Reforming the Energy Vision

Demonstration Project Q1 2016 Report

Flexible Interconnect Capacity Solution

AVANGRID

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1.0 Executive Summary

The Flexible Interconnect Capacity Solution (FICS) demonstration project tests a new model for interconnecting large-scale Distributed Energy Resources (DERs) to the distribution system, with the utility able to manage the delivery of electricity generated by a DER to the grid, thus providing a less expensive, potentially faster interconnection alternative to traditional infrastructure upgrades.

During Q1 2016, the project team filed the FICS Implementation Plan, completed project kickoff, evaluated proposed DERs in the New York State Electric & Gas Corporation (NYSEG) and Rochester Gas & Electric Corporation (RG&E) interconnection queue to identify FICS candidates, engaged the developers of the leading candidate DERs, and conducted broader stakeholder engagement to advance the proposed FICS platform-as-a-service business model.

Two proposed DERs in the NYSEG service territory have emerged as the leading site candidates for the initial FICS demonstration scope. Using Active Network Management (ANM), interconnection cost for each DER can be deferred by managing constraints identified in the interconnection screening. The candidates include a 2 MW solar photovoltaic (PV) farm and a 450 kW farm waste biodigester. The potential avoided interconnection costs enabled by ANM can far exceed the cost to implement and support the ANM system over the demonstration term.

The following report provides a progress update on the tasks, milestones, checkpoints, and lessons learned to date.

2.0 Demonstration Highlights Since the Previous Quarter

Initial activity for FICS began in Q4 2015. The FICS Assessment Report was received from the Department of Public Service (DPS) Staff on December 15, 2015 and the FICS Implementation Plan was filed on January 11, 2016. Activity and results through Q4 2015 and Q1 2016 include:

- Submitted Implementation Plan
- Held kickoff workshops with representatives across the AVANGRID organization involved in DER interconnection and operations, including Transmission Services, System Planning and Protection, Operations Technologies, Energy Control Center Operations, and Customer Service
- Evaluated over 400 DER interconnection studies for projects proposed in the NYSEG and RG&E service territories to develop a short list of FICS candidates
- Positively impacted the NYSEG and RG&E interconnection process through FICS candidate evaluation and internal stakeholder engagement and education
- Engaged DER developers to evaluate interest in FICS participation
- Drafted technical requirements specifications to build and integrate the ANM system with NYSEG's and RG&E's Energy Control Center platform
- Drafted initial technical designs to deploy ANM schemes at the two leading DER candidate sites
- Engaged external interconnection stakeholders and industry experts to evaluate and develop the FICS platform-as-a-service business model

2.1 Activity Overview

2.1.1 Activity: Reviewed DER interconnection studies to identify FICS candidates

To develop a short list of FICS candidates, the project team reviewed open DER interconnection applications in the NYSEG and RG&E service territories, evaluating the Initial Technical Review (ITR) and Coordinated Electric System Interconnection Review (CESIR) (if available) for each proposed DER that has yet to move to construction. Per the New York Standardized Interconnection Requirements (SIR), for DER interconnection requests above 50 kW up to 2 MW utilities are required to complete two stages of interconnection screening.[1] An ITR is provided to the developer as a preliminary study. If the developer decides to move forward based on the results, the utility completes a more in-depth assessment in the CESIR to determine any relay coordination, fault current, thermal, and/or voltage regulation issues due to the proposed DER.

The project team reviewed 181 ITRs completed in 2015 and 239 ITRs completed in Q1 2016 for proposed solar PV, biodigester, hydro, and steam turbine systems that ranged in size from 250 kW to 2 MW.[2] The ITRs reviewed add up to approximately 744 MW of rated generation

[1] The recent SIR revisions will increase system size threshold to 5 MW.
[2] While individual DER applications are limited to 2 MW for net metering qualification, the project team reviewed over 20 locations where multiple 2 MW DERs were sited on adjacent parcels, requiring assessment of up to 18 MW interconnected at a single point of common coupling.

capacity, with the majority of capacity proposed in the NYSEG service territory.[3] Remotely net metered solar PV was the dominant type of DER proposed, with 98% of the DER capacity studied solar PV proposed by 30 different developers.

