

Fleet Guidance for Utilities

During the first half of 2021, the Fleet Readiness Group – a collection of fleets operating class 6-8 vehicles that are early adopters for zero-emission solutions and the sponsoring NGOs – Calstart, NACFE & RMI, and EDF, explored the barriers and potential solutions fleets face when considering charging electric heavy-duty trucks. Below is the guidance from this group for utilities seeking to work with fleets to accelerate the adoption of electric trucks.

1. Utilities need to proactively plan for electrification and engage fleets.

Utility Planning to Serve EV load – Utilities should proactively study load growth and distribution grid impact to assess where fleet charging demand is likely to occur within their service areas and proactively invest in readying the grid to be able to meet this demand. With the accelerated progress of zero-emission truck technology along with 15 states and growing considering zero-emission truck sales standards, it's clear that many companies will be moving a significant portion of their fleets to electric vehicles. Information about where load growth is likely to occur, including distribution center locations, large logistics facilities – such as ports, and major trucking corridors – is readily available to utilities, although they may not customarily anticipate load growth in such locations based on historical patterns. Utilities should assess potential system upgrades and needs to meet the market penetration rates under consideration by policymakers, such as having 30% of all new medium and heavy-duty vehicles be zero-emission by 2030 – which has been referenced by Congress, 15 states, and major manufacturers.

Fleet Engagement in Rulemaking Processes – The process used by utility regulators (commonly utility commissions) that informs the development of electricity rates, charging infrastructure investments, and incentive programs is opaque to fleets. It is also challenging for fleets to track and engage in rate cases across the thousands of utility service areas. As a result of many factors, including the difficulty stakeholders face when trying to engage in these regulatory proceedings, few utilities have proposed, and few regulators have approved the programs that are critical to accelerate fleet electrification within their jurisdiction. Utilities and public utility commissions should redouble efforts to get fleet input before utilities file proposed EV programs. With the aid from NGOs, such as the ones involved in this activity, fleet needs can be communicated in the form of written guidance, sharing of best practices from working with other utilities, and informal support. Then, fleets and expert NGOs can engage in proceedings as appropriate.

2. Utilities need to develop the modern grid and electricity rates necessary to charge large fleets.

Rates – For fleets, the core promise of electrification is significant fuel cost savings that results in lower total cost of ownership for the electric vehicle. It is critical that rate structures be transparent, predictable, and reflective of the costs of service as well as the ability for heavy-duty electric vehicles to serve as a grid asset. Utilities need to work with fleets to ensure they understand the current rate structures and potential rate options to optimize their use case and charging plans, and to develop some initial rate analyses based on different vocations and vehicle types. Rates should be designed to reward fleets that charge during low-cost times and to avoid unnecessary spikes in demand. Rates and other price signals should also recognize and reward the value to utilities that large fleets can provide, including by charging at times of high curtailment and being a flexible load.

Support Lowest/Low-cost Solutions, such as Distributed Energy Resources (DERs) – Incentive programs should be designed to support the development of lowest or low cost solutions to the electrical capacity needed for fleet electrification. Solutions such as managed charging, onsite battery storage, and onsite electricity generation, can reduce the peak demand from fleet charging. This translates to lower costs to utilities in delivering the required power and lower charging costs for fleets. Most infrastructure incentive programs

available today focus solely on the cost of electric vehicle support equipment (EVSE), installation, and getting the required power to the site. As such, these programs are missing a critical opportunity to save money for fleets and ratepayers.

Utilities Investments in Distribution System Updates – Fleets should be insulated from the cost of grid upgrades needed to transform the truck sector. The transition to electric vehicles is a societal priority that is being accelerated by public policies seeking to reduce local and global air pollution. This transition will give rise to significant new sales opportunities for electric utilities, as a single fleet can consume several megawatt-hours of power daily, including predictable consumption outside of peak demand hours. Moreover, although the new load is caused by fleets that electrify, the total cost of serving all those fleets will depend largely on utility decisions, including the extent to which they plan holistically, work with customers to manage their load, rely on non-wires solutions, etc. Indeed, to the extent this new load can be shaped to improve system utilization, it can lower system costs for all ratepayers. Asking fleets to cover the costs of distribution system upgrades would prevent many fleets from making the transition to electric trucks. This burden would be especially challenging for smaller fleets, which can often face significant barriers to access capital. Utilities are the appropriate entities to invest in distribution system updates.

