Department for Energy Security & Net Zero

Solar on Car Parks & Electric Vehicle Charging

A call for evidence

Closing date: 18 June 2025

May 2025

Any enquiries regarding this publication should be sent to us at:
solarcorrespondence@energysecurity.gov.uk

Ministerial Foreword

Solar is at the heart of our mission to make Britain a clean energy superpower. It is fast to deploy, affordable, and plays a critical role in cutting emissions, lowering energy bills, and reducing our reliance on volatile fossil fuel markets. Solar is already a clean energy success story with 18GW deployed as of February 2025, enough to power around 5 million homes with homegrown British power.[1] But we know we need to go even further to achieve our target of a decarbonised grid by 2030. Indeed, our Clean Power Action Plan says we need at least 45-47GW by the end of the decade to make this mission a success.

That is why we are exploring every opportunity to roll out solar across our built environment — from homes and businesses to brownfield sites and infrastructure we use every day.

One of the most exciting potential sites for solar is our nation's car parks. These vast, already-developed and sealed spaces offer a unique opportunity. By installing solar canopies, we can harness their untapped surface area for renewable energy generation – making much more effective use of the land – while providing a new revenue stream for owners at the same time.

We want to ensure the UK does not miss this opportunity. This call for evidence invites views from the car park industry, local authorities, planners, developers and the wider public on how we can increase uptake of solar canopies, and whether a mandate on new car parks is the way to go. We want to understand the costs, the benefits, and the practicalities — and how we can ensure such a policy works across different regions, scales and business models.

Our goal is clear: to rapidly expand clean power while supporting jobs, resilience and local energy generation. Solar car parks can help us do just that — turning everyday spaces into engines of the clean energy transition.

Interlinked with solar and car parks is the transition to electric vehicles. As the largest emitter of greenhouse gases in the UK, road transport plays a crucial role in our journey towards net-zero emissions. With 89% of domestic transport emissions coming from road transport[2], the shift to electric vehicles in essential. We want everyone, no matter

[1] The homes powered estimate reflects the equivalent number of homes that could be powered based on an estimate of the annual generation from the 18GW of solar capacity currently installed. It is not possible to continuously power a home through intermittent renewables – this capacity will work alongside the rest of the electricity system to power homes and businesses. The estimate is calculated using household consumption estimates sourced from the published Subnational Electricity and Gas Consumption Report and actual load factors as per the Energy Trends publication. The actual generation will vary based on site specific factors.

[2] https://www.gov.uk/government/statistics/transport-and-environment-statistics-2023--2/greenhouse-gas-emissions-from-transport-in-2023

where they live, work or travel to be able to charge their vehicle easily and affordably. To do that, we need to make it easier, quicker and cheaper to install chargepoints.

We've already made strides by requiring all new domestic and non-domestic buildings to install a chargepoint while supporting operators to install them more quickly on-street. However, we know that more can be done. That is why we want to hear from you about the challenges you face and the changes you would make to the planning and permitting processes for installing chargepoints. Your views will help us ensure everyone benefits from the transition to electric vehicles.

Contents

General information

Why we are publishing this call for evidence

The Department for Energy Security and Net Zero (DESNZ) is seeking evidence and feedback on a proposal to mandate the introduction of solar canopies on new outdoor car parks and explore opportunities for deployment on existing car parks, above a certain size; this includes car parks in both public and private ownership. We are considering, subject to this call for evidence, whether multi-storey car parks and residential car parks should be in scope. We also welcome evidence and feedback on other ways that government action could increase the deployment of solar canopies on outdoor car parks and views on what further changes can be made to the planning and permitting regime when installing electric vehicle chargepoints.

Call for evidence details

Issued: 07/05/2025

Respond by: 18/06/2025

For Section 1 Enquiries:

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Solar Team

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For Section 2 Enquiries:

Office for Zero Emission Vehicles

Road Transport Group

Department for Transport

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Great minster House,

33 Horseferry Road
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Email: ozev.enquiries@ozev.gov.uk

Audiences: This call for evidence will be of particular interest to stakeholders of the car park industry, including owners, operators, developers (including housing developers), business owners with car park facilities, trade associations, advocacy groups, academics and local authorities, as well as energy generators, energy suppliers and energy network operators, chargepoint operators and anyone wishing to install an electric vehicle chargepoint.

The call for evidence is not limited to these stakeholders - any organisation or individual who this call for evidence relates to is welcome to respond.

Territorial extent: The territorial scope of Section 1 covers England, Wales and Northern Ireland, while recognising that certain planning, building regulation and financial policy areas are devolved in some jurisdictions.

The territorial scope of Section 2 covers England only. This call for evidence will inform future policy development by government in areas where it is responsible, and engagement with devolved governments in relation to devolved policy.

How to respond

For Section 1 Respond online at: https://energygovuk.citizenspace.com/energy-security/solar-canopies-and-ev-charging or **Email to:** solarcorrespondence@energysecurity.gov.uk

For Section 2 Respond online at: https://energygovuk.citizenspace.com/energy-security/solar-canopies-and-ev-charging or **Email to:** ozev.enquiries@ozev.gov.uk

When responding, please state whether you are responding as an individual or representing the views of an organisation.

Your response will be most useful if it is framed in direct response to the questions posed, though further comments and evidence are also welcome.

Confidentiality and data protection

Information you provide in response to this consultation, including personal information, may be disclosed in accordance with UK legislation (the Freedom of Information Act 2000, the Data Protection Act 2018 and the Environmental Information Regulations 2004).

If you want the information that you provide to be treated as confidential please tell us, but be aware that we cannot guarantee confidentiality in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not be regarded by us as a confidentiality request.

We will process your personal data in accordance with all applicable data protection laws. See our privacy policy. We may also share your data with other organisations which have a direct interest in the policy on which we are consulting: for example Crown bodies, government departments including Department for Transport, Ministry of Housing Communities (MHCLG) and Local Government or Department for Energy Security and Net Zero (DESNZ) partner organisations.

To ensure consistency, DESNZ will engage with MHCLG and the Building Safety Regulator as proposals are developed on any future policy following this call for evidence that might relate to the Building Regulations. This includes on interactions relating to Part L, Part P and Part S.

We will summarise all responses and publish this summary on GOV.UK. The summary will include a list of names or organisations that responded, but not people's personal names, addresses or other contact details.

Quality assurance

This consultation has been carried out in accordance with the government's consultation principles.

If you have any complaints about the way this consultation has been conducted, please email: bru@energysecurity.gov.uk.

Executive Summary

As part of the Clean Power Action Plan, the government committed to gathering evidence about the potential for solar canopies in car parks to contribute to our solar generation ambition. Increasing renewable generation reduces greenhouse gas emissions, supports the government's decarbonisation commitments, and may help to address energy security challenges.

The potential for solar canopies on car parks lies in leveraging their vast, under-utilised surface area to contribute meaningfully to the UK's renewable energy generation capacity, and provide additional revenue for car park owners. By being situated close to existing centres of electricity demand, car parks have the potential to reduce the external electricity demand (and bills) of those who host them.

