ELECTRIC VEHICLES: A FACT FILE

JAGUAR LAND ROVER LEADING THE CHARGE

Our long-standing commitments to electrification have resulted in a succession of ground-breaking developments that are now defining the future of Electric Vehicles (EVs), both on the road and on the track.

The new all-electric Jaguar I-PACE, Range Rover and Range Rover Sport Plug-in Hybrid Electric Vehicles (PHEVs) are making their way to the markets. Meanwhile, Jaguar I-TYPE race car is blazing Formula E city centre circuits around the world. Jaguar I-PACE eTROPHY is also introducing track-focused production Battery Electric Vehicles (BEVs) to international racing circuits for the very first time later this year.

Electrification is no longer a concept, it's happening now - and we're leading the charge.

HYBRID ELECTRIC VEHICLES (HEVs)

Powered by a conventional engine with an electric motor and battery pack to improve efficiency, a HEV charges its battery via regenerative braking.

– Lower CO_2 emissions versus Internal Combustion Engine (ICE) vehicles
– Minimal EV range due to smaller battery

PLUG-IN HYBRID ELECTRIC VEHICLES (PHEVS)

Combine a conventional engine with an electric motor and a battery. A PHEV is charged from an external power supply and, using regenerative braking, seamlessly selects and blends the engine and electric motor to deliver optimum performance and efficiency.

– Ultra-low CO_2 emissions
– Range of up to 51km* on EV mode with zero tailpipe emissions

BATTERY ELECTRIC VEHICLES (BEVS)

Instead of a conventional engine, a BEV is powered solely by an electric motor with a battery, and recharged using a plug-in charge point, delivering permanent pure electric vehicle driving. Charged from an external power supply and using regenerative braking, a BEV achieves zero tailpipe emissions.

– Zero tailpipe emissions
– Range of up to 480km** on a single charge

*Figure based on Range Rover PHEV. Official EU test figures. For comparison purposes only. Real world figures may differ. Please refer to landrover.com for further information.
**Figure based on Jaguar I-PACE. Official EU test figures from manufacturer tests under EU legislation. For comparative purposes only. Real-world figures and overall EV performance data may vary according to driving and environmental variables. Please refer to jaguar.com for further information.

Businesses are forecasting an increased inclusion of hybrid and other Electric Vehicle (EV) variants to their fleets by 2021.

THE IMPORTANCE OF ALTERNATIVE FUEL CHOICES

	CHINA		NORTH AMERICA		GERMANY		UNITED KINGDOM	
Fleet composition	2016	2021	2016	2021	2016	2021	2016	2021
Petrol Vehicles	82%	70%	46%	38%	38%	31%	35%	26%
Diesel Vehicles	14%	12%	20%	20%	48%	39%	47%	41%
Battery Electric Vehicles (BEVs)	1%	5%	9%	13%	4%	11%	5%	9%
Hybrid Electric Vehicles (HEVs)	2%	6%	13%	16%	4%	6%	7%	12%
Plug-in Hybrid Electric Vehicles (PHEVs)	2%	7%	10%	13%	12%	12%	6%	12%

Source: Simpson Carter. Fleet Monitor Survey (2016). The Importance of Alternative Fuel Choices.

By offering Electric Vehicle (EV)-friendly policies to company car drivers, which can include providing charging facilities for employees at home or work, a growing number of large corporations are actively pursuing plans to include more EVs in their fleets. However, a host of factors such as local government legislation, specific fleet requirements, budgetary implications and general awareness about EVs, will shape each organisation's ambitions to electrify its fleet over a given time period.

"I am particularly proud of our commitment to convert the whole of our car fleet to electric vehicles by 2030."

Jean-Bernard Lévy, Chairman and Chief Executive Officer, EDF

"We are inspired to create a better future for all through technology innovation, and are committed to sustainability across our business operations."

Wang Lu, Vice President, Baidu

"Our ambition is for all employees to be driving electric cars by 2021. Over half the cars on the road today belong to companies. Making the transition to an electric fleet is one of the easiest ways for businesses to help tackle climate change."

Tex Gunning, Chief Executive Officer, LeasePlan

GOVERNMENT LEGISLATION IS SETTING THE PACE FOR ELECTRIC VEHICLE (EV) ADOPTION

On top of the tax benefits proposed for private EV owners, governments and local authorities are offering further financial incentives to corporations and businesses.

