

# Taking charge: selling electricity to electric vehicle drivers

**What the supply regulations mean for different charging scenarios**



## Taking charge: selling electricity to Electric Vehicle drivers

Subject	Details
<b>Publication date:</b>	09/03/22
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In the last 5 years, around 100 organisations have approached Ofgem’s Innovation Link about Electric Vehicle (EV) innovations, covering chargepoints, network connections, products and tariffs, supply arrangements, and vehicle to grid models.

The thing we get asked most regularly about are the rules relating to the supply of electricity for EV charging.

This guide distils the different models we’ve encountered and clarifies what rules apply. It updates the version from 2019, with information about additional charging scenarios we’ve come across. It doesn’t cover other matters such as technical standards or network connections.

We expect this guide to be useful to innovators, chargepoint operators, local authorities, EV drivers, fleet operators, trade associations, investors, and innovation support providers.

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### **The small print**

- ❖ Nothing in this guide is to be taken as providing legal advice and it's not a substitute for independent legal advice on your own circumstances.
- ❖ It's your responsibility to assess compliance with regulatory requirements.
- ❖ This guide is provided without prejudice to any decision or action Ofgem may take in an individual case in the future, including enforcement or any other regulatory action.
- ❖ Ofgem accepts no legal liability in contract or in tort for the accuracy and / or quality of the information provided.
- ❖ It's worth noting that supplying electricity without a licence is a criminal offence and government is also a prosecuting authority. The views taken by the Innovation Link<sup>1</sup> or by Ofgem on a particular matter will not necessarily be the same as those taken by government or other stakeholders. Context is important and many situations will depend on their own particular circumstances.
- ❖ Ultimately, only a court can give a definitive interpretation as to how a statute is to be applied to a particular situation.

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<sup>1</sup> You can find out more about the Innovation Link and its services on the Ofgem website: <https://www.ofgem.gov.uk/energy-policy-and-regulation/policy-and-regulatory-programmes/innovation-link-share-your-energy-ideas>

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# 1. Introduction

## About the Innovation Link

1. The Innovation Link is here to support innovators developing new products, services, methodologies and business models that have the potential to benefit current and future energy consumers. We help them navigate the sector and regulations, and understand what the rules mean for them.

## Supporting innovators and innovation

2. When we work with an innovator, we provide them a bilateral regulatory steer, giving the Link's view of what regulations mean for their proposition. Given innovation often has uncertain relationships with regulation, we've been given permission by the Ofgem Board<sup>2</sup> to speak with innovators in a frank (but non-binding) manner.
3. Unsurprisingly, a number of popular issues and themes have emerged from these interactions. Our mission is to promote innovation, and to that end we broadcast about areas of common interest to other innovators, their supporters and the energy markets.

## What's this guide about and who's it for?

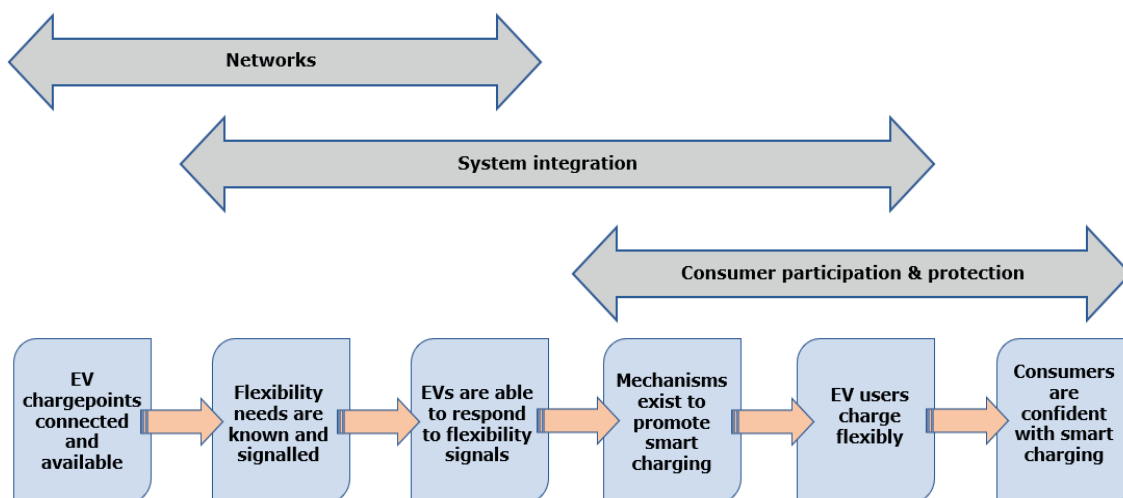
4. In the last five years, about 50 organisations have approached us about Electric Vehicle (EV) innovations, covering chargepoints (including street furniture), network connections, products and tariffs, supply arrangements, and vehicle to grid models.
5. EVs regularly feature as components of other business models focused on behind-the-meter (on a consumer's premises) services, and local energy (notably microgrids). Taken together, we estimate that 100 of the 400 innovators we've supported so far are involved in EV schemes, and what we see is, of course, only a snippet of the EV activity and innovation underway in the energy and transport sectors.
6. The most common query we get is about the rules for supplying electricity. This guide distils the different charging models we've encountered and clarifies what rules apply. It updates the version from 2019, including additional EV charging scenarios. It doesn't cover other matters such as technical standards or network connections.
7. We expect it to be useful to innovators, chargepoint operators (CPOs), local authorities, drivers, fleet operators, trade associations, investors, and innovation support providers.

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<sup>2</sup> The Ofgem Board is the Gas and Electricity Markets Authority: GEMA

## The transition to Electric Vehicles

8. Meeting the UK’s 2050 climate targets means decarbonising the economy. As transport accounted for 27% of greenhouse gases in 2019, the rapid uptake of EVs will be vital. We may see 14 million EVs by 2030, one of the most significant changes in the energy and transport sectors over the coming decade.
9. Ofgem has important roles to play in enabling the adoption of EVs. In September 2021 we published “Enabling the transition to EVs: The regulator’s priorities for a green, fair future”<sup>3</sup> which sets-out our ambition to support the transition to EVs and identifies 6 outcomes and 4 priority areas for achieving lower-cost integration:



❖ <b>Priority 1</b>	Ensure the network is prepared for EV adoption
❖ <b>Priority 2</b>	Reducing barriers to network connections
❖ <b>Priority 3</b>	Enabling rapid development and maximising the uptake of smart charging and V2X technology
❖ <b>Priority 4</b>	Consumer participation and protections

10. We want to enable the development of innovative products, services and tariffs that support EV uptake and decarbonisation at lowest cost. Ofgem is conducting further work on how to enable a future retail market<sup>4</sup> that can protect and promote the interests of consumers while supporting the technological and behavioural changes needed to support decarbonisation at lowest cost.

<sup>3</sup> [https://www.ofgem.gov.uk/sites/default/files/2021-09/Enabling the transition to electric vehicles - the regulators priorities for a green fair future.pdf](https://www.ofgem.gov.uk/sites/default/files/2021-09/Enabling_the_transition_to_electric_vehicles_-_the_regulators_priorities_for_a_green_fair_future.pdf).

<sup>4</sup> [https://www.ofgem.gov.uk/publications/202223-forward-work-programme-consultation - future%20of%20retail](https://www.ofgem.gov.uk/publications/202223-forward-work-programme-consultation_-_future%20of%20retail)

## 2. Supplying, selling and reselling electricity

### Section summary

The supply of electricity involves the conveyance of power by way of electrical wires to a consumer's premises. But EVs aren't usually premises. This section explains what the law around supply is, and what it means for selling (and reselling) electricity to EV drivers.

### Overview of EV charging scenarios

11. Section 3 explains the supply rules that apply in each of these charging scenarios:

EV charging scenarios	
❖ Scenario 1	Home
❖ Scenario 2	Destination
❖ Scenario 3	Forecourt
❖ Scenario 4	On-street
❖ Scenario 5	Home and roam
❖ Scenario 6	Peer-to-peer
❖ Scenario 7	Mobile on-demand
❖ Scenario 8	Fleet

12. **To make sense of the scenarios, you must read the remainder of this section which introduces the concept of supply, what it means to be a licensed or exempt supplier, what reselling is, and key takeaway points about the supply rules governing EV charging.**

## What is supply?

13. The Electricity Act 1989<sup>5</sup> (EA 1989) sets the rules for supplying electricity. It says:

❖ <b>Supply</b>	“supply, in relation to electricity, means <b>its supply to premises</b> where – (a) it is conveyed to the premises wholly or partly <b>by means of a distribution system</b> , or (b) (without being so conveyed) it is supplied to the premises from a substation to which it has been conveyed by means of a transmission system.”
❖ <b>Distribute</b>	“distribute by means of a distribution system, that is to say a system which consists (wholly or mainly) of low voltage lines and electrical plant and is used for <b>conveying electricity to any premises</b> ”.
❖ <b>Premises</b>	“premises includes any <b>land, building or structure</b> ”.

