

Visibility Tool for Distributed Energy Resources and Electric Vehicles

Grid Innovation Fund Project Details

Lead Proponent: Essex Powerlines

Partners: Essex Energy, Utilismart Corporation

Strategic Area(s):	Enhancing Forecasting and Planning
Project Total Cost:	\$ 544,248
Year Contracted:	2019
Status:	Active
Location:	SW Ontario
Economic Development:	N/A

Project Objectives

This project aims to enhance an existing software currently used by utilities, SmartMAP, to enable visibility into electric vehicles (EVs) and distributed energy resources (DERs) and their impacts on distribution system assets.

SmartMAP is a geospatial load analysis tool that combines data from smart meters, wholesale meter points and other sensors spread across its distribution system. The software enhancements would increase the visibility of grid operations through detection algorithms. Detection algorithms will allow for EV charger loads to be automatically identified, improving both visibility and data analysis as it relates to the impacts on distribution assets. Distribution assets that service the EV charger loads will be consolidated within a software application and specifically analyzed for potential issues, such as overloading.

The detection tool will be an integrated software that helps manage and promote customer trends in electrification and conservation in a cost-effective manner.

Expected Outcomes

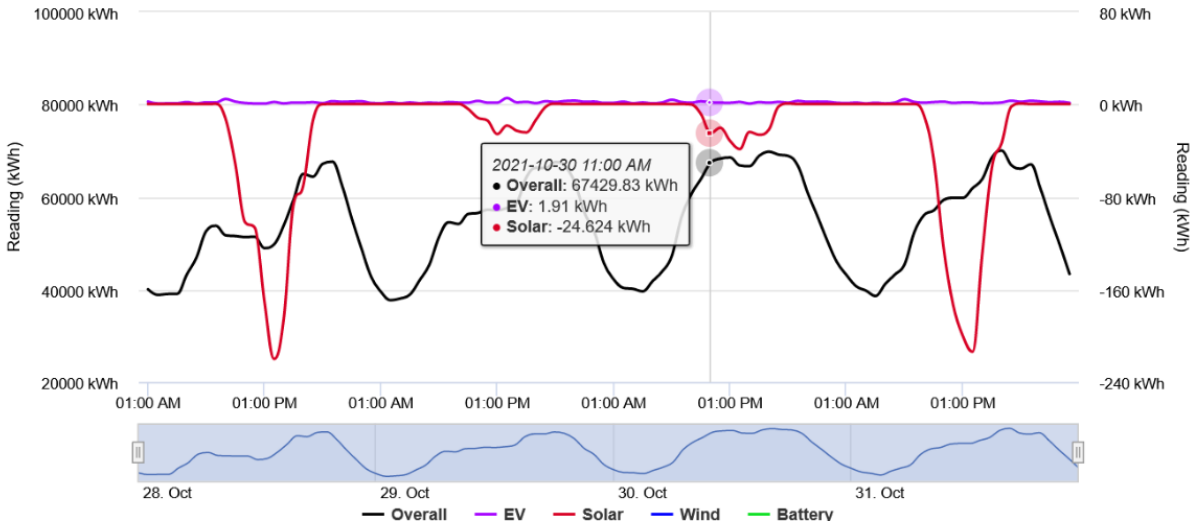
This project will introduce a geospatial and system modeling perspective of where DERs exist in the distribution system and its impact on gross loads associated with its distribution feeders.

If successful, this project will provide a software functionality that is able to:

- 1. Detect (using an algorithm) and display the impact of EVs on the distribution system, and
- 2. Display DERs geospatially and calculate their impact on feeders.

The outcomes include improvements in detection rates for EVs and display criteria for DERs. These capabilities are expected to improve the planning and operation of the distribution system.

Meter: WM156M26 EVDER Readings



Embedded directly into SmartMap, an Outage Management System, users will now be able to view aggregated meter load at the boundary meter level for identified EV, Solar, Wind and Battery.