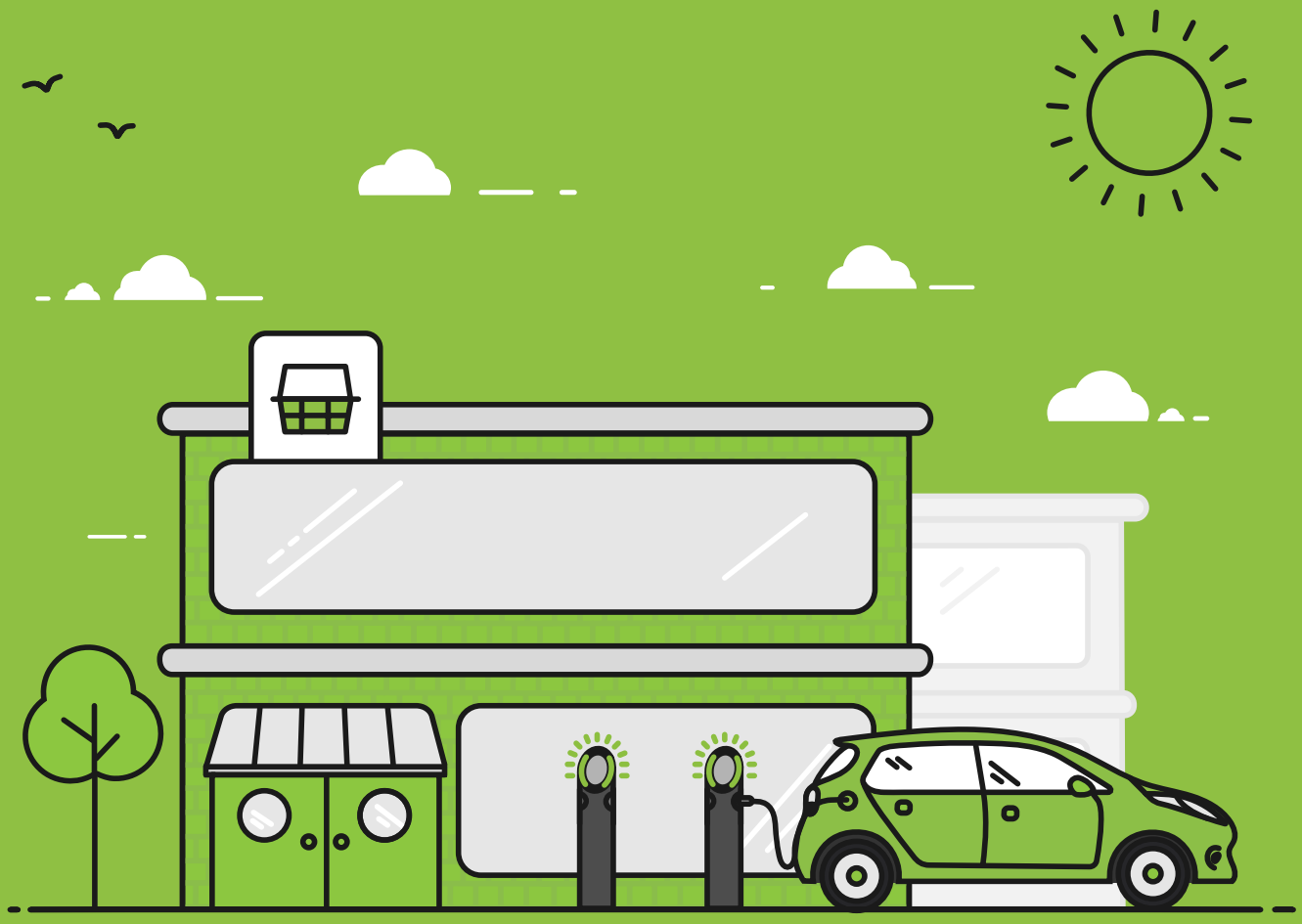
Pod Point
Commercial Whitepaper



pod POINT

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1. Introduction

“Electrification is as sure as death and taxes.”

Dr. Andy Palmer, CEO of Aston Martin

The world is undergoing a transport revolution, with environmental concerns, government policy and advances in technology all playing a role in the switch to electric vehicles (EVs). As of the end of December 2018, there were around 202,000 plug-in vehicles on UK roads[1], but uptake is increasing rapidly. And, to help meet carbon emission targets, the Government has pledged to phase out sales of new petrol and diesel cars by 2040.