FRANCE
- Complete or 50% exemption from registration tax for alternative fuel vehicles
- Exemption from company car tax for EVs and vehicles with CO_2 emissions of less than 60g/km
- A premium of €6,000 under a bonus-malus scheme for EVs and Hybrid Electric Vehicles (HEVs) with CO_2 emissions of up to 20g/km

BELGIUM
- Lowest rate of annual ownership tax for EVs in all three Belgian regions
- Registration tax exemption for EVs and Plug-in Hybrid Electric Vehicles (PHEVs) in Flanders until 31 December 2020
- Incentives and bonuses on purchase of Battery Electric Vehicles (BEVs) and hydrogen-powered cars and vans

GERMANY
- Exemption from ownership tax for EVs over a period of ten years, starting from the date of first registration
- €4,000 environmental bonus of for BEVs and Fuel-Cell Electric Vehicles and €3,000 for PHEVs and Extended-Range Electric Vehicles

SPAIN
- 75% reductions on ownership tax for EVs and fuel-efficient vehicles in main city councils
- 30% reductions on company car taxation for BEVs and PHEVs, and 20% for HEVs, Liquefied Petroleum Gas (LPG) and Compressed Natural Gas (CNG) Vehicles

THE NETHERLANDS
- Exemption from registration tax for zero emission vehicles
- Passenger cars with zero CO_2 emissions exempt from motor vehicle tax up to and including 2020
- Zero emission vehicles subject to the lowest percentage (4%) of income tax on the private use of a company car

ITALY
- Exemption from ownership tax for EVs over a period of five years, starting from the date of first registration

Tax incentives vary by country and even city, and can change without prior notice.
Please visit your country-specific Jaguar or Land Rover website or consult your local Retailer for further information.
Source: European Automobile Manufacturers Association.

RANGE ROVER **PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)**

The Range Rover PHEV combines the ultimate in refinement and capability with Plug-in Hybrid performance and efficiency. Powered by Range Rover's most innovative hybrid powertrain, it manages most city commutes with ease while the additional torque further enhances its off-road capabilities.

2.0L P400e PETROL PHEV (404PS) AUTO

CO_2 combined emissions (g/km)	72
Fuel economy combined litres/100km (mpg)	From 3.1 (Up to 91.1)
Power PS (kW)	404 (297)
Max speed km/h (mph)	220 (137)
Acceleration secs 0-100km/h (0-60mph)	6.8 (6.4)
Capacity (cc)	1,997

All figures are manufacturer's targets and subject to final confirmation ahead of production. Note that CO_2 and fuel economy figures can vary according to wheel fitment, and the lowest figures may not be achievable with the standard wheels. Engine data has not been re-certified in 2018. Data shown conforms to the 2017 certification.

RANGE ROVER SPORT **PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)**

The world's leading performance orientated SUV now available with Plug-in Hybrid performance and economy, Range Rover Sport PHEV.

It's precise and uncompromising, transitioning seamlessly between the petrol engine and electric motor - it's refinement at its best.

2.0L P400e PETROL PHEV (404PS) AUTO

CO_2 combined emissions (g/km)	73
Fuel economy combined litres/100km (mpg)	From 3.2 (Up to 88.3)
Power PS (kW)	404 (297)
Max speed km/h (mph)	220 (137)
Acceleration secs 0-100km/h (0-60mph)	6.7 (6.3)
Capacity (cc)	1,997

All figures are manufacturer's targets and subject to final confirmation ahead of production. Note that CO_2 and fuel economy figures can vary according to wheel fitment, and the lowest figures may not be achievable with the standard wheels. Engine data has not been re-certified in 2018. Data shown conforms to the 2017 certification.

NEW ALL-ELECTRIC JAGUAR I-PACE **BATTERY ELECTRIC VEHICLE (BEV)**

Jaguar's first ever all-electric vehicle, new I-PACE brings zero vehicle emissions technology to a driving experience that is unmistakably Jaguar. With generous interior space, exhilarating acceleration and expansive range between charges, I-PACE truly delivers the art of effortless, silent and ultra-efficient performance.

EV400 90kWh AWD

CO_2 combined emissions (g/km)	0
WLTP range, up to: km (miles)	480 (298)
WLTP consumption, up to: kWh/100km (kWh/100miles)	21.2 (34)
Power PS (kW)	400 (297)
Acceleration secs 0-100km/h (0-60mph)	4.8 (4.5)
Battery (kWh)	90

The fuel consumption figures provided are as a result of official manufacturer's tests in accordance with EU legislation.
A vehicle's actual fuel consumption may differ from that achieved in such tests and these figures are for comparative purposes only.

