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Electric Vehicles

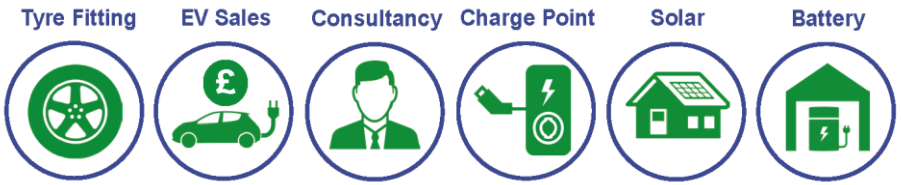
The independent EV specialists

“Choosing, acquiring, maintaining & servicing EVs”

CEEMG 25th April 2019

About Cleevely Electric Vehicles

- EV education and consultancy service
- Bespoke training to businesses and community groups
- New and used vehicles
- EV servicing and MOTs
- Charge point installation
- Electric vehicle self-drive rental
- Sister company to Cleevely Motors Ltd, providing traditional vehicle repairs and maintenance since 1962



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What we'll be covering today

- EV overview
- Uptake of EVs and business opinions
- EVs and business – key facts
- Benefits of EVs
- Introducing EVs into a business
- 5 steps to maintaining an EV
- Servicing an EV – frequent questions
- Q&A

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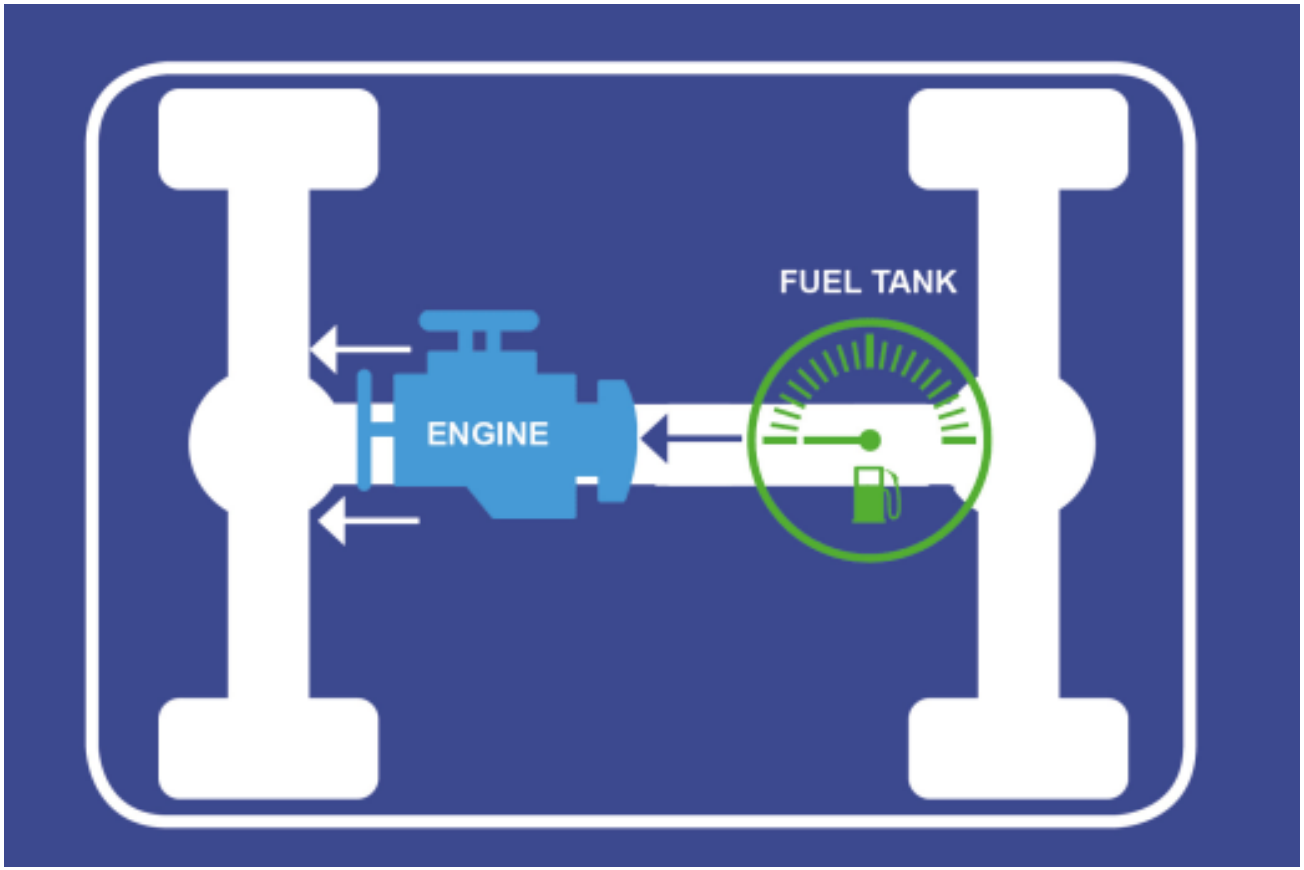
Internal Combustion Engine Vehicle (ICE)