14. **In short, supply involves transporting power via electrical wires to a premises.** Supplying electricity is a licensable activity; someone who wants to supply must be licensed, or in some specific and limited circumstances can be allowed to supply without the need to hold a licence (ie, be **exempt**).
15. There are situations where electricity can be supplied to a premises and subsequently resold. It can be resold to consumers in separate premises via a distribution system (ie, supplied again), or to consumers on the same premises without being separately conveyed via a distribution system (eg, a landlord reselling to their tenants).
16. **As explained in the scenarios below, resale (exempt supply) and reselling electricity (not supply) are central to most EV charging models.**
17. An electricity supply licence can be granted for non-domestic premises (eg, businesses) or both non-domestic and domestic premises (eg, households). An electricity supplier must supply all of the power required at a premises; as premises take electricity for reasons other than charging an EV, being an EV-only supplier wouldn't meet consumers' needs. Industry recently considered<sup>6</sup> whether more than one supply to a single premises could be facilitated by suppliers sharing a consumer's meter. But, the proposal

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<sup>5</sup> <https://www.legislation.gov.uk/ukpga/1989/29/contents>

<sup>6</sup> It was considered by an industry working group that assessed a modification proposal (mod P379) to the Balancing and Settlement Code. Further information is available from Elexon: <https://www.elexon.co.uk/mod-proposal/p379/>



isn't being progressed because the benefits are neither certain nor large enough to outweigh the known costs; this solution's potential may be revisited in the future, meaning specialist EV-only suppliers might become an option. For now, a supplier must satisfy all of a consumer's power requirements.

18. We've published a companion broadcast which gives an overview of the different options for selling electricity to consumers.<sup>7</sup> It explains licensed and exempt supply, and commercial partnership models (white labels and sleeving), providing a useful introduction for innovators wanting to understand routes into the retail market.

## What does this mean for charging EVs?

19. EVs don't fit neatly with a legislative model that defines an electricity consumer by the premises they occupy. EVs are, by their nature mobile, meaning they can be charged at home (yours, your friends' or family's), on the street, at work, a garage, and at destinations like car parks, cinemas and supermarkets; and, businesses may want to pay directly for the power their EVs take while charging at their staffs' dwellings.
20. As **premises comprise any land, building or structure**, this implies a degree of permanence and fixed-location of a building or structure with the land. Consequently, we've taken the view that, under most circumstances, an **EV will not be a premises**.
21. This means that in most situations, selling power to an EV driver **won't be supply**. **But, we do consider the conveyance of power to the chargepoint (or other charging infrastructure) to be supply**. A chargepoint is a premises (since it's a structure) and so would be caught by the supply definition.
22. Together, these mean that **the provision of power to an EV chargepoint (or the premises it's located at) is supply (licensed or exempt), but the charging of the EV from the chargepoint is not supply**.
23. Just like a café that lets its customers charge their laptops isn't supplying electricity, a chargepoint isn't supplying; like the café's customers, EV drivers are protected by trading standards and general consumer protection laws.
24. There may be cases where an EV (such as an electric motorhome) has a more permanent presence and takes power not only for transport, but for residential reasons; in the latter case, it's arguable that the motorhome comprises a premises.

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<sup>7</sup> <https://www.ofgem.gov.uk/publications/selling-electricity-consumers-what-are-your-options>

## Resale and reselling electricity

25. Before considering the different charging arrangements we've seen, the following table summarises how resale and reselling<sup>8</sup> to EV drivers are treated in regulatory terms:

Resale and reselling electricity
<ul style="list-style-type: none"><li>❖ A party (individual or organisation) can resell electricity supplied to their premises to consumers at other premises (exempt supply), or on the party's own premises (not supply).</li><li>❖ The initial supply to the premises could be made by a licensed or exempt supplier (Class C).<sup>9</sup></li><li>❖ Where the electricity is subsequently (re)supplied to other premises (domestic and / or non-domestic<sup>10</sup>) the reseller is an exempt supplier, and subject to exempt supply (see next section) and Maximum Resale Price (MRP) rules (when its reselling to domestic premises).</li><li>❖ Where the power is resold on the same premises, this isn't supply but is reselling, and, in the context of domestic consumers, bound by the MRP.</li><li>❖ In 2014 we clarified that <b>the MRP doesn't apply to the reselling of electricity from dedicated EV charging infrastructure in domestic settings, but remains in effect if a standard plug and socket are used.</b></li><li>❖ In summary:<ul style="list-style-type: none"><li>➤ <b>Where electricity <u>is supplied</u> (conveyed by way of a distribution system) to an EV chargepoint, licensed and / or exempt supply is involved, but the charging of the EV is <u>not</u> supply.</b></li><li>➤ <b>Where electricity <u>is not supplied</u> (not conveyed by way of a distribution system) to an EV chargepoint, but is resold or generated on the same premises, the operator <u>may</u> be reselling electricity, but the charging of the EV is <u>not</u> supply.</b></li></ul></li></ul>

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<sup>8</sup> The reselling of electricity on a consumer's premises is subject to a Maximum Resale Price as provided for in section 44 of the EA 1989. The detailed rules that govern exempt supply resale (to premises) are set-out in the 2001 Electricity Exemptions Order (<https://www.legislation.gov.uk/uksi/2001/3270/contents/made>) and Schedule 2ZB of EA 1989: <https://www.legislation.gov.uk/ukpga/1989/29/schedule/2ZB>

<sup>9</sup> A Class C (onsite) exempt supplier may supply power it has generated itself (exclusively or combined with power procured from a licensed supplier) to consumers' premises located on the same site as its generation facilities. Consumers may be domestic and / or non-domestic, although the domestic supply threshold is 1MW.

<sup>10</sup> Typical exempt supply resale arrangements might include a business centre reselling to its commercial tenants, a static caravan park reselling to its residents or a marina selling power to residents.

## What it means to be an exempt supplier

26. The EA 1989 allows companies, who meet certain criteria, to be exempt from having an electricity generation, distribution or supply licence. The objective is to minimise the burden of regulation on persons operating in a limited manner. The 2001 Electricity (Class Exemptions) Order provides for “Classes” of exemption<sup>11</sup>. A Class applies to a person who falls within its terms: approval is not sought from BEIS or Ofgem.
27. Schedule 4 of the 2001 Order contains 4 Classes of exempt supply. Under each, the supplier is exempt from the requirement to hold a licence to supply electricity by way of a distribution system to consumers’ premises (see above for the supply definition):

Class		Features
<b>A</b>	<b>Small supplier</b>	Supply of up to 5MW of self-generated electricity, but no more than 2.5MW to domestic premises.
<b>B</b>	<b>Resale</b>	Resale of electricity (from a licensed and / or Class C supplier) to consumers’ premises.
<b>C</b>	<b>Onsite supply</b>	Supply of self-generated electricity (exclusively or in combination with power from a licensed supplier) to ‘onsite’ consumers.
<b>D</b>	<b>Offshore supply</b>	Supply of power from an offshore installation <sup>12</sup> to offshore premises.

28. A Class B (resale) exempt supplier resells electricity from its premises to other consumers’ premises. The electricity will most likely come from a licensed supplier, but it could also be from an onsite exempt supplier (Class C) that generates its own power.
29. Exempt suppliers are subject to provisions of the 2001 Order and Schedule 2ZB of the EA 1989. Schedule 2ZB details an exempt supplier’s obligations in relation to: change of supplier; customer contracts; customer information; and, determination of disputes.
30. **For the avoidance of doubt, while an exempt supplier may be involved in the supply of power to an EV chargepoint’s premises, the transaction between the chargepoint and the EV driver is not supply, and the CPO is not subject to exempt supply regulations**, but is bound by trading standards and general consumer protection law.

<sup>11</sup> In March 2021 BEIS’ call for evidence about the exemptions regime closed. At the time of writing (February 2022) the evidence / feedback provided is being analysed: <https://www.gov.uk/government/consultations/exemptions-from-the-requirement-for-an-electricity-licence-call-for-evidence>

<sup>12</sup> An offshore installation is defined in regulation 3 of the Offshore Installations and Pipeline Works (Management and Administration) Regulations 1995: installations associated with offshore mineral wells and gas storage.

