

# Electric vehicle chargepoints in buildings

## Personal details

Q1. Your name and email address (only used if we need to contact you).

**Your name** Kieran Walker

**Your email** kieran.walker@hbf.co.uk

Q2. Are you responding as:

on behalf of an organisation?

## Organisation details

Q3. Your organisation's name is?

Home Builders Federation

## New dwellings

Q4. Do you agree with our proposed policy position to require a chargepoint in new dwellings?

No

## Against new dwellings proposal

Q5. Why not, including what requirement you think would be suitable (include any evidence you may have)?

**Comments:**

We recognise the need to transition to a low carbon future and that electric vehicles may be part of the solution, but we see practical and financial challenges associated with the proposed approach. The proposal goes far beyond the requirements laid down in the EPBD. The physical installation of fixed charging points is not necessary. A Duct only approach would be far more sensible and avoid the potential risk of charging points becoming obsolete and never being used. A lot of money could be wasted by installing a physical charging point.

## Material change of use

Q6. Should we require the installation of an electric vehicle chargepoint in the car park of buildings converted into a new dwelling?

Yes

## Major renovation

Q8. Do you agree not to apply the chargepoint requirement to residential buildings undergoing major renovations?

No

## Against major renovation proposal

Q9. 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 car parking spaces only)?

**Comments:**

The current consultation seeks to place an undue burden on new build houses. To make the policy a success it needs to equally address material changes of use and refurbishment, and make inroads into the existing housing stock

## Scope of requirement

Q10. Do you agree the requirement should be for one chargepoint per dwelling rather than every parking space associated with the building?

Yes

## Optional building regulations

Q12. Do you agree we should set the requirement as mandatory rather than optional in the building regulations?

Yes

## Other issue to consider

Q14. What other issues do you think, relevant to using building regulations to set standards for the provision and safety of electric vehicle chargepoint, we should consider?

The cost of infrastructure reinforcement and additional sub stations has not been considered as part of this consultation. These costs can be substantial and can drastically affect the viability of developments. Comments are made in the consultation around the future homes standard and the increase use of electricity in the home. The introduction of EV charging along with other electric demand technology is already leading to problems with capacity not only in the grid but inside the dwelling as well. None of these costs appear to have been factored in to the consultation.

There is the potential for electric shock to occur when charging a EV. This severity of the shock may be reduced by earthing rods or other devices, but the risk remains (refer to letter received from an electrical contractor). How will the government address such a risk and what risk assessment have they carried out?

## **Building regulation changes: new non-residential and non-residential buildings undergoing major renovation**

Q15. Do you agree with our proposed policy position?

Yes

## **Existing non-residential buildings**

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

No

## **Against existing non-residential building proposal**

Q18. Why, noting this is the minimum we must do under the EPBD?

Existing buildings appear to be being treated differently to new build where the government is proposing to go beyond the EPBD. Therefore, if the government wants to go beyond the EPBD then why not do so in all cases and have a blanket approach to this.

## **Existing non-residential buildings: application**

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

If a landowner runs a car park or other commercial activity including supermarkets then why should they not install charge points. The argument placed is that there will be charge points in locations that are not required but surely this will reduce the stress on drivers trying to find a location to charge when they are on the road.

## **Existing non-residential buildings: enforcement**

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

No

## Against sliding scale

Q21. Why, including what alternative enforcement regime you think is suitable?

If a regime is already in place to police this then we do not necessarily see the requirement to introduce another.

## Existing non-residential buildings: enforcement

Q22. In your opinion the enforcement body should be:

**another body:**

This should be in line with and similar to the enforcement body that is set out in other Approved documents

## Mitigations

Q23. What steps do you think we should take to mitigate against any potential negative impact of the implementation of these regulations?

Historically it appears that the automotive and manufacturing industries will receive government subsidy and grant in order to implement new technologies and pioneer innovation. What is being proposed here is broadly supported by the industry, however the Developer appears to be funding the potential future reinforcement of the DNO/IDNO/National Grid network at significant cost in addition to providing a network of new consumers to the industry too. This is in advance of the proposed Future Homes Standard requirements too which it is likely will be significant.