The project team took several steps to reduce the overall DER interconnection queue to a subset of "feasible" FICS candidates. Feasibility was considered in two ways:

1. The proposed DER had the right technical characteristics for FICS participation, meaning that the project met basic interconnection criteria and had an interconnection constraint ANM could address (i.e. capacity or steady-state voltage).
2. The proposed DER had a qualified offtake arrangement, such that the DER capacity studied reflected the actual amount of capacity the developer planned to construct at the proposed location.

One example of "basic interconnection criteria" is that the DER was proposed adjacent to or close to three-phase electric service. Of the 420 ITRs reviewed, 30% of the proposed DERs were either located more than 1200 feet away from the closest three-phase service or located outside of the NYSEG and RG&E service territories. Less than 10 of the ITRs for these projects were advanced to the CESIR phase by developers, reflecting the expected costs to establish the basic conditions to support a larger-scale DER interconnection.

As described below, the project team had to take candidate DER's offtake status and structure into account as well, since remote net metering enables DER developers to evaluate multiple potential host locations in the same NYISO load zone as the offtake customer's satellite account.

2.1.2 Activity: Engaged DER developers to evaluate interest in FICS participation

The first step in discussing an ITR with a developer was to confirm the DER capacity studied was the capacity the developer planned to construct at that location. If an ITR and CESIR identified an interconnection constraint and cost that could be addressed with ANM, the project team not only had to consider the potential avoided interconnection cost against expected generation curtailment under FICS. The project team also had to determine if the developer had other open ITRs or CESIRs with lower interconnection cost where the developer could site and construct the DER.

In a similar vein, with the influx of proposed DER capacity to meet the June 2015 grandfathering deadline for certain monetary remote net metering credits, ongoing negotiation of the offtake terms between certain developers and customers following application submission, and tariff changes required following the PSC's October 2015 Order in Case 15-E-0267, the project team

[3] 87% of proposed DER capacity reviewed was located in the NYSEG service territory.

had to verify that the initial DER capacity proposed by developers reflected the capacity for which they feasibly could obtain net metering credits.[4]

Working through this process, the project team identified two leading candidate DERs which are detailed below. Both developers have expressed material interest in FICS participation.

Candidate DER #1 Overview

DER Size and Technology: 2 MW Solar PV

Developer: [redacted]

CESIR Interconnection Cost: $288,000

FICS Savings Opportunity: $165,000

Interconnection Constraint: Steady-state voltage

Candidate DER #2 Overview

DER Size and Technology: 450 kW Biodigester

Developer: [redacted]

Estimated CESIR Interconnection Cost[5]: $3,900,000

FICS Savings Opportunity: $3,850,000

Interconnection Constraint: Substation capacity (thermal)

[4] NYSEG and RG&E were directed to file tariff leaves eliminating the Net Metered Limitation and the One Host Limitation but permitting no more than 2 MW of net metered generating capacity to serve any Satellite Account.
[5] As previously stated, the CESIR for Candidate #2 had yet to commence as of March 30, 2016. The $3.85 million cost represents a substation transformer bank upgrade that would be deferred and potentially avoided with the application of ANM.

2.1.3 Activity: Engaged external interconnection stakeholders

The project team held discussions with a number of interconnection stakeholders and industry experts to evaluate the proposed FICS platform-as-a-service business model and opportunities for scaling FICS:

New York Agencies: NYSERDA, NY-Sun, and NY Green Bank

Iberdrola Affiliates: ScottishPower Energy Networks and Avangrid Renewables

T&D Utilities: New York Joint Utilities, Hawaiian Electric Company, Pacific Gas & Electric Company, Southern California Edison

Trade Associations: Solar Electric Power Association (SEPA)

DER Financiers: Generate Capital and Wells Fargo

Lessons learned from the discussions are further detailed in Section 4.

2.2 Tasks Completed & Milestone Progress

Table 1: Implementation Plan Milestones by Project Task

Project Task	Milestone for Task Completion	IP Target	Status
Kickoff	Smarter Grid Solutions delivers Project Initiation document to AVANGRID	Q4 2015	Complete
Stakeholder Engagement	AVANGRID signs off on ANM requirements specifications	Q1 2016	In Progress
Modeling	Developer reviews simulated capacity analysis and signs off to proceed with data gathering	Q1 2016	In Progress
Data Gathering and Analysis	Developer accepts projected capacity analysis produced by Smarter Grid Solutions	Q1 2016	In Progress
Initial Design	AVANGRID and Developer accept draft ANM design specification, interconnection contract executed	Q2 2016	In Progress
Final Design	Pre-production and production acceptance test specifications finalized	Q2 2016	On track
Build and Configure	Pre-production and production factory acceptance test	Q3 2016	On track
Installation and Testing	Site acceptance test, ANM system go live	Q4 2016	On track

The CESIR for one of the two candidate DERs is in progress, therefore the three milestones in the FICS Implementation Plan targeted for Q1 2016 completion are also still in progress. These three milestones are expected to be completed for both candidate DERs in Q2 2016. The project team is on track to commission the first FICS site in Q4 2016, with the second FICS site expected to be commissioned in Q1 2017. The project schedule has been updated in Section 3 to reflect these timelines.

