likely be able to provide charge points at a cost saving, compared to individual consumers.

The provision of charge points will act as a catalyst towards consumers making the transition to electric vehicles, supporting the Government's ambitions to decarbonise the transport sector and reach net zero.

To ensure that the charge points that are installed are future-proofed, we will be seeking to set standards for the charge points required by these regulations, including setting minimum charge powers and plug type. More detail is provided in part 5 of this document. In October 2021, Government laid the Electric Vehicles (Smart Charge Points) Regulations in Parliament to mandate

that most new private (domestic and workplace) chargepoints sold in Great Britain must be smart and meet minimum device-level requirements to protect consumers and the electricity grid. These regulations are expected to come into force from 30 June 2022, except for the cyber security requirements which are expected to come into force from 30 December 2022.

<https://www.gov.uk/government/consultations/electric-vehicle-smart-charging>

The Government recognises the comments raised on extending the requirements to all parking spaces in residential properties. While there may be benefits in exploring this, cost constraints must be considered to ensure that housing projects remain viable and that the UK continues to build the housing stock it needs. The Government also believes the provision of one charge point in all new homes will be adequate for the majority of households. However, in residential properties with more than 10 parking spaces, cable routes will need to be installed in any parking spaces without charge points. This will ensure that charge points can be installed easily and cheaply in the future, if they are required.

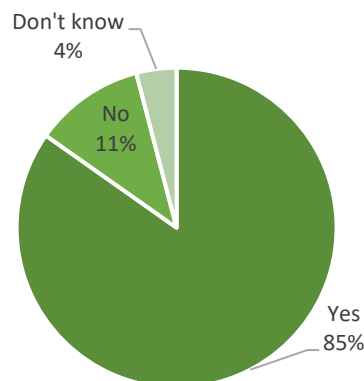
Question: 6

Should we require the installation of an electric vehicle charge points in the car park of buildings converted into a new dwelling?

Question: 7

Why not (including any evidence you have)?

Question 6 - Should we require the installation of an electric vehicle chargepoint in the car park of buildings converted into a new dwelling?



The majority of respondents agreed that the requirement to install an electric vehicle charge point for every dwelling with associated parking should also apply when a building undergoes a change of use, and is converted into one or more dwellings. This included most developers and charge point operators / manufacturers and all but one local council.

The main reasons provided in opposition to the proposal included:

- Not every dwelling with a parking space may have a plug-in vehicle or vehicle at all;
- Concerns those carrying out the works would install the cheapest available charge point rather than the most appropriate;
- That if electricity capacity upgrades were required, this may make the works unviable.

Common concerns and arguments for requiring cable routes and cabling infrastructure only were raised.

Government response

The Government will mandate the installation of electric vehicle charge points in buildings which are converted into new homes. Properties will need to have one charge point for every new dwelling with associated parking within the site boundary of the building. This will ensure that there is consistency across all new homes and electric vehicle uptake is encouraged, further supporting the UK's transition to zero emission vehicles.

The Government recognises concerns on electricity capacity upgrades making housing projects unviable and takes seriously the need to safeguard new housing developments. That is why we are proposing the introduction of exemptions for these properties, which will only require the installation of the number of charge points which can be accommodated within the existing power supply (see section 6). Likewise, recognising concerns about the quality of the installed charge points, we will be seeking to set standards for all charge points required under these regulations, as set out in part 5 of this document.

Question: 8

Do you agree not to apply the charge point requirement to residential buildings undergoing major renovations?

Question: 9

Why, including any evidence you have, and to which types of residential buildings you wish to apply the regulation to (such as residential buildings with more than 10 parking spaces only)?

As detailed at the beginning of this document, there were some inconsistencies in the questions posed in the consultation document published online and the questions in the online survey. In this instance, the consultation document set out that the Government was considering requiring properties undergoing major renovation, where there are more than 10 parking spaces after the renovation is complete, to have a charge point for every dwelling with an associated parking within the site boundary of the building. The consultation therefore asked if the Government **should** extend the requirement for properties undergoing major renovation and mandate charge points. However, the online survey, as above, asked respondents if they agreed **not** to extend the requirement.

Given this inconsistency, analysis of this proposal has focused on the supporting comments provided.

A large number of those that responded expressed that requirements should be the same across new build residential properties and those undergoing major renovation or change of use. Many of those who supported this view thought that the cost of installing a charge point would be minimal in comparison to the costs associated with a major renovation.

For those that thought that major renovations should be exempt from the requirement to install charge points, responses were consistent with other questions citing potential impacts on the viability of projects, the need for consumer choice and the risk of infrastructure that could be obsolete.

Some respondents thought that less stringent requirements could be implemented for major renovations, such as cable routes only for all parking spaces or cable routes and cabling for all parking spaces. Some suggested a threshold number of parking spaces for the requirements to come into force. Other comments provided included requests for a clearer definition of ‘major renovation’ and suggestions that guidance be made available and developers encouraged to install charge points where possible even if not a Building Regulations requirement.

Government response

In light of the considerations above, the Government has decided to adopt the extended approach set out in the consultation document. We will require properties undergoing major renovation, which will have more than 10 parking spaces after the renovation is complete, to have a charge point for each dwelling with associated parking within the site boundary, and cable routes in all further spaces. This will maintain consistency with new homes and will maximise the potential benefits of this policy. Again, recognising the concerns raised on the potential impact that these regulations may have on the viability of housing projects, we will introduce exemptions for these properties, which will:

- Only require the installation of the number of charge points which can be accommodated within the existing power supply;
- Exempt properties from the requirement to install charge points and/or cable routes, where infrastructure costs exceed 7 % of the total cost of the major renovation of the building. (see section 6).

The Government wants to ensure that these regulations are clear and industry is prepared for their introduction. As such, we have been engaging with stakeholders to provide guidance on the new requirements and to ensure the associated Approved Document is fit for purpose.

Question: 10

Do you agree the requirement should be for one charge point per dwelling rather than every parking space associated with the building?

Question: 11

Why not (including any evidence you may have?)

65% of respondents were supportive of the policy aim to require one charge point per dwelling rather than one per parking space associated with a building. Of those that supported the view that one charge point per property would be sufficient, several respondents highlighted that, due to the range of current batteries, those who have more than one electric vehicle are unlikely to need to charge them simultaneously.

Of those that disagreed with the proposal, reasons included:

- That developers should focus on installing enabling infrastructure rather than the charge point itself;
- That sharing charge points would be impractical;
- That charge points are not universally needed.

Some respondents felt the policy did not go far enough, as limiting charge points to one per dwelling would not encourage electric vehicle uptake or meet future demand. Some also wanted provision for charging of other EVs, including e-bikes. Respondents commented on a range of other issues that they felt the policy had not considered including: visitors to the property who may also need access to charge points, concerns that this policy could raise housing costs for non-car owning residents, and concerns around profiteering, or the installation of poor quality charge points. Many respondents raised concerns about the capacity of the energy grid and whether it could support widespread electric vehicle uptake, alongside multiple comments about the need to install solar panels as a priority to reduce carbon emissions.

Government response

The Government believes that mandating one charge point per dwelling is the most balanced measure to take. We expect that majority of charging will take place at home and believe that this will provide sufficient charging capacity for the majority of households, while ensuring housing developments remain viable. Of course, further charge points can be installed in a property if this is desired and feasible. The Government will set standards for the charge points which will be installed under these requirements (see section 5).

In relation to network capacity, we are confident that the grid will be able to cope with increased demand from electric vehicles. The electricity market is already set up to bring forward investment in generation capacity to meet demand and the government and Ofgem are working with stakeholders and industry to consider the implications of electric vehicle policy for networks. We also plan to introduce provisions that will exempt new dwellings from the requirement to have a charge point where the cost of installing a charge point leads to grid connection costs of more than £3,600 (though cable routes will still be required). This exemption formed part of the original consultation. Government expects developers to consider agile solutions to network capacity issues to manage grid capacity (e.g. introducing battery storage on housing sites or load management systems), working closely with network operators to ensure the policy requirements can be met in all but exceptional circumstances. In addition, Government laid legislation in October 2021 which mandates that most new private (domestic and workplace) chargepoints sold in Great Britain must be smart and meet minimum device-level requirements. Smart charging of EVs can help consumers save money on their energy bills and reduce the need for costly network reinforcement.

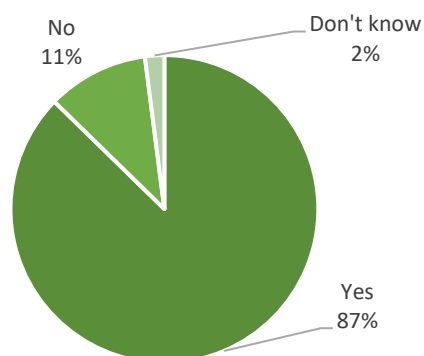
Question: 12

Do you agree we should set the requirement as mandatory rather than optional in the building regulations?

Question: 13

Why?

Question 12 - Do you agree we should set the requirement as mandatory rather than optional in the building regulations?



The large majority of respondents agreed that any requirement set should be mandatory rather than optional. Those that supported requirements being mandatory gave supporting reasons including:

- The UK's need to decarbonise transport and transition to electric vehicles;
- To encourage electric vehicle uptake;
- To reduce costs for homeowners, compared to retrofitting.

A national rather than local approach was considered important. Concerns were raised that an optional requirement would increase workload for local councils and be susceptible to delays or planning challenges. Some respondents agreed to the requirements being mandatory, subject to their concerns being addressed which included how to manage increased electricity demand, defining roles and responsibilities, and ensuring installer competence.