DEVELOPMENTS IN BATTERY AND CHARGING TECHNOLOGY HAVE MADE CHARGING AN ELECTRIC VEHICLE (EV) EVEN MORE CONVENIENT

This means you can top up your battery at work, at home or in public. What's more, there's an EV for every type of employee and every type of business.

WHERE TO CHARGE

INTRODUCING EVs TO A FLEET

HOME CHARGING

WORKPLACE CHARGING

PUBLIC CHARGING

HOME CHARGING

For optimum charging at home, you can install an approved Jaguar or Land Rover wallbox*.

Jaguar I-PACE and Range Rover Plug-in Hybrid Electric Vehicle (PHEV) models are equipped with a 7kW single phase AC on-board charger**, which can fully recharge the vehicle overnight and deliver up to 35km (22 miles) of range per hour.

When using a domestic socket, charging rates are slower than a wallbox (up to 11km, 7 miles of range per hour), but are sufficient to cover the average daily commute of 60km (38 miles)† if the vehicle is charged overnight. Industrial sockets (or upgraded domestic sockets) can charge up to 35km (22 miles) of range per hour.

*Jaguar and Land Rover have authorised charging infrastructure partnerships. Our infrastructure partners are available to advise of the best solutions for you. Please consult your local Jaguar or Land Rover Retailer for further information. **Charging times vary by market, power supply and charging solution.
† This figure has been obtained from the 'Driving and Parking Patterns of European Car Drivers' mobility survey, conducted by the European Commission.

WORKPLACE CHARGING

An increasing number of organisations are providing charging points at work and in some cases, home charging points have also been installed for company Electric Vehicle (EV) drivers by employers. Given a single overnight home charging session is enough for Jaguar I-PACE to cover the average weekly commute of 300km*, organisations do not necessarily need to heavily invest in developing a charging infrastructure at work.

In certain instances, employers have chosen to provide financial assistance to EV drivers. This can be in the form of partial contribution to cover daily charging costs and expenses associated with installing home charging points. In addition to these incentives, employers are supporting the development of EV communities for company car drivers to share information and educate their staff on the latest technology.

*This figure has been obtained from the 'Driving and Parking Patterns of European Car Drivers' mobility survey, conducted by the European Commission.

PUBLIC CHARGING

On longer journeys you may need a quick top up of your electric vehicle battery's charge to complete your trip – DC rapid chargers are the best way to deliver this.

Jaguar I-PACE can cover a distance of 270km when charged for an hour* using a typical 50kW charger. As the public charging infrastructure improves, it's also equipped to accept up to a 100kW DC charge rate. This means you can easily add 100km of range in the time it takes to have a cup of coffee.

Charging Plug-in Hybrid Electric Vehicles (PHEVs) at public charging points is equally convenient and requires the same charge. For instance, Range Rover and Range Rover Sport PHEVs can achieve a full charge in as little as 2.75 hours* using rapid chargers at a range of public points.

As an added convenience, every Jaguar I-PACE, Range Rover PHEV and Range Rover Sport PHEV comes with a Public Charging Cable as standard, making charging as simple as pulling up and plugging in at a charging point.

*Charging times will vary by market, power supply and charging solution. Please refer to jaguar.com and landrover.com for further information.

FLEET REQUIREMENTS

Looking at a fleet's vehicle usage can help identify which particular elements are most suitable for electrification. By doing so, an organisation can better determine the appropriate mix of EVs for their fleet. The following steps can help this:

- ☑ Early project trials
- ☑ Company-wide surveys to gather drivers' requirements and expectations
- ☑ Gradually phase EVs into a fleet
- ☑ Encourage EV users to share hands-on experiences with colleagues
- ☑ Stay up to date with the latest EV tech and EVs

EV-FRIENDLY POLICY

To encourage EV uptake, it's useful to include a section on EVs in the company's Car Policy – for instance, the use of charge points and possible bonus/malus systems based on CO_2 emissions in the form of higher monthly allowances for EVs versus internal combustion engine vehicles.

INTERNALISATION

Grow an EV community and get people involved right from the start of the project. Organisations can also hold educational workshops and trials, and send out informative internal communications which are also a great way of getting feedback.

DRIVER PROFILING

Each type of EV has particular charging, range and performance benefits. Driver profiling by looking into driving patterns and behaviour, can determine if someone is more suited to a certain type of EV.

CHARGING

To help organisations provide charging points for EV drivers, we've appointed preferred suppliers and equipment installers who offer the full spectrum of services from hardware to software solutions. For more information please contact your local Jaguar or Land Rover Retailer.