Fully understanding the potential benefits of solar canopies on car parks, fully considering the impact on businesses and motorists, and addressing ownership structures and infrastructural limitations, will require overcoming significant evidence gaps.

The Department for Energy Security and Net Zero (DESNZ) is seeking evidence and feedback on a proposal to mandate the introduction of solar canopies on new outdoor car parks and explore opportunities for deployment on existing car parks, above a certain size; this includes car parks in both public and private ownership. Mandating solar canopies on new car parks may have many benefits for their owners, including self-consumption from electricity generation, shelter for cars and drivers, and localised power for EV charging points.

This call for evidence is seeking responses from motorists, owners, and operators who plan to own or operate new car parks or who currently own, operate or lease existing car parks, including multi-storey and residential ones. DESNZ aims to better understand and gather evidence on the potential benefits, feasibility, and costs of the proposal, as well as its impacts on stakeholders. We also wish to identify the types of car park that should be in scope of any proposal. Simultaneously, we are aiming to understand the ownership structures for outdoor car parks, identify barriers to implementation and understand the role for government in overcoming these.

The second section of this call for evidence addresses and welcomes responses on electric vehicle (EV) charging infrastructure and the planning system. Decarbonising road transport is crucial, given transport is the largest greenhouse gas emitter in the UK,

and road transport contributing 89%[3] of domestic transport emissions. To support this decarbonisation, the government wants everyone, no matter where they live or work to be able to access reliable and affordable charging. Significant progress has already been made and there are now over 76,000[4] public charging devices installed throughout the UK and over 680,000[5] domestic homes have access to a private chargepoint.

However, while significant progress has been made, more can be done to make it easier, quicker and cheaper to install electric vehicle chargepoints. Permitted development rights (PDRs) allow certain building works and changes of use to be carried out without needing to submit a planning application.

PDRs have been introduced to support several areas of the chargepoint market, provided installations meet certain requirements. Locations include residential and workplace chargepoints, public chargepoints on private land, and chargepoints on public land provided the local authority gives consent.

The government is seeking views on what further planning changes can be made to enable the quicker and cheaper installation of electric vehicle chargepoints and supporting infrastructure, in both private and public settings.

Structure

This call for evidence is split into two sections: Section 1 focuses on solar canopies and car parks, whilst Section 2 focuses on public and private EV charging infrastructure and the planning system. Both sections include background information, HMG's understanding of each sector's current climate, and questions for stakeholders.

[3] https://www.gov.uk/government/statistics/transport-and-environment-statistics-2023--2 Transport and Environment Statistics 2023
[4] https://www.gov.uk/government/collections/electric-vehicle-charging-infrastructure-statistics Electric Vehicle Charging Infrastructure Statistics
[5] https://www.gov.uk/government/statistical-data-sets/amenities-services-and-local-environments English Housing Survey

Section 1: Solar Canopies - Call for Evidence

1. Introduction

In December last year, the government published the Clean Power Action Plan, setting out the expansion of renewable technologies required to achieve the 2030 ambition. The Plan calls for the rapid acceleration of solar PV deployment, from around 18GW[6] at present to at least 45-47GW by 2030.

In October 2024, government relaunched the Solar Taskforce, which brought together industry and government, to discuss the actions required to accelerate solar deployment in line with this plan. Its recommendations, in the form of a Solar Roadmap, set out a pathway to meeting (or, subject to system need, even exceeding) this ambition by 2030. They also chart a course for significant further growth by 2035. Its recommendations include actions across various areas, including electricity networks, rooftop solar, skills, supply chains, and planning.

As part of the Clean Power Action Plan, the government committed to gathering evidence about the potential for solar canopies in car parks to contribute to our solar generation ambition. The potential for solar canopies on car parks lies in leveraging their vast, under-utilised surface area to contribute meaningfully to the UK's renewable energy generation capacity. By increasing deployment of solar canopies on car parks, these spaces could be converted into solar energy hubs, thus improving the productivity of the land. For example, one of the potential benefits of solar canopies is that their installation may lead to car park owners installing EV chargepoints.

Increasing renewable generation reduces greenhouse gas emissions, supports the government's decarbonisation commitments, and may help to address energy security challenges. By being situated close to existing centres of electricity demand, car parks have the potential to reduce the external electricity demand (and bills) of those who host them. Solar canopies offer a dual use of the land used for car parks and can provide additional revenue through the sale of any electricity not used on-site. It's therefore possible that under-deployment of solar canopies on car parks has resulted in under-utilisation of the land.

However, fully understanding the potential benefits of solar canopies on car parks, fully considering the impact on businesses and motorists, and addressing ownership

[6] https://www.gov.uk/Government/statistics/solar-photovoltaics-deployment

structures and infrastructural limitations, will require overcoming significant evidence gaps.

1.1 Scope of the call for evidence

The Department for Energy Security and Net Zero (DESNZ) is seeking evidence and feedback on a proposal to mandate the introduction of solar canopies on new outdoor car parks and explore opportunities for deployment on existing car parks above a certain size; this includes car parks in both public and private ownership. We are considering, subject to this call for evidence, whether multi-storey car parks and residential car parks should be in scope. We also welcome evidence and feedback on other ways that government action could increase the deployment of solar canopies on outdoor car parks.

This call for evidence specifically aims to:

1) Understand the potential benefits, feasibility, costs of the proposal, as well as the impacts it would have on businesses, the public sector, consumers, the energy system, and the environment.
2) Gather evidence on the cost implications and feasibility of the proposal.

3) Identify the car park owners/operators, land owners or public sector stakeholders and size of car park that should be in scope of the proposal.

4) Understand the ownership structures for outdoor car parks and what the equity impacts would be.

5) Identify potential barriers to implementation, including financial, technological and contractual ones, explore possible solutions, and understand whether there is a role for government in overcoming these.

This call for evidence is seeking responses from motorists, owners, and operators who plan to own or operate new car parks, including multi-storey and residential ones. It also seeks input from owners, operators and leaseholders of existing car parks, to explore opportunities for deployment. Evidence gathered will inform the potential design and implementation of the proposal. This includes timelines, exemptions, and support mechanisms.

1.2 Background – Car Parks

There is a huge variety of car parking types across the UK, including surface car parks, in industrial areas, residential streets, airport roads and the like. Given the diversity, there is a lack of up-to-date, compiled statistics on the exact number of sites and individual spaces managed. However, the Private Parking Code estimates there to be around 40,000-50,000 private car parking sites across Great Britain.[7]

Focussing on organised parking sites, there are over 200 private parking operators, divided into two trade associations: the British Parking Association (BPA), which covers around 60% of the operators, and the International Parking Community (IPC), which covers the remaining 40%.[8] In 2022, the Accredited Trade Associations (ATAs) estimated that, of the 43,000 private sites, the 66% had fewer than 50 parking spaces, whilst only 15% and 16% had between 50-99 and 100-499 spaces respectively. 3% had more than 500 spaces. There are an additional 20,000 council-run sites, which each council lists on its website, including a breakdown of spaces and type.

