

Destination Electric Vehicle Charging

Everything you need to know about providing electric vehicle charging for your customers.

Introduction:

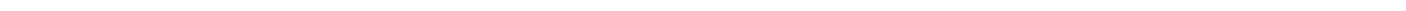
The electric vehicle market (EV) is expanding rapidly with sales of plug-in cars doubling between 2014-2015. For any business that provides customer parking, the installation of plug-in vehicle charge points provides a variety of lucrative opportunities to access this new market segment and retain current customers.

With the increasing demand for EVs comes an increasing demand for charging infrastructure. In the same way a hotel guest or coffee shop customer expects access to WiFi, EV drivers expect to charge wherever they park for an hour or more.

This whitepaper tells you everything you need to know about installing electric vehicle charging for your customers or users of your parking spaces.

By the end you'll know all about:

- The electric vehicle industry & profile of EV drivers;
- The commercial benefits of installing chargepoints;
- Key considerations when choosing a provider.



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Industry Background & Growth Prospects

Industry Background & Growth Prospects

There is Exponential Sales Growth of Plug-in Vehicles

Plug-in vehicle (PiV) sales have increased 10-fold since first being introduced in the UK four years ago (Fig. 1).

In 2015 nearly 30,000 plug-in vehicles were sold compared to 2,364 in 2012. This is an increase of over 1200% and sales are still climbing.

The Consumer Choice for Plug-in Vehicles is Growing

There are already over 35 different electric and plug-in hybrid vehicles on sale in the UK from most major manufacturers.

These include BMW, Mercedes, Audi, Volkswagen, Nissan, Renault, Volvo, Tesla, Mitsubishi & Nissan. This increased choice has contributed to plug-in vehicles now accounting for nearly 2% of all new cars sold (Fig. 2).

Future Sales Projection

The Department for Transport and the EU forecasts that the UK will add 2 million plug-in cars by 2020. This would be a significant increase to around 19% of new cars sold (Fig. 3).

This means that in 4 years time, 1 in every 5 cars sold will be electric, with drivers expecting to find charge points at their frequented destinations.

Exponential Plug-in Vehicle Sales

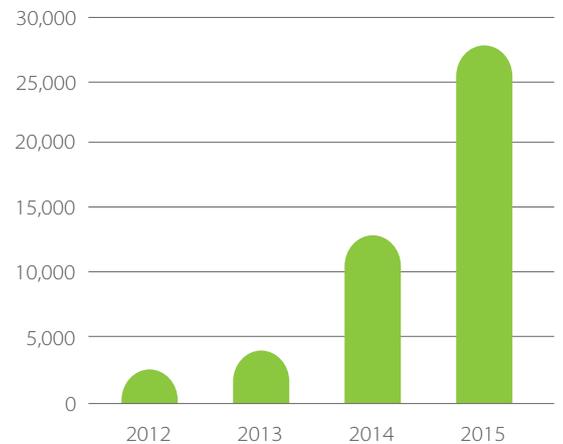


Figure 1

EVs as % of New Car Sales



Figure 2

EV Projection as % of New Car Sales

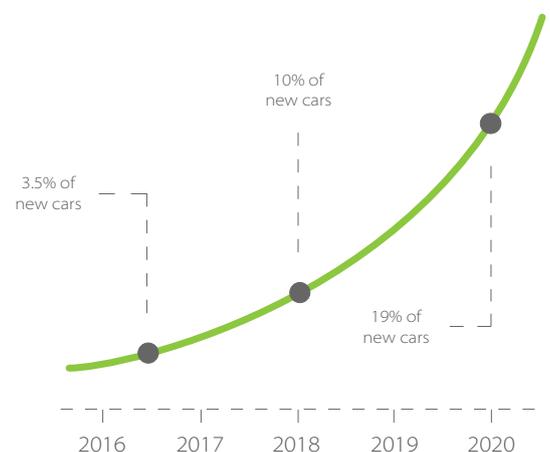


Figure 3

Industry Background & Growth Prospects

Difference between Refueling and Charging

With an internal combustion engine, we are used to driving around until near empty before taking a detour to the petrol station. Charging an electric car on the other hand is seamless and hassle-free. Electric car charging operates on a top up model, which means topping up your battery every time you stop for an hour or more – be that at your home or any other destination frequently visited such as a supermarket, gym or hotel – with drivers often topping up multiple times throughout the day.

While we think of cars as mobile objects, in reality they spend 95 percent of their time stationary. That's 22 hours of the day on average spent idle. With electric cars, drivers utilise parking time to charge their battery, safe in the knowledge that it will be full when they return. Inherent in this behaviour is the expectation that there will be charge points at the places they park.