Respondents who disagreed voiced consistent arguments including:

- need for consumer choice;
- a lack of market demand;
- concern over quality; and
- the risk of charge points becoming obsolete.

Concerns were raised around the UK's technology readiness, citing insufficient electricity capacity variation, unreliable and not fully developed charging technologies, cyber and physical security risks, and lack of regulation in the retail of electricity.

There were arguments for a case-by-case approach, e.g. depending on the building type, the needs of its residents, local priorities and demand forecast. Some respondents supported a mandatory requirement for electric vehicle charge point infrastructure (e.g. wiring, cables) but not the charge point itself. Other respondents suggested mandating new buildings to have electric vehicle charging capability without mandating how this is achieved, e.g. mandating access to a charge point (rather than one per dwelling).

Some respondents recommended reviewing other relevant areas of regulation at the same time, such as:

- Wider Building Regulations,
- DNO capacity offer time limits,
- Sale of electricity through charge points and more widely the whole retail market.

Government response

The Government is committed to the need to decarbonise transport, in order to reach net-zero carbon emissions by 2050. In order to achieve this, it is imperative that people across the country have consistent levels of infrastructure in order to transition to zero emission vehicles. **In light of this, the Government will make the requirement to install electric vehicle infrastructure mandatory in the building regulations.**

These regulations will ensure that, where appropriate, new buildings will be future-proofed for the electric vehicle transition more efficiently and at a lower cost than retrofitting a charge point at a later date. As the Government expects home charging to fulfil the majority of charging needs, this requirement is a vital measure to provide the required infrastructure and demonstrate readiness for the electric vehicle transition.

The Government has considered wider points, such as the request to make clearer links to other related building regulations (e.g. fire and electrical safety) in the Approved Document (see section 6).

Question: 14

What other issues do you think, relevant to using building regulations to set standards for the provision and safety of electric vehicle charge point, we should consider?

There were a number of recurring themes that respondents felt we should consider including:

- Minimum charge point standards and ensuring these are future proofed.
- Health & safety, with suggestions including: adhering to current safety standards and regulations; consideration of electrical earthing arrangements; measures to ensure the competence of charge point installers; and ensuring sufficient fire safety standards for electric vehicles, their batteries and charge points.
- Accessibility, ensuring the charge point should be easily accessible, irrespective of vehicle type, size, location of charging port, or user – including ensuring access and provision for disabled users. Some respondents also noted charge points should be physically secure to prevent unauthorised use.

- Provision across different areas/ building types, particularly ensuring sufficient provision of charge points for residents and visitors, including access for residents in shared buildings or without off-street parking. Other recommendations included provision for public spaces and for multiple users at one dwelling.
- Electrical capacity, particularly ensuring the national grid can cope with increased demand from electric vehicle charging. Points related to the responsibility for network reinforcement costs, electric meter requirements, billing users of shared charge points, load management, and optimising energy consumption across buildings were also raised.
- Costs for installation and long-term maintenance of charge points and their infrastructure. Financial contributions or grants from Government, industry and/or developers to support the policy were suggested.

There were varied suggestions around how to implement and support charge point requirements. Respondents noted the need for there to be clarity over requirements for non-standard scenarios, clear procedures around exemptions, strong enforcement measures, and alignment with other regulations and policies.

Government response

The Government has considered the points raised by respondents and has made several changes to our policies and the associated Approved Document. This includes changes to reflect fire and electrical safety requirements, accessibility requirements and enforcement regimes for these policies and the proposed exemptions. These points are covered in further detail in sections 5 and 6.

Final Policy Position

In light of the considerations above and in line with our consultation proposal, Government will take forward regulations to ensure that new residential properties and those undergoing major renovations are future proofed to meet our electric vehicle transition ambitions. This course of action will ensure greater cost savings in comparison to retrofitting of charge points, greater efficiencies due to economies of scale and provide confidence in the availability of electric vehicle charging equipment. The Government is also proposing the introduction of a number of exemptions to mitigate the concerns raised on grid capacity and project viability (see Table 02 and Section 6).

Specifically, in 2021 Government will take forward regulations requiring that:

- New dwellings (including flats) with associated parking within the site boundary to have an electric vehicle charge point. Residential properties with more than 10 parking spaces will also require cable routes in every space without charge points.
- Buildings undergoing material change of use to create new dwellings, to have one charge point for every new dwelling with associated parking within the site boundary of the building.
- Residential buildings undergoing major renovations, with more than 10 parking spaces within the site boundary of the building after the renovation is complete, to have an electric vehicle charge point per dwelling with associated parking and cable routes in all further parking spaces.

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

Proposed policy position

The Government proposed requiring every new non-residential building, and every non-residential building undergoing major renovation, with more than 10 parking spaces within the site boundary of the building, to install at least one charge point and in addition to this, cable routes for electric vehicle charge point cabling in one in five of the total number of spaces.

Summary of responses

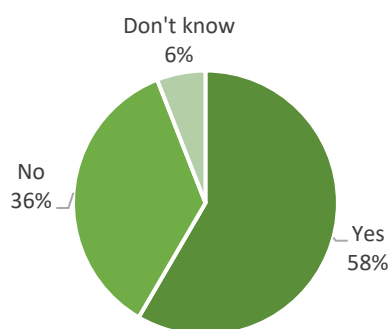
Question: 15

Do you agree with our proposed policy position for new non-residential buildings and non-residential buildings undergoing major renovation?

Question: 16

Why, including what alternative requirement you think would be suitable (note we are obliged under the EPBD to transpose the requirements as a minimum)

Question 15 - Do you agree with our proposed policy position for new non-residential buildings and non-residential buildings undergoing major renovation?



The majority of respondents (58%) agreed with our proposal for new non-residential buildings and non-residential properties undergoing major renovation.

The majority of those who disagreed with the proposal did so on the basis that they believed a single charge point for car parks with more than 10 spaces (and cable routes for 1 in 5 spaces) was not sufficient to support electric vehicle uptake ambitions. A number of respondents (including almost half of local council respondents) suggested that the Government should seek more ambitious provisions.

Respondents proposed more ambitious requirements based on percentage (i.e. 10% or 20% of spaces should have charge point provision) or requirements that differed depending on the type of car park being discussed and the average dwell times for that car park. Some suggested that all new non-residential car parks should be required to have a charge point regardless of size.

Another major theme to come out of this question was the view that requirements for charge point provision should be tailored to how different car parks are used. For example, a supermarket car park should have a few higher powered charge points whereas a train station should have many standard chargers, reflecting the dwell times in those locations.

Government response

The Government will mandate that every new non-residential building (with more than 10 parking spaces in the site boundary), and every non-residential building undergoing major renovation, (which will have more than 10 parking spaces within the site boundary after the renovation is complete), should have at least one charge point and in addition to this, cable routes for electric vehicle charge point cabling in one in five of the total number of spaces.

The Government wants to ensure there is adequate 'destination' charging capacity for the transition to zero emission vehicles. As the UK moves into the early mass market for electric vehicles, the Government believes that one charge point per new non-residential building will be sufficient. However, these are minimum standards and developers and property owners can choose to install further charge points if they wish. We wish to encourage and support the market in providing additional charge points when needed and the requirements for cable routes for 1 in every 5 spaces will help facilitate the easy installation of future charge points. Requiring cable routes at the point of construction represents a significant cost saving in comparison to retrofitting and is more convenient (for example, preventing car parks being closed in order to install cable routes).

The consultation suggested that these requirements would apply to crown buildings and statutory undertakers (e.g. airports and train stations). These building types are normally exempt from the requirements of the Building Regulations, as set out in the Building Act 1984. Applying the requirements to these building types would require new primary legislation. We have chosen not to apply the requirements to crown buildings and statutory undertakers. OZEV will consider how best to ensure adequate EV charging provision at these locations separately to this Government response.

Final Policy Position

The Government will take forward regulations to ensure that new non-residential buildings, and those undergoing major renovation, with more than 10 parking spaces are future proofed to meet our electric vehicle transition ambitions.

Specifically, in 2021 Government will introduce new provisions setting the following standards:

- New non-residential buildings with more than 10 parking spaces within the site boundary of the building to have a minimum of one charge point and in addition, cable routes for electric vehicle charge points in one in five of the total number of spaces.
- Every non-residential building undergoing a major renovation, with more than 10 parking spaces within the site boundary of the building after the renovation is

complete, to have a minimum of one charge point and in addition, cable routes for electric vehicle charge points in one in five of the total number of spaces.

4. Existing non-residential buildings

Proposed policy position

The Government proposed transposing the requirements set out in the EPBD, requiring one charge point in existing non-residential buildings with more than 20 parking spaces.

The Government proposed identifying an appropriate enforcement body, which could operate at a local level, to monitor the implementation of the regulations. We proposed that the enforcement body would be able to apply a sliding scale of penalties.

Final Policy Position

For this section, the final policy position has been brought to the front and summarises the response to all of the questions related to our proposals for existing non-residential properties. This is because, unlike the proposals put forward at consultation for new residential and non-residential buildings, the responses to the proposal to require charge points in existing non-residential buildings were significantly less supportive. There were concerns about the blanket approach of the policy and the impacts this would have on small existing non-residential premises such as charities and small businesses. Conversely, a high proportion of stakeholders argued that the requirements were not ambitious enough for larger premises.

In light of these responses, the government will reflect on the comments that were raised in this consultation and take these into account as we develop an alternative policy, to ensure it is fit for purpose. This process will not impact the wider proposals and the Government will introduce the building regulations for new residential and non-residential properties, and those undergoing major renovation, in 2021.

