October 1, 2021

Key Design Principles for Effective Medium/Heavy-Duty ZEV Incentive Programs

During the second half of 2020, 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 participating in grant and incentive programs that support the purchase of electric heavy-duty trucks. Below is the guidance from this group for policymakers seeking to work with fleets to accelerate the adoption of electric trucks.

1. Ensure the fleets most prepared to lead the transition are not excluded through prohibitive requirements: While intended to ensure air quality benefits, restrictive requirements can severely undercut the value of an incentive program or even make it unusable for fleets. Requiring scrappage of a pre-2010 vehicle immediately disqualifies many of the fleets most inclined to purchase new zero-emission trucks because they simply don't have vehicles old enough to scrap. Where scrappage is required, programs should allow for a "cascading vintage" program whereby recipients may sell their replaced vehicle to another fleet who then scraps an even older truck. Similarly, strict locational requirements make it even harder for fleets to comply with scrappage because it reduces the pool that they can draw from. As these location requirements are designed to address pollution inequities, agencies should increase grant awards to recognize this increased complexity and also help to facilitate "cascading vintage" programs in these areas.

2. Provide adequate funding to make ZEVs cost-competitive with diesel throughout the total cost of ownership: Electrification involves risks and complexities for early adopters. Early deployments, though, are critical to advance industry understanding about best practices that will enable more fleets to adopt these vehicles. The current way for fleets to make the business case to electrify is for incentives to cover the incremental cost of ZEVs relative to diesel alternatives. This goes beyond the purchase cost and includes increased administrative, personnel, excise tax, and insurance costs. To compete with traditional fuels, incentive programs should be designed to reflect all of the costs associated with electrification. Incentive programs should also consider providing support for resilience measures (onsite generation and/or battery storage) that ease impacts to the electrical grid and ensure reliability for fleet operators. While incentive programs are inherently limited by their budget, they can make the most of funding by ensuring synergy with other incentive programs.

3. Minimize the administrative burden to fleets: Electrification requires a significant investment of staff time. Incentive programs should be diligent with programmatic reporting requirements to minimize adding to the fleet burden. For example, some agencies require data documentation many years into the life of the vehicle. Significant reporting requirements increase the cost of operating zero-emission vehicles, which further dampens near-term demand. Incentive programs should be easy to access and have simple reporting requirements that leverage data fleets are already collecting. Incentive programs should also aim to minimize associated administrative burdens related to permitting, construction, and power delivery by coordinating across other stakeholder agencies. Due to their ease of use, voucher programs tend to be more fleet friendly than grant programs. Alternatively, grant programs can reduce the administrative burden to fleets by funding multiple fleets through a single large grant to an OEM.

4. Allow fleets flexibility in their deployment timelines to reflect the complexity of ZEV deployments: Deploying heavy-duty trucks and their requisite charging infrastructure is a complicated juggling act, and restrictive grant timelines can throw fleets off balance. Grant funding needs to be flexible enough to allow fleets to deploy as the technology becomes available. Fleets shouldn't be punished for delays from OEMs, utilities, permitting jurisdictions, or infrastructure providers. It is not uncommon for vehicle deliveries and charging infrastructure construction, installation, and connection to take over one year. Additionally, incentive programs that fund at the point-of-sale are far more accessible for fleets than programs that reimburse retroactively. If funds must be reimbursed, assist fleets by dispersing funds as soon as trucks are purchased, especially for large deployments.

Additional Considerations:

- Keep equipment lists flexible and up-to-date. Web-based equipment lists that can be easily updated are recommended over static pdfs.
- Set locational requirements based on where trucks actually operate, not where they are domiciled or registered. Work with fleets to develop a verification regime that balances agency need for documentation with fleet need for limited administrative burden.
- Make infrastructure funding accessible for a wide variety of charging models, including fleets that don't own their facilities or fleets that charge off-site.
- Focus funding on the sectors that are most challenging to electrify (Class 6-8).
- If funding must be retroactive, allow for pre-approval (before the fleet places an order) so that fleets have confidence in their ability to offset the additional purchase costs.
- Give ample notice of application windows, especially if funding will be first come-first served. Fleets must work with utilities, OEMs among others to be ready to participate in an application process. Notifications about upcoming application windows should be issued at least 60 days in advance.