EV charging represents a business opportunity for destinations that are frequently visited by drivers. While it’s true that most EV drivers charge at home[2], 78 percent regularly top-up their charge at publicly accessible locations[3].

Businesses that have installed EV charging for public use have reported a wide range of benefits, including new revenue streams; new visitor attraction and retention; increased dwell times and basket spend among chargepoint users; an enhanced customer experience; standing out from local competition and meeting sustainability commitments[4].

Analysts predict that the UK will need more than 100,000 publicly accessible EV chargepoints by 2020, to meet the needs of up to one million EVs[5], an increase of 81,315 on the number currently in the ground[6]. By 2030, with the number of EVs forecast to hit 7.7m[7], we estimate that more than 1.5m public chargepoints will be required to meet demand.

1. https://www.nextgreencar.com/electric-cars/statistics/
2. https://www.ofgem.gov.uk/system/files/docs/2018/07/ofg1086_future_insights_series_5_document_master_v5.pdf
3. Zap Map EV charging survey 2018
4. http://www.managingagentspartnership.co.uk/savills-rolls-out-electric-vehicle-charging-points-shoppers
5. A Sustainable Future Preparing for Electric Vehicles, Emu Analytics
6. https://www.nextgreencar.com/electric-cars/statistics/&sa=D&ust=1547750619969000&usg=AFQjCNFhVhm_RPavlnDftUwAjlK-kdLezw
7. Mobility 2030: Investment in EV Infrastructure, KPMG
https://assets.kpmg/content/dam/kpmg/uk/pdf/2018/08/mobility-2030-investment-in-ev-infrastructure.PDF

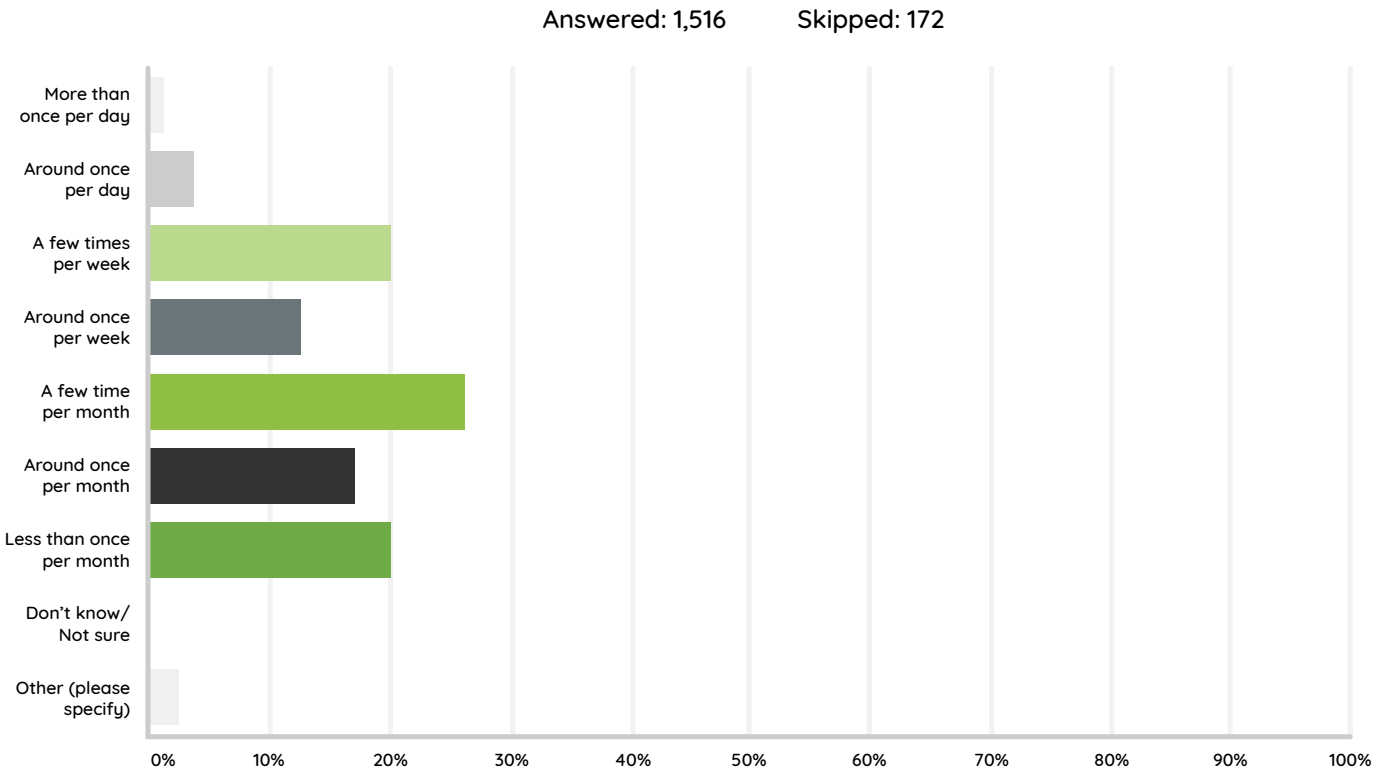
This white paper explores the benefits of providing EV charging for public use and provides a guide for those considering investing in this technology.