DRIVING STYLE

One of the biggest impacts on an Electric Vehicle's (EV's) electric range is the driver. An aggressive driving style with frequent and heavy acceleration will have a detrimental impact on the vehicle's state of charge. Whereas, travelling at a steady pace helps preserve range. Gradual acceleration can also reduce your reliance on hard braking which consumes more energy than gentle braking.

AMBIENT TEMPERATURE

Heating and air conditioning systems use energy and this can reduce an EV's range. That's why Jaguar I-PACE has the ability to pre-condition the interior, ahead of departure, while it's charging. This allows the vehicle to use electricity from the power supply, and not the battery.

MYTH

Electric Vehicles don't have enough range.

FACT

Modern, premium Battery Electric Vehicles (BEVs) have a range of up to 480km (298 miles)* and with a growing public charging infrastructure, range should not be an issue for most drivers.

*Jaguar I-PACE range on a full charge. Real-world figures and overall EV performance data may vary according to driving and environmental variables.

Jaguar I-PACE, Range Rover and Range Rover Sport Plug-in Hybrid Electric Vehicles (PHEVs) offer multiple driver modes that can automatically adapt a vehicle's settings for range preservation.

JAGUAR I-PACE DRIVING MODES

CABIN PRE-CONDITIONING

I-PACE is equipped with the technology to preserve range and protect the vehicle's battery. With cabin pre-conditioning you can heat or cool the interior while the vehicle is charging, so that power can be drawn from the mains supply and not the battery.

ECO MODE

Eco Mode helps preserve I-PACE's range by reducing energy depletion and encouraging a more efficient driving style. It also makes subtle changes to cabin temperature, air recirculation and to a number of other features. However, you can override these changes, either by normally operating each feature or via the menu settings.

RANGE ROVER AND RANGE ROVER SPORT PHEV DRIVING MODES

PARALLEL HYBRID MODE

This offers two functions that help drivers optimise fuel economy and battery charge. For example, Predictive Energy Optimisation (PEO) utilises altitude data for the route selected in the navigation system to intelligently switch between the electric motor and petrol engine to maximise fuel economy.

ELECTRIC VEHICLE (EV) MODE - FULL ELECTRIC DRIVE

EV Mode enables the vehicle to run solely on the electric motor using the energy stored in the battery, ideal for quiet, zero-emission journeys.

A SAFER, MORE ENJOYABLE DRIVE

From negotiating city traffic or the motorway to providing additional safety for you and your passengers, our electric vehicles offer a wealth of innovative technologies, designed and engineered to heighten your enjoyment of the vehicle. Here are some of the standard Advanced Driver Assistance features available across Jaguar I-PACE, Range Rover and Range Rover Sport Plug-in Hybrid Electric Vehicles (PHEVs):

AUTONOMOUS EMERGENCY BRAKING

Helps prevent collisions with other vehicles, as well as cyclists or pedestrians.

LANE KEEP ASSIST

Detects when your vehicle is unintentionally drifting out of your lane, and gently steers you back.

ADAPTIVE SPEED LIMITER

Uses Traffic Sign Recognition information to adjust your vehicle's speed accordingly by using the cruise control system.

CRUISE CONTROL AND SPEED LIMITER

Allows the driver to maintain the current speed of the vehicle without the need for continued use of the accelerator pedal, helping to reduce driver fatigue.

LANE DEPARTURE WARNING

Can help make long journeys much safer. The system senses when your vehicle is unintentionally drifting out of your lane, and notifies you with a visual alert and a gentle vibration of the steering wheel.

TRAFFIC SIGN RECOGNITION

Keeps you informed and aware on the road, by displaying speed limits and no overtaking signs in the instrument cluster, where they can easily be seen.

DRIVER CONDITION MONITOR

Detects if you're starting to feel drowsy by monitoring steering inputs, brake and throttle.

Features described may be optional and model, market or powertrain dependent.
Please consult your local Jaguar and Land Rover Retailers for availability and full terms in your country.

SERVICING COSTS

Compared to a vehicle with an internal combustion engine, Battery Electric Vehicles (BEVs) require less maintenance as they have fewer moving parts. In other words, there is less that can wear out.

FUEL COSTS

Plug-in Hybrid Electric Vehicles (PHEVs) lower fuel costs by reducing the need for petrol and diesel, while BEVs only require fuel in the form of electricity.

TAX BREAKS

Electric vehicles can benefit from significantly lower taxation rates* than the equivalent petrol or diesel cars offered by company car schemes.

MYTH

The battery won't last and it will need to be replaced regularly.

