EnergIIZE COMMERCIAL VEHICLES

Electric Vehicle Fleets - Preparing for Load

Overview

To successfully plan the deployment of your zero-emission (ZE) fleet and infrastructure, it is important to consider the power load requirements to meet the needs of the fleet's duty cycle. **Failing to ensure adequate electric supply before going ahead with an infrastructure project can cause major delays.** Electric fleets should recognize that medium- and heavy-duty (MD/HD) vehicle charging leads to a large electrical load.

While the following fact sheet is particularly relevant for electric bus and truck fleets, hydrogen fleets may also require electrical upgrades depending on their site and its specific needs.

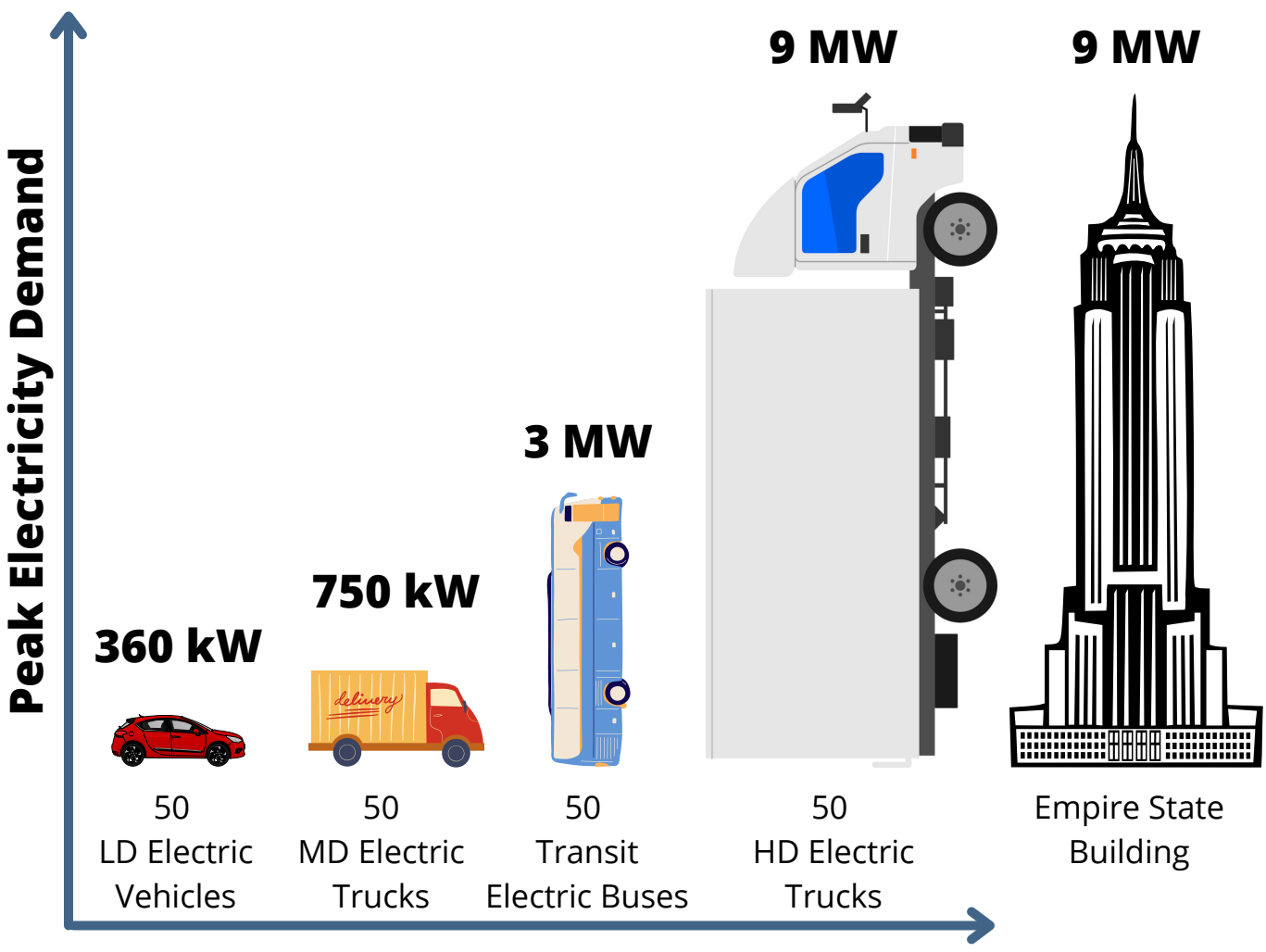
Energy Expectations

Load will vary by the number of chargers onsite as well as charger design and type. For instance, Direct Current Fast Chargers (DCFC) require greater electrical supply than Level 2 models. A common Level 2 charger delivers 19.6kW with DCFCs delivering anywhere from 50kW to upwards of 250kW and higher. **Fleets should expect increased load regardless of charger type.**

Some charging sites may have the grid infrastructure in place to support this increased load, but many do not. The latter requires significant equipment and power line upgrades which should be taken into account for project timeline and costs.

Communication is Key

Engage Your Utility: The first step to infrastructure planning is engaging with your utility. The utility can help evaluate potential load and upgrade requirements. Transformer ratings can give some indication of the site's existing load capabilities in cases where utility response is delayed or insufficient. Overall, it is imperative that fleets consider the resources, time, and communication required to ensure adequate electrical supply and make the appropriate upgrades.



Power Demand by Use Type

The graphic above shows the difference in peak electricity demand required to power a variety of sample electric vehicle (EV) fleets in comparison to that of the Empire State Building in New York City. This graphic alone brings into focus the increased demand placed upon the electricity grid, particularly from the heavy-duty vehicle side.

The average peak electricity demand necessary to operate a diesel vehicle fleet is greatly outstripped by the magnitude of energy necessary to operate a fleet of EVs. Therefore, it is vital to collaborate and communicate effectively with one's utility to ensure a successful fleet electrification journey.

Unsure of who your is utility provider? Enter your zip code on the Infrastructure INSITE tool to find out!

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