> **Editor's note:** For the sake of brevity, we've assumed some knowledge of EV basics. Absolute beginners need not despair, however: at the end of this white paper there is a list of useful links for more in-depth information on specific areas.

"The number of drivers switching to EVs is increasing exponentially. These drivers need access to public charging as they go about their lives, and we need to make sure we're meeting the needs of this particular group of customers."

Dave Lees, Managing Director of Southampton Airport

Q20 How often do you typically use public EV charge points?



In a survey of 1,516 EV drivers, conducted by Zap Map, approximately 60 per cent of respondents said they use public EV chargepoints multiple times per month.

2. Understanding the opportunity

While some chargepoint owners - known as hosts - set a tariff for usage of their chargepoints, these revenues comprise just one element of a wider commercial opportunity. In fact, the benefits of providing EV charging for customers are so broad ranging that some hosts, including major supermarkets, provide charging at no cost to customers.

So why would any business invest in EV charging and choose to give away free electricity? The simple answer is that these businesses find that the benefits of providing EV charging outweigh their initial investment, along with the ongoing energy costs.

"We're always looking to give our customers more reasons to visit our pubs and free charging is a popular incentive for the growing community of EV drivers."

Jonathon Swaine, Managing Director of Fuller's Inns

Some of the many benefits include:

Visitor attraction and retention

For competitive sectors like supermarkets or retail, EV chargepoints can be effective as part of a strategy to gain market share. In a survey of Pod Point's own database, which generated 3,818 responses, 76 per cent of EV drivers said they would switch supermarket brand if EV chargepoints were available.

EV drivers report that they actively select destinations based on whether they can charge, with a survey showing that 87 per cent sometimes or always change their habits to find a chargepoint[8]. Drivers find the chargepoints using specialist mapping apps for EV drivers, which include Zap Map and Pod Point's own app, while Google maps added some public charging networks, including Pod Point's, to its listings last year.

8. https://www.zap-map.com/zap-map-survey-reveals-workplace-ev-charging-gap/

“We know our customers are increasingly moving towards electric vehicles, offering charging while they shop is another little help to make their lives easier.”

Jason Tarry, CEO of Tesco UK and Ireland

Dwell times and basket spend

Research conducted among chargepoint hosts suggests drivers using public chargepoints have longer than average dwell times. This was demonstrated in a study by Savills of 29 retail sites, which found that chargepoints users spent an average of 1.5 to 2 hours on site, significantly more than the average of less than one hour[9]. Increasing dwell times is known to have a positive impact on basket spend[10].

New revenue streams

Chargepoint hosts can set a fee for usage, thereby opening up new revenue streams. Some hosts will set fees that are designed to cover costs, while others - particularly those located close to major motorways, where drivers may need to charge urgently en route - find that they can charge a premium for chargepoint usage and thereby generate profit.

Customer experience

Customers are demanding more from the destinations they visit. Providing visitors with EV charging that they can use while shopping or enjoying the chargepoint host’s facilities is a powerful way to add value and stand out from local competition. As EV charging is likely to be the driver’s first and last experience at the host’s destination, it is important to ensure chargepoints are easy to use and accessible for all, with transparent pricing (if setting a tariff) and without the hassle of third party membership schemes.

Sustainability commitments

Installing EV chargepoints can help businesses comply with sustainability schemes, such as the Energy Savings Opportunities Scheme (ESOS), which is mandatory for large organisations. There are a number of other sustainability schemes that award credits for installing EV charging, such as the Carbon Reduction Commitment (CRC), ISO 50001, the Carbon Trust Standard and the Building Research Establishment’s Environmental Assessment Method (BREEAM).

