

Top 5 considerations when rolling out EV fleet charging infrastructure



Guide to EV fleet charging infrastructure

Finding the right EV charging infrastructure solution for your commercial vehicle needs is a daunting task. Many businesses are waiting to see how first movers succeed and then plan to follow that template when established. However, to hit net zero targets it's clear that businesses need to be acting now. We've put together a guide highlighting the five key considerations business leaders should assess that will help their business power ahead and prepare for the transition to an EV fleet.

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1 Do you have a suitable power supply available for your fleet?

A robust and expandable power supply is crucial for a fleet's transition to EVs. A typical industrial warehouse or depot often only has enough power to support limited rapid charging. This means that, early on, you should assess how much capacity your chosen site can access, when it will become available, and if you will be able to increase it as your business' needs increase.

Even if you don't need additional power now, you should consider your business future needs: plan ahead and establish where power is or could become available, as this will determine where suitable EV charging infrastructure can be built. It is best to look into this early in your EV transition planning stage, because grid connection upgrades may not always be available or when they are, can be incredibly costly and come with very long timescales, such that alternative locations will need to be identified.

Managing power consumption on site and optimising existing available connections can be a useful strategy to manage grid access and capacity availability issues. Investigate whether site-level energy management and smart scheduling can optimise existing capability/capacity.

It's also worth assessing whether there is an opportunity for on-site power generation through solar, wind or other industrial processes and whether battery storage can be installed to optimise performance. Using stored power can cut the costs of charging your fleet. This approach works well if for EV fleets with predictable routines and duty cycles.

When selecting EV charging systems, does the chosen EV charging hardware minimise grid strain? Installing hardware that uses static and dynamic load management, harnesses smart charging capabilities, offers open charge point protocol (OCPP) support, and provides interoperability with energy management service capabilities, will help reduce grid strain. Depending on your operational needs, you can select between low-power AC charging to suit long dwell times, or high-power DC charging to suit short dwell times and 24/7 operations. Combining this thought process with active charging load management, energy storage and power tariffs allows you to customise your hardware installation to improve your operations and minimise operating costs.



AC or DC charging?

Choosing which power output to use primarily comes down to your business's operational needs concerning dwell times. If your fleet schedule allows for long dwell times, AC charging stations have several advantages such as being cheaper, occupying less space, and requiring fewer complex spare parts for processes like battery cooling.

When it comes to fast charging, DC charging stations are tried and tested. DC fast chargers have the ability to convert AC power to DC within the charging station. This means that DC power can be sent directly to the battery, charging it much faster. DC charging comes at a premium, but is well worth the extra investment if your fleet needs short dwell times or round-the-clock operations. Mixing AC and DC charging is also a cost-effective solution if only a few vehicles in a fleet need fast charging.

2 Where will you install the EV charging infrastructure?

The exact location you select to install your EV charging infrastructure will be driven by a number of factors: power availability; how your EV vehicles will be used; the routes they will operate; and other commercial considerations. In some cases, the best option might be a shared hub, which would allow your business to split the infrastructure costs with other businesses.

If a depot makes the most sense for you, there are a handful of elements to weigh up. If you do not own the land, you will need to check the terms of your lease to determine whether you are permitted to install EV charging infrastructure or otherwise negotiate with your landlord to procure those rights. You will also need to decide how the location affects your operations, driver shift patterns, and vehicle dwell time. Equally important is working out the right charging rate for your operations and how you will schedule charging at each location.

Whichever location solution you opt for, it is essential to have the site designed for safe operations – this means consulting with the relevant parties on Health and Safety Executive and National Highways requirements, and

considering your operational use case for the site to ensure traffic flow and charging configurations are optimised.

Collaboration between the public and private sector will be crucial for the timely deployment of a robust and accessible charging network. Since fleets may need to have access to charging solutions at more than one location, it will be useful to build a good relationship with relevant local authorities to keep abreast of plans for public charging infrastructure. This way, schedules can be designed that allow for charging in multiple locations throughout the ecosystem of depots, hubs, and intercity charging locations.

Any significant change to business's operations brings with it some risk; to manage the risk of adopting EVs into your fleet, it is best to start early, to gain experience and build learnings on which to scale up adoption. A staged fleet transition plan that pulls together all the separate requirements – from power supplies to vehicles, to operational integration and maintenance plans may assist.



Public highway installation requirements

If you are looking to install EV charging infrastructure for your fleet on a public highway in the UK, you will need to use a contractor registered with the Highway Electrical Registration Scheme (HERS).

3 How will your business manage costs?

All businesses need to know what they will be spending, the payment solutions available and the funding route available to manage costs. Fleet operators shifting to EVs can benefit from completing a total cost of ownership (TCO) estimate to determine the direct and indirect costs their business will encounter. It is also worth considering what life-cycle expenses there will be and noting the likelihood of major infrastructure costs alongside the expense of installing EV charging infrastructure.

