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HITTING THE ROAD WITH ELECTRIC VEHICLES



PIKE + BAMBRIDGE





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SELECT



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AN INTRODUCTION TO ELECTRIC VEHICLES

THE KEY FACTS

- In 2021, EVs made up **11.6%** of all new car sales
- More EVs were registered in March 2022 than in the whole of 2019
- The best-selling electric car in the UK is the **Tesla Model 3** with 34,783 sales in 2021, followed by the **Kia E-Niro** and the **Volkswagen ID3**

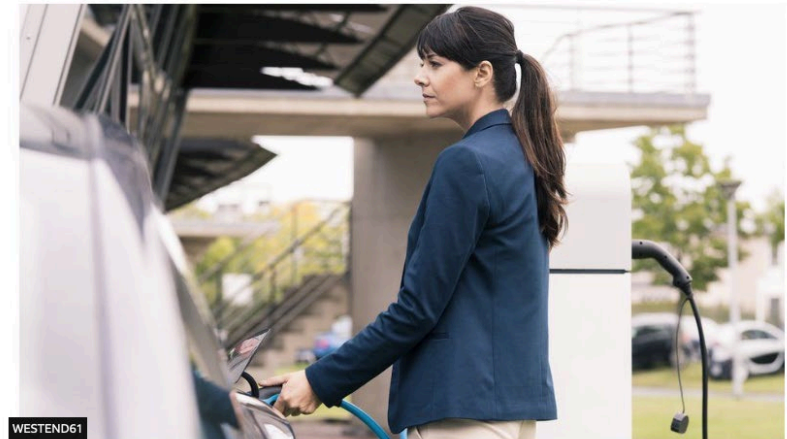


THE PROS...

- EVs obviously reduce your emissions and lower your carbon footprint.
- They will save you money in running costs, particularly given current fuel prices
- There is government grant support for purchasing some new EVs
- If you rent your home, funding is available for home charge point installation...**for now**
- The number of EV charge points

Electric car chargepoints to overtake fuel pumps

25 March | Comments



WESTEND61

The number of electric vehicle charging points will reach 300,000 by 2030 under government plans but motoring groups say the roll out is not fast enough.

Under the plans, operators will have to ensure drivers can compare prices and pay by contactless card.

But the RAC said the chargepoint target "might sound impressive", but it is concerned the number is "not going to be sufficient" for growing demand.

The UK currently has 30,000 public electric vehicle charging points.

...AND THE CONS

- The 'real range' of many EVs may be less than advertised, especially in winter
- Electric cars can be more expensive, before taking into possible tax savings and running costs reductions
- Longer journeys can require more considered planning



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AC AND DC

SIMPLE GUIDE: AC

AC
connector
type

Typical Power
Ratings

Approx range per hour
charging**

Features

Type 2



3.7kW
7kW
22kW (three-
phase)*


12.5 miles
25 miles
75 miles

- 7-pins
- By far the most common connector on new cars
- Inbuilt locking mechanism
- Can carry three phase power

SIMPLE GUIDE: DC

DC connector type	Typical Power Ratings	Approx range per 30 mins charging*	Features
CHAdeMO 	50kW 100kW	75 miles 150 miles	<ul style="list-style-type: none"> • Original DC connector
Combined Charging System (CCS) 	50kW 150kW** 350kW***	75 miles 225 miles 525 miles	<ul style="list-style-type: none"> • High power • Neat arrangement with 2 x 'Type 2' pins • Likely to become most popular DC standard

SIMPLE GUIDE: DC

DC connector type	Typical Power Ratings	Approx range per 30 mins charging*	Features
Type 2 	150kW 250kW****	225 miles 375 miles	<ul style="list-style-type: none">• Only Tesla Superchargers provide DC via a Type 2 connector

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EV BEST-SELLERS

MERCEDES-BENZ EQS

**Battery
capacity:
107 kWh**



Combined urban and highway driver:

- Summer: **435 miles of real range**
- Winter: **315 miles of real range**

VOLKSWAGEN ID3 'PRO'