The market is so varied that is difficult to assess exactly how many sites belong to each different private ownership models. In some cases, car parks are owned and managed by the same firm (e.g. NCP). Many are owned and managed by separate firms (e.g. ParkingEye manage car parks owned by various other companies). Typically, there is no management fee for operators to manage car parks.

7 Private Parking Code of Practice: draft impact assessment See pages 56 and 69 for analysis and assumptions.
8 Private Parking Code of Practice: draft impact assessment page 45 – as of 2022, there were approximately 43,000 private car parks overseen by the BPA and the IPC. Of these, the IPC estimated they cover roughly 16,000 sites whilst the BPA approximate the equivalent figure to be 27,000.

Geographically, car parks are likely to be unevenly distributed across urban and rural areas. Most are in urban areas, due to higher population densities and associated demand. However, we expect suburban and rural car parks to have larger surface areas, potentially making them attractive for high-capacity solar installations.

To help give context and a reference point for answering, we have provided initial estimates of the potential costs and benefits arising from the installation of solar canopies on an illustrative 80-space car park. A full methodology has been provided in Annex C, and we are seeking comment on the robustness and assumptions underpinning these estimates as part of this call for evidence.

Engagement across government and advocacy groups has highlighted the complicated nature of car park ownership within the UK. The government would therefore welcome evidence to understand the scale and ownership structures of parking in England, Wales and Northern Ireland.

1.3 Timescale

The call for evidence will be open for responses until 18th June 2025. During this period, DESNZ will also engage with certain stakeholders.

1.4 Questions

To analyse and interpret responses most effectively, it is helpful for us to identify the type of stakeholders responding and their location within England, Wales and Northern Ireland.

Q: What type of stakeholder is responding?

a) Car park owner
b) Car park operator
c) Housing developer
d) Business owner with car park facilities
e) Local authority
f) Individual
g) Energy generator
h) Energy supplier
i) Advocacy group

j) Energy network operator

k) Academic

l) Other/more than one of the above – please state.

Q: What different car park ownership models in England, Wales and Northern Ireland are you aware of? Please provide any evidence you have on the proportion of market share covered by each of these ownership models.

Q: There is conflicting evidence on the number, size and location of non-domestic car parks in England, Wales and Northern Ireland. Can you provide quantitative evidence to help address this?

2. Benefits

2.1 Potential Benefits to Car Park Owners

Mandating solar canopies on new car parks may have many benefits for their owners. These could include self-consumption from electricity generation, shelter for cars and drivers, and localised power for EV charging points. Examples of potential benefits are given below.

Revenue Generation- Export

Solar PV allows car park owners to generate revenue by selling their surplus energy back to the grid under the Smart Export Guarantee (SEG) or a Power Purchase Agreement (PPA). This can provide a reliable income stream. For example, DESNZ is seeking comment on the estimate that an 80-space car park could generate around £22,000 per year through the installation of solar canopies and exporting all the electricity generated via a Smart Export Guarantee scheme (2025 prices).[9]

An alternative would be for a car park owner to sell the electricity to a nearby business with demand through a private wire agreement. The benefit of this would be that the off-taker would receive power at a lower rate than that available on the retail market. The generator (i.e. the car park owner) receives payment for the generation.

However, the car park owner would need the resources to understand how this works in practice and have the ability to interpret legislation and processes. They would be required to provide the upfront funding to construct a private wire. A private wire agreement would also incur ongoing operating and maintenance costs.

[9] See Annex C for details

Self-consumption (bill/fuel savings)

Another potential benefit from having solar on car parks is that the electricity generated can be used by the owner for self-consumption. For example, a large supermarket could use the electricity generated in its car park to reduce the amount of power it must buy from the grid. Consuming the electricity in this way rather than selling to the grid could also help recoup upfront installation costs.

For example, DESNZ is seeking comment on the estimate that an 80-space car park could save around £28,000 per year in electricity bills by installing solar carports and consuming all electricity generated (2025 prices).[10]

EV Charging

Solar canopies could support EV charging infrastructure within car parks. By integrating solar PV systems with EV chargepoints, reliance on grid-supplied energy can be reduced, potentially lowering electricity costs and charging costs for EV-users. Onsite generation could reduce the size of the grid connection request. However, this would depend on: the capacity of the chargepoints and solar installation; when the maximum demand for the site would be (i.e., whether it would coincide with generation); and the capacity of any battery storage.

This setup would enable direct charging from solar energy during daylight hours, improving productivity of the land. Combining solar canopies with energy storage systems could help manage peak demand and ensure a stable power supply for EV chargers, making car parks more self-sufficient in energy, and contributing to a resilient low-carbon transport network. This combination would also aid car park owners' and operators' desire to optimise the returns they make from the car park space and maximise its value. Please see Section 2 of this document for our proposals, and questions to be answered, regarding EV charging infrastructure, the planning system, private, public and on-street charging.

Improved value of car park

Installing solar canopies on a car park may increase its value, benefitting the owner if it were to be sold.

Diversifying Assets

Car park owners may be keen to diversify their portfolios and maximise the value of the car park space. Assets which generate electricity could be beneficial for them by providing an alternative revenue stream. There have already been moves within the

[10] See Annex C for details

industry towards this. For example, some operators have taken to installing parcel lockers on the car parks they manage as part of a deal with delivery companies.

Enhanced Customer Experience

Installing solar PV canopies improves the overall experience for customers by providing shade and protection from adverse weather conditions. Conversely, there is a risk that the shadier areas created by solar canopies could pose security risks. In hot weather, vehicles benefit from reduced internal temperatures, whilst during rain or snow, customers enjoy shelter as they park or retrieve their cars. These enhancements could increase customer satisfaction. Additionally, by reducing the surface temperature of asphalt, solar canopies could help to mitigate the urban heat island effect, creating a cooler environment for both vehicles and pedestrians.

Sustainability Credentials

Solar PV installation is a visible demonstration of commitment to environmental sustainability. Such initiatives align with growing consumer preferences for environmentally responsible businesses. These sustainability efforts can bolster a company's brand reputation, and attract environmentally conscious customers. Furthermore, generating electricity from renewables would be seen as particularly positive in areas where high energy demands are coupled with an abundance of land use for parking, like suburban retail parks. Deploying solar canopies in these areas could also improve the sustainability of businesses that use the car park.

2.2 Questions

These are the benefits that have been identified could emerge from the installation of solar canopies on car parks for owners. The government would be interested to understand views on these benefits.

Q: Do you agree that we have identified all the major benefits to car park owners which could emerge from the installation of solar canopies?

[Yes, No, Don't know, Please provide any evidence to support your answer]

Q: How would you expect any generated electricity on the car park(s) you might own or operate to be used? You may select multiple options.

[Self-consumption, Sale to the grid, Supporting EV charging infrastructure, Other, Don't know, Not Applicable. Please provide further details]

Q: How do you think the installation of solar canopies would impact the financial valuation of a car park?

