

# Take Charge

## An analysis of the domestic electric vehicle tariff market

**citizens  
advice**



### Future Energy Consumers

Our Future Energy Consumers programme explores how consumers might use energy products and services in the future, and how markets and regulation need to change to meet their needs.

## Introduction

Electricity tariffs tailored for electric vehicle (EV) owners are on the rise, as the number of EVs on our roads increases. Most of these EV tariffs offer specialised features to new customers, which include a range of ways to help EV owners save money when it comes to charging their EV.

As this tariff market grows, it becomes increasingly important to understand EV owners' experience of these tariffs and identify any problems they may have.

Citizens Advice has the statutory responsibility for representing energy consumers in Britain. We want to ensure that changes in the energy market are built around people's needs and their behaviours.

For this research, we analysed information available online to establish what tariffs are available to EV owners, whether they are good value for different types of EV drivers and energy users, and if certain customer groups are excluded from the potential benefits.

## What is an EV tariff?

EV tariffs are charges for supplying electricity that are marketed towards EV drivers, or are only available to people with a pure electric vehicle or plug-in hybrid.

These tariffs can be used with a single rate meter (where you pay the same price for electricity throughout the day), or an Economy 7 meter (which offers seven hours of cheaper electricity during the night).

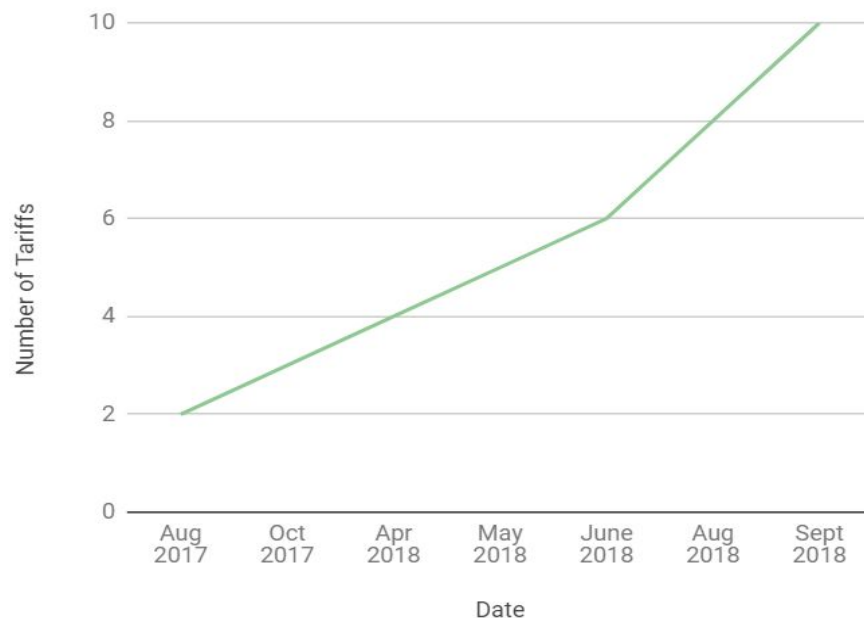
There are also, what we call here, smart Time of Use tariffs, which use smart meters and charge multiple different prices throughout the day.

# Why is this research important?

The UK's EV market is expanding rapidly and is set to keep growing as the Government's 2040 intended ban on the sale of new conventional petrol and diesel vehicles approaches. Figures show that between the start of 2013 and September 2018, there have been more than 178,000 new registrations of EVs and alternatively fueled vehicles.<sup>1</sup>

As the uptake increases, the number of EV tariffs is set to grow and yet little research has been conducted into this emerging tariff market. As more people in Britain become EV drivers, it is increasingly important to understand what energy suppliers are offering to customers. This will help to establish whether there is enough choice and how suppliers are starting to support this new group of energy consumers.

**The number of EV tariffs known to us has increased by 5 times since August 2017\***



\*The data used in this graph was taken from tariff release blogs on zap-map.com<sup>2</sup>

# Market developments

The EV tariff market is both expanding and continuously changing. Energy prices fluctuate and suppliers change bundle offers or release completely new tariffs frequently.

One of the most important changes to this market is the increase in smart Time of Use tariffs. These tariffs charge different prices for energy at different times of the day, offering cheaper rates during periods of low electricity demand. This encourages more people to use electricity at these times - saving people money and helping to take pressure off the national grid.

As the market may be very different in the near future, this analysis will set a baseline from which future changes in the EV tariff market can be tracked.

This report provides a snapshot of the market from September 2018, prices are correct as of this date.

# What we found



As of September 2018, we found that **10 out of the 72 active domestic energy suppliers** offer an EV tariff.



The number of EV tariffs increased **from two** in August 2017 **to 10** in September 2018.



**Half** of the tariffs analysed in this report offer a discount on a **home charger** or **public charge points**, however the value of this discount can vary.



**None** of the tariffs can be used with a **prepayment meter** and few allow for payment methods other than **monthly direct debit**.



**All** the tariffs we analysed come with a **renewable** energy promise.



Tariff prices varied according to supplier and meter type. When we estimated annual energy costs, we found a range of prices from **£811 to £1,442 a year**.



On average it's cheaper for EV owners to have an **Economy 7 (E7) tariff**, which lets them pay less for electricity at night.



To get the most out of an E7 tariff, EV drivers need to charge their vehicles during night time when prices are cheaper.



There are **smart time of use tariffs (SToU)** for EV drivers, but it's difficult to estimate annual costs and compare them to single rate and E7 tariffs because of the absence of smart comparison tools.



An EV tariff is **not necessarily the cheapest** option for drivers, especially for tariffs where the price is the same throughout the day (i.e. a single rate tariff).



Comparing EV tariffs is difficult because they are rarely on **price comparison websites** and the **'extras'** which are part of the tariff bundles can be of **different value** to each customer.