**Battery
capacity:
58 kWh**



Combined urban and highway driver:

- Summer: **225 miles of real range**
- Winter: **180 miles of real range**

ELECTRIC VEHICLES

TESLA MODEL Y

**Battery
capacity:
75 kWh**

Combined urban and highway driver:

- Summer: **310 miles of real range**
- Winter: **225 miles of real range**



MG ZS EV LONG RANGE

Battery
capacity:
68 kWh



Combined urban and highway driver:

- Summer: **260 miles of real range**
- Winter: **190 miles of real range**

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NEW RELEASES:
COMING SOON FOR 2022

ELECTRIC VEHICLES

CUPRA BORN

215-335
miles



VOLKSWAGEN BUZZ

300
miles



ELECTRIC VEHICLES

NISSAN ARIYA

300
miles



A WORLD OF ELECTRIC MOBILITY

From technology advances to government regulations and incentives and hundreds of new models, there is lots more to come!

- **2030:** UK Government deadline for end of new petrol and diesel car sales
- Manufacturers commit to EV-only future, from **Mercedes** to **Volvo** and new entrants such as **Lucid** and the Amazon-backed **Rivian**
- Huge infrastructure investments in charging networks, with the UK Government committing **£500million**





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ANY QUESTIONS?

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INSTALLING AN ELECTRIC VEHICLE CHARGE POINT AT YOUR HOME

GOING ALL-ELECTRIC

- Increasing focus on zero-emission vehicles
- Ongoing rise in fuel prices
- Damaging environmental factors
- Increasing number of charge points
- Ease of use, e.g. with app
- **However...** relying on external providers may not always be practicable, convenient and/or cost effective
- **Therefore...** an electric vehicle charge point can be installed at your home



WHAT IS AN EV?

- Electric vehicle (EV): Any vehicle propelled by an electric motor drawing current from a rechargeable storage battery or from other portable energy storage devices – rechargeable, using energy from a source off the vehicle such as a residential or public electricity service – which is manufactured primarily for use on public streets, roads or highways