16p per mile



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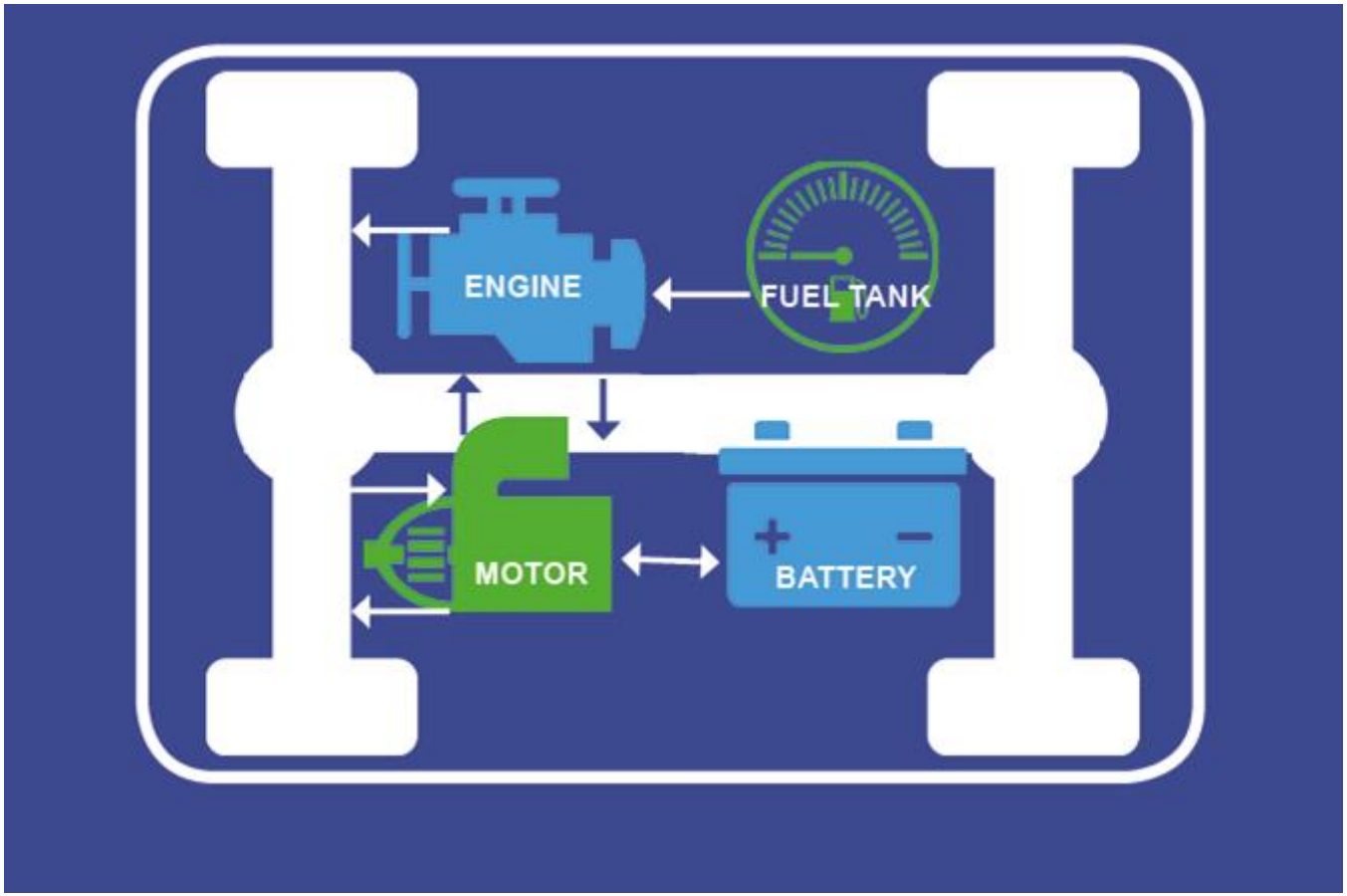
Hybrid Electric Vehicle (HEV)

