

Great Minster House,
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Westminster,
London
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7th October 2019

Dear Sir/Madam,

Gemserv's response to the Electric vehicle chargepoints in residential and non-residential buildings consultation

- (1) We welcome the move to use building regulations to enable a more cost-effective approach towards the transition and uptake of electric vehicles. Gemserv is an expert provider of professional services, helping clients make the most of a world increasingly driven by data and technology. We provide professional services across energy, electric vehicles, healthcare, the public sector and a diverse range of industries including water, telecoms and construction. Over the last couple of years, Gemserv has been working with a wide range of EV market participants to better understand developments and trends.
- (2) We are largely in agreement with the EPBD but have some concerns in the context of this consultation:
 - a. There is a need for a whole system approach and impact assessment with regards to mandating specific charging solutions such as a 7kW charging point.
 - b. There are interdependencies between the provision of charging points and the actual travel demand.
 - c. There is an impact on the electricity system, capacity constraints in terms of grid assets and supply fuses resulting in a reduction in flexibility of what electric devices can be installed in the building context.
 - d. Awareness is needed of products and services for EV charging that could be undermined by the proposal or may render the proposal unnecessary
 - e. Joined up thinking is required in terms of the provision of a comprehensive and affordable national charging infrastructure that is commercially viable
 - f. There needs to be clarity how any mandated requirements will deliver against the pool of electrified national vehicle miles
 - g. Cost should be described in a comparable way for instance the added cost to an electric vehicle mile.
- (3) We would suggest that the proposal needs to be assessed as part of an overall national charging provision that is comprehensive, affordable and aligned with the changing



transport and energy system. Consumer perspective and system costs need to be mitigated as to what is scalable, sustainable and delivers policy outcomes.

Yours faithfully,

Joachim Brandt
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Appendix: Gemserv's response to the Electric vehicle chargepoints in residential and non-residential buildings consultation

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

We acknowledge the good intention to support the uptake of electric vehicles, but do not agree that the proposal is suited to achieve the desired outcome in the most cost effective and sustainable way.

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

While we would agree with EPBD minimum requirements that ducting for cable routing towards suited EV charging locations incorporated as part of new housing developments or any new building that provisions parking would be highly beneficial in reducing installation cost for any type of charging point as and when the need arises, - any other market intervention would stall innovation, consumer choice and potentially would drive unnecessary electricity network costs.

If the desired policy outcome for 2020 would be to increase the number of charging points to 110,000 that would ringfence 770MW of grid capacity that is no longer available for other purposes whether or not any vehicle miles are being electrified.

EV charging needs to be based on an overall strategy for the provision of over 324 billion vehicle miles that need to be electrified. In this context, all charging solutions need to be considered and their scalability to deliver vehicle miles in the most effective way meeting consumer needs, enabling commercially viable business models and future proof infra-structure investment that is sustainable and scalable for all vehicles to be electric.

While we agree that destination charging is currently well suited to deliver the electrification of the national vehicle miles, this is likely to change over time if vehicle ownership declines and mobility services gain traction e.g. with the introduction of connected and autonomous vehicles. Other charging infra-structure solutions will increasingly deliver a larger proportion of the electrified miles which makes the tied-up capacity in the building stock unattractive and costly.

In this context, making homes EV ready by incorporating cable ducting as part of the new build design is a "nothing to lose option" and should be embedded in building regulations, the actual installation of the charging points however should be demand driven. This will also future proof other value propositions such as V2X for bi-directional power flows as well as different charging solutions such as wireless charging. These technology options are at the cusp of going mainstream.

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

The build up of charging infra-structure needs to be aligned with the arising need driven by the uptake of electric vehicles but at the same time support the roll out of innovative solutions that are likely to become available as mainstream solutions in the near and medium term. For example, it may well be that bi-directional charging solutions (V2X) and wireless charging solutions are much more compelling to the consumer than what is currently being proposed. Hence mandating a



particular charging solution as part of the building regulations is unlikely to create the desired outcome. Mandating on the other hand easy access to the power supply point in terms of building design and installation of cable ducting is beneficial across board.

Q4: If you disagree, please explain why.

There are many ways how the electrification of 324 billion vehicle miles might be delivered. Some are more beneficial than others and some are more scalable than others. In the context of new buildings with parking provision, the only common benefit is to provide ducting for power supply and data networks to minimise the installation cost relating to the civil works without picking charging solutions that could be obsolete within a few years. It is suggested that conductive charging solutions are likely to disappear in many charging applications due to consumer inconvenience, uncertainties as and when vehicles are plugged in and hence the whole system benefits that can be achieved. It is important that the installed charging solutions are measured against their actual contribution towards the electrified vehicle miles.

