

The Alphabet eGuide

Integrating eMobility into your fleet

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Guide for fleet managers to support the integration of eMobility into your Car Policy

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Purpose of the guide

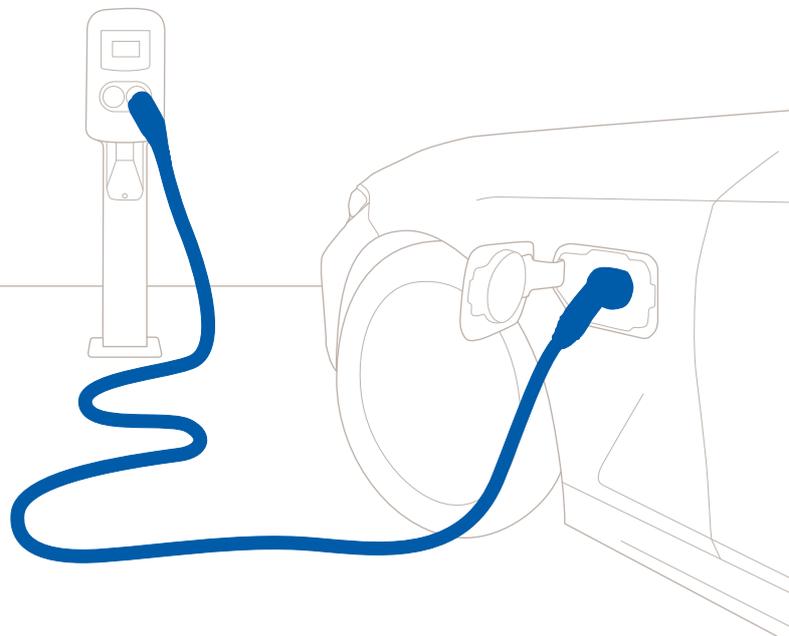
Alphabet aims to support you in your role as Fleet Manager with comprehensive advice and assistance in the implementation of sustainable business mobility. This guide aims to help you supplement your Car Policy with an eCar Policy and highlight potential ways to successfully integrate electric cars into your current vehicle fleet.

A well-conceived Car Policy allows you to control all processes relating to car selection and precisely calculate employees' total mobility costs. Not only can efficient integration of electric cars future-proof your Car Policy, it can also make a significant contribution to your strategic objectives.

The Alphabet eGuide is intended to serve as a guideline to support you in the expansion of your Car Policy, regardless of your line of business or the size of your fleet. What are the aspects you need to consider when integrating electric cars, plug-in hybrid vehicles and the associated charging infrastructure into your fleet?

We hope to give you an overview of the key topic areas, highlight some of the specific features of electric cars, and also offer practical suggestions to help you achieve your mobility goals. In a constantly changing environment, it is important to remain flexible and ready to adapt to new circumstances. With this in mind, this guide in no way claims to be exhaustive.

We would ask that you examine any legal and technical requirements for yourself. The same applies to any technical modifications and legal changes. This catalogue of criteria is an indicative reference tool to support your efforts and is not a substitute for technical and legal examinations on your part.





Would you like further support in adapting your Car Policy?

Alongside the information in this Alphabet eGuide, we aim to support you with our fee-based eCar Policy Consulting offers, so that you can adjust your Car Policy to best fit your needs. Benefit from the expertise of our eMobility specialists for the efficient integration of electric vehicles into your fleet.

Would you like to benefit and get started straight away?

Select our eMobility Package.

Use the handy templates (available in German and English), which can be quickly adapted to your needs, for the integration into your existing car policy.

What does our package contain?

- Two sample eCar Policy attachments for the integration of e-vehicles (supportive and restrictive)
- Release certificate for home charging solutions for your drivers
- Survey to determine the likelihood of your drivers' turning to electromobility

Would you like personalized advice on adjusting your Car Policy?

Attend our eCar Policy Consultation Workshop.

Our eMobility specialists will be happy to hold a workshop together with all responsible entities at your company, with the aim of a structured needs analysis for the individual adjustment of your Car Policy for electric vehicles.

What topics will be covered?