11p per mile



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Hybrid Electric Vehicle (HEV)

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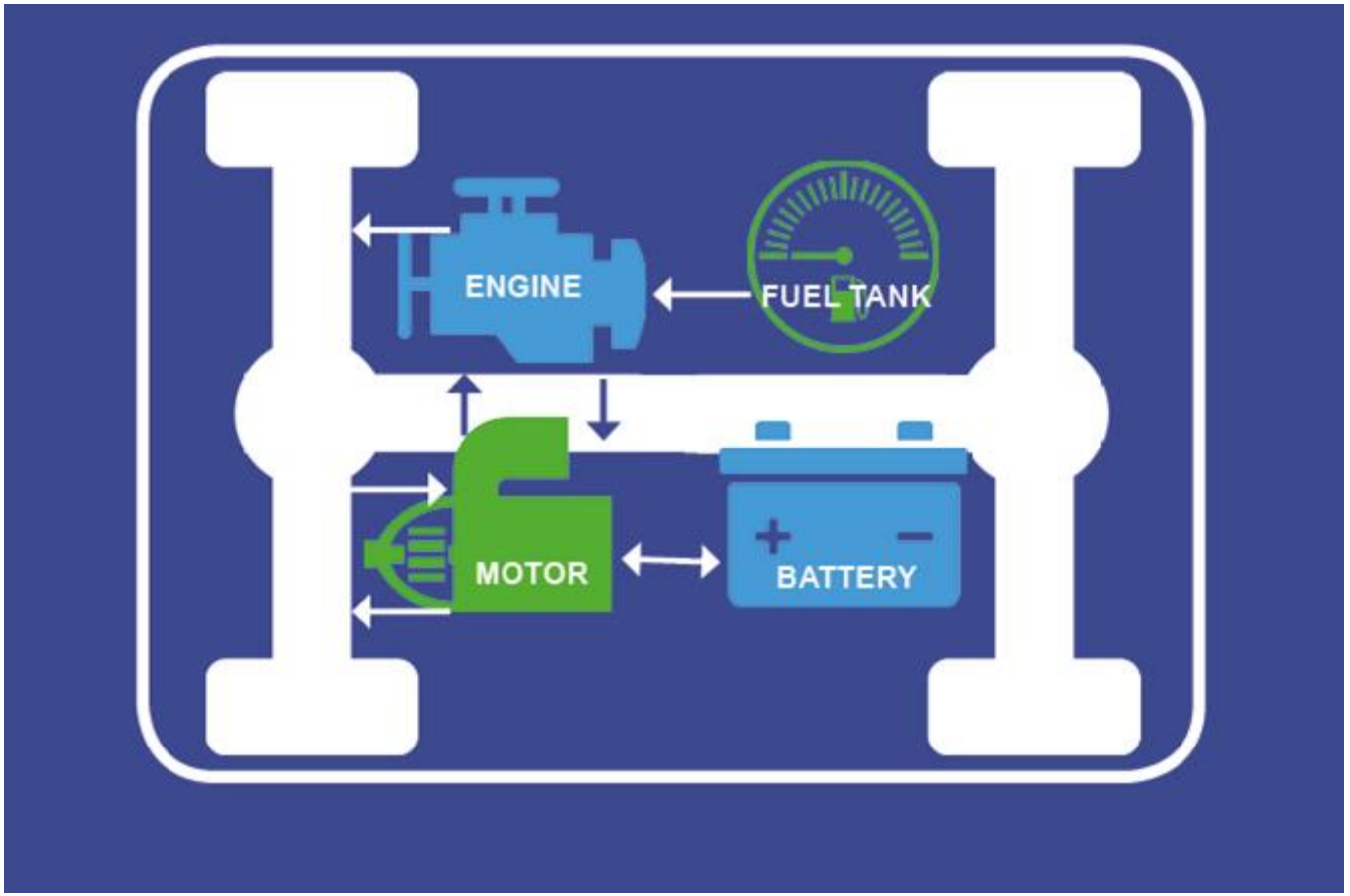
Plug-In Hybrid Electric Vehicle (PHEV)

