

Fleet Advisory – Medium- and Heavy-Duty Electric Vehicles

Role of Electric Utilities in Electric Vehicle Deployment



Quick Take

The electrification of light-, medium-, and heavy-duty fleets presents an opportunity to decrease greenhouse gas emissions and improve air quality through the reduction of PM_{2.5} and NO_x emissions. Utilities can serve as trusted advisors to fleet operators as they begin to electrify by providing electric vehicle recommendations based on existing gas-powered fleet vehicle and maintenance costs, electric vehicle costs, tailored charging infrastructure recommendations, and financial analyses to justify the transition to electric fleet vehicles (“EFV”). By offering this evaluation, fleet operators can better understand their EFV total cost of ownership and charging infrastructure needs while utilities are better able to ensure that the increased load from fleet electrification will be adequately met by making necessary system upgrades.

This case study highlights two utilities – National Grid¹ and Xcel Energy² – that have launched EFV advisory programs that have focused on exploring the electrification needs of different fleet types (National Grid’s Rhode Island Fleet Advisory Services program) and have developed a strong stakeholder engagement process with municipal fleets to ensure electrification goals are met (Xcel Energy’s Minnesota Fleet EV Service Pilot).

National Grid

Beginning with its Fleet Electrification Service in Rhode Island, National Grid seeks to expand its fleet advisory programs across its MA, NY, and broader RI territory. The Rhode Island program provides studies for up to 12 fleets and has thus far engaged with nine customers – three government fleets (mixed light/medium/heavy-duty), one public transit fleet, two colleges and universities, two corporate light-duty fleets, and one school bus transportation company. National Grid has focused on evaluating a wide variety of fleet types to better understand the unique needs of different fleet operators. Since launching the program, National Grid has identified approximately 7 million pounds of CO₂ savings (equivalent to 7,300 barrels of oil) and \$900,000 of lifetime savings for customers. The Company has also identified several obstacles to fleet electrification – two of which are highlighted below - as well as mitigation tactics:

Lack of available models: Of the 1,900 vehicles evaluated across the nine fleets, 108 have EV alternative options available for purchase. While automobile manufacturers are working to expand the availability of EFVs, fleet operators today either have a limited number of commercially available models (e.g. to replace a 4-wheel drive SUV) or have no available options (e.g. pickup trucks or specialty vehicles such as refrigerated vans). To address this, National Grid has focused its

Goals and Process

Both National Grid and Xcel Energy have tailored their programs to focus on specific fleet operator needs in order to understand the differences across fleet types to better serve their customers as fleet electrification grows.

National Grid has partnered with municipal governments, public transit agencies, schools, colleges, and universities, and corporate entities for fleet electrification services. As directed in the rate case, the program seeks to recruit 25 percent of program participants from government or public transit sectors – a goal National Grid surpassed within the first year.

By owning the charging infrastructure, Xcel will study the costs and impacts of charging behavior and utilization under time of use (TOU) rates and advisory services related to fleet conversion and has focused initially on municipal fleets in order to ensure city and state electrification goals and priorities are met.

¹ Additional information on National Grid’s programs see: <https://www.nationalgridus.com/RI-Business/Energy-Saving-Programs/Electric-Vehicle-Charging-Station-Program>

² For more information on Xcel’s programs see:

https://www.xcelenergy.com/programs_and_rebates/business_programs_and_rebates/electric_vehicles/fleet_electric_vehicles

study where there are commercially available models today and will continue to provide fleet managers with EFV updates as models come on to the market.

Current Electrification Financial Landscape: As more studies are completed, the total cost of ownership analysis shows that for numerous customer segments there is little cost savings between gas-powered vehicles and their electric counterparts, absent additional support. This near-parity, except for a few EFV models, can be attributed to historically low gas prices, yet-to-be-realized battery cost savings, limited economies of scale in the production of EFVs, and either diminishing or no federal and state vehicle rebates. National Grid helps mitigate these challenges and continues to support fleet electrification by 1) offering customers “cash on the hood” discounts from the EFV manufacturers to customers, and 2) funding charging stations and electrical infrastructure needed to power the EFVs.

Fleet operators exploring electrification can benefit from the technical expertise of utility fleet advisory services. Utilities can benefit by better understanding the electrical load requirements necessary to adequately serve a fleet while ensuring reliability for all customers.

Xcel Energy

Xcel is partnering with public and private fleets in Minnesota to improve fleet electrification through its Fleet EV Service Pilot program through which it plans to offer advisory services to three primary customers – Metro Transit, the Minnesota Department of Administration, and the City of Minneapolis— in addition to offering services to trucking fleets within its service territory. The program was approved in July 2019 for \$14.4 million over three years and allows Xcel to install, maintain, and own approximately 700 ports over the course of the pilot.

Prior to submitting a range of pilot programs, including its fleet advisory pilot, Xcel conducted a series of stakeholder meetings designed to hear program concerns and suggestions before Xcel’s submittal to the commission. Specifically, the fleet stakeholder discussions focused on the following three main components of the pilot program: 1) analytics and advisory services; 2) infrastructure services to reduce barriers to installing EVSE for fleets; and, 3) pricing and smart charging services to reduce charging costs for fleet operators. This stakeholder engagement approach enabled Xcel to get a better understanding of the needs of their fleet operators and other stakeholders, which ultimately led to a more thoughtful pilot program design that included a wide range of stakeholder perspectives. Upon approval, Xcel partnered with Metro Transit to test eight fully-electric buses that are utilizing both depot and in-route chargers. Throughout the partnership, Xcel guided the agency through an analysis of their existing fleet to determine which vehicles are well suited for electric conversion, offered rate design assistance, and supported infrastructure needs.

To provide continuity and gather lessons learned, Xcel plans to host semi-annual advisory committee meetings with a facilitator, provide data on key metrics in an annual filing, and engage third-party evaluators to conduct interim and final evaluations.

Next Steps

After gathering initial data, National Grid will help partners implement their electrification plans in Rhode Island. National Grid is also expanding their fleet advisory services to their Massachusetts and New York service territories and has already received approval for 100 government and public fleets within its Massachusetts service territory.

Similar to National Grid, Xcel Energy is looking to expand its fleet services across its service territory. On May 15, 2020, Xcel filed its first Transportation Electrification Plan, as required by the Colorado commission, to assist the state in reaching its goal of 940,000 electric vehicles on the road by 2030. Among the proposed programs, Xcel includes a fleet advisory service to support charging optimization solutions and pricing plans for fleets. This program will include commercial transit and school buses and is building off lessons learned from the Minnesota pilot.