

What is the cost of fleet electrification?

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What is the cost of fleet electrification?

Technological development, political will, zeitgeist and an ever-growing interest in climate change and sustainability have ensured that the subject of e-mobility has seriously picked up speed. It's certainly gone mainstream for many countries. For the purpose of this white paper, we will focus on Germany.

The trend speaks for itself in Germany: by December 2021, over 300,000 electric vehicles were registered in the Federal Republic. That's an increase of over 100 percent from 2020.

This tells us that companies and their fleet managers are dealing with fleet electrification in one way or another. While some recognized sustainability and the image factor of an e-fleet early on and acted quickly, others are hesitant, if not skeptical. The fact is, there are still a lot of myths floating around about e-mobility that are either false or already outdated. One preconception in the top 5 of most lists is: "electrification is much too expensive". As a major factor affecting electrification decisions and projec-

tions on business continuity, this is a central topic that grants serious consideration: What is the cost of fleet electrification?

It goes without saying that the costs for transitioning and operating an electrified fleet cannot be generally quantified. The topic is a complex undertaking, and no two initial business cases are the same. What can be done however, is to start by identifying and classifying the central themes. Therein lies the focus on national incentive frameworks, company needs and goals, a fleet analysis and charging infrastructure analysis. We address these themes and present the tools that simplify complexity and empower solutions.

Tax incentives and subsidies

In February 2022, the Scientific Service of the German Bundestag determined a ten-year motor vehicle tax exemption for the purchase of (or conversion to) purely battery electric vehicles (BEV) for first registrations until the end of 2025.

The full ten-year exemption offered until the end of 2030 is only valid for e-vehicles that were registered or converted for the first time by the end of 2020. Among other things, the regulation was intended to provide an incentive for the early purchase of purely electric vehicles. Tax exemptions, and indeed other subsidies, no longer apply to hybrid electric vehicles. That was certainly a windfall for those companies that acted early on electrifying their fleets.

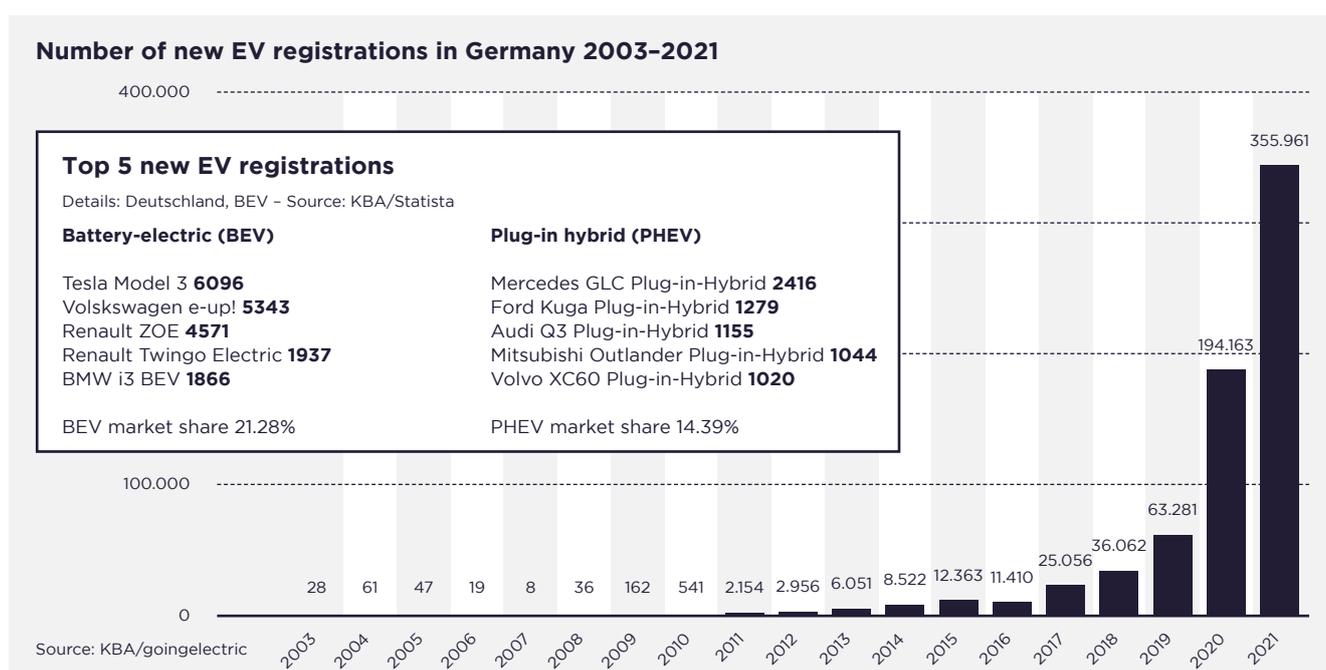
Additionally, the CO₂ emissions component taxation will weigh more heavily for newly registered combustion engine vehicles (ICE) – the amount of which is determined both by the CO₂ value and the vehicle's cubic capacity. For them, the tax rate has changed

since January 1, 2021, increasing over a total of six levels depending on the CO₂ value. These regulatory steps are meant as a stronger incentive for the purchase of lower-emission vehicles.

