

A silhouette of a man in a suit is shown from the back, looking out over a landscape at sunset. The sun is low on the horizon, creating a warm, golden glow across the sky and casting long shadows. The foreground shows the sleek, curved lines of a car, suggesting a modern, eco-friendly mode of transport.

Electric vehicles

**A viable route to Corporate
Social Responsibility?**





Electric vehicles

Corporate Social Responsibility (CSR) has steadily risen up the corporate agenda over the last decade, with a marked impact on many vehicle fleet policies. Combined with the effect of fiscal measures that have also encouraged lower carbon emissions, the result has been that the average company fleet profile has become more environmentally friendly. This trend shows little sign of slowing. Indeed, the potential for companies to improve environmental performance and reduce running costs at the same time accelerates as new engine technology develops.

Both consumers and fleet managers now find themselves on the eve of mass produced electric vehicles (eVehicles) coming to market. So, how might eVehicles fit into a CSR policy and what should organisations consider in assessing their suitability as a fleet option?

From awareness to action

As the profile of CSR has grown, some have seen it as simply a corporate buzz word, restricted to lip service or grand Public Relations gestures. However a growing number of companies are taking CSR more seriously and ensuring it is engrained as a central value of the corporate culture and modus operandi.

Businesses are also aware that as they compete in an ever more environmentally conscious world, consumers are demanding greener products and services and showing a preference for brands with stronger environmental credentials.

Interest in CSR reflects how conscious companies are of the impact their business activities have on employees, customers, society and the environment. And companies that take CSR seriously want to measure and monitor their impact, so that their activities and initiatives will bear scrutiny.

Looking back over the last five years, we have seen company car fleets regularly integrated into CSR policies. It began with a focus on CO₂ 'tailpipe' emissions and at this point companies and their drivers were just becoming acquainted with the topic but it was for many too soon to act. However, more progressive fleet managers soon realised that the emissions rating of a vehicle was only the start. They also wanted to measure the total emissions coming from the whole vehicle fleet

in order to set a clear baseline and subsequent reduction targets for the business.

Now, for most large fleets, CO₂ measurement and monitoring has become 'business as usual'. Fleet strategies have been adapted and fleet managers are actively managing their emissions downward. Carbon footprint information and CSR are now common topics in annual plans.

CO₂ reduction in the automotive industry

When the Kyoto protocol was agreed in 1997, it was translated into a target for car manufacturers to reach overall average emissions of 120 g/km by 2012. At the time, the average CO₂ level was 185 g/km.

A number of trends and factors have subsequently transpired to work against the achievement of this target. More stringent passenger safety standards, demand for higher occupancy vehicles, higher specifications and the fashion for larger vehicles such as SUVs have all worked against the objective of reducing CO₂. In light of this, the EU made the legislation less stringent in late 2008, stating that new cars must now meet a target of 130 g/km by 2015, with an additional 10 g/km reduction to come from complementary measures such as greater use of bio fuels, vehicle technology, gear change indicators and tyre pressure monitoring systems.

“Fuel efficient cars are gaining in popularity.”



Today, notwithstanding increases in size, performance, equipment levels and safety measures, over 50% of all new cars sold in European countries have CO₂ emissions of 140 g/km or less. By the end of 2009 the industry achieved a volume weighted average for passenger cars of just below 146 g/km. If the current rate of reduction can be maintained, the 2015 target of 130 g/km appears to be well on track.

Car manufacturers and related automotive suppliers continue to work hard to improve the fuel efficiency of cars and thus reduce their CO₂ emissions. Some examples include:

- Improving conventional car technology, with the introduction of systems such as ‘start-stop’.
- The development and launch of new engine technologies, such as petrol/electric hybrid vehicles.

- Other means of delivering greater fuel efficiency, such as low rolling resistance tyres.

Since 2008, **economic pressures** have also helped to drive greener buying trends, as the increasing price of fuel has impacted vehicle selection. As such, more fuel efficient cars became more popular.

This trend has been further supported by the **scrappage schemes** introduced by many governments over recent years, as well as the tax benefits for fuel efficient cars. An important threshold for taxation systems in many countries is 120 g/km, which goes a long way to explaining the growing demand for cars with an emissions rating of between 100 and 120 g/km.