[It would improve the valuation, It would not impact the valuation, It would decrease the valuation, Don't know, Please provide any evidence to support your answer]

Q: Do you agree with the estimated revenue from selling electricity back to the grid through a SEG tariff, and/or the estimated electricity cost savings from self-consumption? Please provide any relevant qualitative or quantitative evidence.

[Yes, No, Don't know, Please provide any evidence to support your answer]

2.3 Potential Benefits to Wider Society

Decarbonisation commitments

By harnessing under-utilised land in car parks, solar PV installations on car parks directly support the UK's decarbonisation ambitions as outlined in the Clean Action Plan 2030 (CPAP). Thus, solar PV deployment on car parks optimises land use and accelerates progress toward net-zero emissions.

Energy Security

Enhancing the UK's renewable energy capacity through solar PV deployment on car parks may help to mitigate dependence on imported hydrocarbons, reducing exposure to volatile global energy markets. The decentralised nature of PV energy generation could fortify the resilience of the national grid by diversifying generation points, thereby enhancing system stability. It could reduce transmission losses by generating energy closer to the user.

Effective use of Land

Car parks are currently single-use spaces for storing vehicles. The addition of solar canopies in these spaces could increase the productivity of the land. This elevation of use represents a societal benefit that is currently being missed. Optimising land use to obtain maximal value is the focus of a government consultation run by the Department for Environment, Food and Rural Affairs.[11]

Supporting growth

Stimulating the solar PV and EV industries supports high-skilled jobs in the installation and maintenance of solar panels. This would bring wider economic benefits to local communities. The latest ONS estimates suggest that the solar sector has supported 17,500 direct and indirect jobs across the UK.[12] The roll out of additional generation capacity is expected to increase this number.

[11] https://consult.defra.gov.uk/land-use-framework/land-use-consultation/
[12] Low carbon and renewable energy economy indirect estimates - Office for National Statistics

2.4 Questions

These are the wider societal benefits that have been identified that could emerge from the installation of solar canopies on car parks. The government would be interested to understand views on these benefits.

Q: Do you agree that we have identified all the potential wider societal benefits?

[Yes, No, Don't know, Please provide any evidence to support your answer]

Q: Do you think that solar capacity installed on car parks would be new capacity, or would it displace solar capacity from elsewhere in Great Britain?

[Yes, No, Don't know, Please provide any evidence to support your answer]

3. Costs

3.1 Costs for Car park Owners

This proposal would necessitate structural supports capable of bearing the additional load of solar canopies, as well as electrical infrastructure to handle energy generation and potential bidirectional energy flow. Incorporating battery storage systems and EV charging points might also be essential to optimize energy use, manage peak loads and maximise the benefits to owners, adding further complexity and cost. Car park owners would need to engage skilled professionals, including structural engineers, architects, and Engineering, Procurement and Construction (EPC) firms, from the outset. These investments may be offset over time by revenue from energy generation and reduced operational costs.

There are several costs which may be associated with putting solar canopies on car parks, both new and existing. In this section we explore our initial view of what those might be. We are keen to understand further the impact of solar canopies on wider society, owners/operators, customers of the car parks and business/public sector. The DESNZ statistics and analyses that follow in this chapter consider (and aim to reflect) the plurality of business scenarios and ownership structures in which car parks operate.

Installation Costs

One of the largest costs is expected to be the installation of the solar canopy itself. This includes, but is not limited to, the cost of buying the components and paying for installation. DESNZ is seeking comment on estimates that the cost to install solar canopies on, for example, an 80-space car park, would be around £140,000 (2025 prices).[13]

[13] See Annex C for details

The government recognises that public sector car parks, particularly those managed by local authorities, face their own set of financial constraints. Councils may prioritise essential public services over the increased capital required to construct solar-equipped car parks. Furthermore, the financial viability of solar canopies in public sector (and potentially for private) car parks is influenced by their location, usage patterns, and integration with EV charging infrastructure. If solar generation capacity were to exceed local demand, the feasibility of selling excess electricity back to the grid depends on grid connection costs, capacity and export tariffs, which vary regionally.

Grid Connection Costs

For car park owners who choose to sell the generated electricity back to the grid, there may be an additional cost associated with setting up the necessary infrastructure to allow electricity to flow to the local distribution network. We expect that most existing car parks are already connected to the grid, but this connection (or more likely the local network) may need upgrading to accommodate the electricity being exported. This cost would vary by the location of the car park, size of requirement and availability of capacity on the local network. If generated electricity were self-consumed there might still be work required on the local network as reduced demand can affect voltage levels in the area, for example. If all generation were sold peer-to-peer via a private wire, i.e. was not exported back to the grid or self-consumed, then this network cost would not materialise. Private wire infrastructure would incur a cost and require ongoing operation & maintenance, however.

Foregone Revenue

For existing car parks, installing solar canopies may result in all or part of the car park being unusable during the installation period. This reduction in usable parking spaces will result in lower revenue during the installation period. For example, DESNZ is seeking comment on the estimate that an 80-space car park may incur foregone revenue of around £180,000 during the installation of solar canopies (2025 prices).[14]

Familiarisation Cost

It will take time for new car park owners to understand and implement any new regulations. This would include planning the installation. There is likely to be a cost associated with this. We would expect this cost to be lower per site for owners of multiple sites, since it should only be incurred once. Similarly, if we were to introduce any incentives for owners of existing car parks, owners would have to familiarise themselves with those but we would expect these costs to be similar.

[14] See Annex C for details

Maintenance Costs

There will be some cost associated with the maintenance of solar canopies once installed, from cleaning and repairs. For example, DESNZ is seeking comment on the estimate that an 80-space car park with solar canopies installed may incur an annual maintenance cost of around £1,400, including costs for cleaning and repairs (2025 prices).[15]

Cost Variation for new car parks

Mandating solar canopies on new car parks would introduce unique challenges and costs that differ from retrofitting existing facilities. For new developments, compliance with the policy would require integration of solar PV systems into the design and construction phases.

The financial implications for developers include higher upfront construction costs due to the need for reinforced foundations, specialized materials, and advanced design work to accommodate solar installations. This applies especially to projects incorporating EV charging points. This could act as a deterrent for smaller developers or those operating on tight margins.

However, the policy could present an opportunity to standardise solar-incorporated designs for new car parks. This could reduce costs over the long term by agglomerating industry knowledge, fostering economies of scale, and streamlining regulatory processing points. Furthermore, installation costs could be lower for new car parks as developers can plan installation into the production process.

New car parks are also likely to experience lower or no foregone revenue, as they will not need to suspend operation of the car park to allow for the installation. Given the currently available evidence, this is expected to result in a significant reduction in upfront costs compared to existing car parks.

3.2 Questions

These are the costs that have been identified that could fall to car park owners to cover. The government would be interested to understand views on these potential costs.

Q: Do you agree that we have identified all the major costs that could emerge to car park owners from the installation of solar canopies?

[Yes, No, Don't know, Please provide any evidence to support your answer]

Q: Do you agree with the estimated costs and assumptions relating to: installation, grid connection, missed revenue, familiarisation and maintenance?