Most businesses will need to prioritise capital expenditure (Capex) allocation, so it's important to decide whether to increase vehicle budgets or reduce total capital

expenditure by choosing charging-as-a-service (CaaS) solution. For fleet owners, CaaS and vehicle-as-a-service (VaaS) models can help manage high upfront costs and are especially helpful for owners of small fleets, and bring the added benefit of fixed ongoing operational expenditure (Opex) costs.

Finally, it's advisable to take a look at what commercial EV fleet transition incentives and tax rebates are out there for EV charger purchase, installation, and potential grid upgrades.



CaaS and VaaS

CaaS can enable fleet management to forecast and manage long-term costs by bundling Capex, Opex, and energy costs into a fixed rate. By combining hardware, software, and service offerings with flexible payments, CaaS programs can eliminate the burden of ownership and maintenance.

VaaS simplifies the purchase process for small fleet operators. Managing expenses can be a lot easier through VaaS with monthly payment and renewal options available.

4 How will you integrate EV charging into your business operations?

Switching your business fleet to EVs will require a considerable amount of work to integrate EV charging into your fleet's operations. As we find ourselves in the midst of the Fourth Industrial Revolution, electrification of fleets offers businesses enormous opportunities to harness digitalisation and make the most of data analytics, machine learning, and artificial intelligence to improve optimisation and efficiency. Doing so will assist in reducing operational complexity and maximising carbon emission reduction.

Fleet operators should investigate how their business can use digitalisation and the corresponding data insights on their fleet, drivers, sites, and operations to improve delivery schedules, charging times, equipment reliability and cut

costs and workforce hours. Ultimately, this will entail maximising reliability, ensuring operational awareness and combating challenges of end customers by designing a scalable, easy and efficient EV charging process supported by scheduling, fleet management integration and tiering capabilities at commercial EV charging sites.

Making use of smart charging capabilities and intelligent energy management can help the grid cope better through proactive monitoring, while continual consumption feedback loops will enable optimisation opportunities to emerge. This will help EV fleets to charge at a lower cost and shift charging demand from peak hours.