9. http://www.managingagentspartnership.co.uk/savills-rolls-out-electric-vehicle-charging-points-shoppers
10. http://pdf.euro.savills.co.uk/uk/commercial-retail-uk/spotlight-retail-revolutions-2017.pdf

Furthermore, studies have found that consumers are becoming more concerned about environmental issues. A survey by Unilever of 20,000 people in UK, US, India, Brazil and Turkey revealed 30 per cent of respondents made purchasing decisions based on environmental and social considerations. One in five said they would actively choose brands if they made their sustainability credentials clearer on their packaging and in their marketing[11].

"The future of car travel is electric and so it makes perfect sense for us to offer EV charging to our customers. It's also a good fit with our commitment to the environment."

Simon Williams, Commercial Director of Bridge Leisure

Compliance

Increasingly businesses involved in development, or major refurbishment of their facilities will find themselves compelled to install chargepoints through planning conditions. These conditions usually mandate the provision of a percentage of "active" (i.e. installed) chargepoints and/or "passive provision" (the cabling and supply to support future chargepoints) to cover a percentage of the bays in a car park.

Existing frameworks and planning conditions include:

- The Government's National Planning Policy Framework (NPPF):
  - Provides direction to ensure local authorities fully consider adequate provision of chargepoint infrastructure in new developments.
  - Guidance expected in mid 2019 to help define 'adequate provision'.
- European Energy Performance of Buildings Directive:
  - One chargepoint and ducting infrastructure for at least 1 in 5 parking spaces for new non-residential buildings with more than 10 car parking spaces.
  - The installation of a minimum number of recharging points for all non-residential buildings with more than 20 car parking spaces.

11. https://www.unilever.com/news/press-releases/2017/report-shows-a-third-of-consumers-prefer-sustainable-brands.html

3. Getting the right kit

Charger types and speeds

There are a range of charger types and speeds available. The right charging mix for each business will depend largely on the average dwell times of visitors.

Take, for example, a service station, situated close to a major motorway, which attracts EV drivers who urgently need to charge while undertaking a long journey. Dwell times are typically under 30 minutes and charging is the primary objective of EV drivers that visit. While there, drivers want to stretch their legs, perhaps grab a coffee, but otherwise be on their way as quickly as possible. In this scenario, a rapid charger, (43kW+) would be the best fit.

In another, very different scenario, a shopping centre is visited by EV drivers who typically spend 5-6 hours browsing the various retail outlets. At this destination, charging is a secondary activity for EV drivers, which takes place while they enjoy the facilities on offer. In these circumstances there is no requirement for urgency and a 7kW chargepoint could meet the needs of most EV drivers.

The table below summarises the different charging options available for hosts:

Trickle charger (<3kW)	**Fast charger (7kW-22kW)**	**Rapid charger (43kW+)**
Charging from a domestic 3 pin socket	Found in homes, workplaces and public car parks	Frequently found at motorway services and some supermarkets
Typically adds around 7-10 miles range per hour	7kW adds 20-30 miles of range per hour 22kW adds 60-90 miles of range per hour	A 50kW rapid charger adds around 125-180 miles of range per hour
Not suitable for public charging	Suited to destinations with dwell times from c.45+ mins	Ideal for destinations where dwell times <45 mins

Pricing strategies

There is no one size fits all pricing strategy for chargepoint hosts. Businesses can seek to drive customers to their premises by providing charging at no cost, or look to monetise chargepoints by setting a tariff for usage.

Below is a summary of the main pricing strategies available to chargepoint hosts:

Loss leader	**Cost recovery**	**Profit making**
Charging is provided at no cost to visitors	The host sets a tariff for chargepoint usage, to recoup its investment/ and or to cover its electricity costs	The host sets a tariff for usage that over time will exceed the cost of installation and usage
Popular with EV drivers. Can build brand loyalty, increase footfall, dwell times and basket spend	Makes EV charging more feasible for businesses with smaller budgets	Opens up a new revenue stream from EV charging
Popular with many national supermarkets and retail parks	Popular with car parks and some hotels	Best suited to businesses in areas where drivers need to charge urgently and will pay a premium

Chargepoint hosts can also implement a hybrid pricing model to discourage overstaying or peak usage. This enables businesses to get the benefits of the loss leader model, whilst being protected against abuse, or unhelpful usage of the chargepoints.