[15] See Annex C for details

[Yes, No, Don't know, Please provide any evidence to support your answer]

Q: How do you think these costs may differ between existing car parks and new car parks?

[Higher for new car parks, About the same, Lower for new car parks, Don't know, Please provide any evidence to support your answer]

Q: How would you cover the costs arising from the installation and maintenance of solar canopies? Please provide any relevant qualitative or quantitative evidence.

Q: Would mandating the installation of solar canopies impact your decision to construct new car parks?

[Yes, No, Don't know, Please provide any evidence to support your answer]

Q: If you were looking to develop a new car park and solar canopies were mandated, would you look to install and manage the solar panels in-house, or sell / lease the car park area to another company?

[Install and run in-house, sell/lease spaces, Other, Don't know, Please provide any evidence to support your answer]

Q: Would mandating solar canopies on new car parks impact other planned investments such as building new housing or other solar/renewable generation installation (e.g. on the roof of adjacent buildings)?

[Yes, No, Don't know, Please provide any evidence to support your answer]

Q: How does the cost of solar canopy installation compare to installing solar elsewhere (e.g. on rooftops or in nearby solar farms)?

[Higher installation costs, comparable installation costs, lower installation costs, Don't know, Please provide any evidence to support your answer]

Q: If solar were mandated on car parks, how long should the implementation period be, in order to reduce costs and disruption?

[12 months or less, 1-3 years, 3-5 years, 5+ years, Other, Please provide any evidence to support your answer]

3.3 Costs to wider society

There is some uncertainty around how car park owners would seek to recover the costs of installation and maintenance, including those mentioned above. This includes whether they would expect power revenues or increased customer usage to be sufficient. We are seeking further evidence on how owners expect to cover these costs.

Disruption to drivers

During the installation period for existing car parks, there may be reduced parking available to consumers, which could cause disruption. This disruption will mean that drivers will need to spend longer looking for parking and travelling from the parking to their destination.

3.4 Questions

These are the costs that have been identified that could fall on the wider society. The government is interested to understand views on these potential costs.

Q: Do you agree that we have identified all the costs of this proposal to wider society which could emerge?

[Yes, No, Don't know, Please provide any evidence to support your answer]

4. Barriers to Implementation

Infrastructure Limitations

Some new and existing sites may face spatial constraints that make it difficult to accommodate necessary electrical components, such as inverters and battery storage systems, alongside solar canopies. These technical challenges may add complexity and cost to the task of building new car parks or retrofitting existing ones. This could discourage investment without targeted incentives or regulatory support. Furthermore, the existing electrical infrastructure in many car parks may be inadequate to support the deployment of solar PV installations, as most car parks were not designed with renewable energy integration in mind.

Networks

Constraints on the distribution network can create difficulties for new generation projects. Significant upgrades may be required, including the installation of new substations, higher-capacity transformers, and advanced metering systems to manage bidirectional energy flow. The surge in demand for connections over the past few years has created a lengthy connection queue, which any uptake in solar canopies may add to. Timelines and costs could be affected further where transmission upgrades are required.

We are aware that different Distribution Network Operators (DNOs) take different approaches to connection offers. We are keen to gather evidence on the treatment of solar canopy connections to date.

DNOs must ensure that new solar generation projects can be accommodated, either by existing network infrastructure or by upgrading the network.

If car parks were required to install solar canopies, it is likely that they would be applying for new grid connections, or upgrades to existing connections, simultaneously. It is possible that, to offer timely connections to all eligible car parks, some DNOs would require export limitation for a period of time, potentially at zero. This may prevent car park operators from exporting electricity to the grid initially, limiting income for excess power generated.

Ofgem, the National Energy System Operator (NESO), and the DNOs are currently embarking on a suite of reforms, aimed at improving the process for connecting customers. We expect this work to be complete by the time any mandatory standards for solar canopies on car parks are introduced.

Export Tariffs

Some car park owners/operators with solar PV installed may want to export some or all of the generated electricity, rather than consume onsite/locally. There may be difficulties in securing an export tariff which the owner/operator deems sufficient to recoup the upfront costs. This could limit the financial case for solar generation.

Skills/Supply Chain Issues

Putting solar canopies on car parks will have an impact on demand for skilled installers, electricians, project managers, and engineers. If small businesses or individual installers predict greater returns from, for example, residential rooftop installations, it may be difficult to attract enough workers for car park canopy projects. There is a noted shortage of EPC companies, who provide end-to-end solar services, from design to procurement to installation and maintenance. The recruitment of structural engineers is particularly crucial since, unlike rooftop, ground mount, and floating solar installations, car park canopies often require concrete platforms as foundations. There is, however, the potential to use non-concrete foundations, including ground screws, helical piles and steel ballasts. The extent of flexibility will depend on site conditions and canopy design.

The solar panels and electrical components needed for solar canopies are very similar to the parts required for rooftop solar deployment. We are not aware of any significant issues with the solar supply chain that would hinder the additional level of rooftop solar deployment.[16] There is an abundant global supply of solar panels, with prices falling in recent years.[17] The overwhelming majority of panels installed in the UK are imported.

[16] See https://www.baringa.com/en/capabilities/supply-chain-procurement/uk-renewables-deployment-supply-chain-readiness-study/

[17] Special Report on Solar PV Global Supply Chains – page 7 lays out how the global price of Solar PV has dropped over the last decade.

China dominates solar PV manufacturing globally, but there is evidence to suggest that the solar manufacturing industry is experiencing diversification on a global scale, with burgeoning industries in the US, Europe, India, and elsewhere in the Far East.

There has also been reporting that some companies involved in the global solar supply chain may be linked to forced labour, including in the mining of polysilicon used in the manufacture of solar panels. The Government is committed to tackling this issue, and is already taking action, for example, through the Procurement Act 2023, the Solar Taskforce, and more recently, through our amendment to the Great British Energy Bill[18].

Permitted Development Rights (PDRs)

In December 2023, the government introduced a new PDR to allow for the installation of solar canopies in non-domestic, off-street car parks in England. This means that the canopies can be installed without an application for planning permission. The PDR is subject to various conditions and limitations to control impacts and protect local amenity. These include that the development can only be up to 4m in height, must be more than 10m from the curtilage of any nearby houses or blocks of flats, and that canopies may not be used for the display of advertisements.

There are some exclusions, including that car parks in the curtilage of a listed building or a scheduled monument do not benefit from the PDRs.

In all cases, developers must apply to their local planning authority to find out whether prior approval will be required for the project. Local planning authorities can consider the canopies' siting, design, external appearance, and the impact of glare on the occupiers of neighbouring premises. In certain areas, such as conservation areas, National Parks and World Heritage Sites, the impact on the appearance of that land can also be considered.[19]

Landlord/Tenant/Operator Stakeholder Interaction

The ownership and operating structures of car parks may present a significant challenge to the implementation of this proposal. The primary issue arises from the split between landowners, who hold decision-making authority, and operators, who manage the car park's day-to-day operations. Many car parks, particularly those in suburban retail parks or owned by large-box retailers, fall under this split model which makes it unclear which stakeholder will be most directly impacted by the proposal and which we should engage with.