# Methodology

This report is based on original research by Citizens Advice, conducted using desk based research methods to collate information available from online sources in existence at the time of writing. Energy supplier websites were the main sources used to obtain key information about the individual tariffs analysed for this report.

We gathered tariff price information from pricing leaflets received directly from suppliers, or quotes from supplier websites by selecting a sample of postcodes from the 14 different energy regions.<sup>3</sup> Energy prices differ between regions in Britain, so obtaining quotes from every region allowed us to estimate the average price for each tariff.

All tariff information and prices are correct as of September 2018.

The technical appendices explain our calculations in more detail.

# Terms and abbreviations used

**Suppliers:** Companies that sell gas and electricity to households and businesses, and bill them for their energy consumption.

**Tariffs:** The price that suppliers charge their customers per kilowatt hour of energy consumed.

**Single rate tariff:** A type of tariff that charges the same price for each unit of electricity used at any time of the day. For this type of tariff, customers may have a traditional meter or smart meter.

**Smart Time of Use (SToU) tariff:** A tariff that charges different prices for energy at different times of the day. For these newer ToU tariffs on the market, customers need a smart meter.

**Economy 7 (E7) tariff:** The most common, non-smart ToU tariff offers seven hours of cheaper electricity at night. It is mostly found in households that use electric storage heaters. People on this tariff need to use an Economy 7 meter.

**Ofgem:** The regulator for gas and electricity markets in Great Britain.

**OLEV:** The Office for Low Emission Vehicles works to support the uptake of, amongst other things, EVs.

**Electric Vehicle (EV):** A vehicle that is powered by electricity from a rechargeable battery, rather than by a combustion engine using petrol or diesel.

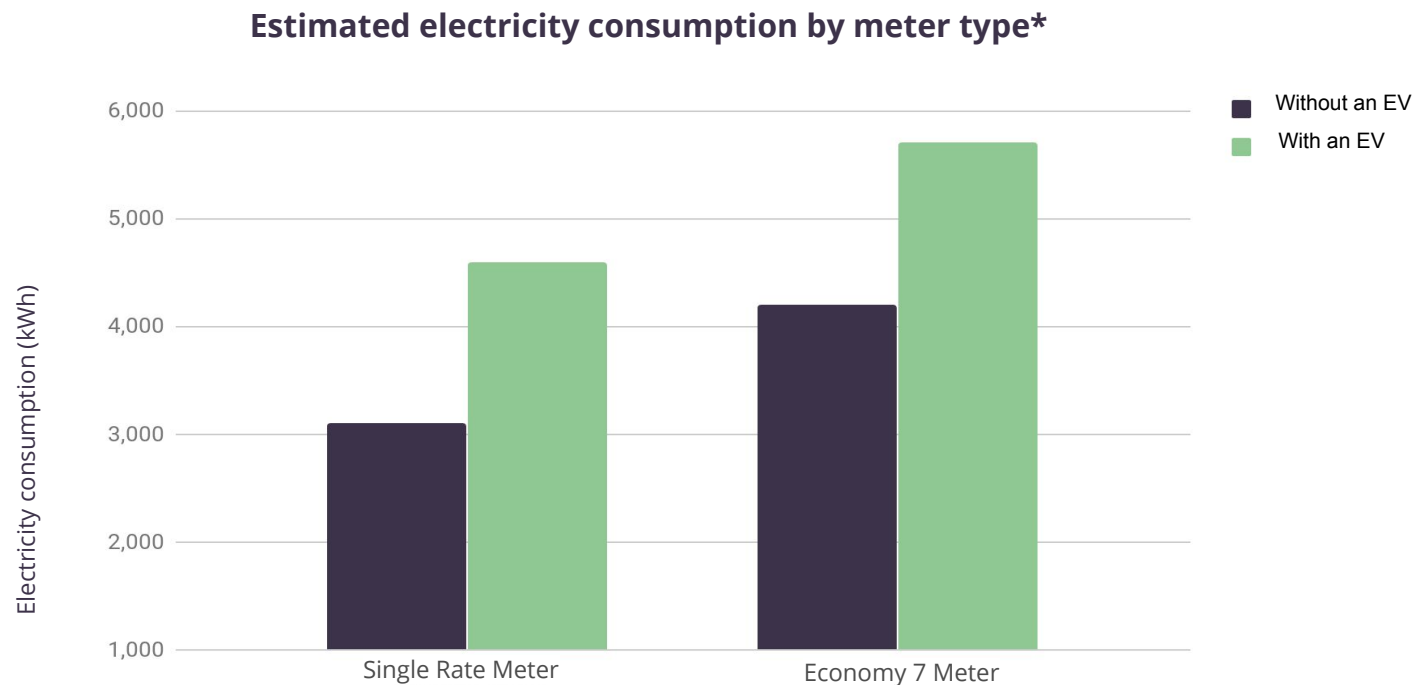
**Plug-in Hybrid EV (PHEV):** A vehicle that is powered by a plug-in rechargeable battery as well as a traditional combustion engine.

**Alternatively Fueled Vehicle (AFV):** A vehicle that runs on a fuel other than traditional petrol or diesel.

# Why it's important for EV drivers to review their tariff if they charge at home

Research on EV drivers and their charging habits shows that due to cost and convenience, drivers with off-street parking opt for charging their vehicle at home more than 80% of the time.<sup>4</sup> These drivers will likely experience a surge in their electricity consumption, as regularly using a home EV charger linked to a domestic energy supply could increase their energy usage by almost 50%. This is demonstrated in the graph below. It therefore becomes important for EV owners to select a tariff and adopt a charging routine that keeps costs down.

A number of energy suppliers have released tariffs that offer specialised features to EV drivers, including renewable energy guarantees, discounts on home car chargers and lower unit prices at times of low national electricity demand.