5p per mile



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Plug-In Hybrid Electric Vehicle (PHEV)

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Range Extender Vehicle (Rex)

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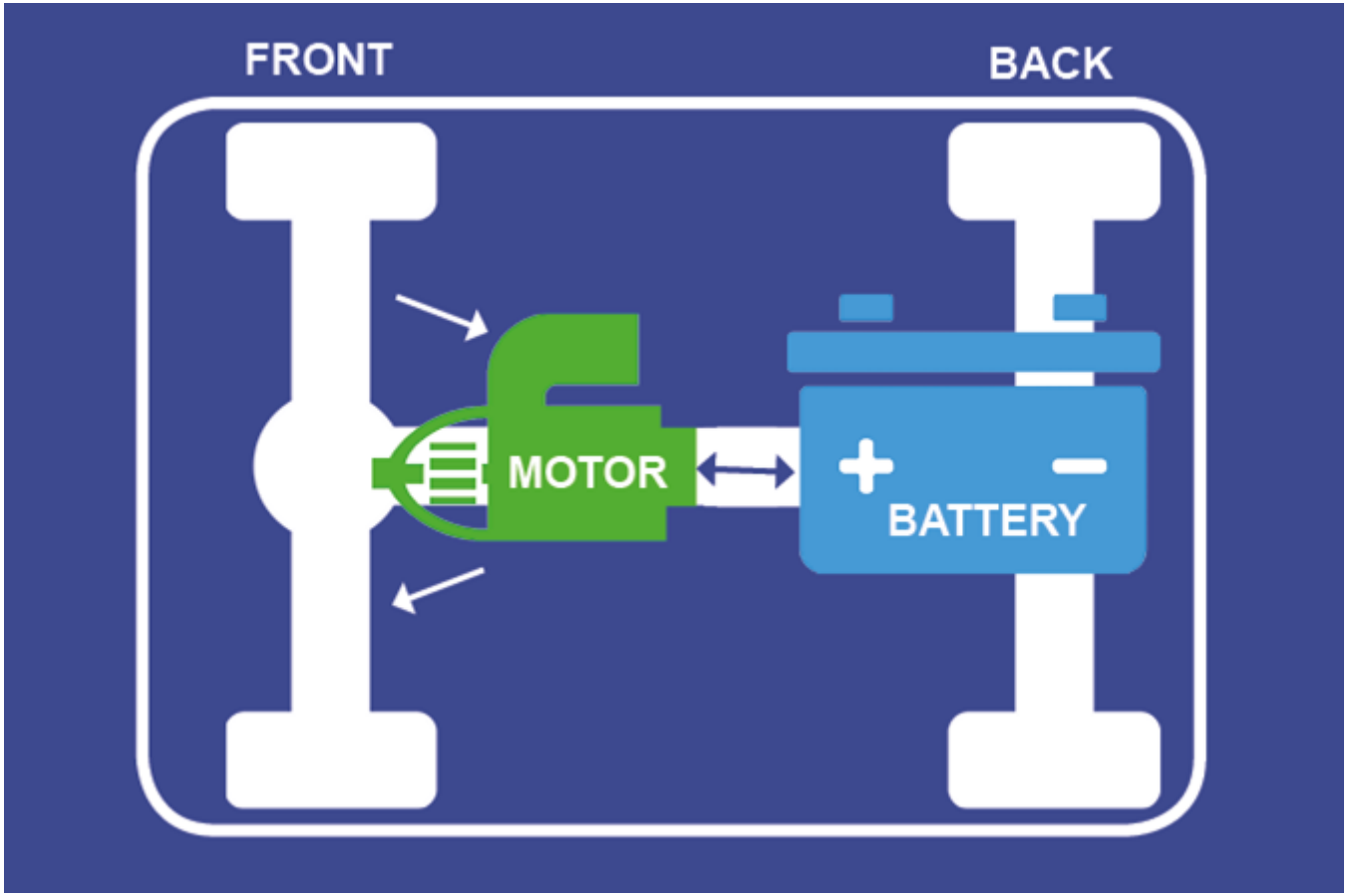
Battery Electric Vehicle (BEV)