- Driver profiles: Which drivers are suited to electric vehicles?
- Charging infrastructure: How can an optimal charging infrastructure be set up, and how are charging costs billed?
- Design of bonus-malus regulations

We would be more than happy to provide information on eCar Policy Consulting from Alphabet, and advise you as to which offer best fits your needs.

1. Criteria for the integration of electric cars

You should define a catalogue of criteria for the introduction of electric cars. This allows you to check that your requirements have been met and thus ensure the vehicles' successful integration from both ecological and economical points of view.

Defining the requirements of eMobility

Drawing up a catalogue of criteria is particularly important at present as [current German tax law](#) concerning employees who are permitted to use their cars for private purposes makes two vehicle types markedly more attractive than those with ICEs: BEVs (battery electric vehicles) and PHEVs (plug-in hybrid electric vehicles).

However, this does not necessarily mean that a BEV or PHEV is the most suitable vehicle for every employee seeking to take advantage of this tax benefit. In some circumstances, they can lead to additional costs for the company. For example, if a PHEV is not regularly charged and is therefore primarily used as an ICE vehicle, it will incur higher fuel costs.

Charging infrastructure and driving profiles

For this reason, guidelines concerning charging infrastructure are among the central criteria. As PHEVs in particular need to be charged on a regular basis, it must be practical and convenient for users to charge their vehicles at home. (For example, a fixed cable leading from the home wallbox is very practical as the user does not have to remove the portable cable from their boot every time.) Otherwise, there is a risk that the vehicle will primarily be powered by petrol. This often leads to avoidable additional costs as the weight of an empty battery not in use (200–300 kg) soon drives up fuel consumption unnecessarily.

The criteria to consider also include each employee's driving profile – i.e. which routes they travel on a daily basis and how often they make long journeys.

Questionnaire for drivers

Alphabet has developed a questionnaire for employees that can help them to determine their own driving profile in an initial quick check. This can serve as an initial indicator of the feasibility of switching to an EV. For example, it can be quickly checked whether it would be possible, in principle, to charge their vehicle at their place of work or at home. (A more detailed examination of the actual costs involved in installing a charging point at home may indicate that the installation costs are not proportionate to the potential savings of switching to a BEV or PHEV.)

However, as the range of electric vehicles continues to increase, you should re-examine these criteria – just as you would your overall Car Policy. Your Alphabet [contact partner](#) will be happy to provide this questionnaire as a driving profile indicator.

If you use your own questionnaire or a digital survey for your drivers, we would recommend taking the following criteria into account. The more criteria are met, the more likely you are to efficiently integrate electric cars into your company fleet.

1.1 Potential criteria for BEVs

The following provides potential criteria specific to the integration of BEVs. It requires the cooperation of the proposed user of the company car.

Charging infrastructure

- The employee should agree to perform a pre-check of their home's technical systems (at their own cost) or have one performed (with the costs borne by their employer).

A pre-check performed by an electrician would examine, for instance, whether the property's power rating is sufficient for an 11 kW wallbox. You can find out more about our pre-check in our [webcast on charge management](#).

- There is the option to install a wallbox at the employee’s place of residence as a means of charging the electric vehicle. It is also conceivable that the employer could arrange for the leasing of a charging point at the employee’s home. Alternatively, a permanent charging station can be installed for the employee at their place of work.
- The employee agrees to install the necessary charging infrastructure at their place of residence (at their own cost) or to have it installed (with the costs borne by their employer).

Range

In future, it will become increasingly common for the range of vehicles to differ. Vehicles of the same model will be available with batteries of different capacities; ultimately, the battery is the main cost factor in the vehicle and determine its range. Companies will therefore have to decide which range is appropriate for which drivers.

- The range of an electric car must be at least 150% of the daily mileage – unless it is possible to charge the vehicle at the employee’s primary place of work.
- The range of an electric car must be at least 150% of the employee’s daily commute from their place of residence to their primary place of work, provided it is possible to charge the car there.

Example calculation of the minimum required range BEVs

Daily mileage

 Commute to work:
50 km

 Return journey home:
+ 50 km

 Business travel:
+ 100 km

 Daily mileage
= 200 km

Required range

What is the minimum electric range a vehicle should have if an employee travels 200 km on a daily basis?