Summary of responses

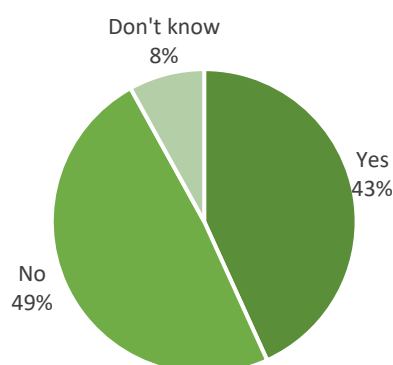
Question: 17

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

Question: 18

If you disagree, please explain why.

Question 17 - Do you agree that one chargepoint per existing building with more than 20 parking spaces is a suitable minimum requirement to transpose the EPBD?



The majority of respondents disagreed with the proposed policy of one charge point per existing building with more than 20 parking spaces as a suitable minimum for transposing the EU Energy Performance of Buildings Directive.

The most commonly cited argument for this was that one charge point per existing building with more than 20 parking spaces was too low a requirement. In particular, the idea of a sliding scale (where the number of charge points installed changes depending on the number of spaces in the car park or the demand of the car park) was popular, as was charge point coverage by percentage (10% of spaces etc). A few respondents also argued that the proposal should be made the same as those for new residential properties.

A small number of respondents raised concerns about who would pay for the installation of charge points and pointed out the possible negative impact on landlords and small businesses. It was suggested that businesses should be exempt from complying if the cost of installing a charge point was unaffordable or that Government funding should be made available.

A few respondents cited additional areas for consideration, including: changing the target date, guidance on choosing the right charge point, how to avoid obsolete infrastructure and how these regulations would apply in buildings with multiple owners.

Question: 19

How can the Government apply these regulations in a way which balances the benefit to electric vehicle drivers and the requirements of the EPBD, with the burden on landowners?

There were differing opinions from respondents on this question.

Many respondents thought that the installation of charge points should be incentivised. Suggested incentives included:

- A grant scheme to subsidise cost of purchase and installation of a charge point;
- Offsetting installation costs against taxes;
- Making installations and equipment required for compliance VAT free.

Some respondents expressed the view that charge points would make buildings more attractive to tenants or customers, and therefore would add value to the landowner's property which would balance the burden.

Another widely supported view was landowners could balance the burden of provision by using the charge points to create a revenue stream to pay for costs of the charge point. The overall benefits of reducing emissions and combatting climate change were viewed by some as outweighing the costs of charge points.

Access to advice including lists of approved suppliers and installers was also cited as reducing the burden being placed on landowners of delivering the policy.

Question: 20

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

Question: 21

Why, including what alternative enforcement regime you think is suitable?

Most respondents agreed that an appropriate enforcement regime for requirements on existing car parks should be a sliding scale of penalties for non-compliance. Some respondents' comments suggested encouragement and assistance to comply would be more appropriate than penalties, whereas others favoured fixed penalties that could be readily enforced to ensure a behaviour change is made.

Respondents also suggested that any penalty should consider the feasibility and suitability of installing a charge point, as different locations could face different barriers to compliance.

Several comments were left in respect to enforcement of requirements on new build properties. There is already an enforcement regime for building regulations which will cover these requirements.

Question: 22

In your opinion which organisation should be defined as the enforcement body for compliance with new regulations for electric vehicle charging infrastructure?

Just over 55% of respondents, including over half the local councils who responded to the question, thought that Local Authority Building Control should be the enforcement body for requirements for existing non-residential building car parks with more than 20 spaces. Few thought that the Local Weights and Measures Authorities was an appropriate body and 40% were either unsure of who the enforcement body should be or suggested other alternatives.

A key theme from many respondents was that whichever body was chosen to enforce the regulations would need appropriate resourcing to carry out its duty correctly. The importance of the chosen body having appropriate powers to enforce was also fed back by respondents. Other bodies suggested included: an independent regulator, the Office for Product Safety and Standards and Local Planning Authorities.

Question: 23

What steps do you think we should take to mitigate against any potential negative impact of the implementation of these regulations?

A quarter of those who responded to this question suggested that central funding, by grants or other financial incentives, could be used to help with compliance and mitigate any additional financial burden the regulations would pose.

An effective enforcement body which is appropriately funded with the correct knowledge and expertise was cited as important in delivering the policy objectives. Some respondents mentioned Local Authority Building Control and their enforcement of building regulations in new build and major renovation properties.

Other suggestions that were supported by a number of respondents across a range of sectors were:

- Public education and promotion of electric vehicles and their charging infrastructure;
- Considerations around an appropriate lead in time to allow for industry to respond but also ensure we are moving towards our net zero by 2050 target;
- Charge points being installed under the regulations should be required to be smart to help mitigate impacts of increased load on the grid,
- A clear communication strategy to ensure all obligated parties understand the regulations on what they are required to do to be compliant.

5. Technical specifications for Building Regulation requirements

Proposed technical specifications

Approved documents are provided alongside the Building Regulations to provide statutory guidance about how the regulations can be complied with. The Government published a [draft version](#) of the Approved Document text alongside the consultation.

The Approved Document provides a list of key terms and their definitions, including “within the site boundary”, and specifies a minimum power rating, mode and connector type for charge points mandated under the proposed regulations. The Approved Document also covers location, accessibility and safety requirements.

Summary of responses

Question: 24

Are the definitions in the draft Approved Document accurate and provide their intended meaning?

Question: 25

How, in your opinion, could the definitions be improved?

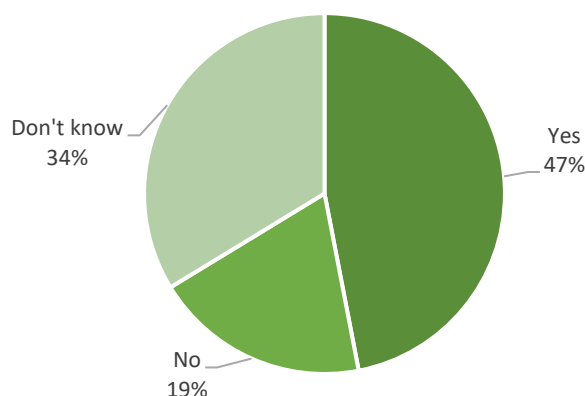
Question: 26

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

Question: 27

Why not and what do you think an appropriate definition would be?

Question 24 - Are the definitions in the draft AD accurate and provide their intended meaning?



While a greater number of respondents thought the definitions in the Approved Document were accurate than those who didn't, a significant proportion of the respondents stated that they didn't know.

Four main themes came through in the comments on how the definitions could be improved:

- Definition of a 'parking space', its size and how it could include other electrified vehicles, not just cars;
- Definition of 'site boundary' and the diagrams supporting its definition;
- Definition of 'major renovation' to be clearer and remove ambiguity;
- Definition of 'technical feasibility' in relation to exemptions.

While respondents argued the definition of 'site boundary' could be improved, the large majority (73%) agreed with using the concept to define which parking spaces are in scope of the regulations.

Respondents suggested it was open to interpretation and may result in sites being split up to avoid complying with the requirements. Respondents also called for clarity regarding multi-unit sites (such as an industrial estate) and for mixed use buildings.

Alternative suggestions included "curtilage", "associated with the development" and proposed all parking associated with a dwelling, including on-street, should be within scope. Some respondents also commented that some designated or associated parking may not be under the same ownership as the building.

Alongside these main themes there were comments with improved wording suggestions within the Approved Document and requests for the document to be regularly reviewed and updated as required.

Government response

The Government has reflected on the comments and will make a number of changes to the Approved Document, to ensure it is fit for purpose. This includes providing more clarity, through text and the aid of diagrams where appropriate, on the definitions of 'technical feasibility', 'parking space', 'major renovation' and 'site boundary' in the Approved Document or the relevant legislation. However, it should be made clear that the objective of the Approved Document is not to specify the provisions for parking space dimensions.

The Approved Document will also now provide more clarity on provisions for the application of these regulations in mixed-use settings as detailed in table 1 of this document.

Question: 28

Do you agree that the Government should specify a minimum charging power of 7 kW?

Question: 29

Why, including any evidence you have, and specify what specification would be suitable?

Question: 30

Do you agree that we should specify that charge points installed under the building regulations should be at least Mode 3 or equivalent?

Question: 31

Why, including any evidence you have, and specify what specification would be suitable?

Question: 32

Do you agree that we should specify that charge points installed under the building regulations must be untethered?

Question: 33

Why, including any evidence you have, and specify what specification would be suitable?

70% of respondents agreed that the Government should specify a minimum charging power of 7kW for mandated charge points and the same percentage agreed that charge points should be at least Mode 3 or equivalent. 61% agreed that charge points should be untethered.

Respondents suggested there should be consideration to allow load managing devices to limit power output via smart charging though specifying 'minimum output of 7kW'. Others wanted further consideration of the appropriate minimum power rating for different location types and dwell time, specifically questioning if residential and non-residential charge points should have the same minimum power rating requirements.

There were suggestions that consideration should be given to how the electricity networks will be able to cope with the additional demand from the electrification of vehicles and the decarbonisation of heating and hot water in homes (due to the use of technologies such as heat pumps) and who will be paying to upgrade the networks.

Respondents raised some concerns that mandating Mode 3 charge points may not be flexible enough to allow for future technologies, such as wireless charging and vehicle-to-grid, to develop. A small number also suggested that mandating for Mode 2 minimum would be more appropriate citing cost, consumer choice and dual purpose (for example using the socket for gardening equipment) as reasons.

