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Electric Vehicles and Your Business
Presentation for CEEMG
25th March 2021

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Electric Vehicles and Your Business

- Short Introduction
- Factors Driving the Uptake of EVs in the UK
- The Benefits of EVs for Businesses
- Providing EV Charging at the Workplace
- e.park's service and product examples

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e.park Part of FROCESTER GROUP

e.park

e.park supplies bespoke metal products used in the installation of electric vehicle (EV) charging points and delivers full installations for business and residential customers.

FROCESTER ENGINEERING

An innovative engineering company specialising in design, water jet cutting, welding and fabrication techniques to manufacture high quality products to exacting requirements.

FROCESTER SECURITY

Frocester Security specialises in working closely with clients to solve security related problems through innovation and devise systems to increase the safety and security of buildings.

FROCESTER FIRE

Frocester Fire designs, installs, maintains and repairs fire safety systems ensuring that its clients' property is safe and compliant to the latest fire safety standards.

Frocester Group is a unique combination of specialist divisions who work as individuals or together to create value for our clients.

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Factors Driving the uptake of EVs in the UK

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The number of Electric Vehicles (EVs) on our roads is increasing

Why is this important?

- The need to improve air quality – particularly in cities
  - Vehicles account for approx. 32% of NOx in the UK
  - Leading to clean air zones being created in most of our major cities
- The need to reduce CO_2 emissions
  - Vehicles account for approx. 26% of CO_2 emissions in the UK

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Clean Air Zones

Typically in a Clean Air Zone or CAZ, if the emission standards of a vehicle are below the permitted level (usually Euro 4 for petrol and Euro 6 for diesel vehicles) that vehicle will be charged to enter the zone

Current Major City Activity:

- **London –** LEZ is in place covering Greater London region inside the M25. ULEZ is in place covering central London and is due to be expanded in Oct 21
- **Bath** – Class C implemented March 21 - Buses, coaches, taxis, private hire vehicles, heavy goods vehicles, vans, minibuses
- **Birmingham** – implementing a Class D zone June 21 - Buses, coaches, taxis, private hire vehicles, heavy goods vehicles, vans, minibuses, cars
- **Bristol** – implementing a Class D later in 2021
- **Coventry** – directed to implement a Class D CAZ but have opted to address air quality problems by other means
- **Manchester** – proposing a Class C CAZ expected spring 2022
- **Newcastle** – Class C CAZ proposed but delayed due to technical issues
- **Sheffield** – Class C CAZ proposed but delayed until local economy recovers from affects of the pandemic
- Others under consideration include Cambridge, Oxford, Leicester, Portsmouth, Liverpool, Sefton, St Albans, Warrington, Wokingham and York.

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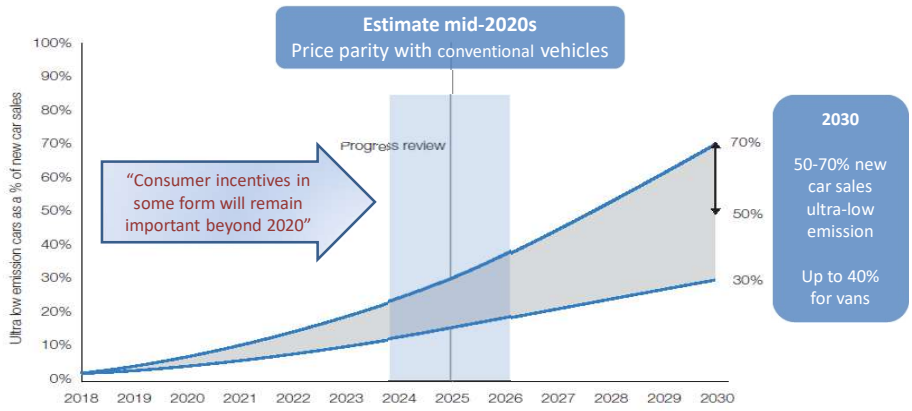
The Government's Road to Zero Timetable



Update – 2030 – all new cars and vans to be zero emissions

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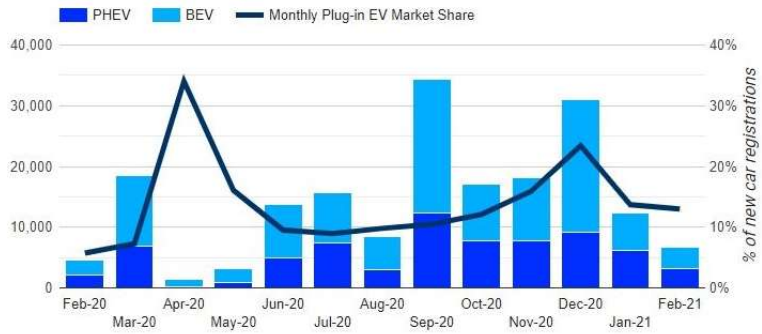
Number of new plug-in registrations by month