The one-time state subsidy for the purchase of BEVs has been reformulated and extended after the recent change of government. Current subsidies for BEV purchases will be €4,000 from 2023, and €3,000 for 2024 and 2025.

Until the end of 2022 the following applies: E-vehicles with a list price of less than €40,000 will be subsidized with €9,000. For EVs with a list price of over €40,000, the subsidy will be €7,500.

Indeed, there's still time to benefit from higher subsidy incentives. Nonetheless, many countries have started slowly winding down on subsidy rates – a trend that will likely continue.



The role of the GHG quota

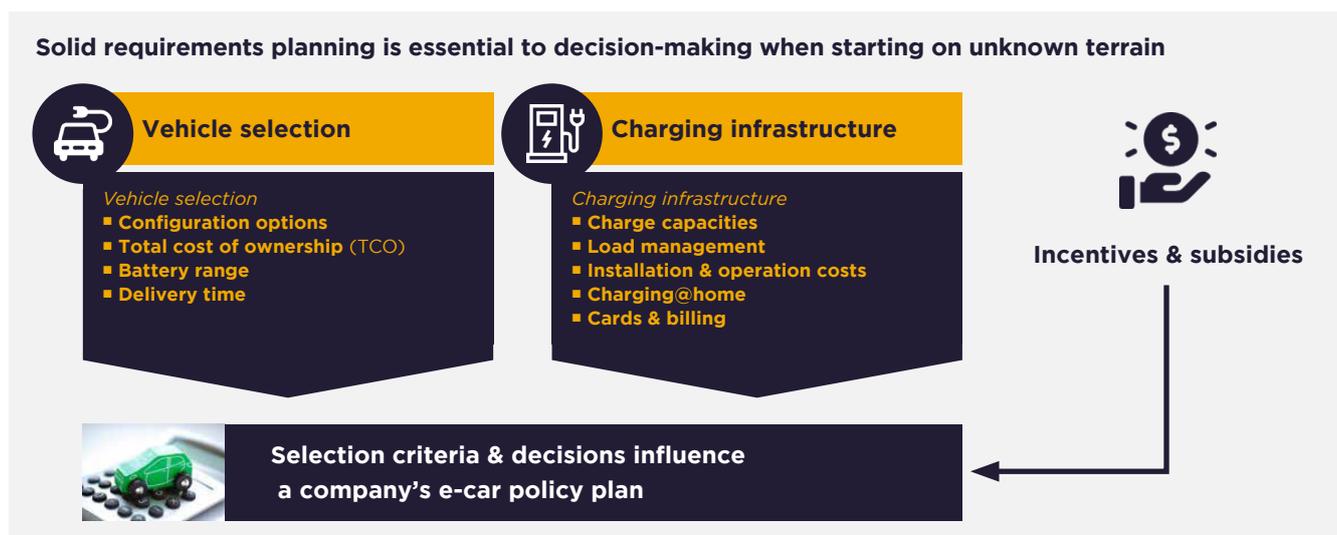
In order to achieve climate neutrality goals by 2045, many governments have defined a framework of regulations – one of which being the greenhouse gas (GHG) quota. Since 2015, mineral oil companies are required to meet a quota for CO₂ reductions in the transport sector. The goal here is to make climate-friendly mobility cheaper and more attractive, and of course reduce emissions.

This GHG quota will increase year-on-year. Currently the quota in the EU is at 7%, but by 2030 biofuel suppliers will have to demonstrate CO₂ reductions of 25%. Biofuel companies that don't meet the requirements will pay increased fines or need to offset by buying emissions credits.

This is one way owners of e-vehicles can benefit, as they save on CO₂ emissions with every trip. The legis-

lation rewards this: Since February 2022, e-vehicle owners have been able to “sell” the greenhouse gases they have saved by applying for the GHG quota. This also applies to fleet operators.

In order to make it as easy as possible for EV owners to apply for the GHG premium, the respective federal environment agencies determine the average electricity consumption of an EV every year and use this to calculate the quota. The individual quotas are bundled via various intermediaries and sold to the mineral oil companies. EV owners then receive cash in return. The specific amount of the GHG quota premium depends on the business model of the GHG intermediary – in Germany, it ranges from €250 to €400 depending on the model.