Some respondents also thought that the consumer should have final choice over if their charge point should be tethered or untethered, particularly for residential properties and that the best solution should be chosen for each location.

There were also observations made on the different safety implications between tethered and untethered, including who is responsible for the maintenance of the charging cable and regulating the length of charging cables.

Government response

Having considered the support shown for the measures from respondents and having conducted further engagement with industry, **the Government has decided that charge points installed as a result of these regulations should have a minimum charging power of 7kW, be at least Mode 3 or equivalent and be untethered.**

We believe that 7 kW of charging power and Mode 3 charge points will sufficiently future-proof standards for home charging and better enable smart charging benefits, compared to lower powers and other mode types. Likewise, untethered charge points will ensure that consumers are able to charge any type of electric vehicle at the charge point, regardless of plug type. As these are set as minimum standards, developers may provide charge points with higher performing kW and Mode if they choose to do so. Further engagement with stakeholders was carried out in light of consultation responses, to understand any potential issues this might cause with electricity network connections, but no significant concerns were raised. The Government is confident that the grid will be able to cope with increased demand from electric vehicles and is working with the electricity market, OFGEM and industry to ensure the network is ready for the transition to zero emission vehicles. We have also laid regulations mandating that most private smart chargepoints must be smart and meet minimum device standards, to help manage increased electricity demand from EVs.

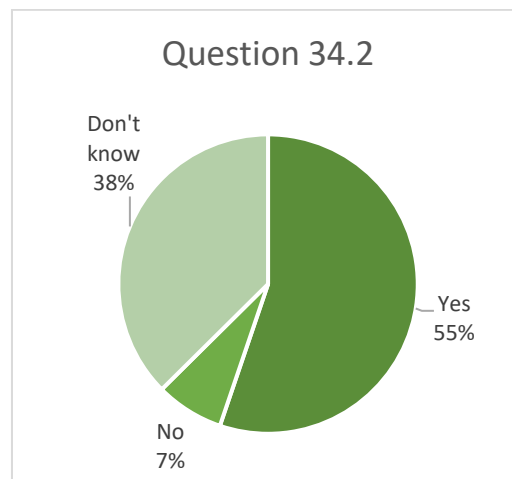
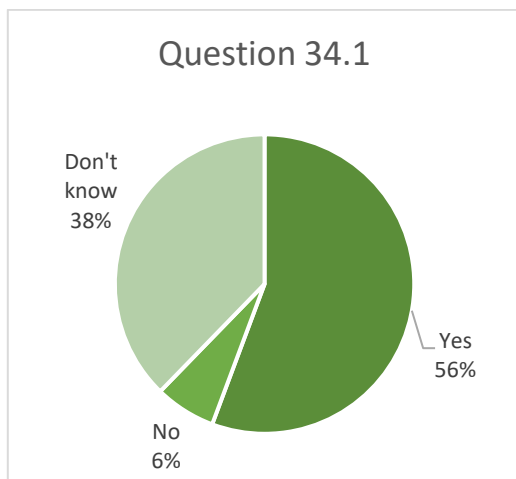
Question: 34

In your opinion do the draft Approved Document specifications adequately consider accessibility requirements with regards to location of the:

- 34.1. cabling routes?
- 34.2. charge points?
- 34.3. Why including alternatives?

Question: 35

In your opinion what, if any, other accessibility requirements should we include in the Approved Document?



Just over half of respondents thought that the Approved Document adequately considered accessibility requirements with regards to the location of the cable routes and charge points. 49 respondents provided comments on what other accessibility requirements should be included in the Approved Document.

Some respondents expressed that the question was ambiguous as to what type of accessibility it was referring to. The majority of comments related to accessibility for users with mobility impairments, while others referred to accessibility in terms of access for vehicles and people. There were a range of comments regarding accessibility for those with reduced mobility. These included requests for additional guidance on the size of parking bays, sufficient clearance and hazard protection around street furniture and ensuring there is provision in designated accessible bays.

A number of respondents thought that the Approved Document should specifically reference Part M of the building regulations. Some respondents also called for Part M to be updated with references to electric vehicle charge points and specific asks for accessible spaces with charge points to be wide enough.

Physical access comments were provided in relation to due consideration of firefighting access, escape routes and location, as well as adequate street furniture to protect charge points, such as bollards.

There were also comments provided requesting the guidance to include reference to communal and visitor parking and electrical installation requirements.

Government response

The Government has reflected on the responses to the consultation and consequently intends to update the Approved Document to reference Approved Document M for accessibility standards.

This includes referring to provisions currently in Approved Document M on minimum and maximum mounting boundaries and including an additional 500mm horizontal space for future connections, where vehicle barriers are necessary. An additional diagram will also be included, to give an example of future connection locations serving accessible parking service.

We recognise that further consideration is needed on accessibility at charge points including research into the issues facing current and prospective disabled drivers to inform the development of proposals to improve accessibility. As part of our consultation on improving the consumer experience at public charge points published in February 2021 we included a call for evidence on accessibility.

Question: 36

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

Question: 37

Why, including what further safety specifications do you think we need to include?

Question: 38

Do you agree with our proposal that the installation, addition or alteration of dedicated circuits and earthing and bonding arrangements of electric vehicle charge points should be notifiable building work?

Question: 39

Why?

Approximately half of respondents thought the specifications with regards to safety standards outlined in the draft Approved Document (AD) were appropriate. 78% of respondents agreed with our proposal that the installation, addition or alteration of dedicated circuits and earthing and bonding arrangements for electric vehicle charge points, made under these building regulations, should be notifiable building work.

Respondents that provided comments on further safety specifications requested that the Approved Document should reference the latest IET wiring regulations and asking for more continuity between these two documents as well as other ADs such as Approved Document B.

Some respondents also provided suggestions regarding fire safety specifications including guidance on breaching compartmentation and facilities for attending fire crews such as an isolation facility.

Respondents made comments on the technical review of Building Regulations and asked for charge points to be considered as part of this and within Approved Document B.

Of those that disagreed with the proposal to make the installation, addition or alteration of dedicated circuits and earthing and bonding arrangements for electric vehicle charge points notifiable work, points raised included:

- That making bonding and earthing notifiable would stop individuals carrying out sensible improvements;
- That non-residential installations should not be notifiable to keep costs lower; and
- If installations are carried out by qualified individuals it shouldn't be necessary.

Those that agreed with the policy proposal gave reasons including distribution network operators needing to be aware of charge point installations to ensure the network is fit for purpose and that due to the high currents and voltages involved, it is important for installations to be done carefully and competently. It was suggested by some respondents there should be a notifying mechanism to ensure the correct parties are notified.

One respondent requested for additional assessment of the safety implications of extensive cabling in large multi-story car parks to ensure any requirements for these properties are adequate.

Government response

The Government agrees that the Approved Document should reference the latest IET wiring regulations and plans to carry out a consultation proposing a minor amendment in Approved Document P (Electrical safety- Dwellings) to also reference the same safety standards. These latest IET wiring regulations include updated standards and guidance for new electric vehicle charge point safety devices and technologies.

The Government does not plan to alter the arrangements for electrical work that needs to be notified under Part P of the Building Regulations. Electric vehicle charge points installed under this policy upon the construction, material change of use and major renovation of a building mean that the electric vehicle charge point installation will form part of a wider piece of notifiable building work that must comply with all relevant requirements of the Building Regulations. This includes Part P requirements for the electrical safety of installations in dwellings.

Outside of this policy, the voluntary installation of electric vehicle charge points in existing dwellings is also controlled by Part P of the Building Regulations. The installation of a new electric vehicle charge point would generally include the installation of a new circuit and when a new circuit is installed this is classed as notifiable building work. Alterations to existing circuits may not be notifiable, however the work should still comply with the electrical safety requirements in Part P. The development and recognition of new devices in the latest IET wiring regulations should also help to make the safe installation of electric vehicle charge points more straightforward. In light of this, there are no plans to change the current Part P notification arrangements.

The electrical safety requirements for electric vehicle charge point installations in non-domestic buildings are controlled through the Electricity at Work Regulations 1989. It is therefore not clear that there would be any significant benefit to introducing a new requirement to notify the local authority building control department upon the voluntary installation of electric vehicle charge points in non-domestic buildings. We have chosen not to introduce a new Building Regulations notification requirement for this type of installation.

Electric vehicles and their recharging infrastructure will be taken into account in the technical review of Approved Document B (Fire Safety). We noted concerns from respondents regarding the potential impact of increased use of electric vehicles on fire hazards in buildings containing parking. We are satisfied that these concerns do not justify delaying the proposed provisions for charging points, but we agree that they should be properly examined as part of the current review of the fire safety guidance given in Approved Document B.

Other concerns raised by respondents are already sufficiently mitigated through the current guidance and as such, we can continue to progress with introducing these building regulations.

Question: 40

Does the proposed guidance in the draft Approved Document provide sufficient detail to comply with the requirements?

Question: 41

Why, including any suggestions for how to improve the guidance?

47% of respondents agreed and 44% said they didn't know if the draft Approved Document provided sufficient detail for compliance with the requirements.

Suggestions on how to improve the guidance were provided by some respondents. These included:

- Referencing a suitable location for charge point installation;
- The option for installing three-phase electricity supply being noted within the guidance;
- The inclusion of reference to a regular maintenance regime.

There were also comments that asked for the guidance to be more specific to ensure that it would not be open to interpretation in different ways, and cross referencing other relevant ADs and standards. Some respondents also called for a clearer separation between single and multiple-occupancy dwellings as installation methods may vary between them.