2.3 Checkpoints

The FICS Implementation Plan included six progress checkpoints. As detailed in the Implementation Plan, certain checkpoints are dependent on milestones to be completed later in 2016. Sufficient progress has been made to provide an update on the following checkpoints:

Selection of the FICS Option

The expected target in the FICS Implementation Plan was that at least two DER developers in the NYSEG and/or RG&E service territory will elect the FICS option during the demonstration term. The two developers of the leading candidate DERs have both expressed material interest in participating in FICS.

Interconnection Cost

The measure in the FICS Implementation Plan included the total utility infrastructure cost per MW interconnected and the avoided cost of system reinforcement that would otherwise be required. The total cost per MW interconnected will be finalized following completion of each interconnection, expected for the two candidate DERs in Q4 2016 and Q1 2017 respectively. Based on current estimates, the total expected avoided cost of system reinforcement for the two candidate DERs is approximately $4 million, or $1.64 million per MW managed.

Total FICS Utility Revenue

As stated in the FICS Implementation Plan, the area of commercial development for the "platform-as-a-service" business model is a primary focus for testing, with the project team's expected target to obtain robust lessons learned of revenue opportunities for FICS.

The initial concept for FICS revenue was a platform-as-a-service fee from participating developers to help offset the upfront and ongoing cost of ANM. Due to the characteristics of remotely net metered solar PV projects, the project team foresees challenges obtaining meaningful platform-as-a-service fees in the short term with current DER penetration levels in the NYSEG and RG&E service territories.

The developer of Candidate DER #1 has expressed that there is insufficient financial incentive to participate in FICS unless they are able to retain the expected interconnection savings in full following the demonstration term. The developer has obtained financing for the full interconnection cost without FICS.

For Candidate DER #2, the allocation of upgrade costs for farm waste biodigesters, including a potential platform-as-a-service fee, needs to be clarified with the Public Service Commission (PSC) due to provisions in Public Service Law and previous PSC rulings. This clarification request is further detailed in Section 2.4. The avoided upgrade costs, regardless of allocation substantiate the value of the FICS alternative.

External Engagement

In Q1 2016, the project team held discussions with a number of interconnection stakeholders and industry experts to gather interconnection lessons learned from states with high DER

penetration, to evaluate FICS customer acceptance, and to evaluate the FICS platform-as-a-service business model. As previously stated, stakeholders engaged included NYSERDA and the New York Joint Utilities. Lessons learned are further detailed in Section 4.

2.4 Issues

The primary issue raised to date in FICS implementation is the challenge to produce platform-as-a-service fees with the current focus on solar PV development. Ground-mounted, remotely-sited solar PV makes up nearly all of NYSEG and RG&E's current SIR interconnection queue above 50 kW. With remote net metering, developers can submit multiple interconnection applications for one offtake agreement and pursue the site with the lowest interconnection cost. Compared to project development for interconnections reviewed by the NYISO, it costs less and takes less time for developers to have interconnections reviewed under the SIR.

As a revenue opportunity, FICS is better suited for geographically constrained projects such as wind, which have been the focus of most ANM deployments in the U.K. Wind projects tend to be more geographically captive than solar PV development due to project size, wind resource availability, and permitting.[6] In other words, siting ground-mounted solar PV up to 2 MW is more geographically flexible, with the primary variables being sufficient space and irradiation exposure.

For Candidate DER #2, NYSEG is seeking a declaratory ruling from the PSC regarding the interconnection cost allocation for the project. Per New York Public Service Law and the PSC's Case 12-E-0408 Ruling issued in November 2012, the apportionment of feeder line upgrades costs for farm waste generators under the Boxler Ruling is such that if the 20% loading limitation for the local feeder is not exceeded by the generator the farm waste customer does not bear any upgrade costs.