FACT

Jaguar I-PACE's 90kWh battery warranty is limited to 8 years or 100,000 miles (160,000km), whichever comes first. Redeemable in the case of any manufacturing defect or should a certified Jaguar Retailer measure that the battery has dropped below a 70 percent State of Health.

*Tax incentives vary by country and even city, and can change without prior notice.
Please visit your country-specific Jaguar or Land Rover website or consult a local Retailer.

HOME CHARGING

Home charging, using a dedicated wallbox, is the most convenient, cost-effective and also the most preferred option among Electric Vehicle (EV) users. The cost itself can be calculated based on the kWh electricity rate multiplied by the kWh capacity of an EV's battery. For instance, the cost to fully charge Jaguar I-PACE can be calculated by simply multiplying the electricity rate charged per kWh by 90, as I-PACE has a 90kWh battery.

WORKPLACE CHARGING

The cost of charging an EV at work depends upon each organisation's EV policy. They can choose to offer free charging at work or install complimentary charging points at employees' homes. Alternatively, organisations can also set a tariff. Of course, this and other payment mechanisms are dictated by tax implications and employment law that vary from country to country.

PUBLIC CHARGING

Public charging gives drivers the added convenience to top up their EV's battery while they are on the move. Many locations such as restaurants, gyms and shopping malls offer free charging to their customers or visitors for the duration of their stay. In addition to these public charging points, rapid charging stations can be found at motorway service stations which can be useful for drivers on an inter-city commute. Charging at such locations can be entirely cost-free or subject to a tariff that's billable to users.

Other factors that reduce Total Cost of Ownership for Electric Vehicles (EVs) and encourage their uptake are the financial incentives offered by governments and local authorities. These can be in the form of tax breaks, lower or no excise duties, free parking and possible exemptions from road charges and tolls.

VAT, GST AND INDIRECT TAXES

Some governments offer direct financial incentives or allow electric drivers to avoid the purchase taxes, such as VAT or GST, charged on petrol and diesel vehicles.

EXCISE DUTIES AND REGISTRATION CHARGES

Excise duties are generally lower for electric cars, and can be zero. In countries where number plates are bought in addition to your car, or obtained in a lottery, EVs can benefit from reduced costs and even avoid the vehicle registration lottery altogether.

SUBSIDISED RATES FOR CHARGING EQUIPMENT

Wallboxes may be obtained at subsidised rates in some countries. Incentives may also be offered to install communal charging facilities in shared residential buildings and at workplaces.

REDUCED COMPANY CAR SCHEME TAXES

In most markets, EVs are subject to lower taxation rates than the equivalent petrol or diesel vehicles. Organisations can benefit from this incentive and also take advantage of possible accounting benefits in relation to writing down the value of the asset.

FREE CHARGING OF EVs

Free charging facilities may be available while you are parked at shopping centres, hotels and other venues. This is referred to as destination charging. Others may offer reduced charging fees based on your time spent at the venue.

AVOIDANCE OF TOLLS AND CHARGES

Where road use charges exist, it's sometimes the case that EVs are exempt. And, of course, they will not be required to pay any emissions-based charges introduced for petrol or diesel cars for air quality reasons.

CONVENIENCE AND ACCESS

In some cities, EVs are permitted to use high-occupancy vehicle lanes, without passengers, as well as bus lanes. You may also park in places where petrol or diesel vehicles are not permitted or can park at a lower cost.

To find out the specific EV incentives being offered in your region, please consult your country-specific Jaguar or Land Rover website or local Retailers to find out more.

Our global retail network is a key enabler when it comes to helping company car drivers and fleet managers better understand Electric Vehicle (EV) technology, encouraging EV inclusion in a company fleet and also offering customer-focused aftersales services.

EV SPECIALISTS

Each of our Retailers will have a designated EV Specialist to guide customers through the EV adoption process. In addition to this, our EV Specialists will help advise on the best charging strategies, especially for small and medium enterprises (SMEs) and large corporations.

JAGUAR LAND ROVER PREFERRED CHARGING SUPPLIERS

To further support our retail network in each of our markets, we have appointed preferred suppliers and installers of charging equipment and access packages to public charging networks.

All equipment from our preferred charging suppliers has been tested for compatibility with Jaguar and Land Rover vehicles. These companies have been chosen on the basis of their ability to provide the best possible combination of value for money, service and convenience, and are able to support home, workplace and business charging requirements.

This preferred supplier arrangement ensures that the latest charging technology and expanded charging networks are quickly available to our customers. Furthermore, it offers our customers the best expertise when it comes to organising equipment that complies with local power supply and other regulations.

For more information please contact your local Jaguar or Land Rover Retailer.

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