It's advisable to work with a chargepoint provider that has a back-end, smart reporting system, which can be used to collect data from chargepoints, set tariffs or dynamic pricing and monitor utilisation. A good provider can help businesses to understand the typical usage profile of their sites, along with the chargepoint and pricing strategy that's the best fit.

4. Getting charging right for drivers

EV drivers have strong preferences when it comes to public charging, and equally strong dislikes.

A survey by Zap Map of 1,688 drivers in 2018 found they most frequently valued **chargepoint reliability, ease-of-use** and **competitive pricing** on a per kWh basis, along with contactless payment for rapid chargers[12].

Poor reliability, unit communication issues, and higher-than-average charging costs were the respondents' main bugbears.

As EV charging is usually a driver's first and last experiences of a certain destination, it's vital that any charging provision enhances the customer experience, rather than detracting from it.

Here are a few factors that can help make charging hassle free for drivers:

Reliability:

- There should be sufficient chargepoints to meet or exceed demand to ensure drivers are likely to find an available charging connector.
- If a driver has any type of issue, it's important they can reach someone from the charging network to help them resolve it quickly.
- It's advisable for hosts to find out what customer service provision is offered by their prospective chargepoint provider along with the average uptime of their public network.

Ease of use:

- Chargepoints should be well signposted and easy for drivers to find.
- Third party membership schemes can become a hurdle preventing a simple EV charging experience. As such they tend to be unpopular with drivers.
- Drivers don't want the hassle of obtaining RFID cards to use chargepoints, particularly when they are all already carrying a smartphone.

12. https://www.zap-map.com/zap-map-survey-reveals-top-ev-charging-networks/

- Some chargepoints, including those provided by Pod Point, begin charging the EV as soon as it is plugged in, giving the user 15 minutes to open the app on their smartphone and claim their charge. If the charge is not claimed, the chargepoint will cease to provide electricity after 15 minutes.

Competitive pricing

As covered earlier in this document, there is no one size fits all solution when it comes to pricing. This is where the right chargepoint provider can prove invaluable, by using their experience of the market to recommend an appropriate pricing structure.

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5. Practical stuff

Placement, Signage and Enforcement

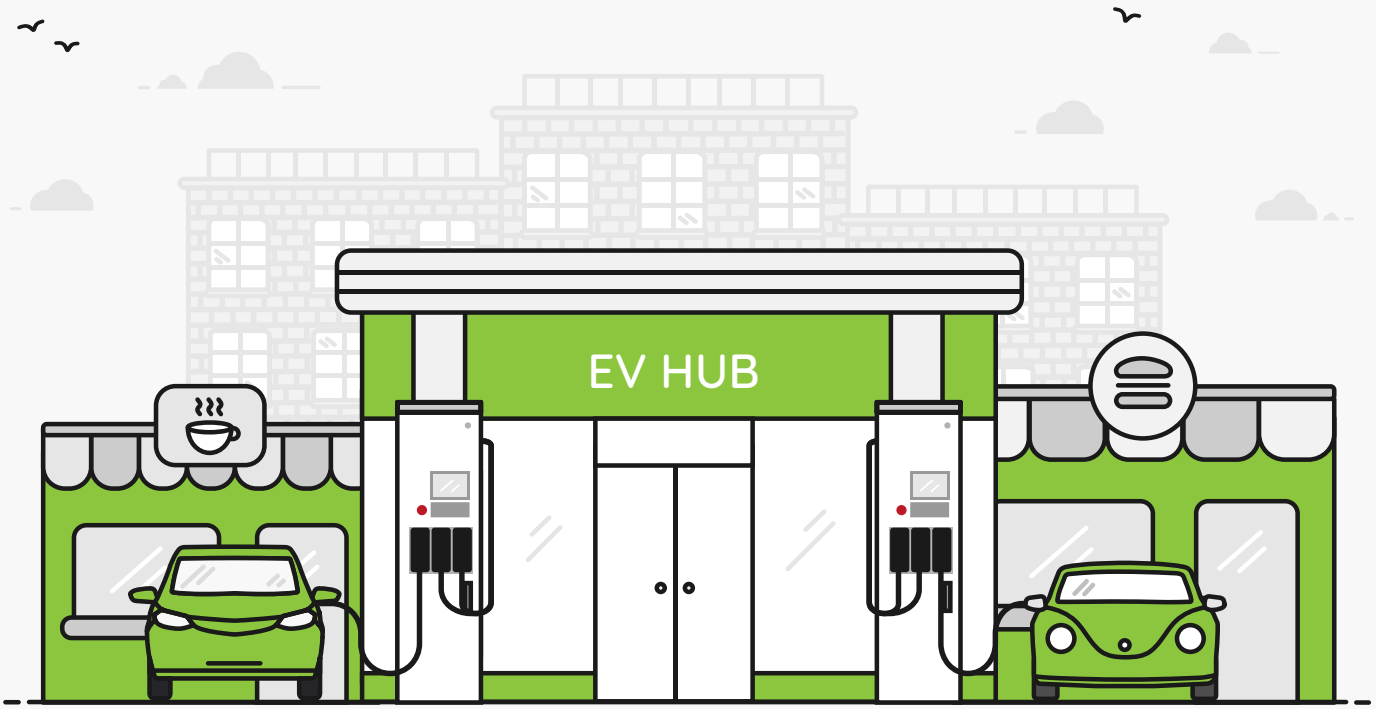
While installation costs will typically be minimised by installing chargepoints near to the available supply, choosing the best location within the car park will help ensure chargepoints are always available to customers. Here's a few things to keep in mind when deciding where to place them:

- Installing chargepoints at the front of a car park means they are much more likely to be blocked by non-charging drivers. Unless it's feasible to implement and enforce policies to discourage non-charging drivers from blocking the bays, it's advisable for chargepoints to be located elsewhere.

- Creating clearly signed EV Zones with appropriate bay markings and signage makes the the chargepoints visible for drivers, while making it clear to other drivers that they should park elsewhere.

- Clearly signpost the chargepoints/EV Zone from the entrance of your business.

- Enforce penalties for non-electric vehicles parking in chargepoint bays. This is not only effective but shows the EV community that your business supports them.



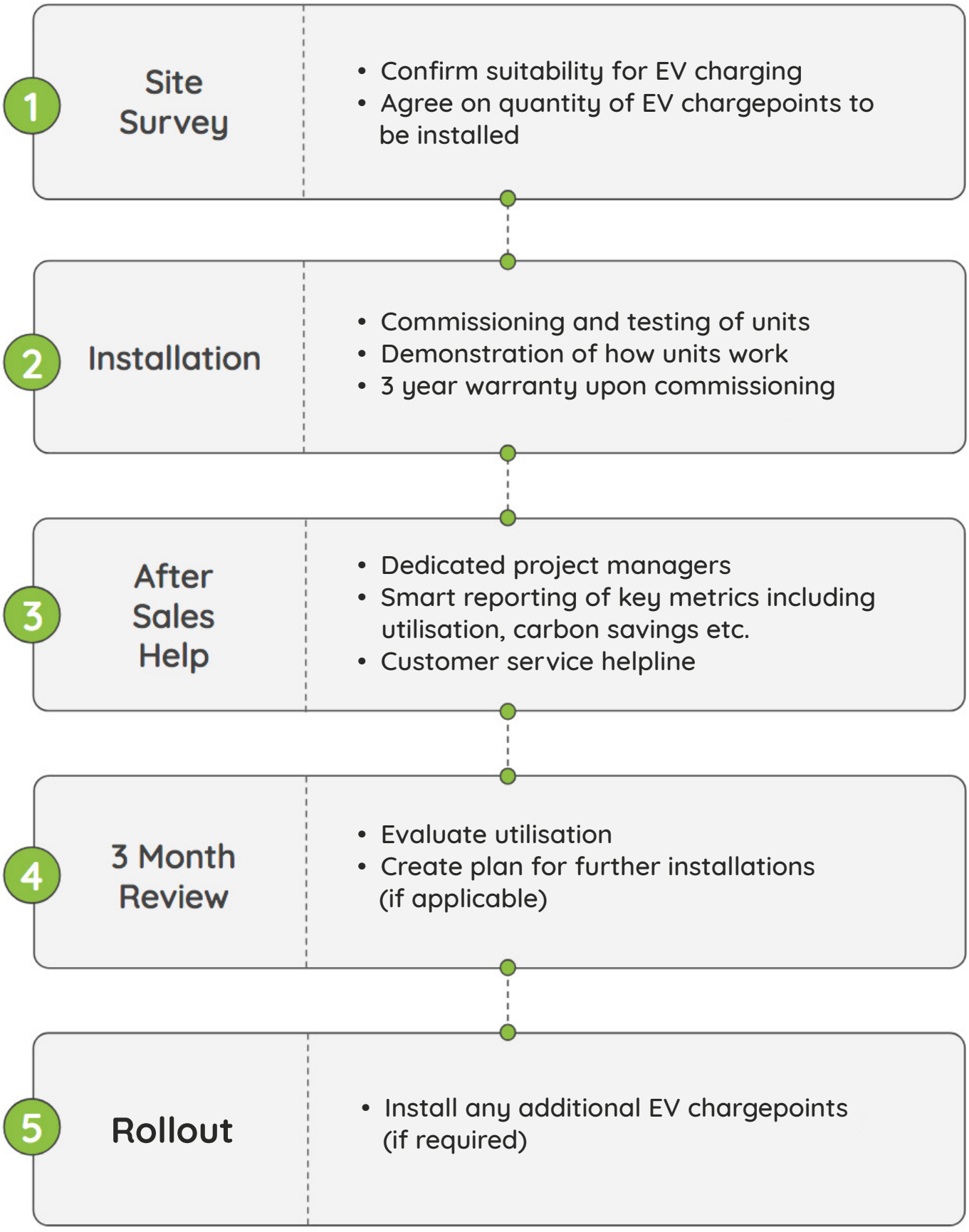
Installation procedure

Power supply

Whichever chargepoint solution you choose likely needs to work with your available electrical supply. It is possible to upgrade the site supply, but this is typically very expensive, time consuming and worth avoiding wherever possible. Some chargepoint providers, including Pod Point, offer load balancing systems that can optimise a site's existing power supply by distributing the available power proportionally across all the charging stations. In this way, more chargepoints can be installed without the need for costly infrastructure upgrades.

Installation process

The exact install process will vary with each chargepoint provider and in line with the requirements of each project. On the next page is a breakdown of an example installation project:


1
Site Survey
• Confirm suitability for EV charging
• Agree on quantity of EV chargepoints to be installed
2
Installation
• Commissioning and testing of units
• Demonstration of how units work
• 3 year warranty upon commissioning
3
After Sales Help
• Dedicated project managers
• Smart reporting of key metrics including utilisation, carbon savings etc.
• Customer service helpline
4
3 Month Review
• Evaluate utilisation
• Create plan for further installations (if applicable)
5
Rollout
• Install any additional EV chargepoints (if required)