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

Any large-scale infra-structure provision should be assessed against vulnerability to abuse, exposure to the elements such as heat, wind, rain, ice and public safety. While private use in protected areas may appear to be of low risk, one should take note that **any managed private charging point could easily convert to public infra-structure provision** due to the digital integration capabilities. Also, inevitably, due to the mechanical nature of the proposed solution, the level of wear and tear could pose a hazard over time. In particular millions of charging cables could become prone to be faulty with no capabilities to monitor and address the issue in a pre-emptive way. We would also point out, that many house fuses are likely to be in need to be upgraded should the proposal go ahead which may also require upgrades to electricity network cables, street transformers and substations due to the physically installed demand requirement whether it is actually used or not. This raises the question whether the introduction of higher capacity 3phase supply needs to be considered. There is a risk that the intended cost saving will create far greater cost in other places.

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

We would suggest that mandating EV cable ducting is the right level of intervention to minimise subsequent installation costs of demand driven charging solution.

Mandating a large number of charging points with very low utilisation ties up a lot of network asset capacity that will not deliver any miles to the wheel of the vehicles. We would suggest that all new dwellings with associated car parking space must be capable of installing EV charging solutions to support choices of EV charging solutions and ease of installation as consumer demand arises. For example, charging infra-structure that is co-located to a number of buildings may diminish the roll out of charging stations at every building. Increasing utilisation would be more affective than simply installing more chargers. In particular sites with onsite generation would benefit from such provisions.

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



The scope of the requirement should be limited to cutting cost by provisioning charging capabilities that would minimise installation costs primarily arising from installing power and data cables from the supply point to the EVSE. The EVSE is then installed only if the need arises providing consumer choice. In the case of shared charging solutions e.g. apartment blocks, the charging need may be mitigated by a smart charging solution that manage the supply point in order to maximise the use of the supply point in relation to the daily travel demand of the vehicles using this facility. Hence it would be unhelpful to mandate a certain type of charging solution that leads to overprovision and unnecessary cost. For example, even a single 16A supply point can deliver the average daily travel demand of 6 – 8 vehicles over a 12 hour period (50% utilisation) or 12- 16 vehicles over a 24 hour period (100% utilisation). In the given example, the current proposal would mandate 512A instead of the required 16A.

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

No – we would suggest that it must be possible to install a chargepoint per dwelling if the need arises or it must be possible to install a charging solution that can satisfy the required travel demand of the associated dwellings.

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

The provision should provide adequate delivery of the required vehicle miles that are likely to be supplied at this location, considering the total charging provision within the locality. The current proposal will massively over provision domestic charging with low utilisation of EVSE and predictability and we would suggest it is very important that the provisioned electricity supply is delivering electrified vehicle miles.

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

Yes, in principle – but limited to ensuring that charging provision can be installed at minimal cost if the need arises.

Q11: If you disagree, please explain why.

Cable ducting only.

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

No, this may slow down the regeneration process in cities due to added costs. These scenarios are more likely to be subject to supply constraints in comparison to new build where this may be part of the development plan. However, it may be incentivised to do so where the opportunity presents itself on a case by case basis where there is either strategic value in doing so, or where delivery of high volume of electric vehicle miles can be achieved.

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



It is suggested that this may not be possible in all locations. It seems the number of 10 car parking spaces is an arbitrary number with no indication whether the site can reasonably support this or whether there is a need for it. We would suggest that the minimum provision should be based on a formula that considers the anticipated travel demand associated with the dwelling and the overall provision of charging infra-structure in the locality based on the previously stated reasons regarding capacity management and charging infrastructure utilisation.

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

The issue is primarily driven by the prescriptive view that 7kW chargers need to be deployed which is unlikely to be inline with the charging need required by the travel demand and capacity of existing supply points.

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

While we agree with the desire to increase public charging provision and cost saving associated with civil works (ref. EPBD), we do feel that the commercial case is dependent on demand and payback on investment. It also links back to if the previous premise whether it is true that most electrified vehicle miles are supplied by residential destinations, then the remaining travel demand would render the provision of public charging commercially none viable. However, if commercial charging solutions are to deliver a larger portion of the electrified vehicle miles then mandating residential deployment wouldn't be cost effective. Hence, our suggestion that the overall infra-structure in the locality needs to be taking into account as being able to serve the travel demand in this locality.

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

We point to the principle, that the overall electrification of vehicle miles is a finite value pool and needs to be distributed in the most optimal way as part of the overall charging provision of electric vehicle. This cannot be achieved by simply looking at a market segment in isolation.

