

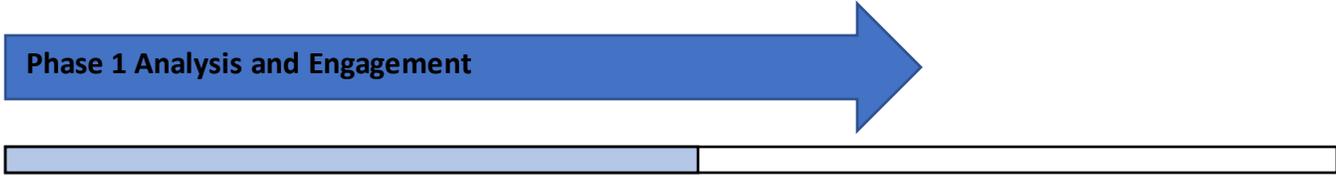
Project Start Date: 06/1/2018

Project End Date: 12/31/2020

Budget: \$1,300,000

Current Quarter Spend: \$21,684

Cumulative Spend: \$413,530



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 project is divided into two classes: (1) Large-Size Projects, which are 0.75 MW to 5 MW in size; and (2) Mid-Size Projects, which are 0.050 MW up to 0.75 MW in size. The Company is working with Smarter Grid Solutions (“SGS”) for Large-Size Projects and has worked with a PV developer for Mid-Size Projects.

Lessons learned: As the Company integrates these new technologies with its existing utility system, the Company has learned the following lessons.

- **Participant identification:** The Company conferred with SGS to develop metrics that could be used to identify parties that would benefit from participating in the Project. These metrics include voltage flicker, overvoltage and thermal violation. The Company worked internally with its DER interconnection team and SGS to analyze various projects from the Company’s DER interconnection queue that had failed the Coordinated Electric System Interconnection Review (“CESIR”) process due to the criteria/metrics above. However, a change in the New York Standard Interconnection Requirements (“NYSIR”) resulted in an updated methodology to calculate voltage flicker during the screening process. Due to this change in the flicker calculation methodology, the Company re-defined its screening process for project participants.
- **Pool of potential projects:** The Company produced monthly CESIR reports to determine if there were any new potential candidates. The Company completed evaluating older applications and is now focused on new CESIR applications. One of the lessons learned is that the project pool is smaller than anticipated and as a result additional time is required to identify a potential customer.
- **Project development cycle:** Another lesson learned is that once the existing queue has been evaluated based on the changes in the Flickr criteria, older candidates have been identified that have moved too far into their development cycle and could not be considered as potential candidates for the Project.
- **Customer outreach:** Customers did not always respond in a timely manner to the Company and SGS contacts, therefore it is important for the Company to incorporate additional time for customer outreach as it attempts to gain developers’ interest.
- **Project constraints:** The Company contacted the four potential candidates that were identified in Q3-2019. Due to the small size of the CESIR project pool, older candidates being identified too late in the planning process and developers not having sufficient land space, the Company will need to be flexible as projects may have other limiting factors.

- **Evolution of alternative technologies:** As part of the Project, the Company sought to understand the range of new technologies available for monitoring and control of mid- to low-sized PV projects. However, with the evolution of smart inverter functionality and declining smart inverter prices, the Company determined that smart inverters will play a major role in providing low-cost monitoring and control to utilities and may replace the other technologies under consideration. The evolution of smart inverters and their impact on the technologies being evaluated as part of the Mid-Sized Projects required the Company to reassess the need to demonstrate alternative low-cost technologies for Mid-Sized projects. As a result, the Company decided not to proceed forward with the Mid-Sized Projects.

Explanation for budget:

The Company spent \$413, 530 on the Project through December 31, 2019. The costs are associated with vendor implementation costs, legal fees and project management labor. The largest amount was spent on legal counsel to draft the contract agreement for the Large-Size Project, followed by vendor costs associated with the analysis of CESIRs within the Company’s interconnection queue. Project spending continues to be on track to meet the overall budget.

Issues Identified:

- **Candidate selection:** For the Large-Size Project category, the Company completed evaluation of all the completed CESIR studies in the queue to identify potential candidates for the Project. Going forward, this limits the amount of potential projects as only projects with newly completed CESIR will be considered as candidates. The Company has seen smaller PV applications and more storage-focused projects and might not be able to identify new candidates in Q1-2020.
- **Integration of new technologies with the Company’s distribution system:** Due to the specifics of the system configuration, the Company cannot integrate all third-party equipment with its distribution system. As mentioned above, due to the system requirements of new technologies, the Company will need to work with vendors to understand technological requirements in order to integrate third-party equipment successfully and safely with its distribution system.
- **Evolution of Smart Inverters:** The fast evolution of smart inverter functionality has proven to the Company that monitoring and control functionality of a smart inverter is a far better option for developers in the Mid-Size Project category than third-party owned equipment.

Solutions Identified:

- For the Large-Size Project category, the Company will now evaluate new CESIRs as they become available and will reexamine projects that withdrew or cancelled their applications. SGS’s past experience has shown that developers that initially cancelled their projects due to concerns regarding interconnection costs, will resubmit a project when there is an opportunity to address those interconnection costs concerns.
- For the Mid-Size Project category, The Company was unable to recruit any customers for this segment. The maturity of smart inverter technology made the hypothesis of finding a lower cost alternative solution to a recloser obsolete.

Recent Milestones/Targets Met:

- **Market engagement and initial interconnection assessment:** The Company plans to have at least 3-5 developers participate in this demonstration project (for the Large-Size Project category). The Project team continued their outreach efforts and was able to contact the fourth developer in order to introduce them to the proposed active network management (“ANM”) solution. The Company explained the hypothesis of the Project to the prospective participants and gauged their interest in participating in the program. The outreach conversation showed that the developer was interested in the SGS solution and the Project, but did not have sufficient land due to a wetland issue that limited the size of the PV site and did not allow for the necessary expansion.
- **Technical assessment of interconnection applications:** The Company completed evaluation of the existing interconnection queue and continued reviewing newly completed CESIR studies on a monthly basis and as they become available, to identify additional projects which may benefit from leveraging SGS’ advanced control and inverter technology in order to optimize PV export. Due to various difficulties such as a smaller, storage-focused project pool, and candidates discovered too far into their development process, the Company has not identified a potential candidate that has agreed to move forward with the SGS solution. The initial discussions that SGS had with the developers about the opportunity and technology that they offer proved to be successful. However, issues arose once the Company started to explore each project (*e.g.*, siting and new Flicker criteria) that are not allowing two developers to move forward.

Upcoming Milestones/Targets:

For the Large-Size Project category:

- O&R plans to continue outreach efforts with the identified developers on the Large-Size Projects. During the next quarter, the Project team will continue to produce a monthly CESIR report that will show if there are any new potential candidates that can be considered for the Project.
- Once identified, the Company and SGS will begin discussions with prospective developers. The Company will start looking at projects that may have withdrawn or cancelled their CESIR applications due to high interconnection costs. SGS’s past experience has shown that developers will revive and resubmit a project where there may be an opportunity to reduce interconnection costs.
- For the Mid-Size Project category, The Company met with the Staff to discuss Mid-Size Projects and the Company’s decision to not continue with the project.