Government response

The Government has engaged further with industry to ensure the guidance in the Approved Document provides sufficient detail to comply with the requirements. This includes, where possible, providing better and further diagrams to help support the installation of charge points.

Question: 42

The diagrams in the draft Approved Document are illustrative only but do you think they provide sufficient detail for compliance?

Question: 43

Why?

Just over half of respondents thought that the diagrams in the Approved Document provide sufficient detail, 38% said they didn't know.

Comments on why respondents thought there was insufficient detail included:

- Lack of guidance on accessibility;
- Variations needed of the label in Diagram 7 for different use cases;
- The space provision in Diagram 9 not necessarily being reflective of residential installations, indicating that the diagram should show more than one dimension.

There were also comments on Diagram 3 asking for more detailed specifications of the cable routes route, such as smooth conduit inside, minimum bend radii, depth of cover, material and colour.

Government response

In response to the respondent comments, **the Government will update the Approved Document** with:

- The addition of a diagram showing an example of future connection locations serving accessible parking spaces,
- Improvements to diagram 3 and other diagrams, to provide clarity.

We have also further engaged with industry to make sure that the diagrams are fit for purpose.

Question: 44

Does the draft Approved Document meet our overall proposed policy intent?

Question: 45

What information do you think is missing from the draft Approved Document to meet the intended policy intent?

Most respondents thought the draft Approved Document meets our overall proposed policy intent.

Of those that provided comments to support their views, multiple respondents requested a more detailed definition of major renovation and called for the Approved Document to have greater cross referencing with other ADs and safety standards.

Government response

The Government has reflected on the comments made by the respondents and will update the Approved Document to reference Approved Documents B (Fire Safety), M (Access to and Use of Buildings) and P (Electrical Safety) and to improve definitions. Please see above for further detail.

Question: 46

What additional information, if any do you think needs to be added to the Approved Document?

46 respondents provided comments and suggestions on what additional information they thought needed to be added to the Approved Document.

Those suggestions that were echoed by multiple respondents included:

- Addition of considerations for the needs of both disabled drivers and pedestrians;
- Details on adequate earthing and bonding for charge point installation;
- Information on mandating charge point installation notification to the Distribution Network Operator (DNO).

Some respondents asked for clarity and guidance on the ownership of charge points installed in multi-dwelling residential buildings. Comments were also provided giving suggestions of improvements to the diagrams and wording contained within the Approved Document.

Government response

The Government has reflected on comments and will update the Approved Document to reflect that DNOs should be notified of charge point installations, as legally required under the Low Carbon Technologies responsibility, specifically the Distribution Planning and Connection Code 5.2.1. Though, this is not a requirement of the building regulations themselves.

6. Exemptions and Adjustment Period

Proposed and Final exemptions

Table 02 – Proposed and final exemptions and Adjustment Period to the Building Regulations:

Adjustment Period		Residential	Non- Residential	Final Position
A period will be put in place, between the laying and coming into force of the regulations, during which properties which have their initial/ building notices or full plans deposited will not be legally required to meet the regulations.		Proposed	Proposed	To be introduced.
No.	Exemption	Residential	Non-Residential	Final Position
1.	New residential buildings where the installation of charge points would increase grid connection costs by more than £3,600 per charge point.	Proposed	N/A	To be introduced.
2.	Exemption for buildings undergoing material change of use for listed buildings, buildings in conservation areas and buildings included in schedule of monuments.	Proposed	N/A	To be introduced.
3.	For buildings undergoing material change of use the policy will only require the installation of the number of charge points which can be accommodated within the existing power supply.	Proposed	N/A	To be introduced.
4.	For residential buildings undergoing major renovation the policy will only require the installation of the number of charge points which can be accommodated within the existing power supply.	Proposed	N/A	To be introduced.
5.	For major renovations, where the cost of the installation of electric vehicle infrastructure exceeds 7 % of the total cost of the major renovation of the building.	Proposed	Proposed	To be introduced.
6.	Exemption for small and medium enterprises.	N/A	Proposed	Not to be introduced.

7.	The charge point requirements do not apply to spaces in enclosed or open-sided car parks (e.g. basements, those below buildings and multi-stories). Cable route requirements should still be met in new buildings, buildings undergoing material change of use to create dwellings and buildings undergoing major renovation, as above. This exemption does not apply to locations such as individual garages.	Proposed having considered consultation responses.	Proposed having considered consultation responses.	To be introduced.
8.	Exemption for residential properties undergoing major renovation for the purposes of fire safety remediation due to historical fire safety deficiencies (i.e. cladding remediation).	Proposed post consultation.	Proposed post consultation.	To be introduced following targeted consultation.

Summary of responses

Adjustment Period, between the laying and coming into force of the regulations, during which properties which have their initial/building notices or full plans deposited will not be legally required to meet the regulations.

Question 47:

What do you believe is a reasonable transition period between publishing the new regulations plus guidance and the requirements coming into force?

The Government asked for opinions on what a reasonable transition (adjustment) period between the new regulations being laid and coming into force may be. 138 respondents provided views and 57% of respondents suggested a one-year period.

Many local councils called for the period to be less than a year, with some suggesting no transitional period. The reasons for this included the need to act as quickly as possible given that a number of local councils have declared a climate emergency and the legally binding net zero target.

Local councils also suggested that a longer period would lead to an increase in the number of applications being submitted during the time which could result in thousands of properties being built that are not future-proofed for the mass adoption of electric vehicles. It was proposed that buildings that have not been completed by the time the period has ended should have to comply with the requirements.

21% of respondents suggested that the period should be longer, with the majority of those suggesting a period of two years. Respondents wanted more time to consider the impact of these regulations on scheme development and the planning process, reducing the risk that planning applications would have to be amended or updated at a cost. Some argued that greater time was needed so supply chains can be managed and land agreements renegotiated.

Government response

Following the publication of this document, the Government will lay the required regulations in Parliament in 2021. The Government has decided that there will then be an adjustment period of no less than 6 months from the date of the laying of the regulations in parliament and the regulations coming into force, during which initial/ building notices or full plans deposited will not be legally required to meet the new regulations. Initial/ building notices or full plans submitted in this period must begin building work by no later than 12 months after the coming into force date, otherwise the new regulations will need to be met.

A 6-month period is considered to be sufficient to allow stakeholders and industry to familiarise with the policies and regulations and prepare for the requirements. The Government recognises the concerns raised by industry on the potential complexity of these rules and as such, will be providing support and guidance to stakeholders during the transition period to address concerns and provide clarity.

Exemption 1: New residential buildings where the installation of charge points would increase grid connection costs by more than £3,600 per charge point.

Question: 48

Do you think we should apply an exemption to our proposal to require a charge point in every new home when the grid connection cost is high?

Question: 49

Why not, including any potential exemption you think is suitable?

Question 50:

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

Question 51:

If not, please suggest an alternative drafting

Question 52:

Do you agree with our suggested maximum cost for grid connection exemption threshold?

Question 53:

What do you think is a reasonable threshold including any evidence?

Question 54:

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

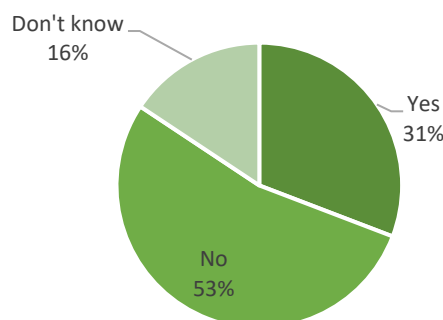
Question 55:

Why?

Question 56:

What other technical considerations do you think should be included?

Question 48 - Do you think we should apply an exemption to our proposal to require a chargepoint in every new home when the grid connection cost is high?



The following section summarises the responses and addresses the Government's response to all questions related to the introduction of an exemption from the requirement to install a charge point in a new residential property, with associated parking, where the cost of the electricity connection is very high.

There was a varied response to our proposal to introduce an exemption from the requirement to install a charge point in a new home where the grid connection cost is high. However, there was clear evidence that a large number of the respondents (particularly individuals, local councils and the energy sector) believed that an exemption should not be applied in any instance.

Among those that held this view, the following points were made:

- Access to a home charge point risked becoming a postcode lottery, leading to patchy provision and would unfairly penalise those who live in areas where local network capacity is limited;
- Concerns developers will inflate costs or find another loophole to meet the exemption or DNOs may quote up to the maximum value for exemption meaning developers will be charged too highly for connections;
- It could result in many new developments being exempt from providing charge points which would not support Government's ambitions to reduce emissions and improve air quality;
- It is more onerous and costly to retrofit a development/property than it is to install charge points during construction or renovation of a building. If costs are deemed high for developers who could also achieve economies of scale, they would be higher for householders acting individually;
- An exemption for new homes would lead to higher costs for bill payers, as costs for connections for existing homes are more widely socialised.
- Electric vehicle charging should be considered as essential as other utilities such as gas, electric, water and the telephone;
- Load management systems could help to reduce the need for expensive grid reinforcement;
- The average cost for a single domestic connection is around £1,500 and the demand of an electric vehicle can often be accommodated on this standard connection.

Those that supported the exemption included the majority of developers. Common arguments in favour of an exemption included:

- The need for costly network reinforcement may lead to delays or threaten development viability;
- The exemption is needed to mitigate the impact on developers of meeting any additional requirements above the EPBD requirements. It was also highlighted that the cumulative effect of multiple clean energy requirements such as low carbon heating and electric vehicle charge points needed to be considered.