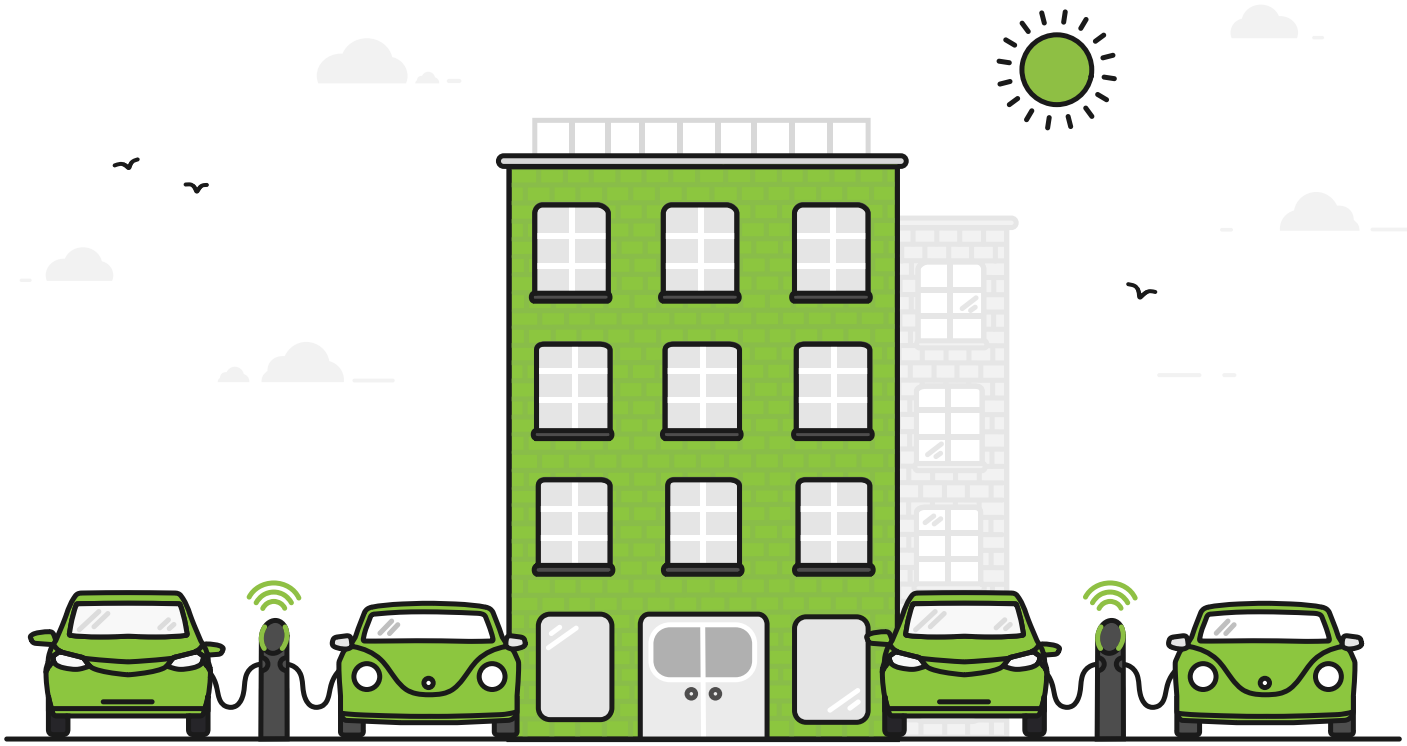
6. What happens now

We hope this document has provided a good overview of EV charging, and what's involved. There's a lot to take on board for newcomers, and it's nigh on impossible to cover everything in one document (believe us, we've tried).

So please do check out the Pod Point website, which has a wealth of information and advice on all aspects of EV charging. And, if Pod Point can be of any further assistance, please speak to our specialist team.

"The service that Pod Point have provided to date has always been to a high standard. So much so that we felt comfortable signing a three year exclusivity agreement with them in 2017."