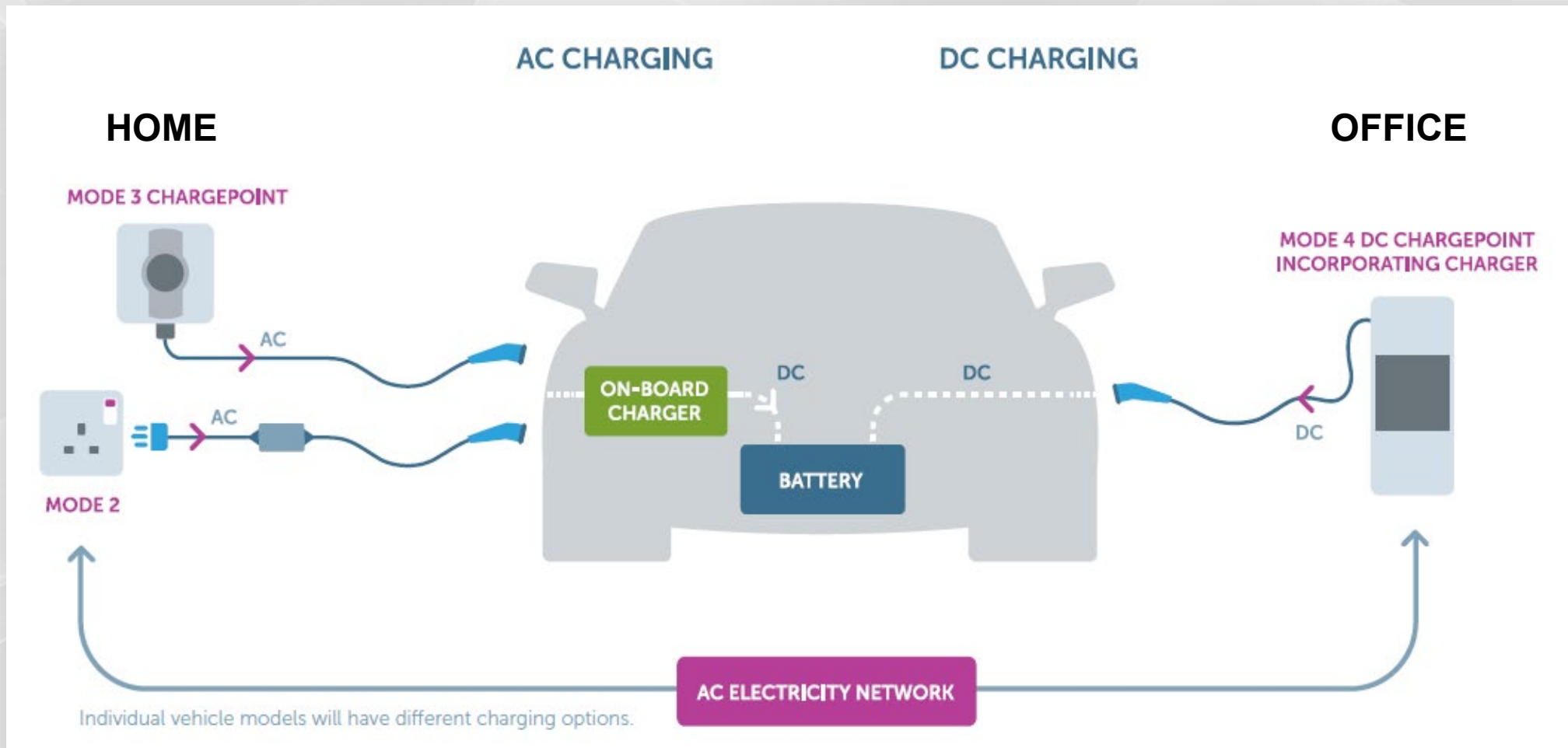


WHAT IS AN EV CHARGE POINT?

- The point where an electric vehicle is connected to the fixed installation, i.e. electrically