Plug-in Vehicle Charging Times

Charging Speed	Use	Power Rating	Miles of range per hour (RPH): *
Trickle	Home - 3 pin plug	<3kW	Up to 10 miles RPH
Slow	Home - chargepoint	3.7kW	Up to 15 miles RPH
Fast	Typical destination and work	7kW - 22kW	30 - 80 miles RPH
Rapid	Motorway service stations	50kW - 120kW	Full charge 15 mins to 1 hr

*Industry averages.

Industry Background & Growth Prospects

The Existing Public Charging Network In the UK

As of 2016, there were over 10,000 publicly accessible chargepoints across the UK, operating at around 3,700 different locations.

Trickle / Slow Charging Points - 22%

Around 22% are trickle or slow charging points (<3-3.7kW). These top up an EV with up to 15 miles of range per hour of charge. They are ideal for locations offering overnight charging but can frustrate drivers if they are trying to top up during the day due to their slower speed.

Fast Charging Points - 59%

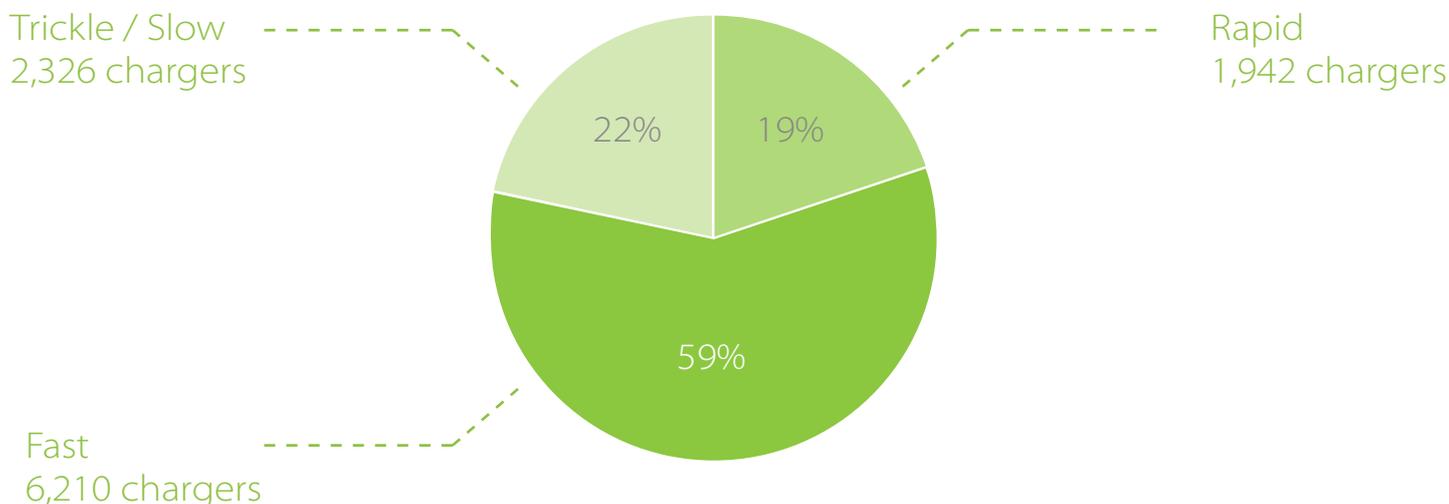
About 59% of these points provide fast charging (7-22kW). These points top up an EV with around 30-80 miles of range per hour of charge.

Fast charging points strike the right balance between cost and convenience for EV drivers. From a business perspective, fast chargers are moderately priced and easy to install.

Rapid Charging - 19%

About 2,000 of those are rapid charging stations, able to provide up to 120kW of power and provide an EV with about 200 miles of range per hour. Most rapid chargers are found on motorway service stations and are suitable for long-range driving when drivers are under a time constraint.

Rapid chargers, however, consume a large amount of power and therefore are very expensive to purchase, install and maintain (generally costing in excess of £15,000).



EV Driver Profile

Who drives an EV?

- 70 percent of EV drivers belong to A or B sociodemographic groups.*
- Over 90 percent of drivers are male.*
- Nearly 60 percent are aged between 36-55.*

*Study by POD Point in 2015 with 300 EV drivers.

What do they look for when deciding where to charge?

- Highly reliable, easy-to-use charge points that are smartphone app enabled.
- They don't wish to be tied up to memberships and subscriptions.
- They strongly approve of parking restrictions so that non-EVs don't block spaces dedicated to charging (this is known as "ICE'ing" because the space is blocked by a vehicle with an internal combustion engine).

Where are they active?

- Many EV drivers are active on internet forums such as [Speak EV](#) and social media channels like Facebook and Twitter.
- They use these channels to share information about new chargepoint installations or simply provide updates on recent places they've stopped to charge at, often with photos.
- This provides a great opportunity for continued exposure to the host site of the charge points they have visited.