Source: SMMT. Updated: Feb 2021

next greencar

- The charts shows that the number of electric vehicles as a proportion of all new vehicles showed a significant increase in 2020.
- In 2015 just 1.1% of new vehicles registered had a plug compared to 3.2% in 2019; by the end of December, this figure has accelerated to 10.7% as an average for the year (6.6% BEV and 4.1% PHEV).
- These numbers reflect both the increase in demand for electric vehicles and the decline in demand for traditional, particularly diesel, vehicles.

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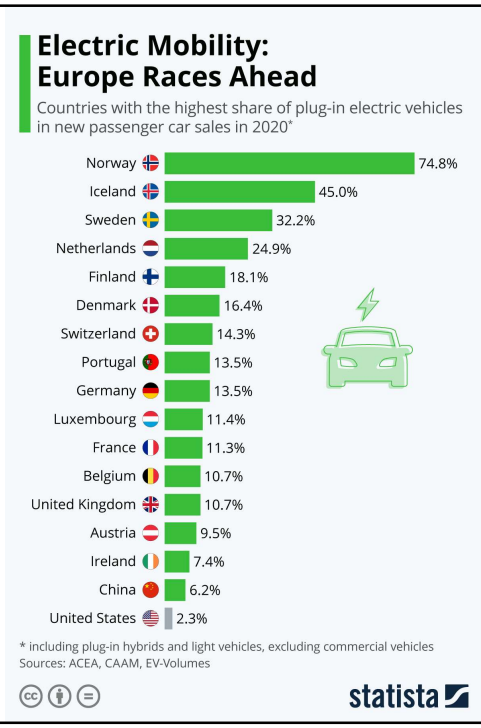

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Key Benefits of EVs for Businesses

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Key Benefits

Financial

- Lower Whole Life Costs are lower(Leased and/or Outright Purchase)
  - Reduced Fuel Costs (3.5p p/m vs 10-14p p/m for petrol/diesel cars)
  - Reduced Service & Maintenance (25-40% less than petrol/diesel)
  - Zero VED until at least 2025
- London Congestion Charge Exempt and CAZ/ULEZ Compliant
- Government Incentives
  - Plug-in Car Grant - £2.5k reduction on purchase price up to £35k
  - Plug-in Van Grant – up to £8k reduction
  - Workplace Charging Scheme – £350 per charging socket up to 20 sockets total
  - EV Home Charging Scheme – £350 for home charger
  - Very low BiK for Company car drivers
  - No Class 1A NI costs
  - 100% First Year Capital Allowances

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Cheaper Whole Life Cost

Based on 36-month lease / 60,000 miles

	P11D	CO_2	Miles/kWh or MPG	Lease cost	NI	Fuel	Total
Nissan Leaf N-Connecta 40kWh	£32,790	0	3	£16,230	£131	£1,200	£17,561
Ford Focus 1.0 125PS Zetec Nav	£21,980	125	51.4	£13,706	£2,625	£3,181	£19,512

BEV saving vs petrol = £1,951 for the business
+ cheaper for the employee on car tax and fuel

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Cheaper Whole Life Cost

Recent research by Direct Line has found that electric cars are now cheaper to own despite the average zero-emission model costing around £5,000 - or 22 per cent - more than a comparable model with a petrol engine.
That's even when taking into account the £3,000 subsidy eligible for sub-£50,000 zero-emission cars though the Government's Plug-in Car Grant.
The insurer has calculated that annual running costs average £1,742, or £33.50 per week for an electric car, which is 21 per cent cheaper than the running costs of a petrol car at £2,205 per year or £42.40 per week.

Expenditure type	Electric car	Petrol car	Difference	Comparison
Up-front purchase cost	£27,921	£22,976	+£4,945	22% more expensive
Fuel	*£343*	*£824*	*-£481*	*58% cheaper*
Tax and maintenance	*£227*	*£443*	*-£216*	*49% cheaper*
Insurance	*£1,172*	*£938*	*+£234*	*25% more expensive*
Total annual running cost	£1,742	£2,205	-£463	21% cheaper
Total lifetime cost	**£52,133**	**£53,625**	**-£1,492**	**3% cheaper**
Annualised cost	£3,751	£3,858	-£107	3% cheaper
Annual CO_2 emissions	0kg	1,867kg	-1,867kg	100% lower