Because of this shift in demand, the trend for larger vehicles does now appear to be reversing somewhat, with the predominant car segment in some countries illustrating this. For instance, the most popular car segment in France has moved from ‘compact’ to ‘small’ and in Italy has shifted from ‘medium’ to ‘compact’.

Conventional engines, hybrid and Electric Vehicles

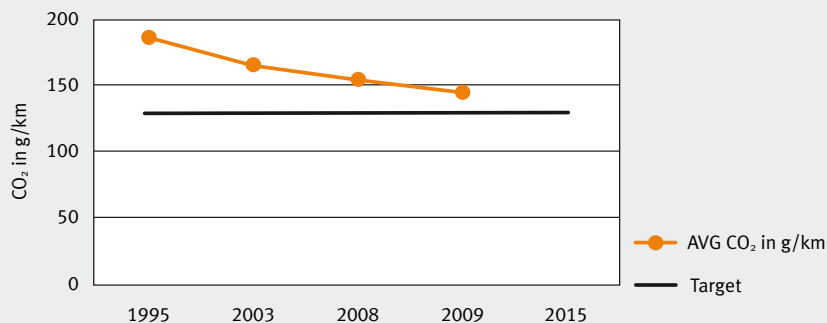
For decades, conventional petrol and diesel cars have dominated the market. In recent years, hybrid cars have been added to the spectrum and now the first mass produced eVehicles are scheduled for release at the end of 2010 and in early 2011.

What is a hybrid?

There are two different categories of hybrid vehicles: parallel and series.

Parallel hybrid vehicles are currently the most widespread on the market and combine two forms of propulsion. In these vehicles both a petrol engine and an electric motor can drive the transmission. The electric engine launches the vehicle from rest, assists with acceleration and powers it for a short distance before the conventional combustion engine is required for propulsion or recharge of the battery pack. Some hybrid vehicles make use of regenerative braking technology, which charges the battery when braking.

Volume weighted AVG CO₂ in g/km



Examples of established parallel hybrids in the mainstream market include the Toyota Prius and a version of the Honda Civic.

Series hybrids differ to parallel hybrids in that the diesel or petrol engine doesn't directly propel the vehicle. Instead it powers a generator to recharge the battery. This enables the use of a smaller internal combustion engine which operates in its most efficient range, thus enhancing the vehicle's fuel efficiency. This technique allows for a larger battery to be carried on board which can also be recharged from an external source.

Both parallel and series hybrids are also available in plug-in versions, meaning that the battery can be charged by plugging it into the mains electricity grid. General Motors will soon be releasing plug-in series hybrids, such as the Chevrolet Volt in the United States and the Opel Ampera in the European market. Other examples include the Audi A1 E-tron and the Tesla Model S. Hybrid technology reduces tailpipe emissions but because it still uses a petrol or diesel engine, the emissions will never be zero. Moreover, actual emissions remain dependent on aspects of car usage such as acceleration, speed, mileage and driving in an urban environment.

What is an eVehicle?

True electric vehicles have 'zero emissions' as they are propelled solely by batteries. Of course, whilst the vehicle has zero tailpipe emissions, the generation of electricity required to charge the battery does create carbon emissions. However, even with the current mix of electric power generation, it is estimated that the power used is 40% cleaner than with gasoline. Moreover, with renewable energy generation likely to grow, this will make true electric vehicles even cleaner and greener. Examples of forthcoming models include the Nissan Leaf, Mitsubishi iMiev, Renault Fluence and Peugeot Ion.

especially as there are less moving parts and 'wear and tear' items.

- *Supports an environmentally conscious image*
As well as the decrease in noise pollution, zero tailpipe emissions underline a company's CSR commitment and its care for people and the environment.
- *Financial benefits through temporary fiscal incentives*
To date, many governments apply low (or even no) road and car registration tax for eVehicles.

Will eVehicles be fit for fleet?