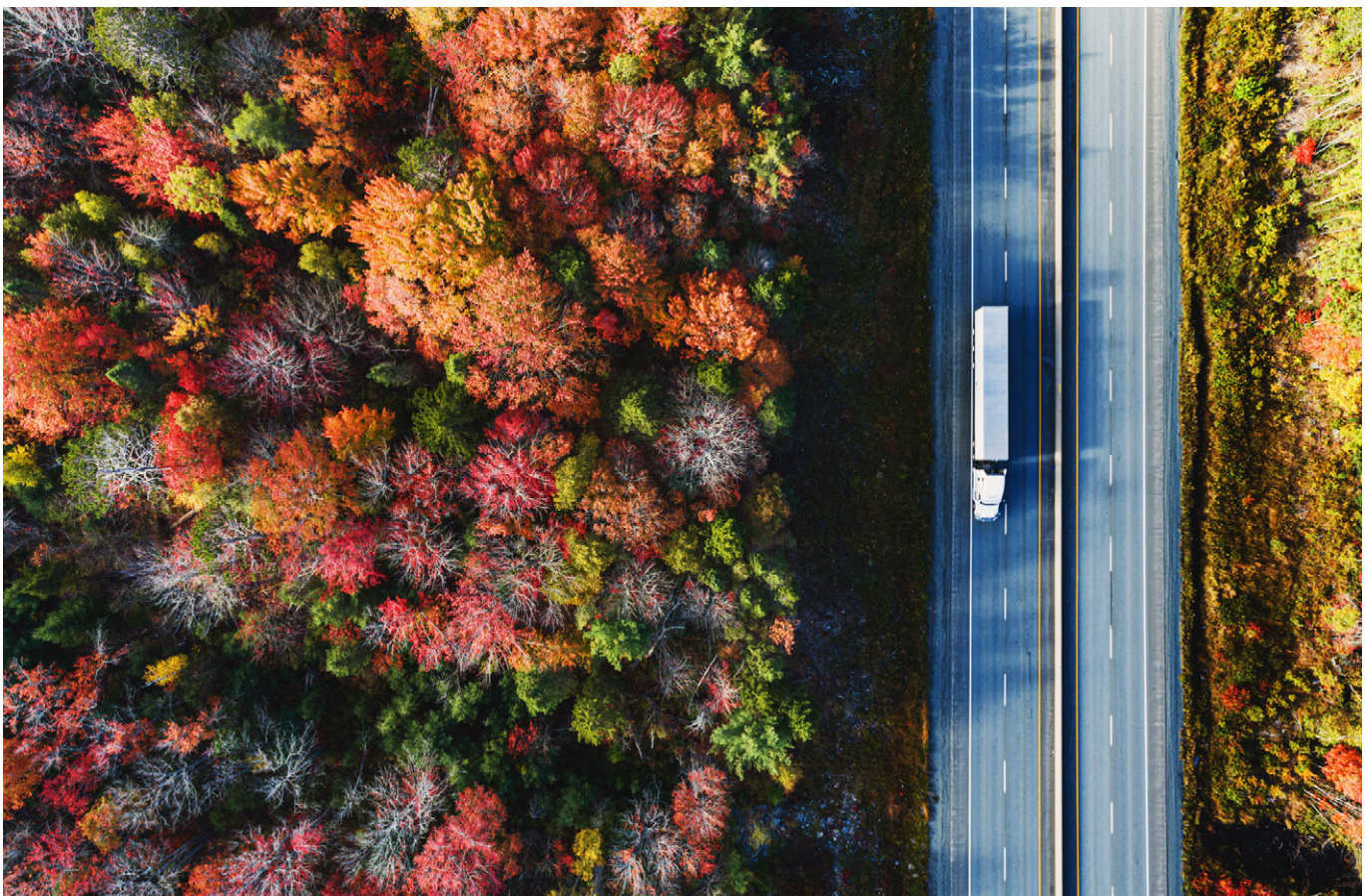
Go smart and save

Harnessing intelligent energy management allows for smaller connections, lower energy bills, a smaller carbon footprint and creates the possibility of future revenues from offering balancing services.

5 Have you considered your business's future needs?

Planning now for initial EV fleet operations is the start. But how will you plan for the cost and implementation of upgrades to your vehicles, charging equipment and software platforms as technology changes rapidly over the coming years?

It's also key to consider how you will scale your EV operations with your business's growth. Regulatory changes are coming thick and fast in the commercial vehicle industry, making it important to be closely engaged with energy officials at the national level to obtain regulatory certainty on EV charging infrastructure regulations and requirements. The most successful businesses are those that stay ahead of the curve and anticipate change, and this is a sector that is poised for significant disruption.



Zero-emission commercial vehicle zones

No-one can predict the future, but keeping an eye on emerging megatrends can help keep your business stay ahead of the curve. A number of countries, including the Netherlands, are implementing zero-emission commercial vehicle zones, creating a business environment that will see EV fleets thrive in the future.

Conclusion

Electrifying a fleet is an intricate and complex process with a broad range of things to consider. The road to electrification will, undoubtedly, have some bumps along the way and there is no one-size-fits-all solution to optimising the rollout of EV charging infrastructure. As such, it is important to collaborate with experienced partners that can offer bespoke end-to-end solutions.

With decreasing vehicle costs for EVs, energy prices stabilising, and growing public acceptance, commercial EVs are rapidly reaching cost parity with internal combustion engine (ICE) vehicles. The total cost of ownership outlook favours zero-emission fleet vehicles because of their lower cost of operation and maintenance. In fact, a study by PwC (*) found that battery electric trucks are expected to outperform ICE technology, reaching

a cost advantage of ~30% in 2030. Accepting this rosy outlook, fleet operators will do well to steal a march on their competition by shifting to electrification. Those operators moving now will likely capture the lucrative contracts driven by ESG-conscious customers.

Inevitably, there will be hurdles to clear on the journey to electrification, but the hardest part is having the courage to get started. First movers will reap the biggest rewards, but success will depend on doing due diligence and future-proofing any business model. Market and regulatory conditions show that electrification can deliver the goods for your fleet, now it's time to move ahead of the pack and seize the chequered flag.

How Fleete can help

Collaborating with experienced partners that can offer complete, tailor-made solutions is key to smoothing out and accelerating the process of establishing a new ecosystem within your fleet operations. At Fleete, we have the expertise to make the transition to electric vehicles as easy, efficient and economical as possible. Our bespoke Charging-as-a-Service solution is tailored to your requirements. We take care of the whole process of design, installation, intelligent management, operations and financing of your EV charging infrastructure, ensuring it is incorporated into your organisation's operations smoothly and effectively, and with no upfront costs. Charging technology is rapidly evolving and investment in these assets could leave your business tied to an outdated investment decision. Our flexible model allows hardware to be updated over time as new advances in charging technology emerge, protecting your company's future needs.

Whether you're an early adopter or just at the beginning of your journey, we have all of your electric fleet needs covered. To learn more about our solutions, get in touch with our experts to discuss your fleet-charging infrastructure needs.

* Source: [PwC, The dawn of electrified trucking](#), viewed on 23 June 2023

The contents of this guide does not constitute commercial or legal advice and should not be relied on or treated as a substitute for specific advice relevant to your or your business's particular circumstances and is not intended to be relied upon by you in making or refraining from making any specific decision.

Our mission is to empower businesses to achieve a fully electric fleet. Get in touch to learn more about our EV fleet charging solutions.



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