\*For the estimated usage of a household **without an EV** we used Ofgem's typical domestic consumption medium values: 3,100 kWh of electricity for traditional meter households and 4,200 kWh for Economy 7 meter households.<sup>5</sup>

For the estimated electricity consumption of someone **with an EV**, we estimated they would use an additional 1,500 kWh of electricity a year (see Appendix A).

# Tariff bundles

**7 out of the 10** tariffs we analysed for this report offer customers what we will refer to as “extras”, which are added benefits tailored to their EV needs. These include discounts on EV home chargers with free installation, public charge point discounts and free credit.

These variable extras can make comparing EV tariffs a complex task. Failing to consider all aspects of a tariff bundle would ignore the potential savings on the cost of running an EV.

Some suppliers make the extras the focal point on their initial online tariff page, advertising discounts on chargers before displaying information about price.

These extras demonstrate that suppliers are not only competing for potential new customers on the price of energy but also on their ability to support the charging needs of EV drivers.



# Discounts on public chargers

**2 out of the 10** tariffs analysed for this report offer customers a discount on public chargers across the UK. In the form of a reduced charging network membership fee or simply reduced costs on specific charging networks, the suppliers offering this extra make it cheaper for their customers to recharge their vehicle when they're on the road.

The value of this can vary depending on where the EV driver lives, as charging networks provide an uneven distribution of charge points in some areas of the UK. For example, one tariff offers discounts on a charging network that, although has over 300 charge points around the UK, has very few chargers in the Midlands, the South East and Scotland.

It's also important to note that charging networks offer new customers discounts on membership prices if they go directly to the network, so EV owners can already get cheaper prices regardless of their energy tariff. Most charging networks also allow non-members to use their chargers, so although members often pay less, if a driver rarely charges their vehicle away from home or work then this benefit would be of less value to them.

**Charge point:** A designated point where electricity can flow through a main supply into an EV.

**Charging network:** A company that owns a network of public EV charge points. Networks span regionally or nationally and the largest network has over 2,000 charge points across the UK.





# Home charge points

**Half** of the tariffs we analysed offer new customers discounts on the installation of a home charge point from their chosen EV charger installer. This extra is valuable for EV owners as charging at home is currently the primary location.<sup>6</sup> This offer is optional - if people opt out of the charger installation, it does not affect the price of the tariff.

Discounts range from **£40** to **£180** on the home charger, however prices differ according to charger specifications. For example, a 7.2kW charger with automatic off-peak smart charging capabilities is more expensive than a standard 3.6kW charger. Some suppliers do not provide customers with a choice of charger type. Many of these chargers come with a three year warranty and some charger manufacturers also offer free installation.

Some suppliers only offer the home chargers to customers eligible for the OLEV Electric Vehicle Homecharge Scheme.\* This could exclude some customers from this offer and reduce the value of the tariff.

£

**\*The OLEV Homecharge scheme** provides a grant which is a 75% contribution towards the cost of one charge point and its installation up to a maximum of £500 (inc. VAT).

Individuals must have access to off-street parking facilities; the date of installation must be no more than 4 months after the start of the vehicle use; and individuals are only eligible for the grant if they own an EV which is eligible for the Plug-in Car or Van Grant.<sup>7</sup>





# Renewable energy

On the road, pure electric vehicles produce **zero exhaust emissions**, so it's understandable that one of the key motivations for purchasing an EV, other than saving money on fuel, is to reduce carbon emissions.<sup>8</sup>

EV owners are likely to be more conscious of where the electricity to charge their vehicle is coming from. Renewable energy sourcing is therefore an important feature of EV tariffs.

**All of the EV tariffs** analysed for this report come with a '100% green' promise. This means the electricity is either supplied directly from renewable generators or is matched with a Renewable Energy Guarantees of Origin (REGO) certificate.\*

Some suppliers go beyond this and offer extra 'green' features for joining, e.g planting trees for every new customer. Most tariffs also have a green gas promise for customers who opt for a dual fuel tariff.



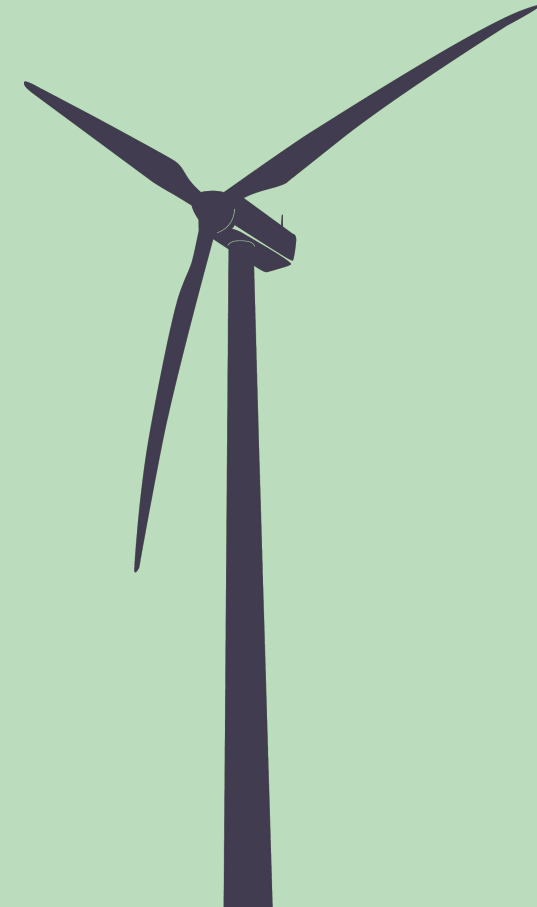
## \*The Renewable Energy

### Guarantees of

### Origin (REGO) is a

scheme run by Ofgem that allows customers to see how much energy the supplier has bought from renewable sources.