 **150%** of 200 km

 Required electric range:
= 300 km

Result

The electric range of the vehicle of an employee who drives 200 km on a daily basis should be at least 300 km. This buffer ensures that the driver can complete their daily mileage without having to re-charge during the day in winter or in inclement weather.

1.2 Potential criteria for PHEVs

The following provides potential criteria specific to the integration of PHEVs. It requires the cooperation of the proposed user of the company car.

Charging infrastructure

- The employee should agree to perform a pre-check of their home's technical systems (at their own cost) or have one performed (with the costs borne by their employer).
- There is the option to install a wallbox at the employee's place of residence.
- The employee agrees to install the necessary charging infrastructure at their home (at their own cost) or to have it installed (with the costs borne by their employer).

Range

We would recommend opting for either a strict approach (Option 1) or a less restrictive approach (Option 2) as a guide for determining the electric range.

Option 1:

- a) The minimum electric range must be greater than the distance between the employee's place of residence and primary place of work.
- b) If there is no facility to charge the vehicle at the employee's primary place of work, the minimum electric range must be greater than their entire commute (from place of residence to work and back).

This recommendation represents a strict approach in which the range should cover 100% of the distances travelled on a daily basis if it all possible.

Option 2:

- a) The electric range must cover 50% of the distance from the employee's place of residence to their primary place of work.

- b) If there is no facility to charge the vehicle at the employee's primary place of work, the electric range must be 50% of their entire commute (from place of residence to work and back).

This recommendation is less restrictive, as at least 50% of the distance travelled every day has to be completed using electric power. The rationale behind this is that electricity at the employee's places of residence and work is usually cheaper than buying petrol. Therefore, if you can cover 50% of daily mileage with electric power, this represents a cost advantage compared to a vehicle with only an ICE.

- The electric range must be sufficient in inclement climatic conditions (i.e. low temperatures during winter). We would therefore recommend including a safety buffer, such as an additional 30%.

Extending range

Being aware of the largest power guzzlers makes it possible to extend the range as far as possible. The values provided below are examples to illustrate their consumption per hour and can vary depending on the vehicle.

- Heating: 4.5 kW (-25% range)
- Automatic climate control: 1.5 kW (-12% range)
- Heated seats: 0.3 kW (-5% range)
- Rear window heating: 0.3 kW (-5% range)

Depending on how intensively they are used, these factors can have a noticeable effect on total range. This is because auxiliary equipment such as lighting, air conditioning and the radio are fed by the 12 V on-board power supply.

Mileage

- Annual mileage should be limited to ensure that the vehicle is driven in electric mode at least 50% of the time.

If the mileage limit is significantly exceeded and the PHEV is therefore primarily driven in petrol mode, this nullifies the vehicle's ecological and economical advantages. The user should therefore strive to drive the car in electric mode at least 50% of the time.

Example annual mileage calculation

The annual mileage can be calculated on the basis of the following formula (providing there is charging infrastructure at the employee's place of residence and at home).

Calculation for maximum annual mileage for PHEVs



Electric range*:
50 km



Daily commute using only electric power (return journey):
50 km x 2 = 100 km



Potential electric journeys per year:
100 km x 220 working days = 22,000 km



22,000 km x 2 (50% in electric mode, 50% in petrol mode)



Maximum annual mileage:
= 44,000 km

* As the range of PHEV increases, the potential annual mileage also increases accordingly.

Result

The annual mileage for a PHEV with 50 km electric range should be max. 44,000 km. If the driver is only able to charge their vehicle at one location (e.g. only at their place of work), the annual mileage is halved accordingly to 22,000 km.

Environmental bonus

- The vehicle should be on the list of electric vehicles eligible for grants by the [BAFA \(Federal Office for Economic Affairs and Export Control\)](#), provided that the available funding (environmental bonus) is to be used. As we can expect changes to regulations to promote electric vehicles in future, you should ensure your Car Policy is adaptive to accommodate such changes.

- Depending on whether it is in the company's interests to do so, another possibility might be to obligate employees to charge their vehicles on a regular basis. If a vehicle is driven in electric mode for less than 50% of the time, the employer could reserve the right to demand an annual surcharge from the employee to cover fuel costs. (This regulation would serve to make clear to the employee that the vehicle must be charged on a regular basis to justify its use in economic and ecological terms. However, before introducing such regulations, it is essential that you examine whether they are permitted under legal regulations and your company's contractual arrangements.)