## 3. EV charging scenarios

### Section summary

EVs can be charged in different locations, such as at home, work, a shopping venue, train station, and motorway services. Where they're charged, how they're charged and who provides the power all matter when considering what regulations are in play. In this section we look at 8 charging scenarios and what supply rules apply.

### Introduction

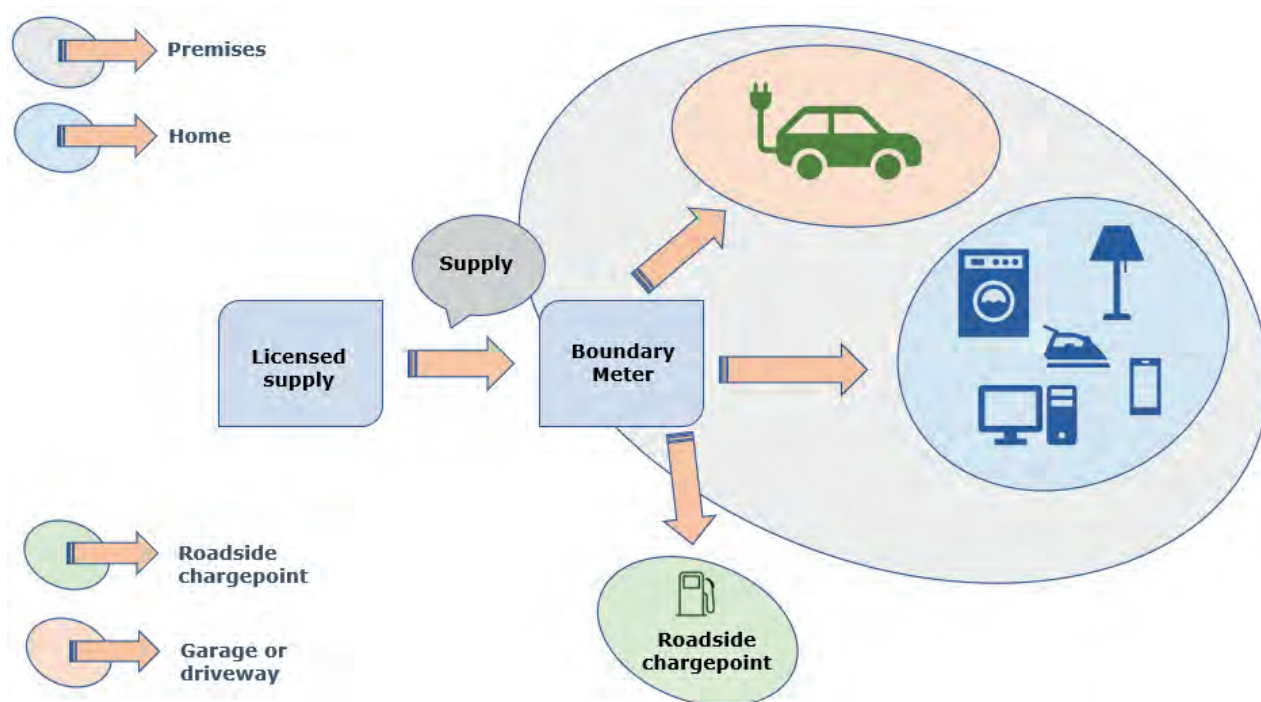
31. We've encountered 8 main EV charging scenarios:

EV charging scenarios	
❖ Scenario 1	Home
❖ Scenario 2	Destination
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❖ Scenario 7	Mobile on-demand
❖ Scenario 8	Fleet

32. Each scenario is explored in detail, setting out how the charging arrangement is configured and what rules apply.
33. As the guide illustrates, many of the scenarios share common features, and can be used in combination to provide EV drivers with diverse charging options.
34. Each of the scenarios has been drafted as stand-alone; all of the relevant information (except for the foundations laid in section 2) is provided and the scenarios don't need to be read sequentially. However, this does mean there's a level of repetition where scenarios have common characteristics.

## Scenario 1 Home

35. EV owners may charge their vehicle in a garage, on a driveway or in some cases at their chargepoint located at the roadside. In all cases the power provided comes via the customer’s standard domestic electricity supply. In this context, the EV is no different to any other household equipment in need of power.
36. There may be a range of players involved in manufacturing, installing, maintaining and remotely operating a home EV chargepoint, but none of these are required to hold a supply licence (or operate under a supply exemption). Only the party that supplies the electricity to the premises is subject to the licensing requirement.
37. EV tariffs (type and time of use) are available, some offering cheaper off-peak power for charging. We expect to see more tariffs come to market, responding to smart charging signals: shifting when an EV charges, or varying the charging speed. Like other tariffs, EV-tariffs have to comply with the relevant conditions of the electricity supply licence (which are more prescriptive for domestic consumers).



38. A tariff is a set of prices with an accompanying set of terms and conditions, linked to charges for the supply of electricity. The prices in a tariff may include zero or more unit rates (charged at pence per kWh), zero or more time of use rates (priced at pence per kWh), zero or more standing charges (charged at pence per day), any charges for bundled products, and fees for contract termination. An EV-specific tariff may manifest as a bundled product, a multi-rate tariff, or a combination of the two.

39. While a premise's smart meter can measure consumption at distinct times of day (and a supplier can charge different rates), the meter doesn't distinguish between the devices doing the consuming. This means that a secondary meter would be needed to measure the EV's consumption. It can be part of the EV's charger so long as it complies with metering regulations. The data collected by the secondary meter is used by the supplier to calculate the charges for the EV separate to the other domestic consumption.
40. The EA 1989 (Schedule 7(1)) requires that where a customer is charged by reference to the quantity of electricity supplied, the volume must be ascertained by an appropriate meter. These are commonly known as MID-compliant meters; MID refers to the Measurement Instruments Directive which introduced the Measurement Instrument Regulations.<sup>13</sup> MID-compliant meters must be used when trade is involved, including billing customers for their consumption.
41. Supply tariffs and contracts<sup>14</sup> are subject to electricity supply licence rules,<sup>15</sup> including the energy price cap for default (or standard variable) tariffs.<sup>16</sup>

#### Regulatory headlines

- ❖ This is a standard supply arrangement: electricity is supplied to the customer's home (their premises).
- ❖ The supplier will typically be licensed, although in some cases it may be an exempt supplier where the property is located on a housing development with its own private network and onsite supplier (most likely operating as a Class C exempt supplier).<sup>17</sup>
- ❖ Customers may be on a multi-rate tariff (type or time of use). EV tariffs are subject to standard supply licence tariff rules.
- ❖ Where a secondary meter is used to measure the EV's electricity consumption and to determine what a consumer is charged, this must be an appropriate meter and comply with metering regulations (ie, be MID-compliant).

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<sup>13</sup> The Office for Product Safety and Standards is part of BEIS, and is responsible for metering regulations and standards: <https://www.gov.uk/guidance/mid-approved-gas-and-electricity-meters>

<sup>14</sup> This guide introduces the basics: <https://www.ofgem.gov.uk/publications/licence-guide-tariffs-and-contracts>

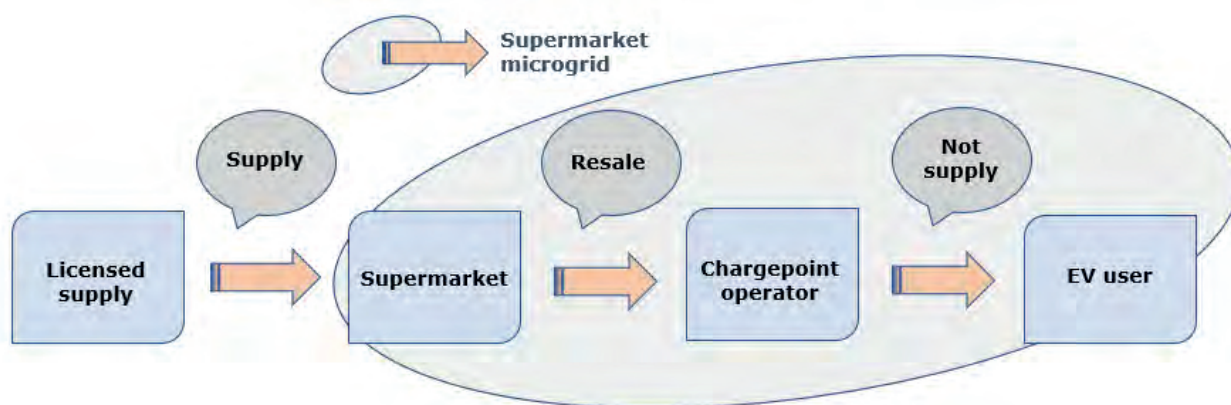
<sup>15</sup> The supply licence is accessible here: <https://www.ofgem.gov.uk/industry-licensing/licences-and-licence-conditions>