For every megawatt hour of renewable energy produced, Ofgem issues a REGO certificate to the generator. Energy suppliers then purchase the REGO certified electricity.<sup>9</sup>



# Terms & conditions

## Payment

**8 out of the 10** tariffs only allow payment via monthly direct debit, and options for alternative payment methods often costs the customer more. This disadvantages customers who prefer to pay quarterly, by phone or by post.

## Meters

Further restrictions apply on meter types as **none** of the suppliers offer their EV tariffs to customers with prepayment meters. As costs of buying and owning an EV are expected to fall, and EV sales rise, the domestic tariff market will need to broaden out to include different groups of energy consumers.

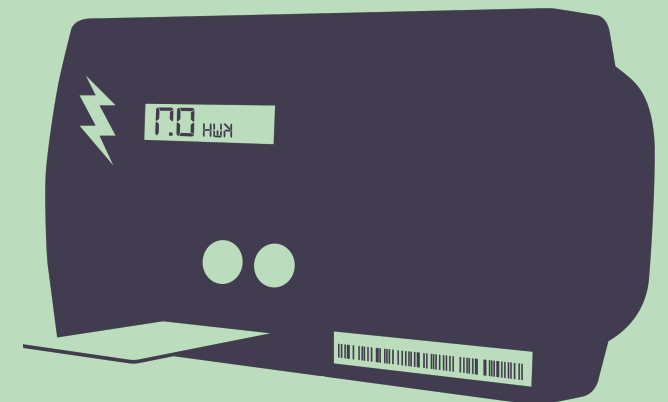
## Vehicle eligibility

Some of the tariffs not only exclude prepayment customers but also those who drive a plug-in hybrid, as they only offer their EV tariff to pure electric vehicle users.

## Rates and exit fees

**6 out of the 10** tariffs offer a fixed price for either one or two years.

**7 out of 10** do not charge an exit fee if you decide to change supplier. Both are positive for energy consumers as a fixed amount gives price clarity, and with no exit fees customers are able to change their mind without having to pay to switch.



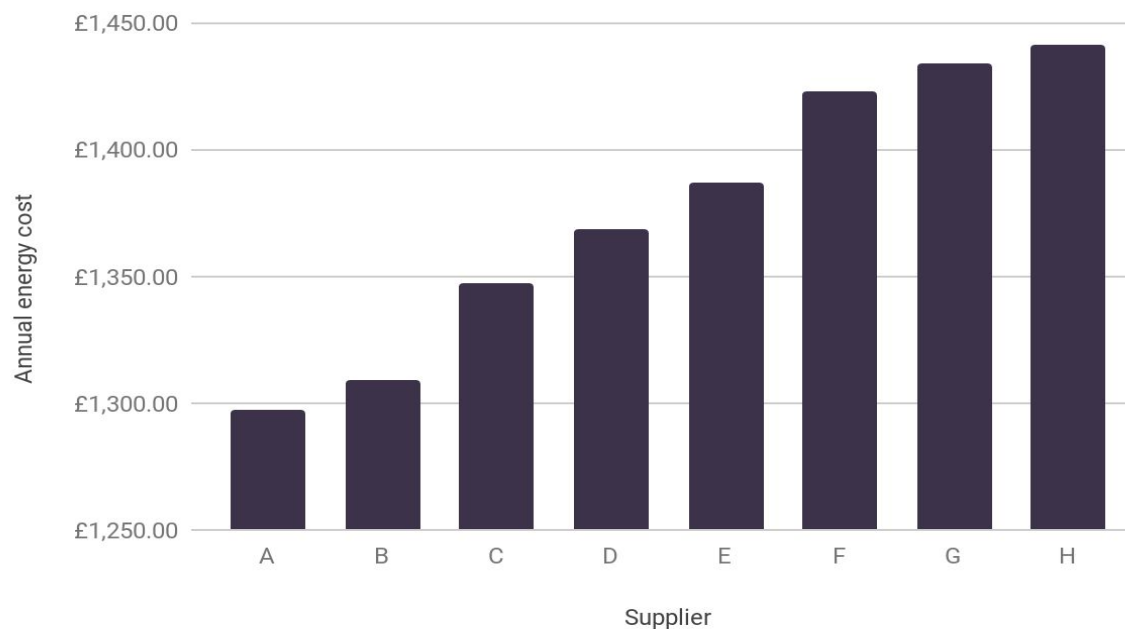
# How good a deal are single rate tariffs for EV drivers?

We created a price model to estimate annual dual fuel energy costs of the single rate tariffs targeted at EV customers. (Appendix B)

What we found:

- Prices between tariffs range from **£1,298** to **£1,442 per year**.
- The difference between the cheapest and the most expensive single rate tariff is **£144**.
- The **average** cost across all of the EV single rate tariffs is **£1,376 per year**.

**The estimated annual price of the single rate meter tariffs for EV drivers\***



Prices are correct as of September 2018, but are subject to change by suppliers.



\* The suppliers have been anonymised and the letters A - H represent individual suppliers and their tariffs. The suppliers keep the same letter throughout the report.