3. Utilities should partner with fleets to ensure that charging equipment installation processes meet the needs of the fleets.

Fleet Ombudsman – It is recommended that fleets work with an ombudsman from the application process through installation (someone within the utility that can move the projects forward).

EVSE Location – The fleet should work in partnership with the utilities to determine the best location for charging infrastructure installation on the fleet site to provide optimum yard flow and productivity. Fleets should be enabled to make the final decision on the charger location within the fleet yard. Utility programs should recognize the primacy of fleet considerations in determining charger location. Utility and regulators should create a standard for point of delivery of the power, which could help clarify how any additional costs associated with charger citing will be allocated between parties.

Planning for Future Capacity Needs – The truck industry is in the very early stage of fleet electrification. Fleets are making the commitment to install charging equipment because they are interested in increasing their adoption of EVs in the years ahead. It's most cost effective for fleets and for utilities to build for future growth in electric power demand, rather than incrementally adding capacity to their site each time they acquire a new cohort of electric vehicles. Utilities should work with fleets to understand their future plans and a streamlined future EV fleet expansion should be a consideration in determining the total power capacity needed for any site build out, including factoring in the potential of behind-the-meter electricity generation and storage to reduce capacity upgrades. It is also very important that the power is 'clean' power, and the transformers are upgraded where needed (i.e., delta vs. wye).

Installation Timelines – In the early stages of EV development, flexibility is required for order to delivery to implementation since lead times can be extended and unpredictable. Utilities and fleets should strive to have vehicles in service as soon as vehicles arrive and all parties need to work together to adjust schedules as required.

Lifetime Timelines – Utilities need to consider assumptions around equipment lifetime when that is part of/ a condition for utility support (and in those cases where utilities are subsidizing or owning the EVSE). For example Operating the initial installed chargers for ten years does not allow the potential for upgrades as the technology advances. Fleets need flexibility that would allow the chargers to be upgraded or replaced over time. This is

especially true, as most third-party logistic contracts are 3 to 5 years. Utilities should work with fleets to establish project timelines that work for existing fleet operations.

Reporting Timeline – When public funds are used to support fleet electrification whether to help cover the costs of vehicles or the infrastructure needed, many fleets must be ready to provide charging data as part of the agreement. Many funding opportunities require fleets to provide charging data for up to 5 years. Today, most of the charging systems have network capability that help support this requirement. Fleets should suggest network connectivity with their utility partner to better enable data gathering by the utility. As electrification expands, consideration also needs to be given to the task of both data gathering for accountability purposes and both the fleet and utility spending resources to review the data. The data gathering activity is often a resource burden that few fleets and utilities plan for and should.

Approved Charging Equipment –To assist fleets in choosing charging equipment a single clearinghouse should be established, but such clearinghouses need to ensure competition and technology choice. Fleets recommend using a standardized list of approved charging equipment across many utilities to avoid situations where chargers are approved by one utility yet waiting on other utilities to approve the same chargers. For example, the current options from Southern California Edison (SCE) is limited for high KW chargers and actually needs to be rapidly expanded as new technology such as higher power chargers comes on board or have an expedited approval process as part of the process.

Also, the list of approved items should be expanded to include integrated software and components such as connectors. Fleets have reported being delayed over four months because of software on a battery storage system.

Application Process – There is great room for making the application process for utility-based infrastructure programs more efficient. If an application is rejected based on a technicality in the submission process, fleets can be required to start over vs correcting the technicality and allowing the process to complete.

Reimbursement – The process utilities use for reimbursing fleets for costs need to be understood and transparent by all parties. As an example, some fleets have realized discrepancies with the level of reimbursement from the SCE program in California.