Your Fleet Management department could examine operating mode use using the petrol costs charged to the fuel card. The average consumption makes it relatively easy to approximate the proportion of total mileage completed in petrol mode. (Whether or not to implement such a review is a matter for each company to decide at their discretion. However, integrating such a clause into a Car Policy can help to raise awareness among employees.)

Example calculation: journeys in petrol mode where no surcharge is due

Calculation basis

 <p>Kilometres driven: <small>(incl. private journeys)</small> 30,000 km</p>	 <p>Petrol purchased: 500 l</p>	 <p>Average consumption: 5.25 l/100km</p>
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Annual mileage

Mileage in petrol mode:
500 ÷ 5.25 x 100 = 9,524 km

Result

30,000 - 9,524 km = 20,476 km were driven under electric power. The proportion driven under electric power is more than 50%.

Example calculation: journeys in petrol mode where surcharge is due

Note: Before a surcharge due to increased fuel costs can be charged to the employee, you must have a legal expert examine whether such a surcharge is legally permissible and can be implemented in practice.

Example calculation

 <p>Kilometres driven: (incl. private journeys) 30,000 km</p>	 <p>Petrol purchased: 1,000 l</p>	 <p>Average consumption: 5.25 l/100km</p>
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Annual mileage



Mileage in petrol mode:
 $1,000 \div 5.25 \times 100 = 19,048 \text{ km}$

Result

30,000 - 19,048 km = 10,953 km were driven under electric power. The proportion driven under electric power is less than 50%.



Calculation basis:
1.53 EUR/l fuel costs



Annual mileage:
 $19,048 - 15,000 = 4,048 \text{ km}$ above limit driven in petrol mode



Fuel:
 $4,048 \times 5.25 \div 100 = 213 \text{ l}$



Surcharge:
 $213 \times 1.53 = 326 \text{ EUR}$

Result

In this example, a surcharge of € 326 would be due.

2. Reference rates for electric cars

While company cars serve as a source of motivation for employees, they also represent a cost factor for companies. However, finance leasing rates are only one of several cost blocks. For this reason, we recommend taking the total cost of ownership as a starting point. The full-cost model is a proven concept in this regard. Simply use this in your Car Policy as a reference rate for employees eligible for company cars. Taking this as a basis, you can then work out the corresponding monthly leasing rates for employees.

Just as the criteria for BEVs and PHEVs were set down earlier in this guide, charging infrastructure is also a decisive aspect in the full cost of electric vehicles. You should therefore include these costs when calculating the leasing rates of employees eligible for company cars. The best method is to use the full-cost leasing rate including fuel pre-payment and the required charging solution. In the case of an electric car, this rate might include: finance leasing rates, servicing, insurance, tyre management, GEZ radio licence, accident prevention management, fuel prepayment and charging infrastructure, among other factors.

Schematic breakdown of the full-cost leasing rate

Category of employee Entitled to use of a company car	Maximum full-service leasing rate
Executive management	€ 1,200*
Department management	€ 800*
Field sales	€ 600*

* Examples of full-service leasing rates

If you wish to integrate the costs of charging infrastructure as a fundamental requirement in your company, it would be reasonable to increase all leasing rates slightly. This helps to ensure that employees who opt for a BEV or PHEV are not financially disadvantaged.

3. Carbon dioxide values in a Car Policy

3.1 Adjusting CO₂ limits

Limiting CO₂ values

If you place emphasis on carbon dioxide emissions in your Car Policy, it is sensible to define a CO₂ limit for each vehicle category. As a fundamental rule, this only permits the use of company cars – whether electric or conventional – that fulfil these criteria.

A company can also choose only cars with low CO₂ emissions or, in the case of electric cars, cars with zero CO₂ emissions. Simply lower the upper CO₂ limits to motivate employees to opt for vehicles that produce low CO₂ emissions (see “Strict CO₂ reference value” in the table below).