Candidate DER #2 is proposed on a feeder where an existing farm waste biodigester is interconnected and the local substation is at capacity with 4 MW of new solar PV capacity about to be constructed. Under traditional DER screening, NYSEG would require an upgrade of the substation transformer bank to increase DER hosting capacity at the substation. NYSEG's petition will seek clarification on whether the 20% threshold is calculated in the aggregate when there are multiple farm waste biodigesters interconnected in a constrained area. Under ANM, the project team is expecting the farm waste biodigester to be able to interconnect with minimal generation curtailment.

While there is not a current revenue opportunity for Candidate DER #1 and interconnection cost allocation questions remain for Candidate DER #2, there is a clear positive business case for moving forward with the two candidate DERs based on a comparison of the avoided interconnection cost and the ANM cost. Comparing the total net present value of the avoided cost for the interconnecting the two candidate DERs and the cost of implementing ANM (the FICS demonstration budgeted amount) and supporting ongoing ANM operations starting in

[6] There are currently no FICS opportunities for wind applications in the NYISO queue located in the NYSEG and RG&E service territories.

2017, there is a positive business case for FICS through the full 25-year life cycle of the two DERs.

The project team is meeting the expected targets for three of the four FICS test statements included in the Implementation Plan, and forecast a positive business case overall for the project in terms of avoided costs. We have gained significant value in lessons learned with progress thus far, as detailed further in Section 4, and fully anticipate additional important lessons learned through operational experience gained with ANM at the first two demonstration sites.

3.0 Work Plan

3.1 Budget Review

Through Q1 2016, project spend is below the quarterly projections included in the FICS Implementation Plan:

	2015	2016
	Q4	Q1
Project Budget	[redacted]	
Actual Spend		
Variance		

3.2 Updated Work Plan

Below is the updated project plan based on the outcome of Q1 2016 activity. The project team is on track to commission the first FICS site in Q4 2016, with the second FICS site expected to be commissioned in Q1 2017. Based on the timeline for the two candidate DERs, the project team has revised the project schedule to run through 2017 in order to capture sufficient operating experience and data for final reporting.

		Timeline							
		2016				2017			
Task	*Activities and Tasks*	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1.0	Activity 1 – Kick-Off, Modeling, Data Gathering and Analysis, Stakeholder Engagement and Initial Design								
1.1	Kickoff: Project Initiation Document	Complete							
1.3.1	Modeling: Site screening	Complete							
1.3.2	Modeling: Data request	Complete							
1.3.3	Modeling: Simulated data runs and capacity analysis for two sites								
G1.3	Gate: Developers review simulated capacity analysis results		△						
1.4.1	Data Gathering and Analysis: Collect system data								
1.4.2	Data Gathering and Analysis: Finalize capacity analysis								
1.2.1	Stakeholder Engagement: Workshops	Complete							
1.2.2	Stakeholder Engagement: Draft ANM requirements specification								
G1.2	Gate: AVANGRID signoff on requirements specification		△						
1.5	Initial Design: Draft design specification, pre- and production								
G1.5	Gate: AVANGRID signoff on draft design specification, pre and production		△						
G1.4	Gate: Developers review final capacity report			△					
2.0	Activity 2 – Final Design, Build and Configuration, Installation and Test, Support								
2.1	Final Design: Assess configuration options and complete ANM scheme								
G2.1	Gate: Developers accept final design specification and AVANGRID signoff on acceptance test specification			△					
2.2	Build and Configuration: Build platform and configure applications								
G2.2	Gate: Factory acceptance test report				△				
2.3.1	Installation and Test: Systems integration testing								
2.3.2	Installation and Test: Complete site acceptance testing for 1st site								
2.3.3	Installation and Test: Complete site acceptance testing for 2nd site								
3.0	Activity 3 - Evaluation								
3.1	Ongoing performance assessment								
3.2	Stakeholder lessons learned (customer, IUSA, SGS, PSC)								
3.3	Project evaluation and final reporting								

3.3 Next Quarter Planned Activities

In Q2 2016, the project team aims to complete the following tasks for each candidate DER:

Candidate DER #1

Modeling: The project team has completed initial modeling of FICS capacity and control based on feeder load profiles for the constrained area and projected DER generation profiles. The project team has presented the analysis' results to the developer.

