Smart Electric Power Alliance

Exelon's Managed Charging Program

Phase 1 Review
Executive Summary

August 2023

In Partnership with

exelon℠ Argonne NATIONAL LABORATORY

Shell Recharge Solutions WeaveGrid

Executive Summary

In the summer of 2020, the U.S. Department of Energy (DOE) awarded funding to Exelon for three of their Maryland operating utilities—Baltimore Gas and Electric (BGE), Delmarva Power and Light (DPL) and Potomac Electric Power (Pepco)—to carry out their Smart Charge Management (SCM) pilot program. This project has three components, each for a different customer class: residential, fleet, and public. The objective of this project is to research, develop, and conduct a wide-scale demonstration of a utility SCM system to determine optimal managed charging structures for grid value, assess the impact of EV charging on local distribution utility operations, and evaluate the utilities' ability to control EV charging load based on grid conditions.

Based on the interim findings produced by the first half of the project life, the project team recommends that when implementing managed charging programs, utilities:

- **Evaluate overall cybersecurity posture**, identify vulnerabilities associated with electric vehicle supply equipment (EVSE) and telematics software, and leverage industry best practices to mitigate identified weaknesses to reduce possible attacks.
- **Perform internal functional testing** using production hardware to isolate interoperability issues found in typical and atypical use cases.
- **Review EV industry trends and conduct market research** to understand driver needs to inform program design and recruitment strategy.
- **Prepare for potential supply chain problems and logistical issues** that could disrupt timelines and delay results if there is a hardware component to program design.
- **Coordinate with IT departments at inception** to automate program functions and incorporate security and technological improvements into the development process to maximize efficiency, security, and scalability.
- **Balance flexibility and structure in program design** to maximize participation and retention.

The programs have provided important learnings that will set the program up for success in scaling. Different end customers (public, fleet, residential) have different challenges and needs that project partners adapted to during design, testing, and implementation of project scope. From this report, stakeholders will be able to take and apply lessons learned related to mapping out detailed steps, tasks, and responsibilities when launching this as a full fledged utility program.



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