2p per mile



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Battery Electric Vehicle (BEV)

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Overview continued

- EVs emit **zero carbon dioxide**
- **Range:** the distance travelled on a single charge
- **Range** depends on make, model and battery capacity. Some newer models have range of >250 miles
- Charged via a **vehicle charge point** or three-pin plug
- Electric versions of **most vehicles** including cars, vans, taxis, buses and motorbikes

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Types of charging connectors

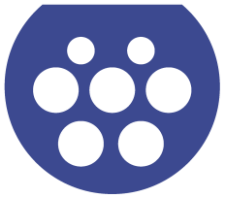
Home charging

Slow charging connections

3-pin

Type 1 – 3.3kW

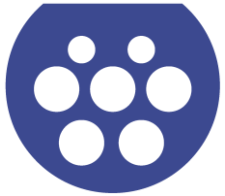
Type 2 – 3.3kW



Fast charging connections

Type 1 – 7kW

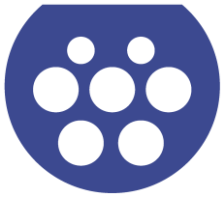
Type 2 – 7kW



Public charging

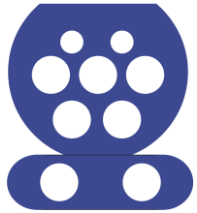
Rapid charging connections

Type 2 – 22kW



CHAdemo 50kW DC

Combined charging system (CCS) 50kW DC



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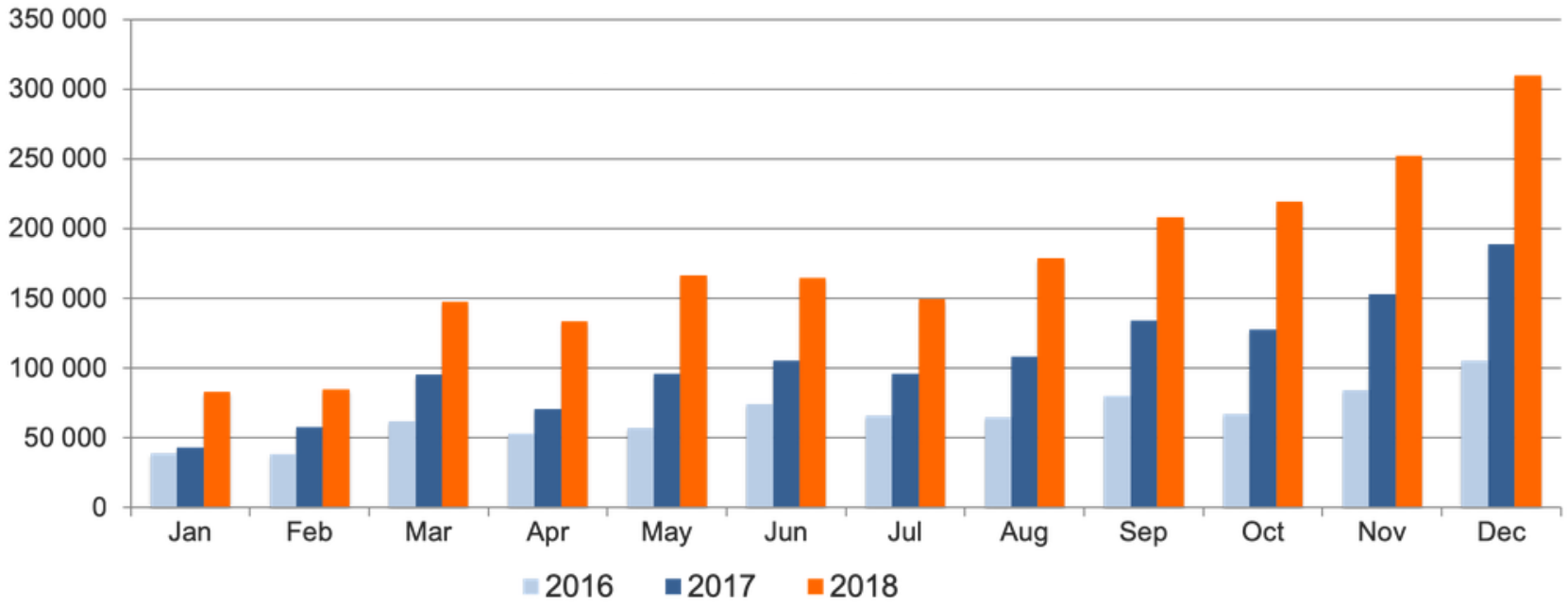
Global monthly plug-in registrations