Several respondents argued that if the exemption is to be applied, a number of measures should be put in place, including that:

- In the event that total costs per charge point exceed the £3,600 threshold proposed in the consultation, the development should not be exempted from providing any charge points. Instead, the development should install the maximum number of charge points possible before the cost threshold is met;

- Any regulations would need to clearly set out the evidence required from developers to demonstrate the threshold had been exceeded;
- The exemption should only be applied when connecting to an existing electrical network. Those requiring a new connection should not have an exemption;
- Public charging provision of the surrounding area should be taken into consideration before an exemption is granted.

Concerns were raised that the exemption did not sufficiently mitigate any negative impact on housing supply. Some developers argued that the suggested threshold could have a significant impact on the viability of larger schemes and may impact negatively on land values and investor interest. Many developers argued that local councils and building control should have more discretion over whether a development should be exempt, considering all factors.

Local councils were also concerned that:

- Costs will vary across the UK and the exemption may leave some areas with fewer charge points;
- In some parts of the country, the costs of connection will make some developments unviable. Subsidy should be available in such areas, in particular for social housing developments.

A range of views were submitted on the suggested threshold, with many agreeing with the Government's proposed amount of three times the high cost scenario but with a significant number arguing for both higher and lower levels. Alternative suggestions ranged from £500 up to £10,000, however largely little or no evidence was provided when a new threshold was proposed. Some highlighted that any threshold specified in regulations would need to be regularly updated to factor in increase in changing costs and inflation, or changes to industry codes and regulation.

Both developers and the energy sector recognised that the introduction of a threshold incentivises developers and other actors to find alternative solutions to reduce costs. Respondents suggested a requirement should be introduced whereby the developer is required to assess options for flexibility (e.g. battery storage, onsite generation) to reduce connection costs or that an exemption should only be provided if all reasonable alternatives have been exhausted.

Despite the concerns above, the majority of respondents agreed that the text in the draft Approved Document captured the intended exemption. A number of local councils and Local Authority Building Control highlighted the difficulty of evidencing the threshold and that it would be difficult for building control to determine and substantiate any argument against a claim for this exemption.

When asked what other technical considerations should be made, the most common theme in the responses were suggestions that consideration should be given to the impact that these requirements would have on the grid system and that technology such as smart charging and vehicle-to-grid systems should be adopted to mitigate any negative impacts.

Government response

The Government believes it is right to include an exemption from the requirement to install a charge point in a property, where the electricity connection cost is very high. This is an important measure, to ensure that developments avoid excessively high connections costs and that the UK continues to build the housing stock it needs.

However, we recognise the strong negative reaction to this exemption and the concerns raised on the need to future proof properties. **That is why the Government will require all new properties to be fitted with cable routes, where this exemption is granted.** This is above our consultation proposal of requiring the minimum EPBD requirements (cable routes in all spaces, in properties with more than 10 parking spaces) where the exemption is granted. There are still significant cost savings in this approach, compared to retrofitting charge point infrastructure, and will make the installation of future charge points easier.

We will set this exemption at three times the high scenario cost of the average electrical capacity connection, as set out in the consultation. We believe this level balances the need to ensure that developments avoid excessively high connection costs, while ensuring the majority of new homes are fitted with charge points. We recognise the concerns that developers may still face relative high costs under this regime. However, the Government believes this is the correct approach given the positive cost benefit of installing charge points at the point of construction, and the need to future-proof homes for the transition to zero emission vehicles.

We recognise concerns that inflation may impact the effectiveness of the cost threshold. As such, the level of the threshold will be kept under review and can be altered in the future, if the Government feels it is appropriate.

The Government also wants to ensure that the maximum number of new homes are built with charge points. As such, we will consider the wording of the exemption to ensure these policy ambitions are properly reflected. We will clarify that the exemption will not exempt developers from installing all charge points at a development. The exemption is based on the electricity connection cost *per charge point*. Developers seeking a connection for multiple dwelling should therefore install charge points for the maximum number of homes in a development, before the cost cap is exceeded, based on the average cost per charge point. We will make changes to the Approved Document to detail the evidence that developers should submit to the relevant Local Authority Building Control teams or approved inspectors to show the cost cap has been met, to receive this exemption.

Exemption 2: Exemption for buildings undergoing material change of use for listed buildings, buildings in conservation areas and buildings included in schedule of monuments.

Question 57:

For our 'a charge point in every new home created from a material change of use' requirement do you agree that we should apply an exemption for:

- 57.1. listed buildings?
- 57.2. buildings in conservation areas?
- 57.3. Explain your reasoning if you disagree.

The majority of respondents were opposed to an exemption for listed buildings and buildings in conservation areas. Some respondents suggested that charge points could be installed with careful consideration of its surroundings, while several others thought that properties should adapt to changing needs. It was also highlighted that large areas of some city centres are designated as

conservation areas. A number of respondents stated that each property should be considered on a case-by-case basis but the aim should always be to install a charge point where possible.

Those respondents who were supportive of the policy noted that conservation areas are fragile and would benefit from less pollution, but charge points would need to be installed without disturbing the area.

Government response

The Government will introduce an exemption for listed buildings, schedule monuments and those in conservation areas from the requirement to install a charge point in new homes, with associated parking, where they have been created from a material change of use where the installation of an electric vehicle charge point would lead to unacceptably altering the character or appearance of the building or its surrounding. We will set out in the Approved Document that building control bodies should consider the advice of the local council's conservation officer when deciding whether the exemption applies. This is in line with other building regulations.

The Government is sympathetic to the concerns raised about the potential for city centre areas to consequently lack the number of desired charge points and the need to maximise the number of properties with electric vehicle charging infrastructure. However, we believe it is right that decisions should be made under the guidance of local council's conservation officers, who are best placed to make decisions considering the needs of local people.

Exemption 3: For buildings undergoing material change of use the policy will only require the installation of the number of charge points which can be accommodated within the existing power supply.

Question 58:

For a charge point in every new home created from a material change of use requirement, should we apply an exemption in cases where there is adequate spare capacity in the incoming electrical supply to the car park?

Question 59:

Why not?

44% of respondents expressed opposition to this question. However, there may have been some confusion over the nature of the exemption. Some comments suggested the question could have been clearer. The Government, in this question, was proposing that where properties undergo material change of use, we would only require the installation of the number of charge points that **can** be accommodated within the existing power supply. Respondent comments supported this proposal, suggesting:

- That if there is spare capacity, then as many charge points as possible should be delivered;
- That an exemption should only exist when costs become too high.

There were also considerations around exploiting loopholes, ensuring that there are no 'opt outs' and some argued that there was no reason to make an exemption.

Government response

Where a property undergoes a material change of use to create dwellings, the Government will only require the number of charge points to be installed that can be accommodated in the existing power supply. This will balance the need to ensure housing projects remain viable while ensuring that the majority of new homes are fitted with electric vehicle charging infrastructure.

We have made changes to the Approved Document to detail the evidence that should be submitted by developers to the relevant local council / building controls team to receive this exemption.

Exemption 4: For buildings undergoing major renovation the policy will only require the installation of the number of charge points which can be accommodated within the existing power supply

Question 60:

If we apply the charge point requirement to residential buildings undergoing major renovations should we allow an exemption in cases where there is adequate spare capacity in the incoming electrical supply to the car park?

Question 61:

Why not?

As with question 58, there may have been some confusion over the nature of this exemption. The Government, in this question, was proposing that where residential properties undergo a major renovation, we would only require the installation of the number of charge points that **can** be accommodated within the existing power supply. Most respondents (across all sectors) agreed with this proposal, arguing that if there was sufficient grid capacity, then properties should be fitted with charge points. Some argued that there should be no exemptions regardless of grid capacity issues, given the Government's commitment to decarbonisation or that major renovations should have the same requirements as new homes.

One respondent from the energy sector stated that availability in the local area should be considered before allowing an exemption for charge points at sites of major renovation and considerations should be made in the context of travel need.

Government response

Where a residential property undergoes major renovation and the charge point requirements are triggered, the Government will only require the number of charge points to be installed that can be accommodated in the existing power supply. This will balance the need to ensure housing projects remain viable while ensuring that the majority of new homes are fitted with electric vehicle charging infrastructure. As per the major renovations policy, developers will still be required to install cable routes in all parking spaces without charge points, ensuring properties are future proofed.

We have made changes to the Approved Document to detail the evidence that should be submitted by developers to the relevant local council / building controls team to receive this exemption.

Exemption 5: For major renovations, the cost of the charge point and cable routes installations exceeds 7 % of the total cost of the major renovation of the building.

The Government proposed to transpose an EPBD exemption, where the costs of electric vehicle

Question 62:

Should we apply an exemption where the cost of installing the cable routes exceeds 7% of the total cost of a major renovations within:

- 62.1. residential buildings?
- 62.2. non-residential buildings?
- 62.3. Why?

infrastructure exceeds 7% of the total cost of a major renovations. 35% of respondents thought that a 7% exemption threshold for the cost of installing cable routes should apply to residential buildings, whereas only 28% thought this exemption should apply to non-residential buildings. 41% and 48% of respondents thought there should not be an exemption for residential and non-residential respectively.

The most prevalent reason for disagreeing with this was that respondents felt the exemption would be open to abuse, allowing renovators to misrepresent costs to evade the requirement. Other arguments against the exemption included:

- That retrofitting charge points is more costly than installing them during construction;
- That buildings need to be futureproofed for a zero-emission transport future;
- That charging will be necessary in all spaces.

A suggestion of financial help being made available where costs fall above the threshold was put forward by several respondents.

For many of those in favour, the exemption was seen as an important measure to ensure housing projects remain viable. Respondents who agreed or disagreed with the exemption suggested there should be an independent review on a case-by-case basis for exemptions to ensure there is no exploitation of the exemption threshold.