<sup>16</sup> <https://www.ofgem.gov.uk/energy-policy-and-regulation/policy-and-regulatory-programmes/default-tariff-cap>

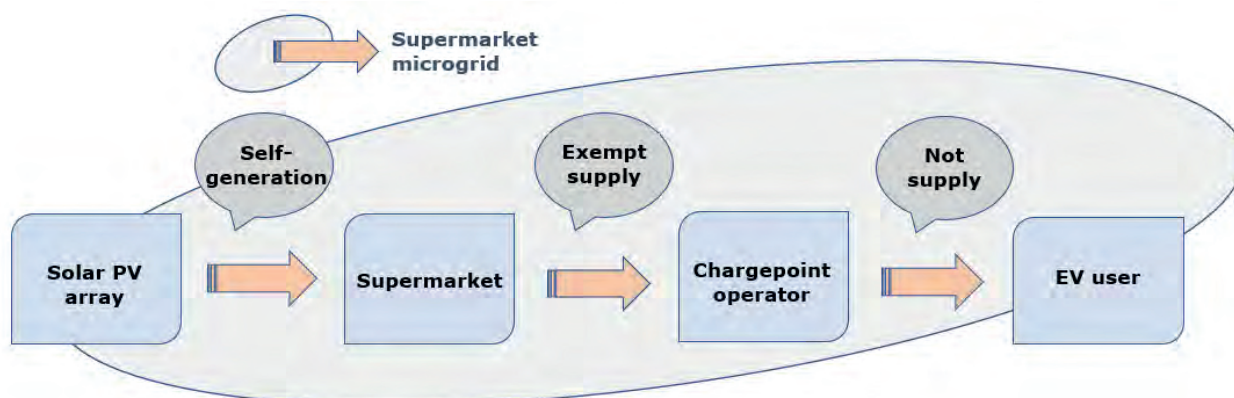
<sup>17</sup> The current energy price cap applies to licensed domestic supply (default and SVT tariffs), not Class C exempt supply. The 2001 Exemptions Order gives Ofgem powers to set a maximum retail price for domestic customers of a Class C exempt supplier, but not for non-domestic customers (chargepoint operators are non-domestic).

## Scenario 2 Destination

42. This is charging at a location where an EV can be left for a period of time, such as a public car park, supermarket, cinema, train station, sporting venue or workplace.
43. An example is a supermarket reselling electricity to a third party CPO doing business on its site. Electricity is supplied to the supermarket by a licensed supplier. The power is transported to the CPO across a private distribution network (a microgrid) at the supermarket's site. The CPO then resells the power to the EV user.



44. The supermarket supplies electricity to the chargepoint, but because it's reselling power supplied to it by another supplier, it qualifies as exempt supply (Class B). The CPO resells the power, but is not supplying it, because the charging of the EV takes place on the CPO's premises.
45. As well as reselling power, the supermarket often has excess electricity from its rooftop solar array which it also sells to the CPO. The solar output is likewise conveyed by the supermarket's microgrid, and again qualifies as the (exempt) supply of electricity. Rather than being Class B (resale), this is Class C (onsite) exempt supply as the supermarket is selling power it has generated itself. The supermarket is, therefore, using the Class B and C supply exemptions in combination.



46. Once again, the CPO is reselling power for the purposes of charging an EV, but not supplying it. The Maximum Resale Price (MRP) does not apply as the reselling is done via dedicated EV charging infrastructure and does not take place on domestic premises.
47. The CPO is not required to have a supply licence or to operate as an exempt supplier.

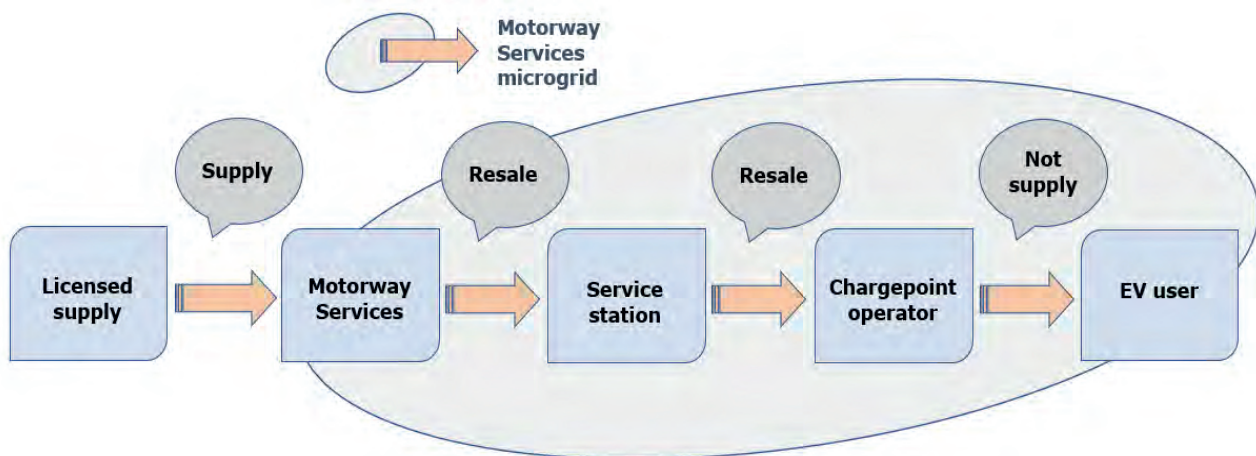
#### **Regulatory headlines**

- ❖ Supplying electricity to the destination would be supply (likely to a non-domestic customer).
- ❖ Where the customer at the destination supplies the power to another party before it's sold to the EV user, this would be resale (Class B exempt supply) which doesn't require a licence.
- ❖ If the reseller also supplies power they've generated themselves, this would be supply, most likely covered by the Class C supply exemption.
- ❖ A party can utilise the supply exemptions in combination to resell power purchased from a licensed supplier (Class B) as well as supplying power it has generated itself onsite (Class C).
- ❖ The resale of electricity from the CPO to the EV driver is not supply, nor is it subject to the MRP.



## Scenario 3 Forecourt

48. This charging scenario is similar to current fuelling arrangements, and can be undertaken at stand-alone petrol stations, dedicated EV garage forecourts or motorway services.
49. Some forecourts may have complex site structures, ownership and letting arrangements, involving multiple players, such as motorway services providers, service station owners and CPOs.
50. The following set-up is similar to the destination scenario (scenario 2), with an extra resale transaction: the motorway services provider takes its supply from a licensed electricity supplier. The power is then conveyed via an onsite private distribution network (a microgrid) and resold by the motorway services provider to the service station owner. The power is then conveyed via an onsite private distribution network (a microgrid) and resold by the motorway services provider to the service station owner. The power is then conveyed via an onsite private distribution network (a microgrid) and resold by the motorway services provider to the service station owner.
51. The service station owner then resells the power (also via the microgrid) to their tenant, the CPO. The CPO then resells the power for the purpose of charging the EV.



52. The motorway services provider and service station owner are both supplying electricity, but they're not required to hold a supply licence. Both resale transactions fall under Class B exempt supply, as the power is being resold and conveyed via a distribution system (the microgrid) to separate premises: firstly to the service station and then to the CPO.
53. It's becoming increasingly common for E-mobility Service Providers (EMSPs) to facilitate EV access to different CPO services via charging cards and apps. CPOs can have contracts with many EMSPs, allowing various EMSPs' customers to use its facilities.

54. There are different ways the CPO and EMSP commercial relationship can be configured, which may involve the reselling of electricity between the two parties: ie, the CPO buys the power from the service station owner and resells it to the EMSP before it's then sold to the EV driver.
55. In this situation, we do not consider there to be an exempt supply (resale) relationship between the CPO and EMSP as the power is not being supplied across the microgrid. Instead it is being resold on the CPO's premises, which is not supply.
56. In addition, the Maximum Resale Price (MRP) does not apply because the reselling is not being undertaken on a domestic premises.