The cost to developers has not been mitigated and this will have a significant impact on their businesses. Land deals are a lengthy process and many would already be in place or in negotiation when the new regulations come into effect. Impact would therefore be significant on the developers and potentially jeopardise future housing delivery.

The supply from the power grid is already constrained in many areas across the country, please refer to power company heat maps which demonstrate the extent of the problem. Major network reinforcement is required across the power network which will be exacerbated with the introduction of EV charging and the move from gas to electric heating. To mitigate the impact of these changes the government needs to confirm with DNO's that planned development sites can be appropriately serviced in advance of the regulations being introduced.

The cost benefit analysis in the consultation may never be realised and remains a theoretical figure but the cost incurred by developers will be real and be severely felt.

## Definitions

Q24. Are the definitions in the draft Approved Document accurate and provide their intended meaning?

No

## Against definitions

Q25. How, in your opinion, could the definitions be improved?

We do feel that some further clarity is required;

- a) Clause 1.1 is confusing in that it refers to the total number of parking spaces and total number of dwellings served by the car park. In the consultation for a single dwelling government is only looking for one space to have a charge point and not all as described in the text
- b) It is not clear when a scheme is not viable what happens to an individual dwelling? Is this the enabling infrastructure? A charge point should not be installed but passive measures introduced such as ducting ready for a charge point to be installed.
- c) Diagram 1 shows only one space is required for a dwelling with associate parking. Maybe easier to just refer to diagram 1
- d) Clause 1.4(d) will lead to conflict around the value of the projects and works to be undertaken. Why stipulate 7% this only adds to complications
- e) Clause 1.6 appears to be a repeat clause just worded slightly differently?
- f) Clause 1.27 may be difficult to determine the uplift cost for infrastructure. The DNO will provide a price for the network including EV charging so how do they get back to an actual figure without EV charging provision. Who will police the network operators to avoid them over charging for network reinforcement. It is likely that all DNO will charge up to the max which does not form part of the IA. The IA should therefore reflect these higher charges in addition to the supply of the EV charging point (£3,600 + £967 = £4,567 per plot)
- g) The document does not make reference to smart chargers but if not installed the current versions will become obsolete which will lead to issue around load management and will not allow for tariffs to be applied. The cost of a smart charger is more expensive than the current standard charge points, but it is unclear if this forms the cost base in the IA.
- h) What happens if Planners do not accept the charging point on the elevation?

In addition:

We are not convinced that feasibility assessment should be covered in the building regulations. This should deal with technical issues only.

The options for a single dwelling need to be clearer but should be limited to enabling infrastructure.

## Definitions

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

Yes

## Technical specifications for EV cable routes and chargepoints

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

Yes

## Technical specifications for EV cable routes and chargepoints

Q30. Do you agree that we should specify that chargepoints installed under the building regulations should be at least Mode 3 or equivalent?

Yes

## Technical specifications for EV cable routes and chargepoints

Q32. Do you agree that we should specify that chargepoints installed under the building regulations must be untethered?

Yes

## Technical specifications for EV cable routes and chargepoints

Q34. In your opinion do the draft Approved Document specifications adequately consider accessibility requirements with regards to location of the:

	Yes	No	Don't know?
<b>cabling routes?</b>		X	
<b>chargepoints?</b>		X	

### Why including alternatives?

The diagrams appear to deal with communal parking areas but not private or visitor parking requirements. We are not sure that the diagrams are clear enough and that text is clear enough from an accessibility perspective.

Q35. In your opinion what, if any, other accessibility requirements should we include in the Approved Document?

We do not consider other requirements necessary

## Technical specifications for EV cable routes and chargepoints

Q36. Are the specifications with regards to safety standards outlined in the draft Approved Document appropriate?

No

## Safety specification insufficient

Q37. Why including what further safety specifications do you think we need to include?

### Comments:

The risk of electric shock is a possibility with EV charging. Although reference is made to other safety standards is the government happy that these other standards satisfactorily deal with and control this risk?

## Notifiable building work

Q38. Do you agree with our proposal?