How much do EV Drivers expect to pay?

- One of the main things that drivers ask for is equitable pricing.
 - A survey of more than 300 EV drivers conducted by POD Point in 2015 reported that over 70% of drivers were happy to pay at least £1 or more per hour for charging in places they visit regularly.
 - 40 percent of participants were comfortable with paying £2 or more, while 8 percent were still willing to pay £5/hour to use rapid chargers while on-the-go.
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Commercial Opportunity and Benefits

Commercial Opportunity and Benefits:



1. Attract and Retain Customers

EV drivers make decisions on where to shop, park and stay based on the availability of charging facilities because they need to be able to top up their vehicles. The main issue drivers currently face is a lack of publicly accessible charging infrastructure that they can use when they are away from home.

Businesses with public chargepoints have a unique opportunity to attract and retain this new market segment. By providing chargepoints, your business is strongly incentivising plug-in vehicle drivers to choose you over a competitor.



2. Reward Loyal Customers

Another benefit is the ability to reward loyal customers and members with free or discounted charging at your business. This can strengthen customer loyalty and increase dwell time with customers who are already loyal to your business.

There are countless possibilities to integrate 'EV-charging-as-a-reward' with existing business objectives. For example, a British homeware store offers free EV charging for customers that have signed up and used their new customer app. In this case, EV charging is used as a reward to increase user acquisition for their new app.



3. Increase Dwell Time

Numerous studies have confirmed the improvement in customer dwell time when drivers are charging their EVs at their favourite destinations. Most notably, US discount retailer Target conducted a nine-month trial with 12 EV charging bays at one of their major outlets in California. During that period, there were 1,100 unique charging sessions by customers shopping at Target.

EV drivers spent an average of 70 minutes charging per visit which resulted in an increase of 50 minutes to the average customer dwell time. These new customers spent almost an extra hour at Target browsing, shopping and enjoying themselves. As a result of this trial Target decided to rollout EV charging facilities across another 80 stores in the US.

For full details of the study, [click here](#).

Commercial Opportunity and Benefits:



4. Improve your sustainability rating

Implementing EV charging at your business helps promote your company as a leader in sustainability and lets your customers choose a more sustainable method of transport. Some sustainability ratings now even require EV charging as a condition of certification.

For example, Green Tourism, the largest sustainable certification programme for businesses, counts EV charging as one of the factors considered when awarding green certification to an organisation. By doing this it helps conscious consumers, not only EV drivers, choose to visit the leading hotels, attractions, restaurants and shops that are officially certified as sustainable venues.



5. Positive Brand Image

Providing EV charging at your business improves your brand reputation among employees and customers alike. A recent report on brand perception by research agency *Wavelengths Consulting* asked drivers whether they thought certain businesses cared about more than just making money.

The number of drivers who agreed with the statement increased by 26% when they were made aware that the company actively supported and invested in EV charging for their staff and customers.



6. PR and Marketing Opportunities

Electric car charging is something to shout about and share. The installation of EV charging is reported in the press, blogged, tweeted, shared and liked online all the time. Drivers are very supportive of locations that choose to install charge points and often show support on social media.

This means that there are numerous and sustained opportunities to raise awareness about your brand or business, both online and offline. The advocacy or coverage you gain can be invaluable for both brand perception and attracting new customers.

Commercial Opportunity and Benefits:



7. Create a New Revenue Stream

EV charging can be a revenue generating investment. By charging drivers an hourly or daily usage fee your business can monetise your charging network. This revenue stream can be used to break-even on electricity costs associated with charging or to recoup your investment in chargepoints. Beyond that, it may also be used to generate revenue.



Free



Electricity Cost
Recovery



Total Cost
Recovery



Profit
Making

Payback Period

Below are two payback models for installing EV charging for your business (i.e. how many years it would take to recoup your investment via chargepoint usage alone) .

This model considers installing 2 x dual charging points (suitable for charging up to four electric cars at once).

Avg. Unit cost:	±	£3,500
Avg. Install cost:	±	£4,000
Avg. Total:	±	£7,500

Short Stop

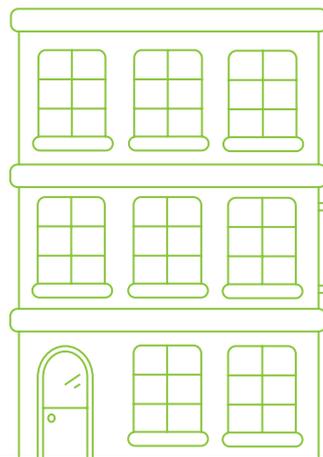
£1.5/hour for average of 2 hours charging per day

Annual energy cost:	-£2,000
Annual revenue:	£4,400
Annual profit:	£2,400
Payback period:	3 years 1 month

Overnight stay

£5 fixed fee for overnight charging

Annual energy cost:	-£4,100
Annual revenue:	£7,300
Annual profit:	£3,200
Payback period:	2 years 4 months



Key Considerations

Below are the most important things to consider when selecting an EV charging solution in order to ensure the best experience for both you and your customers or car park users.