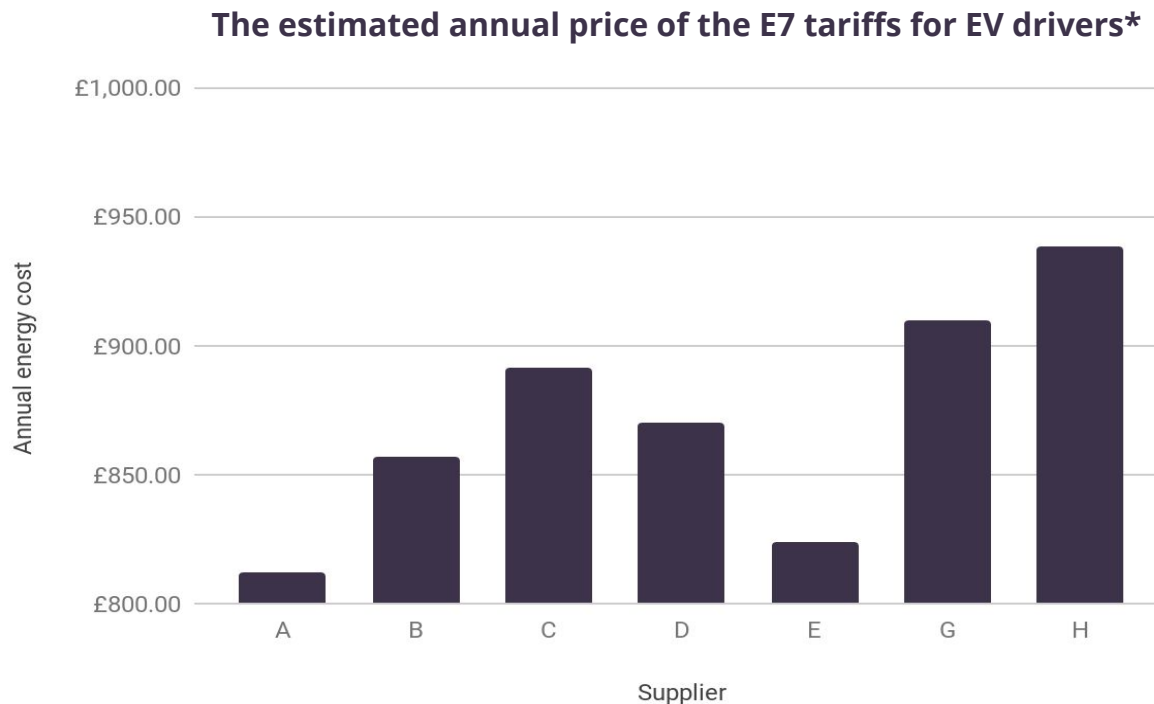
The figures shown in this graph are based on a vehicle using 4,600 kWh of electricity (Average domestic use = 3,100 kWh + estimated average EV use = 1,500 kWh) and 12,000 kWh of gas per year.

# How good a deal are Economy 7 tariffs for EV drivers?

We also created a price model to estimate annual energy costs of the Economy 7 tariffs targeted at EV drivers. These tariffs charge customers a higher price for electricity during the day and a cheaper price during the night. (Appendix C)

What we found:

- Prices between the tariffs range from **£811 to £938 per year**.
- **£127** was the difference between the cheapest and most expensive.
- The **average** cost across the Economy 7 tariffs is **£872 per year**.



Prices are correct as of September 2018, but are subject to change by suppliers.



\* Prices calculated are based on Ofgem typical domestic consumption values for E7 meter customers (and exclude gas, as heating and cooking on an E7 tariff is assumed to be electric):

Peak: 2436 kWh (58%)

Off-Peak: 1764 kWh (42%).<sup>10</sup>

To find the EV user's average from Ofgem's non-EV user average, we added 1,500 kWh onto the off-peak figure:

Peak: 2436 kWh (43%)

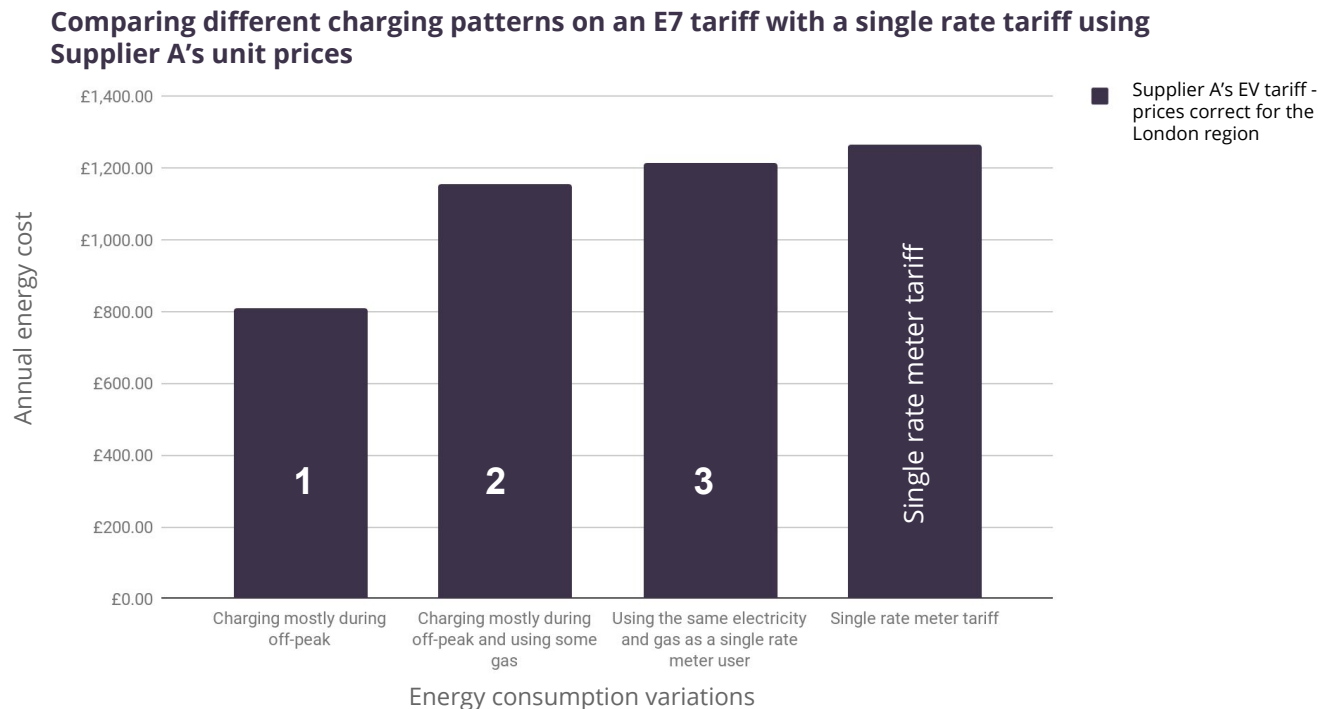
Off-Peak: 3264 kWh (57%)