Yes

## Approved Document scope

Q40. Does the proposed guidance in the draft Approved Document provide sufficient detail to comply with the requirements?

No

## Against approved document scope

Q41. Why including any suggestions for how to improve the guidance?

**Comments:**

The new approved document could include reference to suitable locations for charge points on dwellings to avoid conflict at the planning stage. Cables may not reach to areas on non-prominent elevations, therefore locations may be restricted. The dwelling section needs to be clearer when it comes to individual dwellings and dwellings in apartments blocks and associated parking. At present they seem to merge into one which makes it quite confusing.

## Approved Document scope

Q42. The diagrams in the draft Approved Document are illustrative only but do you think they provide sufficient detail for compliance?

Yes

## Approved Document scope

Q44. Does the draft Approved Document meet our overall proposed policy intent?

No

## Does not meet policy intent

Q45. What information do you think is missing from the draft Approved Document to meet the intended policy intent?

as previously outlined we do not agree with the policy intent when it comes to every dwelling having a charge point installed. To better future proof design this should be a duct only approach.

## Lead in times

Q47. What do you believe is a reasonable transition period between publishing the new regulations plus guidance and the requirements coming into force?

In line with the EPBD we agree that buildings that have submitted their initial notice or full plans applications by the 10th March 2012 should be exempt from the regulations for EV charge points including those on individual dwelling houses.

Developments that receive building regulations approval will be built under the prevailing regulations. A minimum period of three years prior notice would be needed to manage supply chains, design scheme loadings, consult with DNOs and potentially re-negotiate land agreements etc prior to new regulations being enacted.

## Proposed exemptions for residential buildings

Q48. 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?

Yes

## Proposed exemptions for residential buildings

Q50. Does this text capture the intended exemption?

No

## Not capturing intended exemption

Q51. Suggest an alternative drafting.

It is most likely the that the DNO's will levy up to the max value for exemption and mean developers will be charged significant sums for supplies. Government need to be realistic about the cost that will be incurred by developers as DNO's seek to upgrade systems. Load management and battery storage will be inevitable and expensive and not yet included in the IA.

Exemptions should be in place where the chargepoint grid connection cost threatens viability. There needs to be more certainty around enabling infrastructure if the site is unviable. It is likely that because the enabling infrastructure has been installed then the DNO's will still require additional monies to upgrade the network. Therefore, if the site is unviable then no works would be required not even enabling infrastructure.

## Proposed exemptions for residential buildings

Q52. Do you agree with our suggested threshold?

No



## Against threshold

Q53. What do you think is a reasonable threshold including any evidence?

**Comments:**

We do not feel additional cost should be levied by developers for connections to the grid.

## Mitigation

Q54. Does this exemption sufficiently mitigate any negative impact on housing supply?

No

## Against mitigation

Q55. Why?

**Comments:**

The exemption measures would not mean there would be no impact on housing supply. The cost to install EV charging would result in further negotiations where land deals may fall through. Investors may also get nervous as projected profits are affected and obligations not fulfilled.

## Other technical feasibility considerations to include

Q56. What other technical considerations do you think should be included?

**Comments:**

We have serious concerns about the capacity of the existing electrical network in the UK. The Future Homes Standards cannot be ignored. With a move to more electric specifically, electric heating, then the demands on the grid will be impacted significantly. The capacity of the electrical supply in the dwelling would most likely not cope with all these additional demands even when diversity is applied. The timing of the implementation of the Future Homes Standard is stringent and as such there are genuine concerns that the network providers are ready for this significant step change.

## Proposed exemptions for residential buildings

Q57. For our a chargepoint in every new home created from a material change of use requirement do you agree that we should apply an exemption for:

	Yes	No	Don't know?
listed buildings?	X		
buildings in conservation areas?	X		

Q58. For our a chargepoint 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?

No

## Against exemption for adequate spare capacity

Q59. Why not?

if there is sufficient capacity then no exemption should apply

## Proposed exemptions for residential buildings

Q60. If we apply the chargepoint 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?

No

## Against adequate spare capacity in the incoming electrical supply to the car park exemption

Q61. Why not?