There were several responses regarding the 7% threshold value. Some respondents were unclear on where the 7% value was derived from, others commented that the value was too high and others that it was too low. Alternative approaches were suggested, including a change of language to 'where practical' or considering the development margins of a project within the exemption values.

Government response

The Government will introduce a two-tier exemption, for residential and non-residential properties undergoing major renovation, where costs of the required infrastructure exceeds 7 % of the total cost of the renovation. Residential and non-residential properties undergoing major renovation will be exempt from:

- **Installing charge points where the cost of charge points and cable routes exceed 7 % of the total cost of the renovations. Cable route requirements will still apply as per the residential and non-residential major renovations policy, subject to the next bullet point.**
- **Installing cable routes where cost of installing all of the cable routes exceeds 7 % of the total cost of the renovation.**

The consultation suggested an exemption only where the cost of cable routes exceeds 7% of the total cost of the major renovation. However, as charge point installations will be required in residential and non-residential major renovations, we believed it pertinent to include the cost of charge points in this exemption.

To illustrate the above:

- A residential property undergoing a major renovation contains 12 dwellings and 14 parking spaces in the site boundary for use by all dwellings.
- As per the building regulations, a charge point is required for each of the dwellings (12 spaces) and cable routes are also required in the 2 further spaces. The charge points can be accommodated within the existing power supply.
- However, the total cost of installing charge points in each of the 12 spaces, plus installation of the cable routes in the 2 further spaces, exceeds 7 % of the total cost of the renovation. As such, the property is exempt from the charge point requirements.
- In this instance cable routes should still be installed in all of the parking spaces.
- However, the total cost of installing all of the cable routes also exceeds 7 % of the total cost of the major renovation. In this instance, the property is also exempt from installing cable routes.

The Government recognises concerns on retrofitting costs and the need to future proof properties and we believe that this approach will ensure the majority of properties will have electric vehicle infrastructure installed, while ensuring property redevelopments remain viable.

We have made changes to the Approved Document to detail the evidence that should be submitted by developers to the relevant local council / buildings controls team to show the cost cap has been met, to receive this exemption.

Exemption 6: Exemption for small and medium enterprises.

Question 63:

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

Question 64:

Why not, including any evidence you think is relevant?

In the consultation document, the Government set out a possible exemption included in the EPBD, for new and existing non-residential properties and those undergoing major renovation, owned and occupied by SMEs. The Government explained that as we are seeking to introduce these measures through building regulations, it would be unprecedented and difficult to enforce in practice. The Government therefore proposed to not transpose these requirements, except for existing buildings (the policies for which we are not progressing).

Just over half of respondents also said that they did not think small and medium enterprises (SMEs) should be exempt from the requirements for new non-residential and non-residential buildings undergoing major renovation.

Those respondents that thought an exemption should be applied expressed concerns that the requirements may be financially disproportionate on smaller companies and that additional unnecessary burdens should not be placed on SMEs.

Many respondents conveyed that they did not support an exemption for SMEs, because many businesses in the UK, which could afford the measures may also fall into this category. They argued that the definition of an SME is too large for an exemption, therefore the policy would not have the desired outcome, if they were all exempt. This view was supported with additional comments that transition to decarbonised transport and meeting our climate change goals needed to be supported across all sizes of business.

It was noted by some that there may be circumstances where an exemption may be appropriate, but this should be by exception with case-by-case consideration. Respondents also suggested there should be some form of financial support provided to SMEs where the cost of the requirements is prohibitively high.

Government response

The Government will not introduce an exemption from the requirements for new non-residential buildings and those undergoing major renovation, which are owned and occupied by small and medium enterprises. As detailed, this would be unprecedented to introduce through Building Regulations. Likewise, we expect that costs are more likely to fall to developers, rather than those who own or occupy a building.

The Government has also considered the option of introducing an exemption for both residential and non-residential properties built by Small and Micro Business developers (those with fewer than 50 staff and/ or those who produce fewer than 100 buildings per year). However, the Government will not introduce these provisions. The Government believes that adequate charging provision is needed in as many homes and destinations as possible, to support the transition to zero emission vehicles, regardless of the size of the developer that built the property. Similar arguments were put forward by majority of the respondents. The Government also does not wish to penalise the future tenants of a property (both residential and non-residential) and not provide electric vehicle infrastructure due to a developer being an SME. From our analysis, SME developers also tend to build smaller, higher cost, developments (the majority building 1-3 developments per year) and operate in a highly competitive market. Evidence from industry has indicated that many SME developers are already installing charge points and as such, introducing an exemption may stifle this competition. Ultimately, the Government believes that the wider exemptions proposed in this document will be sufficient in protecting businesses from high costs due to the installation of electric vehicle infrastructure.

7. Evidence and Analysis

Proposed evidence and analysis

Government published two consultation stage Impact Assessments alongside the consultation, to capture the residential and non-residential building requirements. The Impact Assessments are based on some key assumptions around the development of the electric vehicle and charge point markets.

Central to the Impact Assessment is the extended appraisal period of 31 years. Since the consultation stage Impact Assessment was published the Government announced a phase out date for the sale of new petrol and diesel cars and vans of 2030. From 2035, all new cars and vans must be zero emissions at the tailpipe and between 2030 and 2035, any new cars and vans sold that emit from the tailpipe must have significant zero emission capability, which would include some plug-in and full hybrids. The final Impact Assessment has considered how an earlier phase out date will impact the results of the proposed policies.

To assess the impact of the proposed policies we conducted an analysis on some policy scenarios:

New Residential Buildings Impact Assessment Options

Option	Detail
Baseline	Retrofitting of 91.5% of all residential buildings, with the installation rate rising with the proliferation of electric vehicles. This illustrates the costs if we do not intervene, and provides a baseline against which to consider the other options. Note that this was not a legitimate option as we were 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).
Policy Option 2	Mandate full charge point installation in all residential new builds with a parking space associated with the dwelling (Road to Zero commitment).

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 electric vehicles. 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 charge point 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 charge point in all existing non-residential buildings with 20 or more parking spaces.

Summary of responses

Question 65:

Do you agree with:

- 65.1. assumptions set out in the Impact Assessment?
- 65.2. costs set out in the Impact Assessment?
- 65.3. impacts set out in the Impact Assessment?
- 65.4. Explain your reasons if you disagree.

Question 66:

Provide any evidence you think relevant to the impact assessment.

Over half of the respondents answered that they did not know if they agreed with the assumptions, impacts and costs set out in the Impact Assessment. There were areas highlighted where respondents believed further analysis could be undertaken as part of the Impact Assessment.

Respondents stated both that costs of charge point installations were underestimated and overestimated. There was wide acceptance that costs would be variable dependent on location, connection capacity and development size.

There were concerns raised regarding assumptions of the lifespan of a charge point. Some respondents thought the 15 years used in the Impact Assessment was over optimistic. Some also questioned if the charge point infrastructure would become out of date and obsolete during its lifetime given the market is continually developing.

Respondents raised concerns over the accumulated costs of all new changes being introduced into new buildings not being reflected in the Impact Assessment. For example, proposed changes to Part L (energy efficiency) and Part F (ventilation) of the building regulations. Taking the additional cost of charge points into account independently may not reflect the true impact the combined changes could have on property developers and consequentially housing supply.

Additionally, the costs borne by energy consumers through their electricity bills, due to the socialisation of electricity system infrastructure costs were said to be missing. As were points concerning potential fire safety measures, load balancing systems and costs associated with the additional space required per vehicle bay to accommodate the infrastructure.

Government response

Having considered the responses to the consultation, the Government believes that the assumptions, costs and impacts included in the Impact Assessments are fit for purpose. Where possible we have updated the analysis to reflect the latest available evidence; however limited evidence was received to suggest that any of the assumptions and analysis should be altered in the Impact Assessments.

The Government recognises the concerns raised on the potential cumulative impact to developers of these and other upcoming legislative changes. However, the development of the estimated costs of many of other policies has not yet been finalised and as such, these could not be reflected in this Impact Assessment. The Government will consider the need for the calculation of the cumulative costs of its proposals as our work progresses.

The Government recognises that requiring EV Charge points in new builds will increase electricity demand. How much that might impact on the existing electricity network will vary by development. Under the connection charging arrangements developers are solely responsible for the costs of connecting their developments to the existing electricity network and for a proportion of any wider network costs of accommodating their project². It is in a developer's interest to manage the connection capacity to minimise or avoid these wider network costs, we would therefore expect them to take action, such as deploying smart solutions, on their developments where possible to achieve this.

The requirement to install electric vehicle charge points would also not necessarily mean extra costs for bill payers, as a development may have required the same level of upgrade to the existing network, regardless of the inclusion of charge points. Likewise, any infrastructure funded by electricity bill payers would be available to accommodate the expected general demand growth expected from the electrification of transport and other technologies, such as heat.

The Government notes that connection network charges are a matter for the independent regulator, Ofgem. Ofgem is currently reviewing the electricity distribution connection charging framework (including the connection costs borne by connection customers and electricity bill payers) any changes are expected to be implemented from April 2023. Given that each housing development will have different requirements, the variation in available network capacity across the country and uncertainty over the connection charging framework we have not included quantified costs in the impact assessment.

Question 67:

How do you think these costs are likely to change over time?

62 respondents provided comments on how they thought costs were likely to change over time.

The majority of respondents thought that overall costs will decrease over time, however a significant number of correspondents disagreed, stating costs would increase over time.