# You get more out of your E7 tariff by charging when it's cheap

Not all EV owners will have a daily routine that allows them to charge their vehicles only during night time. To understand how different charging behaviours may impact on the final bill, we modelled three possible charging patterns on an E7 tariff. For these calculations, we used the London prices of Supplier A's Economy 7 tariff - the cheapest EV tariff. (Appendix D describes the charging patterns we tested.)

What we found:

- All our three hypothetical EV drivers who shifted to charging at night to varying degrees still had a **lower bill on an E7 meter tariff** than they would have had on the cheapest single rate meter EV tariff. However, these comparisons are not straightforward, as explained in the green box on the right.



The fact the cost of the third charging pattern we looked at was only £50 cheaper than the single rate meter tariff would suggest that an E7 meter tariff could be more expensive if the customer didn't tailor their energy use to their ToU tariff.

For example, if they didn't use an electric cooker or storage heating, or mostly charged their vehicle during the day when electricity is more expensive.

# Smart Time of Use tariffs

## What are smart ToU tariffs?

On a smart ToU tariff, a customer pays different prices for electricity at different times of the day. Typically, there are more than two price bands throughout the day, but in theory a different price could apply every half an hour.

Prices tend to be lowest during the night, making charging an EV at night even cheaper. One such tariff offers a **super off-peak** price (during the hours of 12am - 4am) of **5p/kWh**. But there are likely to be higher prices during the day. For example, one smart tariff charges **6.4p/kWh** during super off-peak hours but almost **30p/kWh** for electricity used during the hours of 4pm - 8pm.

## Why are they good for EV drivers?

Smart ToU tariffs offer even lower prices at night than E7 tariffs, making charging an EV cheaper. Drivers can set a timer either in their car or on their home charge point so they can take full advantage of the off-peak prices.

One smart ToU tariff offers typical EV tariff extras, such as a discount on a home charge point and a renewable energy guarantee.

## Why are they not included in this report's price comparisons?

As these tariffs offer more than two prices throughout the day, it's more complicated to estimate annual electricity costs. Making accurate comparisons to single rate and E7 tariffs, using the tools and methodologies currently available, is not straightforward. This also makes it difficult for EV drivers to calculate in advance whether they will benefit from being on a smart ToU tariff.

This doesn't mean smart ToU tariffs should be disregarded; posts on EV online forums show that drivers are using them and taking advantage of the super off-peak unit prices.

But you don't need to have a smart tariff to be smart

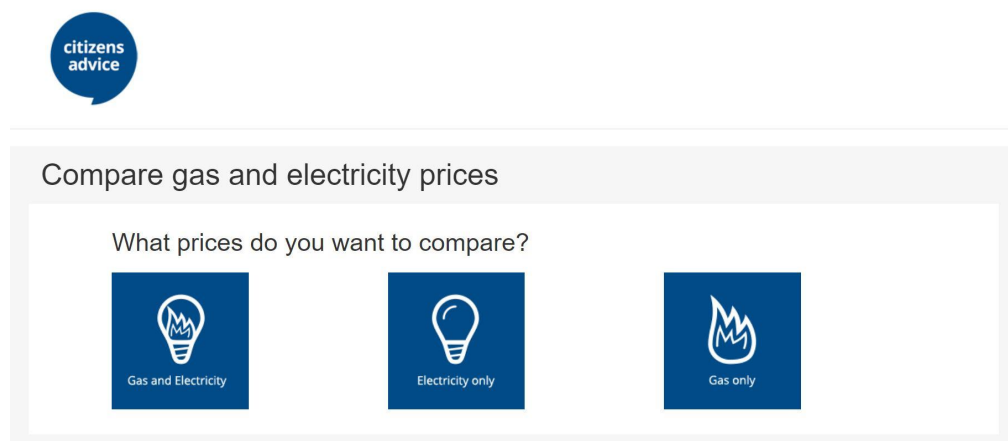
EV drivers can purchase smart EV home chargers (some suppliers currently offer these with their EV tariffs).

These devices can be used with a smart ToU tariffs **or** older ToU tariffs (i.e. an E7) to detect when it's cheapest to use electricity.

They can be programmed to automatically charge the vehicle during off-peak hours. This means people don't need to have a smart tariff to benefit from smart functionalities.



# Are EV tariffs cheaper than regular tariffs?



Using a London postcode and the Citizens Advice [energy comparison tool](#), we compared the price of the cheapest EV tariff - Supplier A - with non-EV tariffs.<sup>11</sup> (Appendix E)

What we found:

- There were several regular tariffs that worked out **cheaper than the cheapest EV tariff**.
- Not only that, there was a tariff that used **renewable** energy sources and had a **lower annual** energy cost than the EV tariff.

But it is important to factor in the monetary value of the EV tariff bundles. These could balance out higher annual energy costs.

For example, joining a tariff that offers £50 off a home charger and free two-year membership for a public charger network amounts to £200 worth of free extras.



EV tariffs rarely appear on price comparison websites.

As more EV tariffs are released, the need for their inclusion on price comparison sites to help EV drivers find the best deal increases.



