OPENADR UTILITY CASE STUDY

Vehicle-to-Grid

DTE Energy / Xcel Energy

PROJECT GOALS

OpenADR protocols provide a standard way to interconnect distributed energy resources with the utility grid, allowing for participation in utility demand response (DR) programs, time-of-use rates and increased renewables contributions. This is proving valuable to utilities who are increasing their engagement around the electrification of transportation. It is also proving valuable to utility partners among automotive manufacturers (OEMs), who are promoting a standards-based Open Vehicle Grid Integration Platform (OVGIP). OVGIP is a project of the utility industry Electric Power Research Institute (EPRI), and its architecture incorporates the OpenADR protocols. DTE Energy and Xcel Energy are two early adopters of OVGIP in order to enable programs aimed at EV drivers.

DTE Energy / Xcel Energy → openADR ALLIANCE → OVGIP →

DTE Energy

DTE is introducing a Smart Charge Program to encourage interconnection of customer electric vehicles. In this use case, DTE dispatches the DR event signal through a portal implementing OVGIP. The signal flows to the OEMs back-end systems via OpenADR. The OEMs communicate the event details to the EV participants, and charging is stopped to the participants that accept the event wherever they are plugged in at and charging.

Xcel Energy

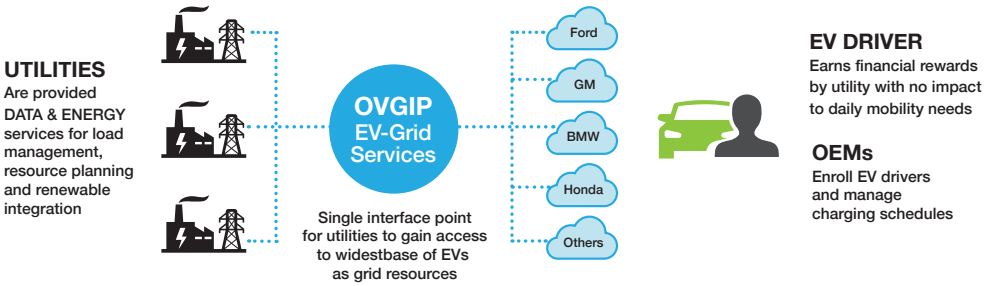
Xcel Energy's Charging Perks Program has been introduced for purposes of characterizing the grid value of electric vehicle integration, as well as learning about customer behavior in new EV programs. Grid value is informed by information about EV baseline usage, CO_2 emissions, and grid impacts including avoided capacity, energy cost and renewables curtailment. Customer behavior learnings include program satisfaction, enrollment motivators, overrides and communications preferences.

For more information
please visit
www.openadr.org

openADR ALLIANCE

Open Vehicle-Grid Integration Platform (OVGIP)

- Solves the Many-to-Many problem to enable scaled, widespread VGI
- Aggregation and coordination of EV load and data



PROJECT IMPLEMENTATION

The implementation of the common OVGIP, from the perspective of Ford and General Motors, offers multiple value propositions. A single interface allows utilities to manage the charging of EVs across different OEMs simultaneously. OVGIP keeps customers at the center of the decision making around charging, allowing them to earn incentives and better utilize renewable energy through cooperative charge management. The open-standards based platform enables EV-DR, off-peak load shifting, day-ahead hourly pricing, renewable following, and other EV load management use cases. The platform also requires no dependency on charging infrastructure, instead leveraging OEM in-vehicle telematics. At the same time, it is capable of accommodating and interoperating with all charge management pathways. In summary, OVGIP is designed to provide the utility with the broadest and deepest access to EV customer enrollments, load management, and data.

TECHNICAL INTEGRATION AND PARTNERS

Providers of Distributed Energy Resource Management Systems (DERMS) generally integrate the OpenADR protocols on behalf of their utility customers. Those providers typically test and certify their integration with the OpenADR Alliance, to ensure interoperability with the systems managed by the utility's program partners.

About OpenADR Alliance

The OpenADR Alliance brings together system operators, utilities, aggregators, controls vendors and solution providers to support the growth of this international standard (IEC 62746-10-1) Industry stakeholders worldwide work to foster the development, adoption and compliance of the OpenADR standard through collaboration, education, training testing and certification. There are currently over 250 certified OpenADR products. Collaboration includes technical working groups – most recently the creation of an Electric Vehicle Interest Group.