[18] https://www.gov.uk/government/news/great-british-energy-to-lead-the-field-in-ethical-supply-chains#:~:text=An%20amendment%20to%20the%20Great,used%20in%20its%20supply%20chains.

[19] Or any other land protected under Article 2(3). This includes areas of outstanding natural beauty, national parks, World Heritage Sites, and the Broads.

On the other hand, for car parks owned and operated by the same entity, such as those managed by NCP or Q-Park, it is more straightforward to identify who will be most directly impacted. These companies are likely to be more receptive to renewable energy initiatives, given their direct control over operations. However, many of their sites are multi-storey car parks, the surface area limitations of which restrict the potential coverage of solar canopies. This reduces the overall impact and scalability of the policy.

Smaller operators with fewer resources may face significant barriers in terms of both funding and technical expertise, further complicating policy implementation. These structural issues highlight the need for tailored engagement strategies (and incentives) to ensure the policy's success across different ownership models.

4.1 Questions

These are the barriers that have been identified that might hinder solar canopy uptake. The government is interested to understand views on these potential barriers.

Q: Do you agree that we have identified all the major barriers to the installation of solar canopies, or have we omitted anything? Do you disagree with any of the barriers we have outlined? Please provide any relevant qualitative or quantitative evidence.

Q: What support or incentives would help overcome these barriers? Can you think of any other government measures, aside from mandating, which would help increase solar deployment on existing car parks?

Q: If you are a car park owner/operator with solar PV deployment already, what were the biggest barriers to installation and how did you overcome them?

Q: Might there be impacts on the distribution networks as a result of this policy? Please provide detail.

Q: Would you be willing to accept an export limitation condition (potentially capped at zero export) to speed up the connection process? How would this affect the timescale for making returns on the initial capital investment?

Q: If a mandate is introduced, how should it be monitored and enforced?

5. Exemptions

While the policy aims for broad implementation, certain car parks may warrant exemptions due to specific circumstances. For example, new car parks to be located in conservation areas and more sensitive landscapes, and those with likely structural limitations such as insufficient load-bearing capacity, may be unsuitable. Other potential exemptions could include small car parks with fewer than a defined minimum

number of spaces, or those in areas where grid infrastructure is inadequate to support solar deployment. Similarly, older existing car parks nearing the end of their functional lifespan or slated for demolition may not justify the investment required for solar canopy installation. These exemptions would aim to balance the policy's ambition with practical and economic feasibility, ensuring resources are directed to car parks with the greatest potential for solar canopy uptake. This would maximise impact.

The government is also specifically considering, subject to this call for evidence, whether to:

- Exempt existing car parks, with the policy proposal to mandate solar installation applying to new car parks only.
- Exempt multi-storey-car parks, due to the more limited surface area available for solar canopies.
- Exempt residential car parks, due to the significant upfront costs this would create for households and sharing structures.

5.1 Questions

Q: Should any additional categories of car parks be exempt (e.g. based on size, location, unsuitability, physical state or usage)? Your answer may refer to existing and/or new car parks.

Q: Do you think any policy to mandate solar installation should apply to existing car parks or only new car parks? Do you think residential and/or multi-storey should be exempt?

[Yes, No, Don't know, Please provide any evidence to support your answer]

Section 2: Electric Vehicle Charging Infrastructure and Planning – Call for Evidence

1. Introduction

The following section focuses on electric vehicle (EV) charging infrastructure, planning and the UK's wider energy security and net-zero commitments. As transport remains the largest emitting sector of greenhouse gases, decarbonising road transport through EV adoption is critical, requiring a substantial expansion of EV charging infrastructure.

The Clean Power Action Plan outlines the importance of adopting clean power technologies such as EVs to support the transition away from the use of fossil fuels. From 2030 onwards, further emissions reductions from clean power will come indirectly through displacing fossil fuel use in other sectors, such as transport. As with solar energy, the charging infrastructure for EVs needs to be deployed rapidly and at scale.

The government welcomes input and detailed evidence from stakeholders to better understand any concerns or views that they may have around existing planning policy, guidance and PDRs in relation to the widespread adoption of EV chargepoints, including links to solar canopies and energy storage systems.

1.1 Charging Infrastructure

Transport remains the largest emitting sector of greenhouse gas emissions, producing 29% of the UK's total emissions in 2023. Road transport accounts for 89% of domestic transport greenhouse gas emissions[20], with cars alone responsible for 54%.

The government has committed to phasing out new cars that rely solely on internal combustion engines (ICE) by 2030. The transition to ZEVs will drive economic growth and make Britain a clean energy superpower, helping the UK meet its climate change obligations and improve air quality.

The ZEV Mandate sets annual headline targets for vehicle manufacturers for the registration of zero emission cars and vans starting at 22% and 10% in 2024 and rising to 80% and 70% in 2030.

The government is committed to accelerating the roll-out of charging infrastructure so that everyone, no matter where they live or work, can make the transition to an electric vehicle.

Charging infrastructure needs to be installed across the country to support the transition to EVs. A mixture of public and private chargepoints is required to support drivers.

Currently, there are over 76,000 publicly available charging devices installed in the UK (as of 1 April 2025) and over 680,000 properties have access to a domestic chargepoint.

1.2 The Planning System and Wider Permitting Requirements

There are a variety of stipulations that determine whether a chargepoint installation requires the submission of a planning application or needs a particular permit. In very broad terms, home and workplace charging, as well as smaller (tending to be lower

[20] https://www.gov.uk/government/statistics/transport-and-environment-statistics-2023--2 Transport and Environment Statistics 2023

powered) installations in areas lawfully used for off-street parking, typically do not require the submission of a planning application as they qualify as permitted development.

As well as this, new residential buildings and non-residential buildings with off-street parking, and those undergoing major renovations are required to install a chargepoint under Part S of Schedule 1 of the Building Regulations 2010.

There are a variety of exceptions that may mean a planning application is required for existing properties, such as height, siting and, for instance, where a chargepoint is located within the curtilage of a listed building. Larger, rapid hubs, including those requiring electrical cabinets, currently tend to require the submission of a planning application.

In some instances, additional permissions and permits are required, in addition to receiving planning permission, before a chargepoint can be installed. This is usually from the landowner or for on-street chargepoints, the local highways or planning authority.

The National Planning Policy Framework (NPPF) sets out the government's planning policies for England and how these should be applied and is a material consideration in planning decisions. By law, planning applications are determined in accordance with the development plan, unless material considerations indicate otherwise. Each application is judged on its own individual merit and the weight given to these considerations is a matter for the local planning authority as the decision taker in the first instance.

The NPPF outlines that transport issues should be considered from the earliest stages of plan-making and development proposals, using a vision-led approach to identify transport solutions that deliver well-designed, sustainable and popular places. This should involve, realising opportunities from existing or proposed transport infrastructure, and changing transport technology and usage – for example in relation to the scale, location or density of development that can be accommodated.