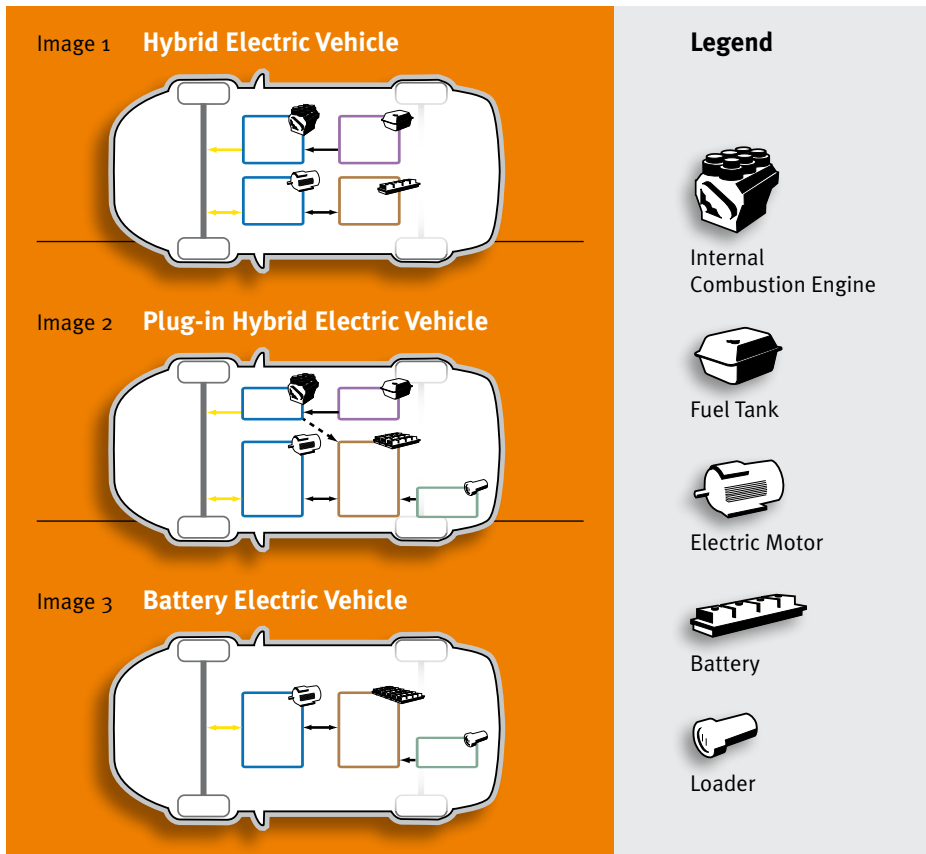
In order to assess the suitability of eVehicles for fleet, there are a number of aspects that should be properly considered:

The advantages of battery eVehicles

- *Zero CO₂ tailpipe emissions from the vehicle*
In fact, there is no tailpipe on an electric car! The car runs on electricity and does not emit any greenhouse gasses. Of course, for the eVehicle to be truly 'green', it is important that the generation of electricity is from renewable resources such as solar and wind power wherever possible.
- *Lower running costs*
Despite the higher initial investment (mainly due to the lithium ion battery), eVehicle running costs are expected to be similar or even lower compared to conventional cars. Electricity costs less than fuel, which means that considerable fuel cost savings can be achieved (fuel costs being some 20% of the direct running cost of a car). In the longer run, as knowledge and tools are adopted at service centres and garages, maintenance costs are also expected to come down,



Saskia Harreman, LeasePlan International's Managing Consultant comments: "Due to the fact that eVehicles cause far less noise than cars with a conventional combustion engine and decrease the impact of air pollution on the environment, the choice to introduce them to a global fleet policy will significantly support an organisation's social responsibility."



“Electric vehicles fit certain mobility needs very well.”