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?

We agree with the concept that there needs to be a need to satisfy travel demand associated with these buildings. However, the provision of 1 charging point for 20 spaces is no assurance for the driver that charging at the destination is possible. Also, whether 1 charging point is provisioned, or 5 charging points are provisioned the civil engineering work is unlikely to be massively different. Unfortunately, with regards to a lot of the building stock, the rollout of charging infra-structure often is very much constrained by the electricity supply point. While not disagreeing, we would suggest that the provisioning of 1 charging point per 20 car parking spaces is very costly in relation to the benefit it can provide. We would suggest that the arising charging demand within this locality should be taken into account and given assessment criteria government support should be provided.

Q18: If you disagree, please explain why.

We disagree that the proposal delivers a worthwhile outcome. Some more thoughts are required how this opportunity in the context of the overall provision of the charging need can be supported.



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?

It is suggested to qualify the requirement in the context of the available supply point capacity, the travel need that may be satisfied and hence whether there is a desired outcome that should be incentivised rather than legislated. There needs to be a viable business case and access to investment capital to mitigate barriers that are rooted in the societal shift to EVs.

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

We would suggest that it is premature to contemplate penalties for non-compliance as it is unclear as to what the impact on the nascent EV infra-structure market is.

There is a good chance that no enforcement is needed as the market scales up and charging infra-structure provision is viable. However, we would point out that there are interdependencies of regulations in the residential and the commercial context that could become counterproductive.

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

We are not keen on the idea to enforce regulations that have a significant level of uncertainty to deliver the desired outcome i.e. quantifiable delivery of electrified vehicle miles. We would suggest that **the sales stop** of fossil fuel vehicles will inevitably create the need for charging infra-structure where and when it is needed across all sectors.

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

We would suggest this should be in the transport sector and potentially could be tagged on to the vehicle licensing e.g. DVLA. We would however suggest that the whole approach needs some more analysis to come up with something that delivers the desired outcome and is value for money.

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

Where appropriate incentives and access to investment capital is required, in particular during the required transition period to scale up the vehicle parc.

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

The intent of the definition is clear, however it may not reflect the complexity of ownership. For example, a car park may be associated with the building in terms of reserved for dwellings xyz but could be a shared resource owned by a car park operator.

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

Potentially there could be an issue with regards to different ownership of assets within the site boundary of the dwelling or building containing the dwelling.



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

As stated, ownership may have an influence as it may address different stakeholders in the housing context.

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

It is suggested that there might be a complication with the generalised terminology and the scope of the applicability of the building regulations. For example, there could be a 1 to 1 relation between dwellings in a shared resource say of 10 spaces which however are owned by private individuals or the 10 spaces could be owned by a 3rd party. There could be arising conflicts how the regulations are applied and exemptions thereof.

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

We would suggest that there is no need for government to specify minimum charging power.

We do not agree with the narrative of 6.7 as it does not take into account the travel demand to be provisioned. The average daily travel of 25 miles per day translates approximately into a 6kWh energy demand. Based on different charging powers this would translate to charging times of approximately 55 minutes using 7kW charging power, 1 hour 45 minutes using 3.6 kW charging power, 2 hour 25 minutes using 2.5 kW charging power. The size of the battery is not necessarily an argument of higher charging power need but more along the line that large batteries could accept higher charging power. Considering that the charging demand may be shared across several locations the actual dwell time requirement may further decline.

We do not agree with the narrative of 6.8, while large domestic supplies are beneficial if incorporated as part of new build, for the majority of the existing housing stock this would not be a good choice and would create unnecessary supply constraints since there is sufficient vehicle dwell time to flex in terms of lower power over longer periods.

We do not agree with the narrative of 6.9, in particular the older housing stock is unlikely to have 100Amp connection fuse.

With reference to narrative in 6.10 we would draw attention to stationary battery storage or smart controlled devices can not mitigate the installed capacity requirement with a given house fuse rating.

In reference to 6.11, commercial buildings are often constraint in terms of their supply point and their operational needs. Additional capacity of EV charging is often very limited and may impose the need for supply point upgrades.

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

We would suggest that there is not a real need to specify charging power as part of building regulations, but it is suggested that the minimum provision should be 10A. This would be aligned with the default bottom line provision of mode 2 charging usually supplied with the electric vehicle.



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

No, we are not in favour for the government to specify the type of EVSE to be installed as part of the Building Regulations. What is needed that access to the supply point is convenient and doesn't require major civil works which could become a consumer barrier to switch to electric vehicles.

Q31: If no, please explain your answer.