Schematic breakdown of CO₂ limits

Category of employee entitled to use of a company car	Normal CO ₂ reference value	Strict CO ₂ reference value
Executive management	180 g/km	150 g/km
Department management	130 g/km	120 g/km
Field sales	100 g/km	90 g/km

All figures shown in the table are example values. Each company should define its own individual figures.

Bonus accruals for electric cars

The company can implement a bonus system for employees who opt for a BEV or PHEV. Such a system could be structured to include different models. You should first check whether a system like this would be permitted in your company.

- When selecting an electric car, an employee receives a percentage bonus (cf. bonuses in the following table) to put towards the car’s features. The employee can therefore choose a car with a higher leasing rate and thus enjoy a higher spec – but only pay the regular leasing rate.
- When selecting an electric car, the employee also receives a voucher to rent a replacement car for use on holidays (for 14 days, for example) – especially when they choose a BEV as their company car.

Schematic breakdown of the percentage bonus system

Category of employee entitled to use of a company car	Maximum full-service leasing rate	Maximum full-service leasing rate incl. PHEV bonus	Maximum full-service leasing rate incl. BEV bonus
Executive	€ 1200	+ 10% bonus	+ 25% bonus
Mid-range	€ 800	+ 15% bonus	+ 30% bonus
Compact	€ 600	+ 25% bonus	+ 35% bonus

All figures shown in the table are example values. Each company should define its own individual figures.

Fixed bonus-penalty system

Alternatively, a company could implement a bonus-penalty system at a fixed rate per gram deviating from the reference value, or as a tiered system. However, it is essential that you check in advance whether such a system is permitted.

- Fixed bonus-penalty system: For every gram of CO₂ below the reference value, the employee receives a set bonus on the monthly leasing rate. For every gram

of CO₂ in excess of the reference value, a set penalty value is applied.

- Tiered bonus-penalty system: Depending on which reference value the vehicles are listed under (see table below), a bonus or penalty is applied to the monthly leasing rate.

Schematic of the bonus-penalty system

CO ₂ reference value	Bonus/penalty
0 – 49 grams	+++
50 – 99 grams	++
100 – 139 grams	+
140 – 179 grams	€ 0 bonus
180 – 189 grams	-
190 – 199 grams	--

All figures shown in the table are example values. Each company should define its own individual figures.

3.2 Calculating actual CO₂ emissions

Make sure your calculated CO₂ values are correct. It is your responsibility to review and determine the maximum CO₂ value of the company cars available to your employees.

CO₂ emissions of a BEV

If it cannot be guaranteed that an electric vehicle is charged with electricity from sustainable sources, its actual CO₂ emissions can be calculated and integrated in the internal reference rate and/or leasing rate. You must calculate the actual CO₂ emissions of the vehicle for yourself.

Example calculation of actual CO₂ emissions of a fully electric car (without green electricity)

CO₂ emissions

-  CO₂ emissions stated by manufacturer: **0 g/km**
-  Consumption: **15.3 kWh/100 km**
-  CO₂ emissions per kWh in EU electricity mix: **approx. 500 g**
- CO₂** **15.3 x 500 ÷ 100 = 77 g/km**

Result
Based on this calculation method, the CO₂ emissions of a fully electric car when not charged with green electricity would be 77 g/km in this example.

CO₂ emissions of a PHEV

The real consumption values for a PHEV can sometimes deviate from the WLTP and RDE values depending on the employee's driving behaviour. To take these differences into account, it may be worth considering an individual surcharge on the CO₂ emissions depending on the driving profile. Alternatively, it would be conceivable to implement a surcharge – for example, 30% – for all PHEVs. You must calculate the actual CO₂ emissions of the vehicle for yourself.

Example calculation: CO₂ emissions for a PHEV (165 kW)

CO₂ emissions

	CO ₂ emissions stated by manufacturer: 63 g/km
	Surcharge of 30%: = 82 g/km

Result
In this example, a hybrid vehicle powered by electricity drawn from the EU electricity mix would have CO₂ emissions of 82 g/km.

In principle, CO₂ compensation and green electricity measures can be arranged through Alphabet.