The NPPF sets out when setting local parking standards for residential and non-residential development, policies should take into account the need to ensure adequate provision of spaces for charging plug-in and other ultra-low emission vehicles.

It also outlines that applications for development should be designed to enable charging of such vehicles in safe, accessible, and convenient locations.

Permitted development rights (PDRs) allow certain building works and changes of use to be carried out without needing to submit a planning application.

PDRs have been introduced to support several areas of the chargepoint market, provided installations meet certain requirements. Locations include residential and workplace chargepoints, public chargepoints on private land, and chargepoints on public land provided the local authority gives consent.

As previously announced, the government plans to provide additional flexibility through permitted development rights for homeowners and businesses when installing off-street electric vehicle chargepoints. This includes permitting taller upstands, outlets and upstands within 2 metres of the highway, and facilitating the installation of equipment housing to support the operation of bigger and more powerful EV upstands in non-domestic off-street car parks.

This call for evidence looks to gain insight, evidence and views into any further potential planning and permitting changes required to support continued acceleration in relation to chargepoint deployment.

2. Charging on Private Land (includes private and public charging)

2.1 The Current Planning Process

Under current permitted development rights, when installing an EV outlet mounted on a wall in, for example, residential and commercial settings, a planning application is not required if the chargepoint does not:

i) Exceed 0.2 cubic metres
ii) Face onto and be within two metres of a highway
iii) Be within a site designated as a scheduled monument
iv) Be within the curtilage of a listed building

When installing a ground-mounted charger, i.e. on a free-standing base or post, the submission of a planning application is not required within an area lawfully used for off-street parking so long as the upstand and outlet does not:

i) in relation to an upstand and outlet—

   (1) within the curtilage of a dwellinghouse or a block of flats, exceed 1.6 metres in height from the level of the surface used for the parking of vehicles; or

   (2) in any other case, exceed 2.3 metres in height from the level of the surface used for the parking of vehicles;

ii) Be within two metres of a highway
iii) Be within a site designated as a scheduled monument

iv) Be within the curtilage of a listed building
v) Have more than one charging point per allocated parking space.

People living in rental properties or multi-unit buildings may require permission from the landlord or property manager before installing an EV charger in addition to any planning requirements.

Combining low carbon technologies like solar power and energy storage systems with EV chargepoints can have multiple benefits, such as allowing users to access lower energy tariffs. In some charging settings, energy storage systems, like batteries, are being considered as a means for operators to obtain accelerated access to power collected at off-peak times. This consideration is due to high costs and lead times for grid connections, as well as falling battery prices. Planned changes, outlined below, may benefit such technologies.

2.2 Planned Changes to the Planning System

The government has announced plans to extend permitted development rights to facilitate the further rollout of chargepoints by providing additional flexibilities for homeowners and businesses when installing electric vehicle chargepoints. This includes permitting taller upstands, outlets and upstands within 2 metres of the highway and facilitating the installation of equipment housing to support the operation of bigger and more powerful EV upstands in non-domestic off-street car parks. Legislation to enact these changes will be brought forward shortly.

2.3 Questions

Q: Are the current planning rules, included planned changes, around charging on private land appropriate? Are there further potential changes that could be made to the planning system in relation to EV charging installations and the associated site in residential and commercial settings, including listed buildings? What evidence can you provide that would support this position?

Q: Are the current and planned planning rules around equipment, housing and energy storage systems (i.e. batteries), and the use of solar appropriate? Are there further changes to the planning system that could accelerate the installation of energy storage systems to support chargepoint installations? What evidence can you provide that would support this position?

2.4 Cross-Pavement Charging

With the increasing number of EVs, more users are wanting to connect and charge via their domestic energy tariffs. For users without off-street parking, in some cases this has led to the trailing of charging cables across the public highway.

Under Part IX of the Highways Act 1980, it is an offence to trail a cable, or similar, across any part of the highway, including the footway, unprotected.

Cross-pavement charging solutions enable the safe passage of charging cables across the pavement, allowing more EV users to connect and charge their vehicle on-street through their domestic energy tariffs.

2.5 The Current Planning System and Wider Permitting Requirements

Planning permission is required to install any cross-pavement solution and associated private EV chargepoint, unless a local development order is in place. Where a local authority is installing the cross-pavement solution, planning permission may not be required, however the resident will still be required to apply for planning permission for the chargepoint.

Installers also need permission to carry out street works and therefore need to apply for a licence under Section 50 and Schedule 3 of the New Roads and Street Works Act 1991 (NRSWA). Where a local authority is directly undertaking the installation, a Section 50 licence is not required.

Any cross-pavement installation must also comply with the Specification for the Reinstatement of Openings in Highways. An addendum with standards for reinstating pavements following the installation of cable channels was published on 24 December.

2.6 Questions

Q: What changes could be made to consenting processes for cross-pavement charging solutions, if any? What evidence can you provide to support this position?

3. On-Street Public Charging

3.1 The Current Planning System and Wider Permitting Requirements

Local authorities installing chargepoint infrastructure themselves already benefit from PDR, as do chargepoint operators who are contracted or operating on behalf of the local authority.

The installation of chargepoint infrastructure on the public road network is also classified as street works. Section 48 of the NRSWA sets out the definition of street works and Section 51 of NRSWA states that it is an offence to carry out street works without a statutory right or a Section 50 licence.

Organisations that want to carry out street works but do not have a statutory right to do so need to apply for a licence under Section 50 and Schedule 3 of NRSWA. This applies to EV chargepoint operators.

Under both the permitting and Section 50 licencing regimes, the organisation carrying out street works must comply with other requirements set out in NRSWA. These include:

- Section 60: general duty of undertakers to cooperate
- Section 65: safety measures
- Section 70: duty to reinstate
- Section 75: inspections
- Section 81: duty to maintain apparatus
- Section 82: liability for loss or damage caused

3.2 Planned Changes to the Planning System and Permitting Requirements

The government has decided to proceed with proposals to grant EV Chargepoint Operators (CPOs) access to street works permits and Street Manager.

An amendment will also be made to Section 115E of the Highways Act 1980 to disapply the permissive power for highways authorities to grant Section 115E permissions in cases where EV chargepoint operators are seeking to install chargepoints. These are not required if the organisation installing the chargepoint has either a statutory right to carry out the street works or a Section 50 licence.

3.3 Questions

Q: Are the current rules for planning and consents around on-street charging appropriate? What further changes would you make? What evidence can you provide to support this position?

Q: Overall, and having regard to the contents of this call for evidence are there any other comments you wish to include in the role of highways permitting and licencing or national planning policy / guidance in better planning for and delivering electric vehicle charging infrastructure? What evidence can you provide to support this position?

Annex

Annex A – Section 1 Questions

Q: What different car park ownership models in England, Wales and Northern Ireland are you aware of? Please provide any evidence you have on the proportion of market share covered by each of these ownership models.

Q: There is conflicting evidence on the number, size and location of non-domestic car parks in England, Wales and Northern Ireland. Can you provide quantitative evidence to help address this?