We would suggest that the main reason for the building regulations is to ensure that the installation of a charging point is made easy and that the inclusion of cable ducting for the EVSE at build time reduces the cost of installation as and when the need arise. The choice of the EVSE and the rating of the EVSE whether this is a dedicated domestic socket using a mode 2 portable charger, or a mode 3 charger of a power rating suited to the house consumer unit or any other type of charging unit such as bi-direction V2X for AC or DC or wireless charging remains consumer choice and whether it is possible to install the desired charging solution compliant to safety standards.

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

No

Q33: If no, please explain you answer.

For the reasons given in Q31 we do not support the view that government should mandate any particular charging solution. We would suggest that there is a good chance that conductive charging solutions will be superseded by wireless charging solution and that the proposed building regulations are limited to make it as simple as possible to reach the electricity supply point without expensive civil work.

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

No

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

We would suggest that there are a range of charging solutions available today and even more so in the future and that it wouldn't be desirable to specify a particular solution.

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

We would suggest that there are other charging solutions that would be more suited from an accessibility point of view, for example wireless charging. In this context the building requirements should simply state that appropriate provisions can be made if the need for specific accessibility requirements arises.

Q37: Should we include any additional accessibility requirements?



It is important that the most suited charging solution is deployed to meet accessibility and special need requirements and again this would point to only installing the desired EVSE solution as the need arises.

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

Yes, however the emergence of new technology will require a periodic review.

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

This is a moving target and needs to be periodically reviewed.

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

Not necessarily as long as they are carried out by a certified person who can underwrite that the work carried out is fully compliant to current regulations.

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

Yes, in principle. However, different charging solutions may need additional guidance.

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

Additional guidance may be required with regards to the selection of the appropriate charging solution in any given building scenario.

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

Additional guidance may be required based on selected charging solution.

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

Perhaps input from manufacturers of different charging solutions should be considered. We are not in agreement that building regulations become a barrier to deploy a wide range of charging solutions that meet the demands and desirability of the paying consumers.

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

As per previous comments, we would suggest that the type of charging solution to be installed is outside the scope of building regulations.

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

There may be technology dependencies that have not be addressed.

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



In terms of the provisions of electric cable ducting we would suggest a 2 yr transition period. In terms of the more honours requirements such as the provision of EVSE, we feel that this is premature to be mandated.

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

Consideration needs to be given, that as part of the phase out of fossil fuel engines, the national EV charging provision must be comprehensive and affordable. In this context the electricity system must be fit for purpose to allow the transition to happen in a timely manner. On the same accord, there is also a requirement that the utilisation of the provision is substantial delivering a commercially viable case and that capacity requested from the electricity system actually translates into electric miles driven. The provision of charging solutions as a whole needs to meet these requirements and exemptions in building regulations should be viewed in that context.

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

As previously outlined, exemptions should be viewed in the context of achieving a national charging provision that delivers the phase out of fossil fuel vehicles in line with climate change policy targets. This needs to be done in such a way that the electricity system is used in the best possible and affordable way that delivers the required outcome for everyone.

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

No, the proposed narrative in terms of upgrade costs is insufficient to address the need for national charging provision that is comprehensive and affordable.

Q51: If no, please suggest an alternative drafting.

Exemption should only be granted if the national charging provision is adequate in the location in question. If the location does not support a viable business case and hence in any likelihood the national charging provision is not comprehensive, the provision should be eligible for subsidy in support of the wider national interest.

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

This is likely to be dependent on many factors. We would suggest that where grid connections are cost prohibitive, alternative charging solutions should be considered in the national coverage context. For example, a solar port for EV charging may be appropriate in areas that are thinly populated, and the grid provision is thin. Also, considering that EVs are not necessarily reliant on a particular grid connection, this should be seen in the context of whether the grid assets within the local area are able to deliver the travel demand or whether the electricity system is not fit for purpose.

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

The need for housing supply and the need for low carbon transport are inherently linked as part of the road to zero policy outcome. Consideration needs to be given that as EVs become the majority in



the national vehicle parc, the provision of fossil fuels will no longer be commercially viable. We would encourage to look at the bigger picture of what charging provision is needed where and when in order to successfully achieve the transition away from fossil fuel vehicles. In other words, what does deliver the electrification of 324 billion vehicle miles in the UK every year in a sustainable, comprehensive and affordable way.

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

We would suggest that there is no “one fits all” type solution that should be mandated at this point in time. It is important that all charging solution contributions should be considered as part of the national provision of EV charging. The sectorial approach advocated here, is unlikely to deliver the desired outcome that is affordable, fit for purpose and world leading.