#### **Regulatory headlines**

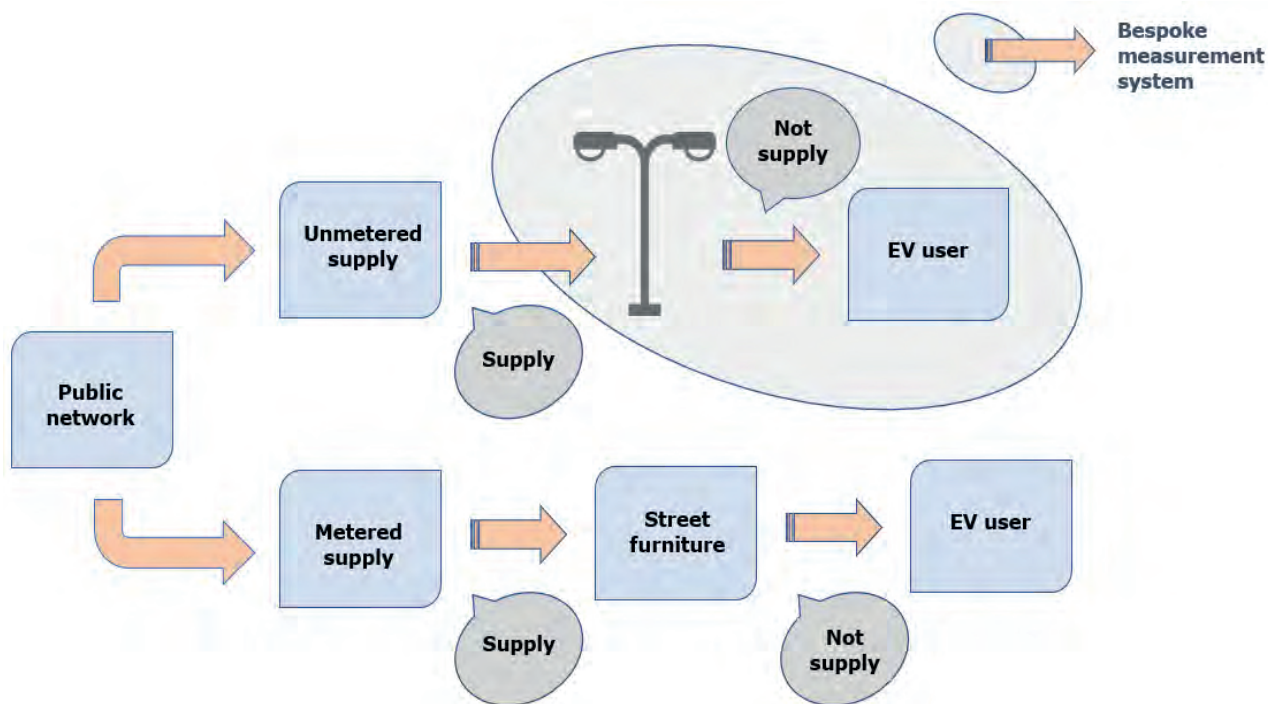
- ❖ Supplying electricity to the site would be supply (likely to a non-domestic customer).
- ❖ The supply is either directly from a licensed supplier, or from an onsite supplier that's reselling the electricity and / or supplying power generated onsite.
- ❖ The motorway services provider resells power to the service station operator (exempt supply) via the onsite microgrid.
- ❖ Where the service station sells the electricity to another party before it's sold to the EV driver, this is also exempt supply (resale). The MRP doesn't apply.
- ❖ The CPO may be charging the EV itself, or facilitating a transaction between an EMSP and the EV customer. The MRP doesn't apply.
- ❖ The resale of electricity from the CPO to the EV driver is not supply, nor is it subject to the MRP.

## Scenario 4 On-street

57. This involves roadside charging, particularly in areas where EV drivers lack off-street parking. These may be stand-alone chargepoints or attached to existing street furniture (eg, lampposts), or chargepoints owned by and powered from a home on the street, but usable by other EV drivers (this specific model is covered in scenario 6 – peer-to-peer).
58. Power is conveyed to the CPO most likely via the local Distribution Network Operator's (DNO's) system. Although less common, it might be the streets are on a privately owned network (also known as a microgrid) not operated by the DNO. The CPO may, therefore, receive electricity from an onsite exempt supplier, which has generated the power itself or procured it from a licensed supplier (via the DNO network).
59. In either case, just like other scenarios, (eg, home, destination and peer-to-peer) the provision of electricity to the chargepoint is supply and subject to standard supply rules (licensed or exempt). The sale between the CPO and the EV is not supply. The Maximum Resale Price (MRP) does not apply as the reselling is done via dedicated EV charging infrastructure and does not take place on domestic premises (unless a householder's chargepoint is located at the roadside; see scenario 6 – peer-to-peer).
60. A number of billing models exist for using these chargepoints, such as subscriptions, fuel cards and pay-as-you-go. Increasingly, licensed suppliers are including charging at on-street locations as a service bundled with their customers' standard electricity supply contracts (see scenario 5 – home and roam).
61. Supplies to on-street chargepoints are metered, so that the CPO is correctly charged for the electricity they consume when charging their customers' EVs. However, some street furniture (such as lampposts), is categorised as unmetered supply. Where EV chargepoints are attached, it may be permissible for the supply to continue to be unmetered, provided this is agreed by the supplier, relevant network operator and customer. Each electricity network operator has an Unmetered Supplies Operator.
62. In unmetered scenarios, a special measurement system must be used to ensure accurate consumption is recorded and submitted to industry settlement systems. There are various sources of information available about what needs to be done to configure this arrangement.<sup>18</sup>

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<sup>18</sup> The Office for Product Safety and Standards (OPSS) is responsible for metering regulations and has produced guidance on unmetered supply regulations:



### Regulatory headlines

- ❖ Supplying electricity to the on-street chargepoint is supply (likely to a non-domestic customer).
- ❖ If the streets are located on a DNO's network (or an Independent DNO<sup>19</sup>) the supplier will most likely be a licensed entity.
- ❖ If the streets are located on a private network (a microgrid), the supplier will most likely be located onsite and operating under a supply exemption (Class C exempt supply).
- ❖ The sale of electricity from the chargepoint to the EV is not supply, nor is it subject to the MRP.
- ❖ Where a lamppost hosts a chargepoint, the supply to the chargepoint may be unmetered. The CPO will need to set-up and register an industry compliant system to measure and report consumption.

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/704336/Unmetered supplies of electricity - Guidance to the UMS Regulations version 3.0.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/704336/Unmetered_supplies_of_electricity_-_Guidance_to_the_UMS_Regulations_version_3.0.pdf). Elexon (the Balancing and Settlement Code Company) has produced an operational guide: <https://www.elexon.co.uk/operations-settlement/unmetered-supplies/>.

<sup>19</sup> Independent DNOs (IDNOs) develop, operate and maintain local electricity networks in Great Britain and, like DNOs, are licensed by Ofgem: <https://www.ofgem.gov.uk/publications/regulation-independent-electricity-distribution-network-operators>