Q: Do you agree that we have identified all the major benefits to car park owners which could emerge from the installation of solar canopies?

[Yes, No, Don't know, Please provide any evidence to support your answer]

Q: How would you expect any generated electricity on the car park(s) you might own or operate to be used? You may select multiple options.

[Self-consumption, Sale to the grid, Supporting EV charging infrastructure, Other, Don't know, Not Applicable. Please provide further details]

Q: How do you think the installation of solar canopies would impact the financial valuation of a car park?

[It would improve the valuation, It would not impact the valuation, It would decrease the valuation, Don't know, Please provide any evidence to support your answer]

Q: Do you agree with the estimated revenue from selling electricity back to the grid through a SEG tariff, and/or the estimated electricity cost savings from self-consumption? Please provide any relevant qualitative or quantitative evidence.

[Yes, No, Don't know, Please provide any evidence to support your answer]
Q: Do you agree that we have identified all the potential wider societal benefits?

[Yes, No, Don't know, Please provide any evidence to support your answer]

Q: Do you think that solar capacity installed on car parks would be new capacity, or would it displace solar capacity from elsewhere in Great Britain?

[Yes, No, Don't know, Please provide any evidence to support your answer]

Q: Do you agree that we have identified all the major costs that could emerge to car park owners from the installation of solar canopies?

[Yes, No, Don't know, Please provide any evidence to support your answer]

Q: Do you agree with the estimated costs and assumptions relating to: installation, grid connection, missed revenue, familiarisation and maintenance?

[Yes, No, Don't know, Please provide any evidence to support your answer]

Q: How do you think these costs may differ between existing car parks and new car parks?

[Higher for new car parks, About the same, Lower for new car parks, Don't know, Please provide any evidence to support your answer]

Q: How would you cover the costs arising from the installation and maintenance of solar canopies? Please provide any relevant qualitative or quantitative evidence.

Q: Would mandating the installation of solar canopies impact your decision to construct new car parks?

[Yes, No, Don't know, Please provide any evidence to support your answer]

Q: If you were looking to develop a new car park and solar canopies were mandated, would you look to install and manage the solar panels in-house, or sell / lease the car park area to another company?

[Install and run in-house, Sell/Lease spaces, Other, Don't know, Please provide any evidence to support your answer]

Q: Would mandating solar canopies on new car parks impact other planned investments such as building new housing or other solar/renewable generation installation (e.g. on the roof of adjacent buildings)?

[Yes, No, Don't know, Please provide any evidence to support your answer]

Q: How does the cost of solar canopy installation compare to installing solar elsewhere (e.g. on rooftops or in nearby solar farms)?

[Higher installation costs, comparable installation costs, lower installation costs, Don't know, Please provide any evidence to support your answer]

Q: If solar were mandated on car parks, how long should the implementation period be, in order to reduce costs and disruption?

[12 months or less, 1-3 years, 3-5 years, 5+ years, Other, Please provide any evidence to support your answer]

Q: Do you agree that we have identified all the costs of this proposal to wider society which could emerge?

[Yes, No, Don't know, Please provide any evidence to support your answer]

Q: Do you agree that we have identified all the major barriers to the installation of solar canopies, or have we omitted anything? Do you disagree with any of the barriers we have outlined? Please provide any relevant qualitative or quantitative evidence.

Q: What support or incentives would help overcome these barriers? Can you think of any other government measures, aside from mandating, which would help increase solar deployment on existing car parks?

Q: If you are a car park owner/operator with solar PV deployment already, what were the biggest barriers to installation and how did you overcome them?

Q: Might there be impacts on the distribution networks as a result of this policy? Please provide detail.

Q: Would you be willing to accept an export limitation condition (potentially capped at zero export) to speed up the connection process? How would this affect the timescale for making returns on the initial capital investment?

Q: If a mandate is introduced, how should it be monitored and enforced?

Q: Should any additional categories of car parks be exempt (e.g. based on size, location, unsuitability, physical state or usage)? Your answer may refer to existing and/or new car parks.

Q: Do you think any policy to mandate solar installation should apply to existing car parks or only new car parks? Do you think residential and/or multi-storey should be exempt?

[Yes, No, Don't know, Please provide any evidence to support your answer]

Annex B – Section 2 Questions

Q: Are the current planning rules, included planned changes, around charging on private land appropriate? Are there further potential changes that could be made to the planning system in relation to EV charging installations and the associated site in residential and commercial settings, including listed buildings? What evidence can you provide that would support this position?

Q: Are the current and planned planning rules around equipment, housing and energy storage systems (i.e. batteries), and the use of solar appropriate? Are there further changes to the planning system that could accelerate the installation of energy storage systems to support chargepoint installations? What evidence can you provide that would support this position?

Q: What changes could be made to consenting processes for cross-pavement charging solutions, if any? What evidence can you provide to support this position?

Q: Are the current rules for planning and consents around on-street charging appropriate? What further changes would you make? What evidence can you provide to support this position?

Q: Overall, and having regard to the contents of this call for evidence are there any other comments you wish to include in the role of highways permitting and licencing or national planning policy / guidance in better planning for and delivering electric vehicle charging infrastructure? What evidence can you provide to support this position?

Annex C – Section 1 Initial Estimates Methodology

Within this call for evidence, we have provided initial, illustrative estimates of the potential financial savings, costs, and revenues associated with the installation of solar canopies. We are seeking comment on the robustness and accuracy of these estimates as part of responses. This annex provides more detail of the assumptions that underpin these estimates, to support such comments.

For all of our estimates, we consider a 24/7 car parking business with an illustrative size of 80 solar canopy solar bays. All values are presented in 2025 prices.

Estimates of potential generation assume:

- A 2.4m x 5.0m car parking space (based on evidence of standard parking space sizes);
- A capacity-intensity of 1 MW capacity for every 5000m^2 (based on industry published research of warehouse installations);
- A load factor of 11%, based on evidence published in the DESNZ Electricity Generation Costs Report 2023.

Estimates of potential savings and revenue then assume:

- All electricity generated is either self-consumed by the business, or exported to the grid via the Smart Export Guarantee (SEG);
- Foregone electricity prices 'saved' through self-consumption are based on an average of published DESNZ evidence of central commercial electricity price forecasts from 2025 to 2054;
- Revenue raised through the SEG is based on an assumed tariff of 12.5p/KWh, an approximate estimate based on a median of recent available SEG rates from a range of suppliers online (for example, see here).

Estimates of potential installation and maintenance costs assume:

- Installation and maintenance costs estimated by taking the average of central construction, operation and maintenance costs for large-scale solar farms and 10 – 50kW Solar PV in 2030. This is based on evidence published in the DESNZ Electricity Generation Costs Report 2023.

Estimates of the potential foregone parking charge revenue assume:

- The entire car park will be closed for three and a half months whilst it installs the solar canopies; this represents the midpoint of the 2 to 5 months estimated for the construction period.
- That information on occupation rates and parking charges of car parks published by the British Parking Association is representative (uplifted by inflation).