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

As previously outlined, there needs to be evidence in terms of the electric vehicle miles provisioned to satisfy the travel need in the context of a comprehensive and affordable national charging infrastructure. This is unlikely to be a 7kW charger per dwelling.

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

With the categorical phase out of fossil fuel vehicles, the national provision of EV charging must satisfy the travel demand. If the travel demand is satisfied, then there is ground for exemption not to install EV charging that in essence would require grid capacity that ultimately would not deliver any vehicle miles. We feel that the proposed building regulations are not linked to meeting the travel demand and hence risk to incur costs when it is not needed or provide exemptions where the travel demand is not met.

Q57: If you disagree, please explain why.

The provision of EV charging needs to meet the travel demand.

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

No. As previously mentioned there are a range of charging solutions available. For example, wireless charging solutions very much reduce the need for street furniture and hence would be applicable to conservation areas. We therefore are in favour to be inclusive to all charging solutions to meet a comprehensive national charging provision.

Q59: If you disagree, please explain why.

Less intrusive charging solutions are available that would be suited for conservation areas.



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

We would suggest that this is problematic. If this location is critical to contribute to the national charging coverage, then it is suggested that financial support may be appropriate. However, we would point out that mandating 7kW chargers could be at the root cause for causing unnecessary costs and that the charging provision should be reviewed in the context of the travel demand it will satisfy.

Q61: If you disagree, please explain why.

If cost is prohibitive, rather than applying a blanket exemption it should be reviewed whether the required travel demand would warrant higher costs that may be supported by government.

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

If spare capacity is available and there is a travel need then the aim should be to satisfy the travel need. Exemptions may be considered if alternative EV charging provisions are already available in the local area.

Q63: If you disagree, please explain why.

The provision of EV charging needs to be considered in the context of the travel need and the summation of all charging solutions that satisfy this travel need. If the travel need is already well satisfied, then there is no need to mandate to build more.

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

No, these destinations are likely to be instrumental to spread the charging need over a larger geographical area.

Q65: If you disagree, please explain why.

In a world where all vehicles are electric, it will be inevitable that these locations provision EV charging.

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

Should be assessed in the context of the strategic value to provision EV charging in these locations. If there is no need, then an exemption is applicable. What we are suggesting is to look at the bigger picture to identify the most appropriate charging provision on a location basis.

Q67: If you disagree, please explain why.



It is unlikely to achieve affordable and effective EV charging provision if the overall national charging provision isn't taken into account.

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

No, taking into account what was said previously, these locations are likely to be in need of EV charging anyway in a world where fossil fuel vehicles have been phased out. Where necessary, government support should be considered.

Q69: If you disagree, please explain why.

There needs to be a more holistic approach in assessing where building regulations are critical for the affordable delivery of EV charging.

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

We would suggest that there are issues with the Impact Assessment not taking into account the need for the electrification of the national vehicle miles demand. Any implementation approach that does not take into account the workings of the electricity network in relation to the travel demand is likely to increase avoidable costs.

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

The changes to the building regulations are proposed out of context with regards to the electricity supply system and the travel demand that needs to be provisioned.

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

We would suggest that the approach considered is out of context in terms of the overall charging provision for electric vehicles. The segmental approach does not consider the inherent interdependencies and the impact on costs and viable business models.

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

Again, there are also cost penalties incurring from deploying charging provision that does not deliver cost benefits in terms of miles to the wheel and ignores costs incurring in the inefficient use of the electricity system.

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

As previously stated, the installation and hardware costs may be irrelevant if the incurred system costs are being ignored.

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

The electricity system.



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

As previously pointed out, it is not the cost of provisioning the charging point but ultimately the costs of electrified miles to the wheel of the EV that need to be considered.

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

We would suggest that proposed charging solution is already outdated.

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

Suggest this should be discussed in detail with the grid companies.

Q79: Does the assessment of cost incidence seem accurate?

We are concerned that the overall picture of the national charging provision is unclear and hence there are many costs that are not taken into consideration.

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

We would suggest that the installation costs are very uncertain and very variable between buildings.

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

The nascent EV market does not lend itself at this point in time to derive these kind of conclusions where large changes to the type of infrastructure technologies and vehicle technologies can be expected within the next 10 years.

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

We would suggest that housing supply needs to be aligned with achieving the low carbon transport policy outcomes as well as the transition to a low carbon and increasingly distributed electricity system. In order to achieve economy of scale new standards and regulations may be needed. However, there is a risk that unless a whole system approach is followed across industry sectors, benefits in one sector could easily become stumbling blocks in another sector.