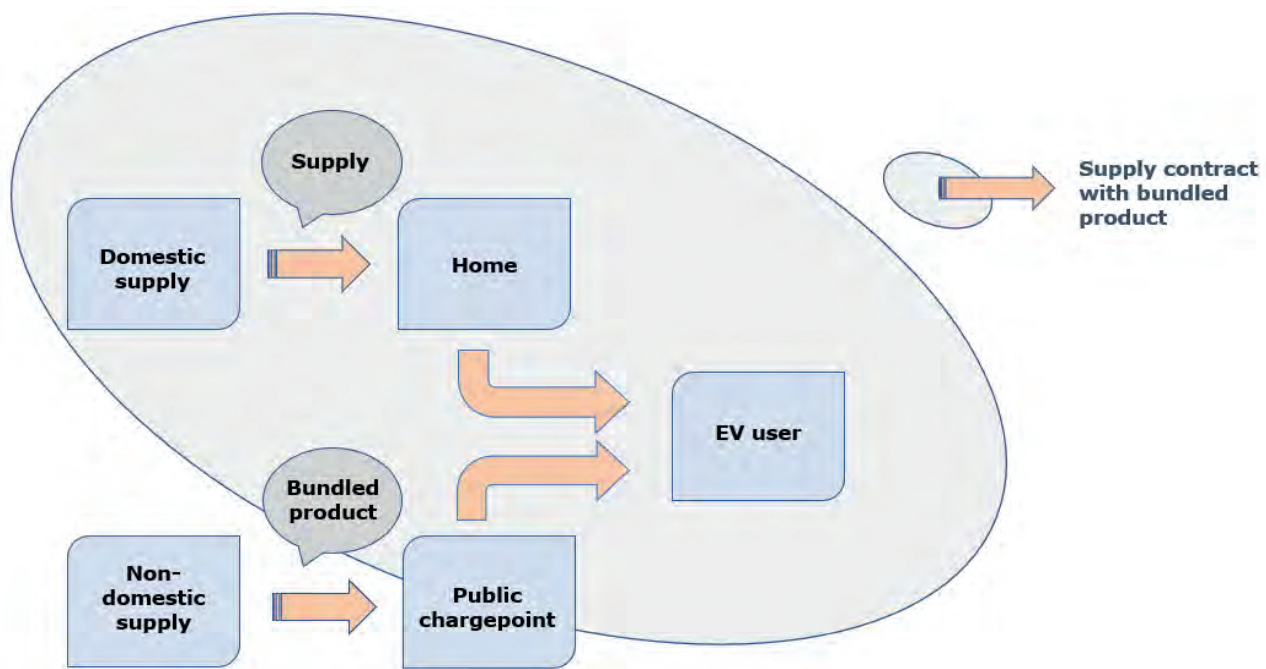
## Scenario 5 Home and roam

63. Domestic consumers may want to receive a single bill for when they charge their EV at home and on-the-go. A licensed electricity supplier providing this service will combine a standard domestic supply with a roaming package (via commercial arrangements with CPOs and fuel card vendors) allowing for the use of public chargepoints: on-street, destinations and forecourts.
64. Electricity is a locational product, with costs assigned based on the location of consumption. The electricity system is, therefore, configured on the basis of fixed-location metering points with unique identifiers (Meter Point Administration Numbers – MPANs). Metered data is collected to build a picture of which meters consumed how much electricity in each half-hour of the day.<sup>20</sup> The data is aggregated at Grid Supply Points,<sup>21</sup> roughly correlating with Distribution Network Operator (DNO) areas in GB, and once aggregated it's used to work out each supplier's position and who pays what charges (each GSP area has different network charges).
65. The key thing to take away from this set-up is that metering the location of electricity consumption is critical. The system expects and only allows a consumer's metering system to be in one fixed place: it doesn't support mobile MPANs for EVs.
66. Instead, a licensed supplier's commercial EV charging partners collect data each time a customer charges their EV (identified via an app, fuel or membership card, or EV car-charger identifier) and submit this to the supplier. The supplier includes this service as a separate line-item on their customer's electricity bill.
67. In licensed supply terms, this roaming service constitutes "a non-energy optional bundled product": a good or service that couldn't reasonably be considered as being directly related to the supply of electricity to premises (ie, the home), and is optional for the customer to take up as part of their supply contract.

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<sup>20</sup> See Elexon's guide on the 'BSC for beginners' which explains how the balancing and settlement system works and the importance of metered data: <https://www.elexon.co.uk/guidance-note/beginners-guide/>

<sup>21</sup> A Grid Supply Point (GSP) is a system connection point at which the national Transmission System is connected to a Distribution System. Elexon (the Balancing and Settlement Code Company) refer to each Distribution System as a GSP Group, a distinct electrical system in which the total supply is determined by metering for each half hour.



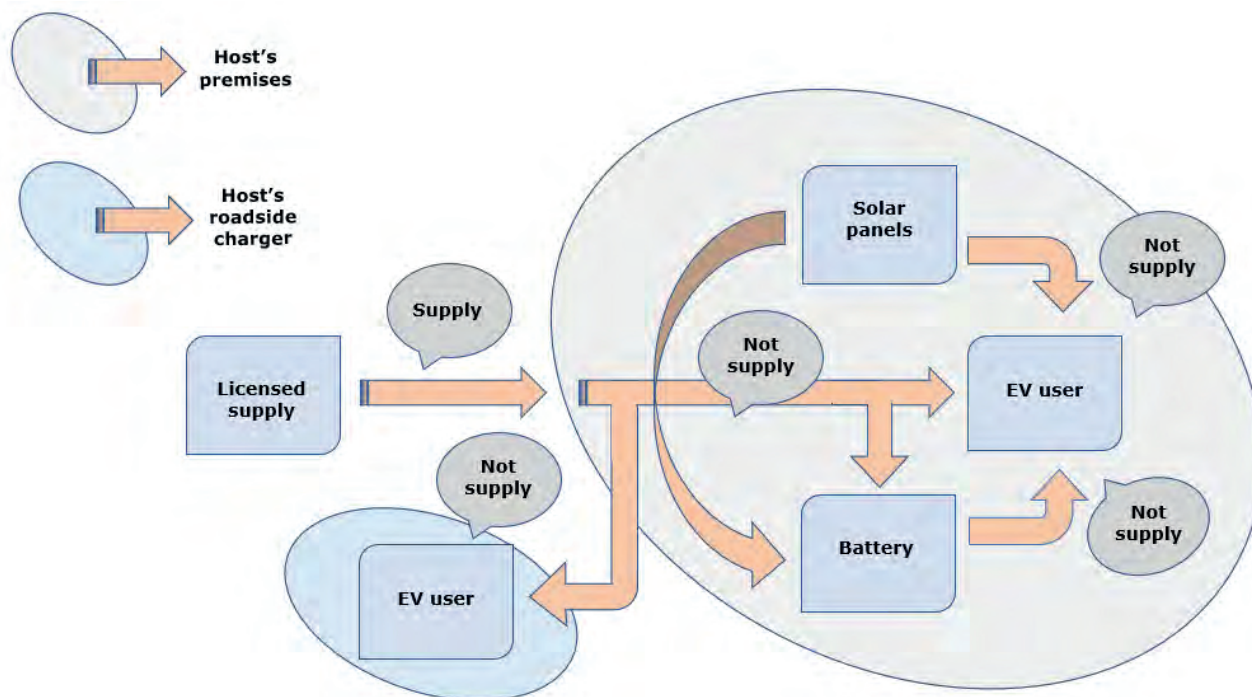
68. Estimated Annual Costs (EAC) are a personalised and transparent calculation of a domestic consumer’s expected yearly costs on a given supply contract. EACs are used by consumers, licensed suppliers and price comparison services to compare tariff offerings from different suppliers.
69. At present, comparison services typically only compare home-based consumption, so EAC calculations don’t need to include the costs associated with optional bundles, such as roaming EV charging. However, we expect the price comparison marketplace and suppliers will evolve to include comparisons that reflect consumer’s diverse consumption habits, including bespoke offers for domestic and EV charging.

#### Regulatory headlines

- ❖ Customers pay for charging on-the-go through their domestic electricity supply and bill.
- ❖ The roaming charging service is a “non-energy product” and is bundled with the customer’s supply contract.
- ❖ The domestic supplier gives their customers access to public chargepoint services run by other providers.
- ❖ The CPOs have supply contracts which are separate to the supply contract between the domestic supplier and EV consumer, and may involve different suppliers.
- ❖ The terms of charging (eg, rates, free miles, etc) will be set-out in the bundled offer.

## Scenario 6 Peer-to-peer

70. This is where individuals (or businesses) make their chargepoints available for other EV drivers to use. This can be on a firm's premises, or more likely on the driveway (or garage) of a home. In some cases, a householder's chargepoint will be installed at the roadside, taking its charge from the domestic supply rather than through a separate connection to the local distribution network. There are various apps available that match a chargepoint provider (the host) with a driver (peer) needing somewhere to plug-in.
71. In most cases, the electricity the host provides will be sold to them by their licensed supplier. They're effectively reselling this power to someone else temporarily based at their premises. Where a host's chargepoint is installed at the roadside, this falls outside the footprint of their premises, but this doesn't affect the supply rules. In either model, the host is reselling electricity, but the transaction is not supply (exempt or licensed).
72. It's possible that some hosts will have their own means of generating power (most likely solar-PV panels in domestic settings). This means the host will resell power they bought from their supplier and sell power they've generated themselves.
73. In supply terms, regulations oversee the relationships between generators, suppliers and consumers, and the network companies that transport the power to the customer's premises. However, supply regulations stop at the door (technically the meter) of the home or business; where the customer is reselling power to someone else at their premises (the landlord and tenant arrangement being the classic model), reselling rules come into play (see below).
74. If the solar-PV (or other generating technology) receives government subsidies through the Feed-in-Tariff (FIT) scheme, then the host is still entitled to receive payment for the electricity generated, even though the power's consumed by the EV driver. What matters is that the power is still consumed at the same location as the FIT installation.
75. It's likely that some hosts will have batteries for storing electricity; this might be stand-alone or combined with a solar-PV system. In regulatory terms, storage is treated as a type of generation; whenever a battery consumes and then exports electricity, it's effectively "new" power. When the host buys electricity from their licensed supplier, stores it and then sells it to charge an EV this is not reselling, but the sale of power they've generated themselves; it gets treated as if it's "made" for the first time.
76. Where the host generates electricity (by solar-PV or via a battery) and sells this to the EV user, neither a supply or reselling relationship occurs.