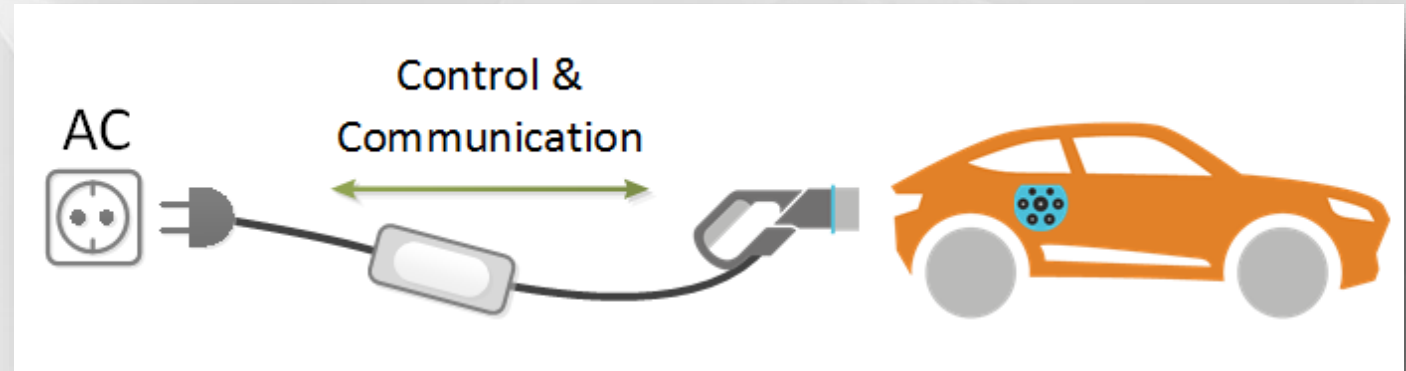


TYPES OF CHARGE POINT



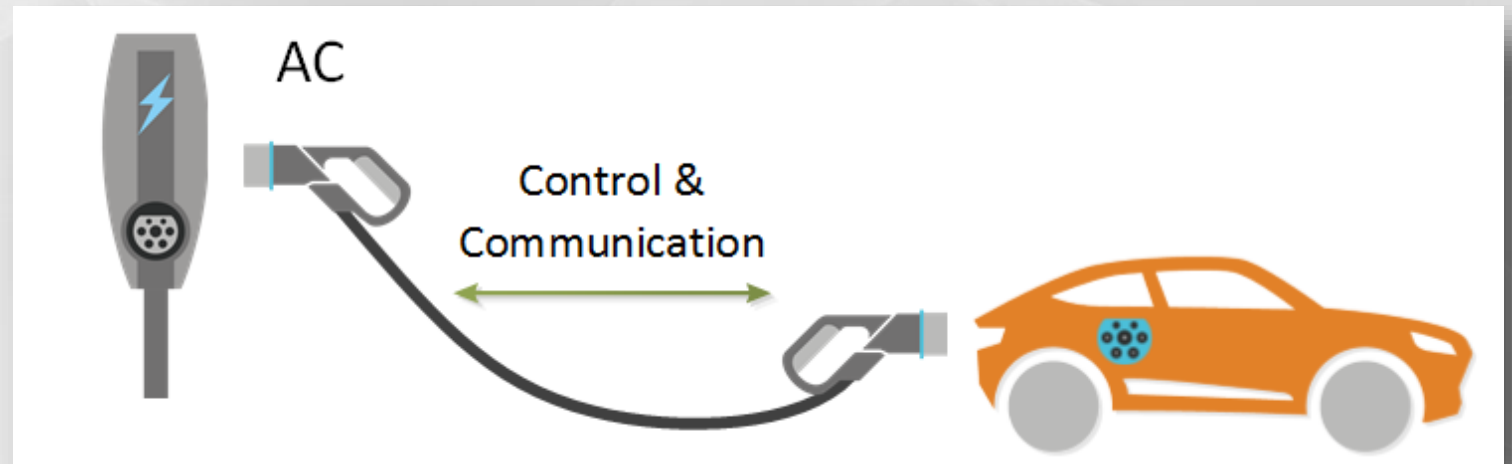
MODES OF CHARGING: MODE 2

- Connection of the EV to the AC supply network using standard socket-outlets not exceeding 32A and 250V AC single-phase or 480 VAC three-phase, at the supply side.
- Using the power and protective earth conductors, together with a control pilot function and system of personnel protection against electric shock (RCD) between the EV and the plug, or as part of the in-cable control box.