1. A Networked Solution

Considering a networked EV charging solution that can be centrally managed, tracked and scaled can help you save time and work. Networked solutions record usage data and manage access and fees remotely via centrally managed backend management software.

A centrally managed solution will reduce support costs associated with managing the network as it grows; by using a solution that can be managed using a single piece of software, your UK-wide network can be managed by a single administrator. Additionally the data provided helps businesses optimise their network for maximum efficiency.



2. Accessibility

EV charging needs to complement the customer experience and not detract from it. Outdated charge points use tags and physical keys (like RFID cards) to allow your customers to access a point. Equally, some networks require a subscription payment or membership.

Physical access keys have a propensity to fail and come with a large support overhead as they need to be issued, maintained and replaced. Token or coin operated points need to be manually emptied by the host site once full. Additionally, mandatory membership or subscription fees lower the quality of the user experience because they restrict the ability of drivers who are new or occasional users of the network to easily start charging.

Businesses should also consider smartphone-enabled chargepoints that can be initiated via a mobile app. This model comes with several benefits. Firstly, it allows the business to track usage on their network in more detail. Secondly, it also enables a business to collect revenue should they wish to monetise their network. Finally, it ensures a reliable and easy-to-use experience for drivers.

Key Considerations



3. Revenue Generating Capabilities

If you do not want to offer free charging or think you may want to charge a usage fee in future, then it's important to think about a solution that supports this. This usage fee could be used to cover costs or generate profit. The best solutions available not only allow you to set and manage tariffs, but also offer functionality to create custom revenue models based on user type, access time and location. Revenue models should be easily configurable by your business via a backend management system.



4. Option to Lease Hardware

Some solution providers offer the ability to lease your chargepoints over a 3-5 year term. Leasing lets your business spread the cost of infrastructure rather than an upfront investment. This reduces the capital expenditure required to install chargepoints and keeps cash within your business. Leasing also provides the opportunity to upgrade your charge points on renewal rather than having to reinvest in new technology every 3-5 years.



5. Engaged Network User Base

Not all chargepoint networks are created equal. Consider a charging provider that offers access to a network of engaged EV drivers who favour that network. The right chargepoint provider will have a strong reach into, and ability to communicate with, the EV community and hold a leadership position in the industry.

The provider will be able to use their relationship with the EV community to promote your location and its new charging facilities.

Key Considerations



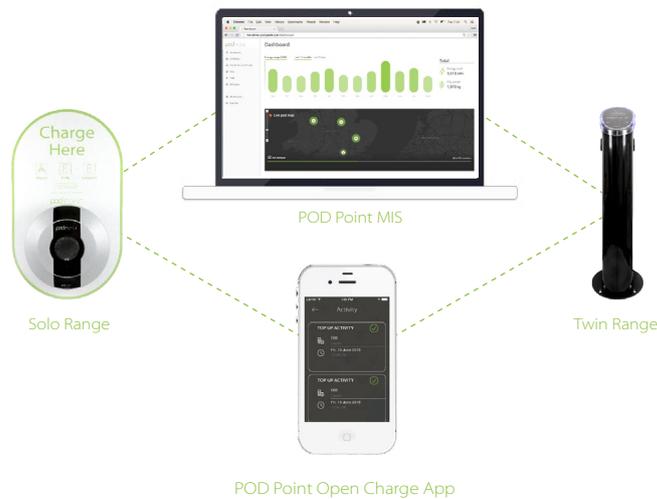
6. Dedicated Support

Finally, an often overlooked consideration is choosing a provider that has a dedicated support function. This ensures that should you ever have an issue, you can get it resolved quickly. Perhaps more importantly, it also means that your customers are receiving instant support at the point of charge, should they need it. This is a key component of creating a positive charging experience for drivers and reflects well on your business.

About POD Point

POD Point provides the industry's most advanced solution for customer EV charging. We provide networked charging stations to some of the UK's largest organisations, including: Sainsbury's, David Lloyd and National Trust.

POD Point's destination charging solution includes smartphone-enabled, networked charging with three-year on-site warranty. It's a centrally managed solution that seamlessly scales as your network expands.



Your network is easily connected via the POD Point MIS, the industry's most advanced backend platform for easily managing your charging infrastructure. Using the POD Point MIS your business can manage access, monitor usage and efficiency, set pay-as-you-go pricing, and much more.

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