Major renovations should be treated the same as per new build.

## Cable routes exceeds 7%

Q62. Should we apply an exemption where the cost of installing the cable routes exceeds 7% of the total cost of a major renovations within:

	Yes	No	Don't know?
<b>residential buildings?</b>		X	
<b>non-residential buildings?</b>		X	

### Why?

We do not support and exemption for major renovations. Major renovations should be treated the same as per new build.

## Small medium enterprise exemptions

Q63. Should we apply an exemption for the requirement for existing non-residential buildings to small and medium enterprises?

No

## Against small medium enterprise exemptions

Q64. Why not including any evidence you think is relevant?

**Comments:**

Again if capacity exists why not utilise it fully in all scenarios

## Evidence and analysis

Q65. Do you agree with the:

	Yes	No	Don't know?
<b>assumptions set out in the Impact Assessment?</b>		X	
<b>costs set out in the Impact Assessment?</b>		X	
<b>impacts set out in the Impact Assessment?</b>		X	

**Explain your reasons if you disagree.**

Costs have previously been received for installing EV charging and appear to be significantly above the notional £3.6k per plot.. This figure would be capped at £3,600 under the new proposal but goes to support the case that the cap figure would automatically be levied on developers. The IA therefore needs to include the figure of £3,600 along with the cost of the charging unit, cabling and any proposed load management.

Q67. How do you think these costs are likely to change over time?

**Comments:**

The consultation does not mandate the need for smart charging. It is likely that smart charging will have to be installed to cope with the demand on the network and in the home. It is unclear from the IA what charger have been costed but based on the fact that smart charging has not been mandated then the costs are based on product that is not smart. Therefore, costs will increase from that in the IA.

Q68. 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?

**Comments:**

We have not seen any data to suggest a cost reduction linked to economies of scale. : The cost will go up due to smart charging but then may stabilise. However, with such a new market and continual advances in technological solutions, costs may go up as well as down.

Q69. Do you think there are groups who would be impacted by these regulations that have not been captured by this assessment?

Yes

## Additional groups

Q70. What additional groups and why?

**Comments:**

: Developers will be impacted the most by these changes. However, residents will also be impacted if the charging points become obsolete and require changing prior to the projections in the assessment. This is another reason why charging points should not be installed until required by the residence. In addition to this, it is imperative that owner/occupiers are given choice and not locked into contracts with suppliers in perpetuity.

## Evidence and analysis

Q71. Do you think multiple single-occupancy developments (such as housing estates) will be able to take advantage of economies of scale savings for chargepoint installation?

Don't know?

## Evidence and analysis

Q73. What are the likely technological learning rates that chargepoint hardware would experience and why?

**Comments:**

Unsure on this point as not a field of Expertise for the HBF.

Q74. Do you think our methodology for capturing grid connection cost variation is suitable?

Don't know?

## Evidence and analysis

Q76. Does the assessment of cost incidence seem accurate?

Don't know?

## Evidence and analysis

Q78. 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?

**Comments:**

As our membership is made up of predominantly new build housing members only, we are not able to confidently answer.

Q79. In your opinion have we captured all of the benefits?

No

## Other benefits in impact assessment

Q80. What additional benefits do you suggest including and why?

**Comments:**

We don't believe the benefits will be realised and in fact it will just end up in additional cost for most.

## Evidence and analysis

Q81. What do you think will be the impact on housing supply of introducing a requirement for chargepoint infrastructure on new dwellings?

**Comments:**

Developers will be severely impacted by the proposal set in this consultation which will inevitably affect the housing supply. Projections and forecasts would all have to be reviewed with profits and jobs potentially impacted.

## Final comments

Q82. Any other comments?

We urge the government not to review these proposals in isolation to the Future Homes Standard. In addition the speed at which technology is moving in this industry is significant and as such we feel a cable and duct approach to this proposal is a more futureproofed and durable approach to the installation of vehicle charging points which would negate the potential for obsolete technology being experienced by the occupier 2 yrs (circa) after the initial utility infrastructure agreement has been signed.