Light vehicles



Courtesy of EVvolumes.com

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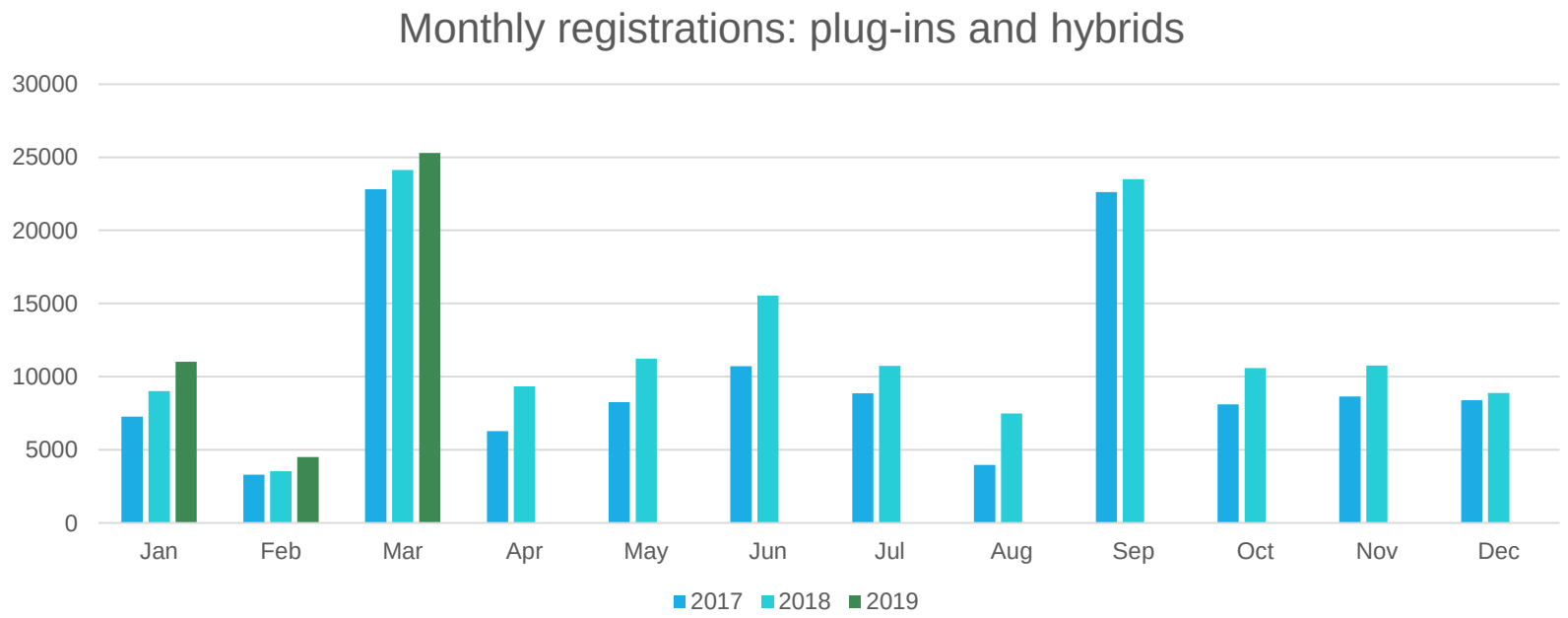
Electric and alternative fueled vehicle registrations UK 2017-19