Practical considerations

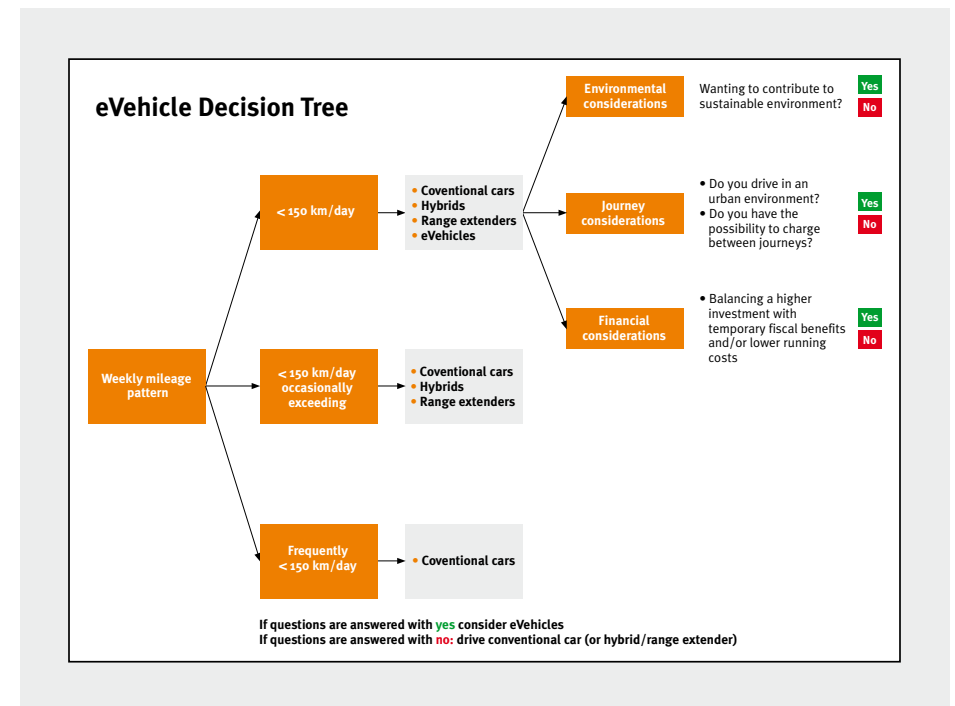
Putting the environmental advantages of eVehicles to one side, certain other elements should be taken into account prior to making a decision to replace conventional engine vehicles:

- The driving range of a full battery is currently restricted to around 150 km.
- Charging the battery takes approximately half an hour when using a quick charger or up to 8 hours when using the slow charger (normal power socket). Preferably, the car is charged as often as possible using a normal charger, as this preserves the life and performance of the battery.
- Public charging points are growing in number, but for the time being are still not widespread. Companies running larger eVehicle fleets may decide to install their own charging locations, which does require capital investment. Costs range from a couple of hundred euro for a dedicated parking space with a mains power socket to a couple of thousand euro for installing a quick charger.

- The purchase price of the car is higher than an equivalent conventional engine car in the same segment (albeit the running costs are expected to be lower).
- The current tax benefits may be temporary. It remains to be seen how sustainable these measures will be, because as eVehicles grow in popularity, governments will lose income from vehicle tax and fuel duties. The bigger the success of eVehicles, the more likely it will be that fiscal rules will be adapted to maintain government revenues. Nevertheless, it is expected that the fiscal distinction between clean and polluting cars will always remain in some form.

Electric vehicles do fit certain mobility needs very well, such as pool cars, (urban) delivery services, short distance commuting and transportation on factory premises. As long as the daily mileage is within 150 km, or if there is an opportunity to charge the battery whilst parked, eVehicles can be a good option.

eVehicle Decision Tree based on mileage pattern



Overall, the driving range, recharging considerations, the typical vehicle segment, as well as the costs involved are elements that require careful assessment before determining if eVehicles are a genuine fleet alternative to conventional or hybrid cars. But, if the average journey is less than 150 km and journey planning allows for charging, becoming an early adopter could be a positive option for fleets.



What to consider whilst evaluating an eVehicle?

Specific requirements to consider include:

- Driving range
- Charging time
- Possibility to charge
- Costs
- Fiscal impact

Sources used for this white paper:

- LeasePlan database
- Dataforce
- Jato, 'Jato consult CO₂ report 2009', May 2010
- Automotive World, 'The electric car report', 2nd edition, July 2010

How LeasePlan can help?

LeasePlan International has helped many leading global organisations design, implement and manage successful fleet strategies.

LeasePlan's expertise across all aspects of sustainable fleet management provides global clients with a single source solution to a successful sustainable international fleet.

At a global level, LeasePlan International's Consultancy Division can deliver advanced CO₂ reporting, advice on the latest market and manufacturer trends, along with effective recommendations to reduce the environmental impact of a client's fleet.

LeasePlan is actively testing the eVehicle option with some international clients as part of a balanced fleet management approach that considers environmental impact as well as cost and driver satisfaction.

For more information on LeasePlan International's approach to eVehicles and the feasibility of introducing them into a global fleet, please contact your LeasePlan International Account Manager.



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