

Project Start Date: 06/1/2018

Project End Date: 12/31/2020

Budget: \$1,300,000

Current Quarter Spend: \$5,569

Cumulative Spend: \$270,481



### Phase 1 Analysis and Engagement

**Project Summary:** The Project proposes to use advanced control and inverter functionality, along with supporting technologies, to optimize the export of Photovoltaic (“PV”) generation to the Company’s distribution system. The Company will explore developers’ interest and acceptance of Active Network Management (“ANM”) solutions devices which may optimize PV export, and/or provide an alternative to traditional system upgrade and protection costs to interconnect. The project is broken up into two classes: (1) Large Projects, which are 0.75 MW to 5 MW in size; and (2) Mid-Sized Projects, which are 0.050 MW up to 0.75 MW in size. The Company is working with Smarter Grid Solutions (“SGS”) for Large Projects, and a PV developer for Mid-Sized Projects.

**Lessons learned:** As O&R integrates these new technologies with its existing utility system, the Company has experienced the following lessons as part of the demonstration project.

- **Prospective candidate selection:** The Company conferred with SGS to identify various metrics that could be used to identify candidates that would benefit from the Project. The Company continued to work internally with its DER interconnection team and SGS to analyze various projects from the Company’s DER interconnection queue. A recent update in the New York State Interconnection Requirements (“NYSIR”) provided guidance to an updated methodology to calculate Voltage Flicker. Due to the changes in the flicker calculations the Company further defined its evaluation process within the Co-ordinated Electric System Interconnection Review (“CESIR”) to expedite the identification of prospective projects. The Company continues to streamline this process and work with SGS to implement the improvements. The lessons learned is to plan for unexpected changes in the criteria that are being developed and add time in the schedule to account for these changes.

**Integration of third-party equipment with the Company’s distribution system:** As for the Mid-Sized Project, the team continues to work with internal Subject Matter Experts (“SMEs”) to safely and reliably integrate third-party technology with the utility’s distribution system. The Company explored their internal timeline for the deployment of their Advanced Distribution Management System (“ADMS”) and Distributed Energy Resource Management Systems (“DERMS”) platform to further understand how the third-party technology may be integrated with these future platforms. The Company also learned that their current Supervisory Control and Data Acquisition (“SCADA”) system will not be able to accommodate one of the proposed technologies proposed by a third-party vendor. The future O&R SCADA will be more robust and may have added functionality to ease the integration of third-party devices.

- **Explanation for budget:**

The Company has spent \$270,481 on the Project through June 30, 2019. The costs are associated with implementation vendor costs, legal fees and project management labor. The Project spending is on track to meet the overall budget.

#### Issues Identified:

- **Candidate selection:** There is a need to have flexibility to adapt to the evolving Reforming the Energy Vision (“REV”) requirements. Changes occurred to the flicker calculation which impacted the CESIR screen requirements. The Distributed Generation (“DG”) team was able to include this change in their criteria process and developed a report that the Company used to identify additional candidates.

- **Integration of third-party equipment with the Company's distribution system:** As noted above, due to the complexity and introduction of new technologies, the Company is working with various vendors to integrate third-party equipment safely into the Company's distribution system.

#### **Solutions Identified:**

- For the Mid-Sized Project category, the Company plans to continue to work with third-party vendors and internal SMEs to identify pathways for an efficient integration of third-party technology with the Company's distribution system. Any integration should take into account both current and future functionality of ADMS/DERMS platform. O&R is speaking to a vendor in order to have an integrated solution metering current and voltage with a Power Quality ("PQ") meter. The specifications have already been developed for this solution which allows for high accuracy sensing at a low cost. There are also provisions established to provide remote communications to these devices from the electric control center. Once we have this initial solution, additional work will be done to add control capabilities to other devices and potentially inverters.
- For the Large Project category, the Company continues to work with internal SMEs to identify projects that are an ideal fit for this demonstration project. As some of the technical screening process for the SIR are updated, it is important for the Company to remain flexible and incorporate this new guidance into existing study parameters. The Company is also taking necessary steps to understand how the Smart Inverter Functionality will affect the overall hypothesis of the project. As the Company transitions into working with third-party developers, who are willing to participate in the demonstration project, the Company and SGS will try to understand and identify the various metrics that may produce additional value for the third-party developer.

#### **Recent Milestones/Targets Met:**

- **Market engagement and initial interconnection assessment:** The Company engaged two vendors and conducted detailed reviews to identify eligible candidates for the Project.
- **Technical assessment of interconnection applications:** Due to the changes in the criteria and screening requirements, O&R's DG team coordinated with SGS to review additional completed CESIR studies, to identify additional projects which may benefit from leveraging SGS' advanced control and inverter technology, and to optimize PV export.

#### **Upcoming Milestones/Targets:**

- Due to the changes in the flicker criteria, the Company had to re-establish the CESIR studies selection criteria and identify new potential projects that may have failed the new Voltage Flicker criteria. During the next quarter, the Project team will begin outreach to a pool of identified developers (have been identified as an ideal candidate for the project) and introduce them to the proposed ANM solution.
- O&R will continue discussion with the vendor in order to have an integrated solution metering current and voltage with a PQ meter.