77. Consequently, the host is either acting only as a reseller of electricity or a reseller and seller of electricity. As the reselling takes place on the host's property (or at their roadside chargepoint) they're not supplying (licensed or exempt). If the host uses a dedicated EV chargepoint then the Maximum Resale Price (MRP) doesn't apply. But, if they use a standard plug and socket (in a domestic setting), it does apply. The MRP stops a reseller charging more for the electricity than they paid for it from their supplier.
78. When selling their own power, the host isn't subject to supply rules, but must give due consideration to their obligations under trading standards and consumer protection law.

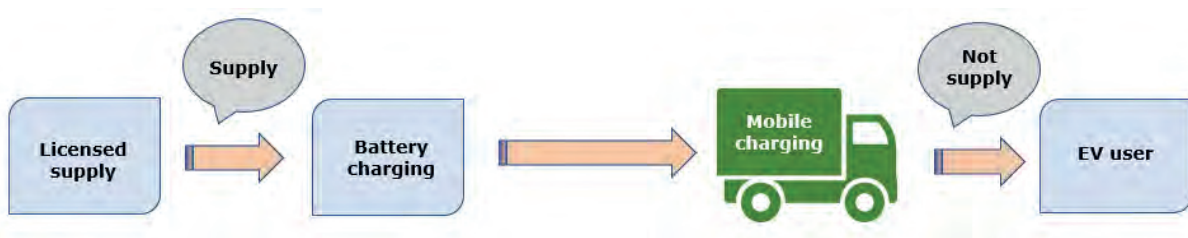
#### Regulatory headlines

- ❖ Like scenario 1, the supply to the home (or business) is a standard supply arrangement. Supply licence rules apply.
- ❖ If the host is reselling power from their licensed supplier directly to the EV driver, they're not supplying but they are reselling.
- ❖ However, the MRP doesn't apply when a bespoke chargepoint is used. But, if it's done via a standard plug and socket (in a domestic setting) it does apply, and the host can't resell at a price higher than they paid.
- ❖ If the host sells the solar-PV output (or other generating technology) to charge the EV, this is not supply.
- ❖ If the host is storing power from their licensed supplier and / or from their solar-PV and charging the EV afterwards, this is not supply.



## Scenario 7 Mobile on-demand

79. In this scenario, an EV is charged without using a fixed chargepoint, whenever and wherever it's convenient (and permitted) for the driver and mobile charging provider.
80. There are various portable EV chargers available to drivers who want the comfort of their own back-up source of emergency power, but in this scenario, the service is brought to the EV by a third party. The provider will most likely use fast-charging batteries (unless the location is suitable for a longer charge time), or the charge may be taken directly from another EV.



81. The batteries are charged in advance, most likely at the provider's business premises. Unless it's generating power itself, it will buy its electricity from a supplier, probably a licensed one. Alternatively, it could be the mobile-charging provider is based at an industrial site with its own private distribution network (a microgrid), and the power comes via an onsite supplier (most likely operating as a Class C exempt supplier).
82. The batteries are transported to the EV driver via the road network. As such, there's no distribution or supply of power involved in the charging of the EV. The mobile charging provider is not subject to electricity supply regulations. It's also not reselling electricity, because its not doing it from a premises (a vehicle is not a premises).
83. The provider will need to ensure it has any relevant permissions for charging at the location agreed with the customer. It will also need to be satisfied that it meets any regulatory requirements for the transportation and use of electrical equipment.<sup>22</sup>

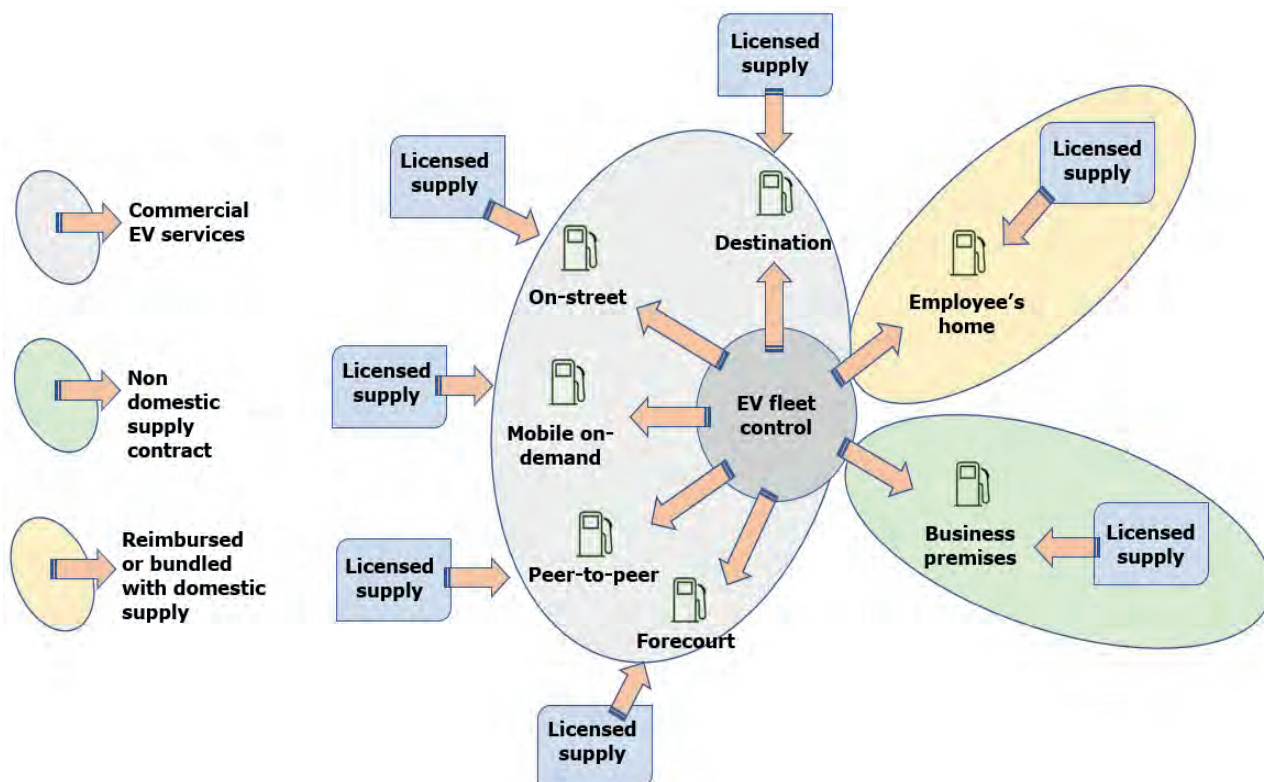
### Regulatory headlines

- ❖ The power supplied to the mobile on-demand provider to charge its batteries is supply.
- ❖ The mobile provider doesn't supply power via a distribution system to a consumer's premises, so supply regulations aren't relevant.
- ❖ The sale of electricity to the EV driver is not supply or reselling.

<sup>22</sup> The Health and Safety Executive is responsible for regulating and enforcing health and safety regulations. Contact information is available here: <https://www.hse.gov.uk/contact/index.htm>

## Scenario 8 Fleet

84. Many businesses are transitioning their fleet (cars, vans, buses, coaches and trucks) to EVs in readiness for bans on new internal combustion engine sales, and as part of broader carbon reduction efforts.
85. Unlike the other charging scenarios, the fleet model doesn't involve an alternative charging location. Instead, fleet-based EV solutions typically utilise the other charging scenarios (1-7), and is most comparable to scenario 5 (home and roam). Many specialised fleet management service providers have entered the market, coordinating the charging experience across numerous infrastructure providers.
86. Where an EV is charged at the business's own premises, the arrangement is essentially the same as the home charging set-up (scenario 1), although the tariff rules differ between domestic and non-domestic contracts. The electricity supply to the business premises will most likely be from a licensed supplier, but it could be the business is on an industrial site with its own private distribution network (a microgrid), and the power comes via an onsite supplier (most likely operating as a Class C exempt supplier).
87. When drivers are on-the-go, they can access charging services at destinations (scenario 2), forecourts (scenario 3), on-street (scenario 4) and even at peer-to-peer venues (scenario 6). Fleet managers utilise fuel cards and bespoke payment arrangements to pay for the charging.