Requirements planning and vehicle selection

There is no doubt that most companies are entering completely new territory when they plan their e-fleet transition. Many start by formulating an e-car policy to set out the general goals and framework for such a change. Doing so helps clarify which EV models can be chosen, charging costs and locations, or what happens if an employee resigns.

Within such a framework, requirements planning can begin, balancing tasks and solutions.

The key questions to be answered here are:

- What are the tasks of the e-fleet?
- Which ranges are necessary?

- Which delivery times should be realized?

These requirements are compared to the existing options:

- Configuration options of EVs available on the market.
- Total Cost of Ownership (TCO) estimates, including tax aspects and subsidies.

Involving internal and external stakeholders — like GL, facility management, purchasing, drivers, etc. — at an early stage, is sound advice.

Charging infrastructure and its costs

Setting up the corresponding charging infrastructure is equally essential.

Five key areas are important here:

- How many charging points does the company need and what performance do they have to offer (charging times)?
- What should load management look like?
- What are the costs for installing and operating these charging points?
- Should there be charging points for employees at home (charging@home)?
- How is charging outside the company billed?

Again, early-stage stakeholder involvement (like electricity providers, hardware vendors, installation experts) is advisable.

Three essential building blocks for transitioning your fleet to EVs

In most cases, it's a company's fleet management that thinks about and plans e-transition — but that's not always the initial trigger. Maybe the general manager buys an EV. Or facility management installs a charging station of their own accord. Perhaps the purchasing department is making CO₂ reduction plans.

This is why we developed PANION software into an integrated 3-pillar process. It empowers EV transition through transparency and efficient decision-making tools into a model for fleet analysis, infrastructure analysis and a guiding consultancy approach.

Whatever the case, the nature and complexity of these tasks makes careful planning of fleet transition more than advisable. The proverbial "jump into the deep end" is a risk better not taken.

Three central pillars for a smooth EV fleet transition

Fleet analysis

- Electrification potential fleet analysis** based on:
 - Historical data
 - Telematics data
- EV recommendations** identify
- CO₂-reductions potential** identify

Infrastructure analysis

- Planning for charging infrastructure at depot/location**
 - Number of charging stations
 - Optimal location
 - OEM makes & models
 - Charging & load management
 - Charging@home@public
 - Installation by electricians

Guidance

- Custom guidance** topics for companies can include:
 - **E-mobility basic training** (often subsidized)
 - **Incentives & subsidy education**
 - **Changing a car policy**

Comprehensive, data-driven guidance is invaluable in making electrification decisions — transparently & independent

The fleet analysis

The fleet analysis considers a fleet's electrification potential based on historical data and telematics data. With our software, users collect relevant data on the current vehicles and create an analysis of the electrification potential of a fleet.

Based on this analysis, fleet operators can identify CO₂ reduction potential and receive recommendations for suitable e-vehicle replacements that best meet their specific requirements.

The infrastructure analysis

The infrastructure analysis is the basis for an optimal e-fleet charging infrastructure. We consider the necessary number of charging stations and their optimal locations, suitable manufacturers and models and finally the charging and load management — including a feasibility check with an electrician.

It also takes the integration of charging options for employees at home and public charging options into account. The specific charging management is then carried out with our PANION EV Charge Planning software. It has been optimized for business continuity and costs, and charging schedules are seamlessly integrated into day-to-day operations.

Consulting

The third conceptual pillar is our consulting approach as your comPANION on the electrification journey. This allows for specific tailor-made solutions for a fleet's individual needs and requirements. Consulting includes basic e-mobility training to make relevant

knowledge available to all internal stakeholders. Other topics include educating on subsidies and tax breaks, informing on TCO, or reformulating the company's car policy — and more.

Conclusion

Overall, a strategic electrification plan is a smart, sustainable and worthwhile (but not trivial) undertaking. Early planning, the availability of all relevant information and a realistic view of budgeting and costs are crucial.

Here it is important to consider subsidies and tax options as well as the infrastructure costs incurred.

The image factor of fleet transition is also an advantage, as more and more customers are rewarding efforts towards sustainability with brand loyalty. According to a Capgemini study from 2020, 79% of shoppers in Germany are rethinking their purchasing behavior and attaching more importance to social responsibility, inclusivity and environmental friendliness.

In this respect, EV transition is not just a logistical project to be seen in a political context. An e-fleet means future-proof climate and business sustainability, not to mention a positive marketing, CSR and customer experience opportunity.



PANION charged by ABB

Who we are and what drives us

PANION is a Berlin-based startup and subsidiary of the leading technology group ABB, with a focus on the data-driven electrification of fleets. We work closely with ABB and co-innovation partners to develop software products that empower fleets to transition to a future with fewer emissions. As your comPANION, we expertly guide you on the road to an electrified future.

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