# EV driver profiles

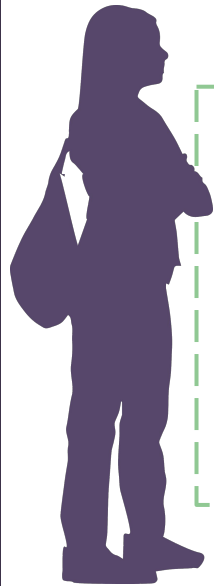
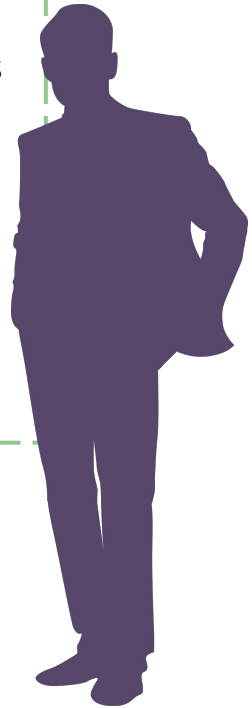
This report shows the level of variation between EV tariffs in terms of price and bundle extras. To get the best deal, EV owners should decide what they want from their energy tariff, whether they're looking for the cheapest price, discounts on an EV charger or energy sourced from renewable generators.

We created EV driver profiles to demonstrate the different prices and bundles that EV tariffs offer. We used driver statistics from the National Travel Survey to calculate the mileage per person by the region they live in.<sup>12</sup> Their energy consumption estimates are based on industry estimates for energy consumption by property size.<sup>13</sup>



Zara lives in a two bedroom house in London and drives just over 1,400 miles a year. She has opted for a dual fuel single rate tariff that's fixed for 2 years. With this tariff, she has a free two year membership to a public charging network and £50 off a home charger. **Her energy bill is £845 a year.**

Mark lives in a three bedroom house in Leeds and drives just under 3,500 miles a year. He has an electric cooker and heating system so has chosen an electricity only E7 tariff. The tariff comes with a home charger for £99 and a 50% discount off membership to a public charging network. His tariff also invests some of his money into green energy projects. **His energy bill is £720 a year.**



Rachel lives in a four bed house in a rural town in the East of England and drives almost 5,000 miles a year. She charges her EV at home almost all the time as there are few public chargers near her. She has opted for the cheapest fixed EV tariff, which doesn't come with extras, but the supplier uses energy from renewable generators. **Her annual energy bill is £1,320.**

# Conclusions

## The EV tariff market

- This market is growing and frequently changing. This is good for EV owners because greater choice means they're more likely to find a good deal.
- However, the lack of consumer-friendly information on EV tariffs makes it difficult to navigate the market.
- These difficulties are compounded by the fact that there are no tailored comparison tools and EV tariffs rarely feature on existing price comparison sites. This makes it harder for EV owners to make informed choices when selecting a tariff.

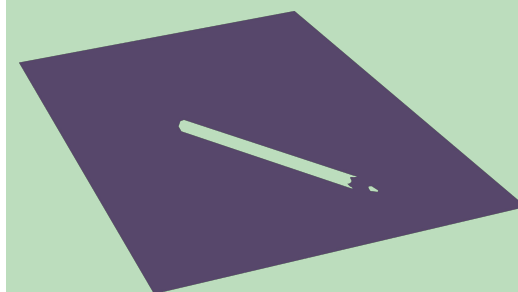
## What's the best deal for EV drivers?

- With the EV tariffs currently available, the best way to keep energy bills low for EV drivers who predominantly charge at home, is by choosing a tariff that offers lower prices at certain times of the day, and by charging their vehicle as much as possible during those times - most likely overnight. This includes Economy 7 tariffs and smart ToU tariffs.
- EV tariffs are not necessarily cheaper than regular, non-EV tariffs.
- It's important to factor in the value of extras such as free home chargers or discounted memberships on public charging networks. These could balance out higher annual energy costs.

## But not everyone feels the benefits of EV tariffs

Some consumers are unable to access or fully benefit from EV tariffs, these include:


- Those ineligible for the OLEV charge point grant;
- Prepayment meter customers;
- People who don't want to pay by monthly direct debit;
- Those whose energy consumption habits don't fit around ToU tariffs (e.g. people who use a lot of energy during 4 - 7 pm).




# Recommendations

Our research has shown the importance of shopping around for EV tariffs and not assuming that EV tariffs are the cheapest option. However, choosing tariffs is harder for these consumers than it should be. To make it easier we recommend:

 **Price comparison websites** (PCWs) should either include EV tariffs on their comparison pages or feature a specialist section for EV drivers.

 PCWs should include information about the **tariff bundled extras** so EV drivers can properly evaluate the tariff offers.

 That said, EV owners also need to have access to **tools that help them model their likely bill** on a specific tariff. Such tools should help consumers understand how a change in charging behaviour, i.e. shifting charging to different times, can help them save money.

We recognise that some of these outcomes are likely to become easier to deliver as the market for EV tariffs develops, and as detailed consumption data becomes more readily available.

But we also think that existing Ofgem rules\* should be delivering some of these outcomes already - although there may need to be changes to the Confidence Code in future, to ensure smart time of use tariffs are widely available on PCWs.

We will continue to monitor the market and share information with Ofgem where we think the existing rules are not being followed.

## \*Relevant Ofgem rules<sup>14</sup>

Ofgem's Confidence Code requires accredited PCWs showing a wide market view to 'use all reasonable endeavours to include price comparisons for all available domestic tariffs' - but they can include tariffs other than single rate and Economy 7 tariffs at their discretion.

Ofgem also requires suppliers and accredited PCWs to estimate annual tariff costs based on actual historic consumption, all reasonably available data and on reasonable assumptions where data is not available.

Estimates must also include ongoing, non-contingent discounts (including goods and services provided at reduced charge) and non-optional bundled charges, but exclude contingent or one-off discounts.

Ofgem's 'informed choices' principles require suppliers to 'put in place information, services and/or tools' to enable customer to 'easily compare and select appropriate Tariffs within its offering'.