### Charging fleet vehicles at employees' homes

88. Where an employee charges their fleet EV at home, they pay via their domestic bill. This may lead to affordability challenges for employees. Many employers are looking for efficient and equitable solutions to this situation, with third parties now offering fast-track reimbursement services using real-time EV charging data, delivered via payroll, or even a bundled product with the employee's licensed supplier.
89. Where the reimbursement process is bundled with the domestic supply, the fleet operator will need arrangements with each of the employees' electricity suppliers, or may negotiate a bespoke tariff with one supplier, which staff switch to. If the latter, we wouldn't expect joining this tariff to be a condition of employment, nor for this to be the only means by which staff can claim expenses. A domestic supply contract is made between the resident and supplier, with the customer retaining their right to switch.
90. Most domestic premises have a single grid connection and take one supply. Industry processes can discern when supply happens and apply separate rates (peak and off-peak), but meters can't distinguish who supplied. Industry recently considered<sup>23</sup> whether more than one supply to a premises could be facilitated by meter sharing. The proposal isn't being progressed because the benefits are neither certain nor large enough to outweigh the known costs.
91. This solution may be revisited in the future, but it means that current arrangements don't allow a fleet operator to have a dedicated supply contract for EV charging at their employees' premises, separate to the main domestic supply contract.

#### Regulatory headlines

- ❖ The fleet provider will have a non-domestic supply contract for charging at its premises. Non-domestic supply licence rules apply.
- ❖ For the rules that apply to the commercial charging services provided on-the-go, see the charging scenarios (1-7) for regulatory headlines.
- ❖ Recompensing employees for cashflowing home-based charging can't (yet) be done via a separate supply contract to the employee's home.
- ❖ Employers need to agree repayment methods via payroll or through a bundled product with the employee's domestic licensed supplier(s).

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<sup>23</sup> It was considered by an industry working group that assessed a modification proposal (mod P379) to the Balancing and Settlement Code. Further information is available from Elexon: <https://www.elexon.co.uk/mod-proposal/p379/>

## 4. Other stuff

### Useful information about EVs

#### Electricity supply licence

92. The standard conditions of the electricity supply licence (they differ for domestic and non-domestic consumers) can be accessed from [Ofgem's licensing pages](#),<sup>24</sup> and there are useful [introductory guides to the supply licences](#)<sup>25</sup> which differentiate between domestic and non-domestic supply.

#### Consumer protection

93. Consumer protection rules apply to all EV users, including those not covered by supply licence or supply exemption regulations. These apply much like they do for customers of petrol stations today. The government backed [Business Companion](#) website provides information about trading standards and consumer protections in Great Britain.<sup>26</sup>

#### Metering

94. The EA 1989 (Schedule 7(1)) requires that where a customer is charged by reference to the quantity of electricity supplied, the volume must be ascertained by an appropriate meter. An appropriate meter is commonly known as a MID-compliant meter (MID referring to the Measurement Instruments Directive which introduced the Measurement Instrument Regulations).
95. MID-compliant meters must be used when trade is involved, which includes billing customers for their consumption. The [Office for Product Safety and Standards](#) is part of BEIS, and is responsible for metering regulations and standards.<sup>27</sup>

#### Tax

96. The various EV charging scenarios will likely have tax (VAT, personal income and corporation) implications. [HMRC](#) has published guidance on how VAT should be charged (VAT Notice 701/19)<sup>28</sup> and a paper on the VAT liability of charging EVs.<sup>29</sup>

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<sup>24</sup> <https://www.ofgem.gov.uk/industry-licensing/licences-and-licence-conditions>

<sup>25</sup> <https://www.ofgem.gov.uk/industry-licensing/licences-and-licence-conditions>

<sup>26</sup> <https://www.businesscompanion.info/>

<sup>27</sup> <https://www.gov.uk/guidance/mid-approved-gas-and-electricity-meters>

<sup>28</sup> <https://www.gov.uk/government/publications/vat-notice-70119-fuel-and-power/vat-notice-70119-fuel-and-power>

<sup>29</sup> <https://www.gov.uk/government/publications/revenue-and-customs-brief-7-2021-vat-liability-of-charging-of-electric-vehicles/revenue-and-customs-brief-7-2021-vat-liability-of-charging-of-electric-vehicles>

## Networks

97. The [Energy Networks Association](#) is the voice of network companies. One of its roles is to make it easier to connect low-carbon generation, and benefit from technologies like EVs and storage. Its website has useful information about connecting EVs.<sup>30</sup> The Scottish DNOs, [SPEN](#) and [SSEN](#), published a guide on EV fleet connections.<sup>31</sup> [UKPN](#) and [Energy UK](#) also published a guide on EV fleet connections for businesses in London.<sup>32</sup>

## Other resources

98. The [Office for Zero Emission Vehicles \(OZEV\)](#)<sup>33</sup> works across Government to support the development of the markets for ultra-low emission vehicles, including EVs. It co-ordinates new legislation including progressing arrangements for smart charging.<sup>34</sup> [Go Ultra Low](#)<sup>35</sup> is a joint government and industry campaign to provide consumers with the facts and information they need to make an informed decision about EVs.
99. The [EV Energy Taskforce](#) brings together senior players from the energy, infrastructure, automotive and transport sectors. Its website includes useful reports and resources.<sup>36</sup>
100. [Citizens Advice](#)<sup>37</sup> provides free, independent and impartial advice to people on a range of matters, including energy and transport. Its website includes information and advice for consumers about EVs.
101. The [Energy Savings Trust](#)<sup>38</sup> provides advice and support to householders and businesses. Its website contains a wealth of information and guidance about EVs, including a step-by-step guide on EVs for fleets.
102. [REA](#) (the Association for Renewable Energy and Clean Technology) provides various member services, including guidance on EV chargepoint procurement.<sup>39</sup> Similarly, [BEAMA](#)<sup>40</sup> (trade association for manufacturers and providers of energy infrastructure technologies and systems) provides guidance and other EV resources.

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<sup>30</sup> <https://www.energynetworks.org/operating-the-networks/connecting-to-the-networks>

<sup>31</sup> [https://www.spenergynetworks.co.uk/userfiles/file/Connecting\\_your\\_EV\\_fleet\\_-\\_final.pdf](https://www.spenergynetworks.co.uk/userfiles/file/Connecting_your_EV_fleet_-_final.pdf)

<sup>32</sup> <https://www.energy-uk.org.uk/media-and-campaigns/energy-uk-blogs/7656-connecting-your-fleet-a-simple-step-by-step-guide-to-installing-ev-chargepoints.html>

<sup>33</sup> <https://www.gov.uk/government/organisations/office-for-low-emission-vehicles>

<sup>34</sup> <https://www.gov.uk/government/consultations/electric-vehicle-smart-charging>

<sup>35</sup> <https://www.qoultralow.com/about-us/>

<sup>36</sup> <https://evenergytaskforce.com/>

<sup>37</sup> <https://www.citizensadvice.org.uk/>

<sup>38</sup> <https://energysavingtrust.org.uk/>

<sup>39</sup> <https://www.r-e-a.net/our-members-forum/electric-vehicles/>

<sup>40</sup> <https://www.beama.org.uk/>

## Give us feedback

103. Questions and comments about this guide can be sent to the Innovation Link team. For more information about the Link and the services we provide, see our [website](#).<sup>41</sup>

104. We believe feedback is essential for good service management. We're keen to get your comments about this guide:

- Did you find it useful?
- Was it easy to read and understand? Or could it be better written?
- Are there other guides you think we should provide to support innovation?
- Do you have any further comments?

105. Please send any feedback to [InnovationLink@ofgem.gov.uk](mailto:InnovationLink@ofgem.gov.uk)

## The small print

106. Nothing in this guide is to be taken as providing legal advice and it's not a substitute for independent legal advice on your own circumstances. It's your responsibility to assess compliance with regulatory requirements.

107. This guide is provided without prejudice to any decision or action Ofgem may take in an individual case in the future, including enforcement or any other regulatory action.

108. Ofgem accepts no legal liability in contract or in tort for the accuracy and / or quality of the information provided.

109. It's worth noting that supplying electricity without a licence is a criminal offence and government is also a prosecuting authority. The views taken by the Innovation Link or by Ofgem on a particular matter will not necessarily be the same as those taken by government or other stakeholders. Context is important and many situations will depend on their own particular circumstances.

110. Ultimately, only a court can give a definitive interpretation as to how a statute is to be applied to a particular situation.

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<sup>41</sup> <https://www.ofgem.gov.uk/about-us/how-we-engage/innovation-link>