Jase Booker, Head of Environment, Govia Thameslink



7. Further reading

What's driving electric vehicles

Fully Charged Barriers to Mass Adoption with Erik Fairbairn

Bloomberg New Energy Foundation (BNEF) Electric Vehicle Outlook 2018

7 Reasons You'll Be Buying An EV Within 5 Years

How to...

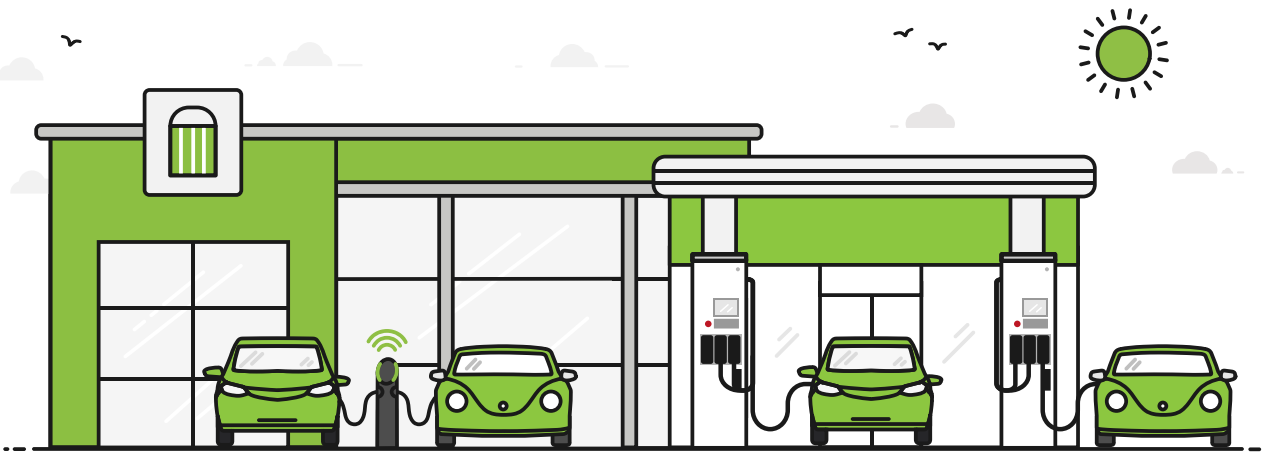
Charge an electric car

Charge an electric car on the go

How long EVs take to charge

Products

Pod Point's Commercial Charging Solution



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