4. Charging infrastructure considerations

You should work to make it as easy and convenient as possible for your employees to charge their vehicles. Only then will employees charge their EVs on a regular basis. Installing charging solutions both on the company's premises and at employees' homes should be regarded as a one-off investment. The charging infrastructure may even be used for a longer period than the vehicle itself.

In the case of employees entitled to the use of a company car who live in apartments (whether as owners or tenants) or apartment buildings, you should take into account that the installation of charging points will require the permission of the building management or landlord. If it is not possible to install such infrastructure, a BEV could still be economically viable – such as when the employee lives close to their place of work and is able to charge their vehicle there.

Like other electrical devices, having the EV charging stations serviced and maintained by a certified electrician is mandatory. You must ensure that maintenance is actually carried out as required.

4.1 Costs of charging infrastructure

In some cases, charging infrastructure can be used over several leasing cycles. It is therefore possible that the costs for a charging solution above the costs of the vehicle itself will only be incurred in the first leasing cycle. Nevertheless, the costs of regular maintenance of the charging solution also need to be considered after the procurement costs, i.e. incorporated in the monthly leasing rates.

The question of who will bear the costs of inspecting, providing and maintaining the charging infrastructure at the employee's place of residence should be made transparent in the Car Policy. There are several options:

Company bears all costs

An investment of this type can be worthwhile when introducing electric vehicles.

Employee bears all costs

In some cases, this can act as a disincentive for the employee and dissuade them from choosing an electric car.

Company and employee split the costs

The employee could bear the costs of associated infrastructure and pre-installation work (e.g. earthworks, construction measures such as wall penetration, cable installation, and required upgrades to technical systems) while the company bears the costs for the solution itself (e.g. wallbox, installation and maintenance costs). A (one-off) surcharge for the charging system on top of the leasing rate is one conceivable solution.

We recommend integrating all costs in the leasing rate. You might decide to raise this rate when a charging solution is installed for the first time.

Pre-installation costs (construction costs)

Pre-installation costs are the costs of construction work incurred before the charging station can be installed – such as laying power cables to the proposed installation site of the charging solution. These costs can also be integrated in the leasing rate.

From an economic perspective, it is advisable to include a cap on pre-installation costs in the eCar Policy, such as a maximum of € 2,500.

4.2 Employee relocation

If additional costs are incurred for further installation work when an employee moves home (relocation) while the station is leased to them, the employee could be asked to bear these costs. If it is not possible to install a charging station at the employee's new place of residence, the company could reserve the right to replace the electric car with an ICE vehicle of comparable value. This is something for the company to determine, particularly in relation to the legal practicability of such an arrangement.

4.3 Employees leaving the company

The Car Policy should also set down how the situation of an employee leaving the company ahead of schedule should be handled.

The following options are possible, providing the contracting parties agree:

- The company continues to bear the costs for the charging infrastructure.
- The employee continues to pay the company the remaining leasing rates for the charging infrastructure.
- The leasing contract for the charging infrastructure is terminated. The employer and employee share the costs involved.
- The employee's new employer accepts the leasing contract for the charging infrastructure.

5. Further information

Successfully integrating electric cars into a company's vehicle fleet requires well-considered adjustments to your Car Policy. In this Alphabet eGuide, we have summarised some fundamental aspects to consider and put forward some proposals.

If you have any further queries, you can of course contact your Alphabet [contact partner](#) at any time.

Glossary

BEV: Battery electric vehicle

PHEV: Plug-in hybrid electric vehicle

BAFA: Bundesamt für Wirtschaft und Ausfuhrkontrolle (Federal Office for Economic Affairs and Export Control)

WLTP: Worldwide Harmonized Light-Duty Vehicles Test Procedure

RDE: Real driving emissions

Alphabet assumes no liability and makes no representations as to the accuracy of the figures stated in this eGuide. More specifically, these figures are based on the standard values valid in June 2020 (e.g. on average ranges etc.). Any changes to these values have not been taken into account. Each company is obligated to continuously examine the currentness of its procedures and documentation, and therefore also its Car Policy, and to amend them in light of technical and legal amendments and innovations.

Equally, the company is solely responsible for the accuracy of its procedures and documentation, and therefore also its Car Policy, including from technical and legal perspectives. Alphabet makes no representations and assumes no liability in this regard.

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