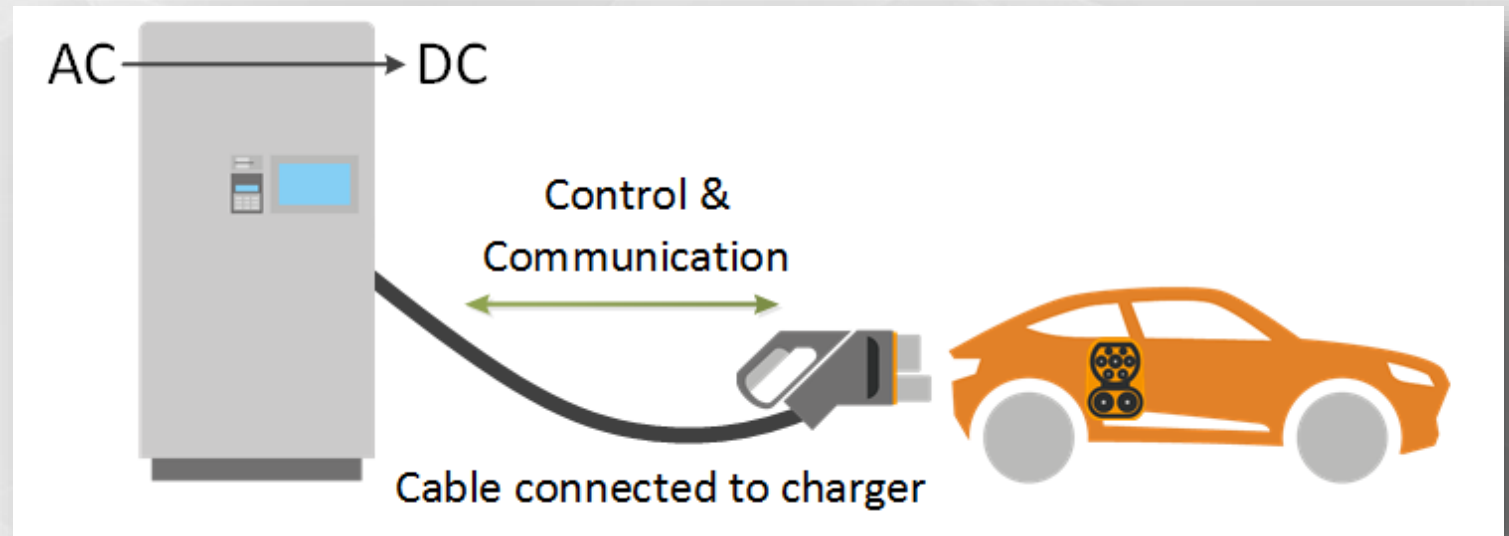
MODES OF CHARGING: MODE 3

- Connection of the EV to the AC supply network using dedicated EV supply equipment, where the control pilot function extends to control equipment in the EV supply equipment, permanently connected to the AC supply network.



MODES OF CHARGING: MODE 4

- Connection of the EV to the AC supply network using an off-board charger, where the control pilot function extends to equipment permanently connected to the AC supply.



BENEFITS OF INSTALLING A CHARGE POINT

- Convenience
- Less planning
- Reduced tariff/cost effective
- If you have solar panels, you can use them as a source of power to charge your vehicle
- Possible to add value to your property if selling or renting
- Use your vehicle as electricity storage, i.e. Island Mode





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IS **MY** HOME SUITABLE?

Electricity supply:



Utility company



Landlord's supply

ELECTRICITY SUPPLY:

Utility company

Ask the utility company for permission and/or suitability for use

YES

NO

Do you have parking facilities at your house or flat, e.g. driveway, allocated space, etc?

YES

Do you have an alternative electricity supply, e.g. solar?

NO

Likelihood EV point cannot be installed

NO

Likelihood EV point cannot be installed. Contact a SELECT Member who is a qualified EV point installer for further guidance