Source: Direct Line Car Insurance 2020

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Key Benefits

Non Financial

- Good environmental PR
- Lower carbon footprint of organisation
  - Zero tailpipe emissions
  - Overall greenhouse gas emissions of BEV 66% lower than petrol equivalent
  - Even with manufacturing emissions, BEVs less environmentally damaging than petrol/diesel equivalent vehicles
  - Batteries recyclable/reusable (storage)
- Staff well-being – they're easy and great to drive
  - Happier drivers – better driving behaviour – less accidents

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Transitioning to EVs

EVs are clearly now viable alternatives to petrol and diesel vehicles. Here are some steps to consider in the process of transitioning a fleet over to EVs

- Detailed fleet review to establish TCO baseline from which cost savings can be estimated
- Review duty cycles to identify the fleet vehicles that are most appropriate to change (Energy Saving Trust green fleet review)
- Investigate charging requirements – see later
- Work force buy-in – maybe run a trial
- Training to ensure maximum benefit is delivered to the business
- Update company car policy

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Providing EV Charging at the Workplace

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Providing EV Charging at the Workplace

- Essential for companies that are transitioning van fleets over to electric
- Useful for staff driving EVs as company cars and for visitors arriving in EVs
- Good incentive to encourage staff to change cars to EV and possibly to attract new recruits into the business
- Revenue generation and/or attract customers
- Becoming a planning requirement and likely to be added to building regulations in the near future

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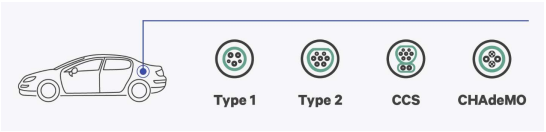
EV Charging Fundamentals

Different types of plug



Different rates of charging depending on charger

	Slow	Fast		Rapid
Power Rating	3.6KW (16amp 1 ph)	7.2KW (32amp 1 ph)	22KW (32amp 3 ph)	43KW+ (DC)
Range (miles) added in 15 mins	3	5 to 7	15 to 20	45+

Charging speed also depends on the car's on board charger size

Car	On-board AC charger	On-board DC charger
Tesla Model 3	11KW	100KW
Nissen Leaf	6.6KW	46KW
Jaguar iPace	11KW	104KW
Renault Zoe	22KW	46KW

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Considerations when planning for EV Charging infrastructure

- What/who will be charging? Commercial fleet, employees cars, visitors, guests, en-route?
- What turn-around is needed? Parked up for hours or back on the road in 30 mins?
- How much charge will they need?
- When will charging happen? During the day or overnight?
- What power capacity is available with your current connection?
- Where will the chargers go? Minimise distance for cable runs, wall mounted cheaper than post mounted
- Future proofing

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Some Workplace Examples

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Some Workplace Examples

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e.park can help you provide EV charging at the workplace

We install EV charging points and our service covers:

- Product selection
  - extensive market knowledge to select most appropriate chargers for your situation
- Site Investigation
  - electrical supply capacity, charger location, groundwork requirements
- Project Delivery
  - groundworks, charger installation, electrical cabling and connection, metalwork, signage
- Testing, commissioning and certification
- Charge Point Operation
  - Locate, charge, pay and analyse
- Breakdown and preventative maintenance

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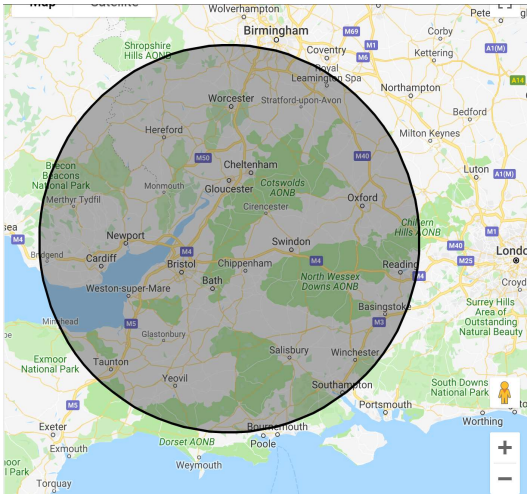
e.Park Coverage

- 10 or more chargers – UK wide
- For smaller projects our primary area of focus is within a 60 mile radius of our HQ in Tetbury

Bath, Bristol
Gloucestershire, Somerset
Wiltshire, Oxfordshire
Berkshire,
Worcestershire, Warwickshire



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Partners

Partnerships in place with key players in the market

ALFEN
POWER TO ADAPT

eo CHARGING

RAW CHARGING

wallbox

ClenergyEV

Office for Low Emission Vehicles

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e.park Demo Centre

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e.park

- One point of contact for a tailor made solution
- Futureproofed installations
- OLEV approved
- Knowledge and network

Thank you for listening

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