# Report References

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10. Economy 7 Meter consumption was based on 'Electricity Profile Class 2' data:  
<https://www.ofgem.gov.uk/gas/retail-market/monitoring-data-and-statistics/typical-domestic-consumption-values>
11. <https://energycompare.citizensadvice.org.uk/>
12. Average miles per person per year - London: 1,422 miles; Yorkshire: 3,453 miles; Rural town: 4,971 miles. Latest (2016/17) data:  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/729518/nts9904.ods](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/729518/nts9904.ods)
13. Average energy consumption rates per property size - 1 or 2 bed house/flat: gas 8,000 kWh electricity 2,000 kWh; 3 or 4 bed house: gas 12,500 kWh electricity 3,100 kWh - [https://www.ukpower.co.uk/home\\_energy/average-energy-bill](https://www.ukpower.co.uk/home_energy/average-energy-bill)
14. See Ofgem's Standard License Conditions (SLC's) 1 and 25:  
<https://epr.ofgem.gov.uk//Content/Documents/Electricity%20Supply%20Standard%20Licence%20Conditions%20Consolidated%20-%20Current%20Version.pdf>

## Appendix A

### How much domestic electricity does an EV use?

- For the purpose of this report, we estimated the average electricity consumption of a household in Britain with an EV.
- According to Ofgem figures, the average household (without an EV) uses **3,100 kWh** of electricity a year if they have a single rate meter tariff, and **4,200 kWh** for E7 meter tariffs.<sup>1</sup>
- According to the National Travel Survey, the average mileage **per car** in the UK is **7,800 miles** a year.<sup>2</sup>
- The 2018 **40 kWh Nissan Leaf\*** has a range of approximately **168 miles** = **1 kWh** equates to **4.2 miles**.<sup>3</sup>
- If a typical vehicle covers the national average of **7,800 miles a year**, the vehicle would use roughly **1,860 kWh** (rounded up from 1,857). Research shows people charge their cars **80%** of the time at home (the rest at motorways, shopping centres, at work).<sup>4</sup> This means **1,500 kWh of electricity** would be used to charge their EV at home.\*\*
- Tariff price calculations conducted as part of this research are based on this model and unless stated otherwise, tariff prices listed are for monthly direct debit, paperless billing and averaged across the 14 energy regions in Britain.

\*We based our estimations on the Nissan Leaf as the best selling pure EV car in the UK at time of writing.<sup>5</sup>

\*\*This still leaves an additional 360 kWh that the EV user would have to pay for from other charge points, a figure not included in the price calculations.

## Appendix B

### How good a deal are single rate tariffs for EV drivers?

- We analysed the prices of **eight of the 10 EV tariffs**.
- This was because two of the tariffs we analysed are smart ToU tariffs, so are incomparable to single rate tariffs as they use different pricing systems (see 'Smart ToU tariffs', slide 14).
- Many single rate meter customers are on dual fuel tariffs so we included gas in our estimated prices.
- Gas prices are based on Ofgem's typical domestic medium gas consumption of 12,000 kWh a year and are correct as of September 2018.<sup>5</sup>
- Two suppliers offered dual fuel and online billing discounts, these are included in the prices.
- These prices listed are for payment via monthly direct debit and paperless billing, and are averaged across all regions.

## Appendix C

### How good a deal are Economy 7 tariffs for EV drivers?

- **Eight out of the 10** tariffs can be used with an E7 meter, which offers a peak rate during the day and an off-peak rate during the evening.
- These prices are electricity only as they assume the consumer uses electric heating and an electric stove with their E7 meter rather than gas.
- We omitted Supplier F from this comparison as they only offered the EV tariff as dual fuel, so we couldn't compare their E7 rates with the electricity only prices of the other tariffs.
- We calculated the cost of charging an EV during **off-peak hours only**, as EV drivers can use pre-set charging times using controls on the charge point (or inside the vehicle) to charge during the cheapest hours.

## Appendix D

### Modelling different charging behaviours on an E7 tariff

The charging patterns we used in our E7 calculations were:

- If only 60% of their EV home charging occurred during off-peak, rather than 100% of it.
- If only 60% of their EV home charging occurred during off-peak and they were a low gas user (8,000 kWh/year), using gas for either cooking or heating rather than electric.
- If their E7 consumption ratios were the same as an average E7 consumer without an EV (58% peak/ 42% off-peak split) and they used the same amount of electricity and gas as someone with a single rate tariff (e.g they did little to change their habits even with an EV and an E7 meter).

## Appendix E

### Are EV tariffs cheaper than regular tariffs?

- 28 tariffs in total that were cheaper than the cheapest single rate meter EV tariff.
- Only 5 out of the 28 cheaper non-EV tariffs included a green energy guarantee.
- The cheapest non-EV tariff was £175 less per year than Supplier A's EV tariff.
- The cheapest non-EV tariff was also marketed as 100% renewable.



# Appendices References

1. Single Rate Meter Consumers were based on 'Electricity Profile Class 1', and Economy 7 Meter Consumers were based on 'Electricity Profile Class 2':  
<https://www.ofgem.gov.uk/gas/retail-market/monitoring-data-and-statistics/typical-domestic-consumption-values>
2. Latest available (2017) data:  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/729452/nts0901.ods](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/729452/nts0901.ods)
3. <https://www.zap-map.com/charge-points/nissan-leaf-40kwh-charging-guide/>
4. Based on a 2010 case study in Leeds:  
<https://www.smartenergygb.org/en/-/media/SmartEnergy/essential-documents/press-resources/Documents/The-smart-route-to-electric-vehicles.ashx>
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6. <https://www.ofgem.gov.uk/gas/retail-market/monitoring-data-and-statistics/typical-domestic-consumption-values>

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