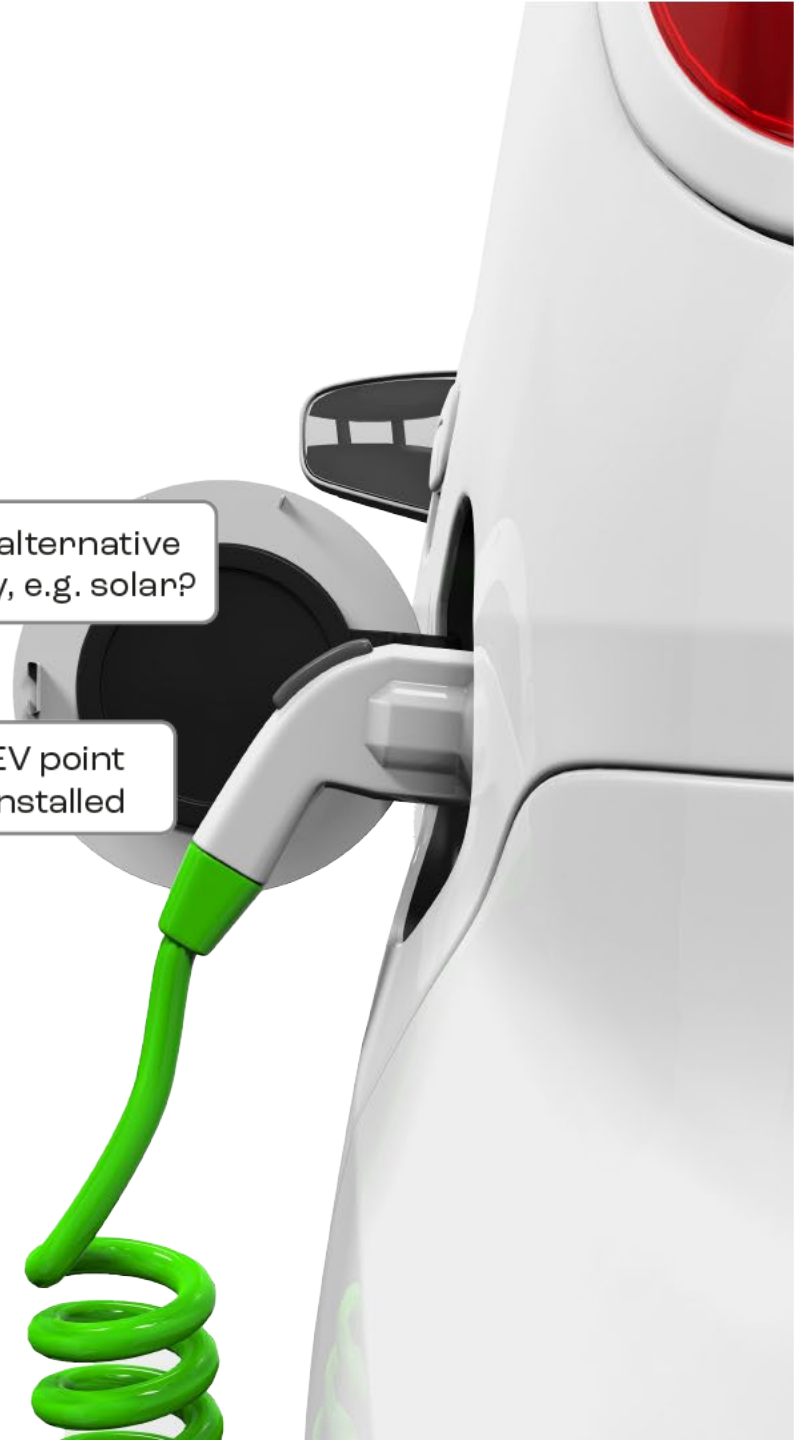
YES

Likelihood EV charge point can be installed. Contact SELECT Member who is a qualified EV point installer who will go over:

- Type of car you're using (possibly needs specific type of charge point)
- Budget

- Type of charge point you would like and/or their recommendations
- Existing condition of your electrical installation
- Consumer unit/distribution board condition
- Cable routes/installation

- methods to supply EV charge point
- Load management of the installation (installation maximum demand)
- Smart control of charge point
- Available government grants



Electricity supply:



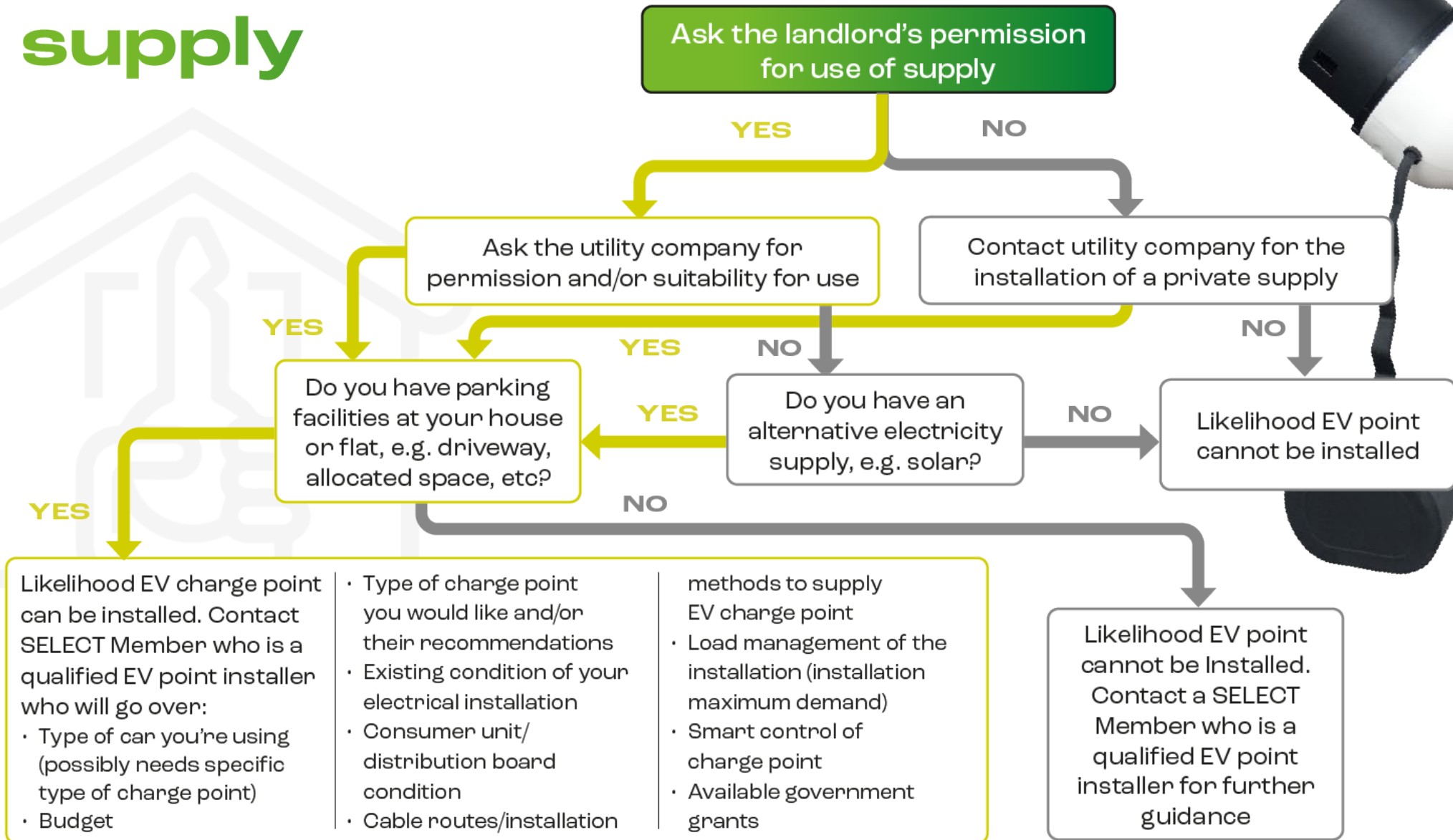
Utility company



Landlord's supply

ELECTRICITY SUPPLY:

Landlord's supply



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HOW CAN
 **SELECT** HELP?

HOW SELECT CAN HELP

- SELECT members are assessed by a UKAS accredited inspection service to a robust membership criteria. This includes requirements for competent and qualified employees and compliance with relevant statutory and industry standards.
- SELECT training now includes a Level 3 Award in Electric Vehicle Charging Equipment Installation / City & Guilds 2921-31.
- SELECT continues to push for regulation of the electrical industry and professional recognition for electricians.

Go to **www.select.org.uk** and find a SELECT Member. If they are a qualified EV charge point installer, and registered for government grants, they will go over:

- Your type of car – it could need a specific type of charge point
- Budget
- Type of charge point you would like, or recommended a type
- Existing condition of your electrical installation
- Condition of your consumer unit/distribution board
- Cable routes/installation methods to supply EV charge point
- Load management of the installation, i.e. the installation maximum demand
- Smart control of charge point
- Available government grants

BENEFITS OF USING A SELECT MEMBER

- Nearest contractor can be located via SELECT website
- Annually inspected
- Insured
- Training
- Complaints procedure
- Technical advice
- Industry recognised trade association, with more than 120 years of experience



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ANY QUESTIONS?

WOULD YOU CONSIDER BUYING AN EV IN THE NEXT THREE YEARS?

- Yes
- No
- Undecided



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THANK YOU

 **SELECT**



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