- Plug-in electric cars in UK grew by 75% in 2018
- hybrid, plug-in hybrid, and battery electric grew by 30%
- >195,000 plug-in vehicles on our roads
- >620,000 hybrid, plug-in hybrid, and battery electric
- Chargemaster predicts half a million EVs on UK roads by 2020

Courtesy of The Society of Motor Manufacturers and Traders (SMMT.co.uk)
April 13th 2019

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Popular EVs and PHEVs

- Nissan Leaf, UKs best selling EV & most popular 2nd hand car
- Mitsubishi Outlander, UKs best selling PHEV
- Well established EV manufacturers e.g.: Tesla, Nissan, Renault and Hyundai
- First EV launches in 2019 & 2020 from e.g. VW, Volvo, Skoda, Mini, Honda. Audi and Peugeot
- New breed of car manufacturers e.g.: Rivian, Sono, and Rimac

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EVs and business: key facts

More than **70%** of EV registrations are made to UK businesses

2/3 of SMEs would consider EVs due to lower running costs than petrol and diesel equivalents

Fleet average **CO2 ↓** to lowest ever level due to low emission vehicles, despite record 34.9m cars on the road

Small and medium-sized enterprises (SMEs) could save up to **£1,440** a year with their first EV

Education is key to increasing EV adoption by UK businesses

Courtesy of The Society of Motor Manufacturers and Traders (SMMT.co.uk)
April 13th 2019 & Go Ultra Low

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New vehicle purchase plug-in grants

Overall cost of ownership (CofO) must be considered – initial purchase prices are high but CofO is lower

Cars

35% off the purchase price **or up to £3,500**. Must qualify as category 1. Less than 50g/km CO2 emissions / able to travel at least 112km (70 miles) without any emissions

Vans

20% off the purchase price, **up to £8,000**. Less than 75g/km CO2 emissions / able to travel at least 16km (10 miles) without any emissions.

Taxis

20% off the purchase price, **up to £7,500**. Purpose built taxis with less than 50g/km CO2 emissions / travel at least 112km (70 miles) without any emissions.

There are also grants available for **motorbikes** and **mopeds**.

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Cost-saving benefits of EVs

- Workplace Charging Scheme grant
  - up to 75% of the purchase and installation costs
  - up to £500 towards each socket
  - up to 20 chargepoints per business
- EV Home Charge point grant
  - up to 75% of the purchase and installation costs
  - up to £500 towards each socket
- London charge zone exemptions
  - £11.50 congestion charge
  - £12.50 Ultra Low Emission Zone

No petrol/diesel: save up to 6p per mile

Mileage reimbursement 8p vs. up to 22p

20-30% servicing cost saving

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Tax efficiencies

- Road tax: EVs costing <£40k are exempt
- Capital allowances
- Benefit-in-kind and national insurance
- Salary sacrifice

Speak to your tax advisor about your own or your businesses circumstances

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Non-financial benefits

1
Win new business in the public and private sector

2
Customer loyalty and retention

3
Attract and engage employees

4
Build your sustainable reputation

5
Help meet UK C02 reduction targets

6
Protect our environment

7
Improve the health of our communities

8
Gain Go Ultra Low status and other green credentials





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Choosing and acquiring EVs

Introducing EVs to your business

1. Set goals and decide how to measure
2. Consider vehicle requirements
3. Research vehicles and talk to experts
4. Plan the charging infrastructure
5. Educate drivers
6. Measure and review

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Step 1
Set goals and decide how to measure

- Understand **current fleet metrics** to measure EV fleet performance against
- **Financial metrics** based on the total life cost of vehicles (fuel savings, tax efficiencies, mileage etc)
- **Non-financial metrics** including charge point usage, carbon footprint, employee satisfaction




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Step 2
Consider vehicle requirements

- **How many** vehicles and where are they kept when not in use?
- What is the **purpose**? Goods or passengers? **Size** / capacity?
- Daily **mileage** and **type of journey**: long distance, short trips, Hub and Spoke or Point to Point?
- **Business use**, personal use, or both?
- Will you start with **entire fleet** replacement or a **pilot** to test and learn from?