Overall there was agreement that hardware costs would decrease over time as the potentials of technological advances and economies of scale are realised. Some areas, such as the cost of cabling and labour, were seen by some as unlikely to change significantly.

There was recognition from a number of respondents that costs may initially increase due to demand and training but would then decrease over the longer term through efficiencies, economies of scale and as more efficient technology is brought to market.

Government response

The Government has decided that it will not make any changes to the cost assumptions set out in the Impact Assessment. Our costs are based on surveys performed by consultants and subsequent validation undertaken directly with charge point installers. Since respondents indicated that the

² Developers are responsible for covering their proportion of the costs for upgrades to one voltage level above their connection voltage. Any remaining costs are socialised across all electricity bill payers in the region.

costs could be higher or lower than we suggest we do not believe this constitutes a sufficient basis for changing our analysis.

Question 68:

What do you think are the likely cost reductions from economies of scale specifying whether the cost reductions will be relevant for both installation and hardware costs?

40 respondents provided comments on what they thought the likely cost reductions of economies of scale will be.

One third of the respondents thought that there would be minimal or no cost reductions achieved through economies of scale. One third thought that savings from economies of scale would be made through either hardware, installation or both. The remaining respondents thought savings would be dependent on the site location as well as changes in regulation and standardisation.

Few respondents provided detail on whether their comments on savings related to the installation or the hardware.

Government response

From the responses received, the Government is content that it has properly reflected the impact of economies of scale in the Impact Assessment and has made no further changes. Our assessment of costs does factor in economies of scale and without hard evidence on how they might be alternatively factored in we consider the analysis that has been done in the IA to be sufficient in this regard.

Question 69:

Do you think there are groups who would be impacted by these regulations that have not been captured by this assessment?

Question 70:

What additional groups and why?

Of the 147 respondents who provided an answer to the question, almost half said they did not know if there were other groups that were not captured in the assessment, while approximately a quarter thought there were additional groups not captured and the remaining quarter thought all impacted groups were considered.

Respondents focused mainly on providing the additional groups that may be impacted by the proposed regulations. Additional groups that respondents suggested could be included in the impact assessment and reasons why were:

- Disability groups due to the need for provision for accessible spaces;
- Rural communities, who are likely to travel further distances than urban communities and therefore require a different charging pattern and have a greater reliance on vehicles;
- Residents who will not own an electric vehicle within the charge point's lifespan and will not utilise services the charge point provides;
- Retirees because:

- They are a different demographic with different requirements from mainstream housing;
- They have lower car ownership within the demographic; and
- There could be increased difficulty in providing power for disability vehicles.

Government response

While respondents suggested some groups that the Impact Assessment could consider, the Government did not receive any evidence that these groups will be adversely impacted by the policies set out. We also believe some of these groups may be positively impacted by these policies, including rural communities who often have poor public charging infrastructure. We recognise the concerns raised on costs being passed to homeowners who will not use the infrastructure. However, the Government believes that developers will face the majority of costs from this policy and homeowners will benefit from increased value to their properties, from pre-installed charge points.

Question 71:

Do you think multiple single-occupancy developments (such as housing estates) will be able to take advantage of economies of scale savings for charge point installation?

Question 72:

Why?

65% of respondents thought that multiple single-occupancy developments would be able to take advantage of economies of scale savings for charge point installation.

Of those that thought savings would be achieved, the majority cited bulk purchasing and reduction in labour costs through central planning installations, as key to realising these savings. Negotiating deals, and building relationships with charge point manufacturers and installers, were also cited as ways in which savings could be achieved through economies of scale.

Of those that did not think savings would be made through economies of scale, increased grid connection costs were seen to outweigh any other savings that may be made.

Government response

As responses were largely in accord with the Impact Assessment, no further changes have been made.

Question 73:

What are the likely technological learning rates that charge point hardware would experience and why?

48 respondents left comments for this question, of which half conveyed that they did not know or did not understand the question. 'Technological learning rates' are the cost reductions seen for a technology, as technology manufacturers accumulate experience.

Some respondents expressed that charge point software improvements and installation knowledge would increase over time while others thought hardware costs were unlikely to change significantly. There was some acknowledgement that learning rates were likely to be faster in the short term before slowing down as standardisation may begin to occur in the medium-long term.

Government response

In line with the questions posed on cost reductions, due to unpredictable future trends and a lack of compelling evidence, no alterations to the Impact Assessment have been made.

Question 74:

Do you think our methodology for capturing grid connection cost variation is suitable?

Question 75:

What do you think is a more suitable methodology for capturing the variation in grid connection costs?

20% of respondents thought the methodology for capturing grid connection cost variation used in the Impact Assessment was suitable. 9% thought that the method used was not suitable and the remaining 71% said they did not know.

Some respondents provided comments on ways they thought were more suitable for capturing variation in grid connection costs. These included that:

- Every site is individual, so there is no average that can be applied;
- Smart charging applications can defer or reduce connection upgrades;
- ACE 49 Standard techniques for estimates of low voltage demand should be incorporated;
- The cost of space required for connection infrastructure.

Government response

The Government did not receive sufficient information to alter the methodology for capturing grid connection costs in the Impact Assessment. However, we recognise in the Impact Assessment that connection costs are very difficult to generalise and as such, have introduced an exemption where connection costs are excessively high.

Question 76:

Does the assessment of cost incidence seem accurate?

Question 77:

Why not, including any evidence you have?

21% of respondents thought the assessment of cost incidence in the Impact Assessment seemed accurate. 7% thought that the method used was not suitable and the remaining 72% said they did not know.

Of the different industries and sectors that responded to the consultation, only the charge point industry had a majority opinion which was that they thought the assessment was accurate.

Few respondents left comments, but of those that did, some thought that costs used within the assessment were too high, while others thought they were underestimated. It was also noted by one respondent that they thought that the assessment did not take into account an overarching cost of national charge point provision.

Government response

The Government was not provided with hard evidence to suggest the need for changing the assessment of cost incidence in the Impact Assessment. However, we have worked with MHCLG and have sought to improve the narrative around where the costs may fall in the final impact assessment.

Question 78:

Do you think there are likely to be disruption costs in a retrofit scenario, and if so how large do you think these will be?

75 respondents provided answers regarding the disruption costs in a retrofit scenario. Of those that responded, 70 % thought that there would likely be disruption costs in a retrofit scenario and 20% thought there may be disruptions in some scenarios.

A few respondents specifically stated that there would be significant disruption while others specified the disruption would be small. Respondents did not quantify the size of the disruption they thought likely.

Government response

The Government found and received limited evidence to quantify disruptions costs, so these impacts remain unmonetized in the Impact Assessment. Our analysis looked at potential disruption costs and could find no strong evidence on the degree to which disruption would pose a cost to those impacted by this policy, particularly addition to the disruption created by building or majorly renovating buildings.

Question 79:

In your opinion have we captured all of the benefits?

Question 80:

What additional benefits do you suggest including and why?

41% of respondents thought that all of the benefits from the proposed policies had been captured within the Impact Assessment. 11% thought that there were additional benefits that had not been captured and 48% said they did not know.

Benefits that respondents thought were missed in the Impact Assessment included: electric vehicles being a key tool in combatting climate change and meeting the UK's net zero target; the potential

for electrical network demand management, including vehicle-to-grid; and, the social and health benefits that electric vehicles bring compared to their internal combustion engine counterparts.

Government response

While the Government agrees that these are important benefits which can be attributed to the whole transition to zero emission vehicles, there is currently no appropriate methodology to assess the degree to which this policy will specifically contribute. **As such, we have discussed these benefits in the unmonetized impacts section.**

Question 81:

What do you think will be the impact on housing supply of introducing a requirement for charge point infrastructure on new dwellings?

137 respondents provided comments in relation to the impact new requirements would have on housing supply.

Half of the respondents thought that introducing a requirement for charge point infrastructure on new dwellings would have minimal effect on housing supply. Just under 10 % of respondents thought the requirements would have a large detrimental effect on housing supply, while just over 10% thought it would have a positive impact on housing supply. The remaining respondents thought there would be some effect of varying severities.

A number of respondents thought the requirements would have a positive effect, as it would make properties more attractive to purchase due to the increasing public awareness of the environment and climate change.

Some respondents noted that house prices would increase and that the increase in build costs would be passed onto the end buyer of the property.

It was noted by respondents from a number of sectors that the effect may fall disproportionately on parts of the housing market. Concerns on exacerbating a shortage in specialist housing were noted as well as viability of delivering affordable housing.

The varying cost of connections, and the increase in electrical capacity a development needs, due to the added demand of supplying charge points was also commented on by a number of respondents. Recognition of the locational variation of connection costs was linked to potential decreases in land value.

Government response

The Government did not receive any substantial evidence from the consultation on the impact of these policies will have on housing supply. However, the Impact Assessment speaks to these

potential impacts and the Government has introduced a number of exemptions to ensure property development avoid excessively high cost and remain viable.

Question 82:

Any other comments?

The majority of the additional comments made covered points raised in previous questions which we have covered above. These included requiring minimum standards in charge points and concerns about the demand that will be placed on the grid because of these regulations. Some respondents were concerned that the Government should go further or that it should be promoting other modes of transport, over cars. The other most common response was a general positive attitude to the policy.

8. What will happen next?

The Government thanks stakeholders for their responses to this consultation, as well as their engagement during the development of it. The evidence provided during this consultation has been beneficial in helping us finalise our policy proposals.

We intend to lay the implementing regulations in Parliament in 2021.

We will continue to engage with and support industry/ stakeholders to transition into compliance, by hosting workshops and providing guidance, to ensure that these new measures are clearly understood.