Nissan E-NV200 Cargo
Available now

VW E-Transporter
Available later in 2019

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Step 3
Research vehicles and talk to experts

- Certainty of **range** and **charging speed** is essential
- Once vehicle(s) identified, calculate **total cost of ownership**
- Talk to **EV experts** about your needs
- **Test drive** or try a **short-term rental** to experience within your business
- Update your **fleet policy** to ensure EVs are available and provide information the benefits




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Step 4
Plan the charging infrastructure

- Considering **where, when**, and **how** charging will take place?
- **How many** charge points? Current and future? **Who** will use?
- What **type** do you need? Will they be tethered (with cables provided) or untethered?
- Dedicated **off-road parking** is needed for the OLEV grant
- Planning **permission** or landlord permission required?

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Step 4 continued
Plan the charging infrastructure

- Help employees apply for the Homecharge scheme grant
- Integrate with **solar panels** and **battery storage**?
- **Promote** your charging capability

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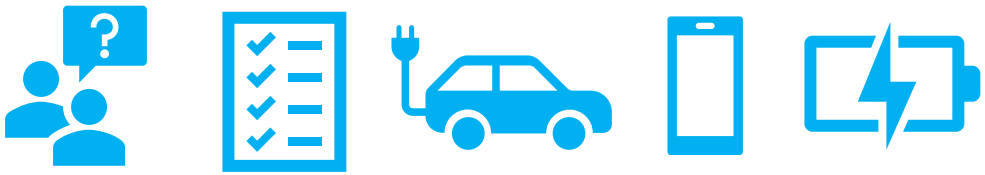
Step 5
Educate drivers

- **Positive attitudes** + **good understanding** of EVs = successful implementation
- Provide employees with **information** on the essentials
  - financial and non-benefits
  - practicalities - vehicle charging and battery maintenance best practices
  - an overview of vehicle's 'new' features - automatic 'gear' selection and regenerative braking
- Information on the **public charging infrastructure** and available mobile apps will also help build driver confidence and ease range anxiety



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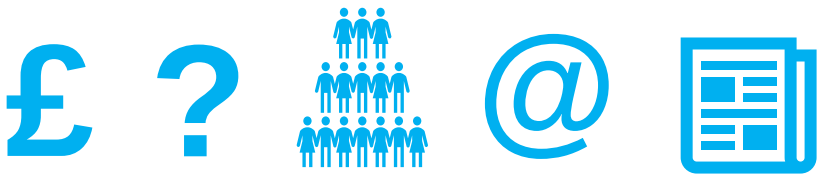
Step 6
Measure and review

- Compare back to **stage one goals**
- **Evaluate success** of the programme
- Share information about your **carbon reduction** and **sustainability** achievements
- **Promote** in communications with stakeholders, on your website and in company reports



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Maintaining and servicing EVs

5 steps to maintaining an EV

With half the moving parts of a petrol or diesel vehicle, EVs are easy for drivers to maintain

1. Take care of the battery – charge to about 80%
2. Keep an eye on tyres – tread and pressure
3. Top up fluids – brake fluid, coolant and windscreen wash
4. Do software updates when prompted
5. Have your EV inspected and serviced regularly

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Servicing an EV – frequent questions

Do I need to have an MOT on an EV?

Yes, but there is no emissions test

Do I have to use a main dealership to service my EV?

No, EU Block Exemption legislation mean drivers don't need to use a main dealership in order to maintain a new car warranty

Is it really cheaper to service an EV?

Yes, as there are nearly 50% less moving parts than on traditional internal combustion engines, there is less that can break or wear out

EVs don't have:

Exhausts, catalytic converters, starter motors, spark plugs, engine oil, clutches, fuel and air filtration, fuel injection systems, fuel pump, ..and more

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Questions?

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