Data Gathering and Analysis: As NYSEG does not have existing monitoring capabilities to capture interval feeder-level loading data in the constrained area, the project team is deploying sensors to capture the data. The project team will collect at least one month of actual loading data to analyze, refine (as needed), and finalize the initial FICS capacity and control modeling.

Initial Design: The project team has drafted an ANM design specification detailing the proposed ANM scheme at the proposed DER site.

Final Design: The project team will assess configuration options and finalize an ANM scheme at the DER site, producing an ANM Design Specification and Acceptance Test Specification report.

Candidate DER #2

Modeling: The project team is completing initial modeling of FICS capacity and control based on feeder load profiles for the constrained area and projected DER generation profiles. The project team will present the analysis' results to the developer.

Data Gathering and Analysis: As NYSEG does not have existing monitoring capabilities to capture interval feeder-level loading data in the constrained area, the project team is deploying sensors to capture the data. The project team will collect at least one month of actual loading data to analyze, refine (as needed), and finalize the initial FICS capacity and control modeling.

Initial Design: The project team will draft an ANM design specification detailing the proposed ANM scheme at the proposed DER site.

Final Design: The project team will assess configuration options and finalize an ANM scheme at the DER site, producing an ANM Design Specification and Acceptance Test Specification report.

4.0 Conclusion

4.1 Lessons Learned

- FICS has positively impacted NYSEG and RG&E efforts to develop workable solutions for DER interconnection
- The portability of remotely net metered solar PV poses challenges to developing platform-as-a-service fees under ANM in the short term
- The ownership structure of most net metered DERs places emphasis on interconnection cost certainty
- As expected, establishing transparent Principles of Access will be a key requirement to developer adoption of flexible interconnections

Developing Workable Solutions for DER Interconnection

Through FICS efforts, NYSEG and RG&E modified planning guidelines in Q4 2015 to increase system capacity thresholds for DER interconnections. Consequently, only five distribution systems in the NYSEG and RG&E service territories are currently at a capacity allowing for firm DER interconnection. The guideline modifications have positively impacted developers' interconnection outcomes, but mean that widespread capacity constraints have yet to be reached that would lead developers to increasingly consider an alternative solution like ANM.

While capacity constraints are not widespread, voltage impact remains a concern with the focus on larger-scale remotely sited solar PV. Expanding the FICS scope to include voltage management for Candidate #1 aims to provide NYSEG and RG&E's planning team an additional tool to interconnect solar PV efficiently and reliably.

Proposed FICS Revenue Opportunity Challenging in Short Term

One of the principal objectives of the initial FICS proposal was to assess whether a platform-as-a-service model under ANM has the potential to generate meaningful revenues, if implemented at scale. While there is a clear positive business case in terms of avoided costs, lessons learned to date point to several challenges capturing any meaningful value in the form of additional external revenues in the short term.

Portability is a major factor in the current solar PV domain under the SIR. Solar PV developers commonly apply for multiple interconnections and pursue those with low preliminary interconnection costs.[7] Given the portability of solar solutions and absence of widespread capacity constraints in today's environment, developers have the ability to move to avoid large interconnection costs, thus the large interconnection cost avoidance opportunities that ANM could harness are typically attained simply by going somewhere else.

[7] Developers and stakeholders indicated that $250,000 is typically the economic breaking point for interconnection costs for a typical 2 MW remotely net metered solar PV project. It is at this threshold that they will select an alternative location or consider other measures. ANM as demonstrated in the DER#1 candidate scenario still has an opportunity to reduce costs in this window and can expedite the timelines of interconnection.

However, we fully expect capacity constraints to increase over time with the potentially significant ramp up in DER development under REV, and thus the opportunity and need for ANM functionality will grow. The SIR revisions and NYSEG/RG&E's publication of DER Opportunity Zone maps to its online portal for DER developers are two efforts that will be further advanced by the upcoming DSIP filings.[8]

By providing developers access to information on distribution system topology through geospatial mapping, such as the Opportunity Zone maps, the project team expects developers to hone remotely sited solar PV projects to meet basic interconnection criteria, such as focusing siting on properties adjacent or close to three-phase service. Furthermore, with the hosting capacity calculations to be included in NYSEG/RG&E's DSIP filing, the project team expects developers' project siting to be guided and concentrated where existing firm DER interconnection capacity exists. Instituting "value of D" provisions will likely have a similar impact of steering developers to specific substations and circuits.

Net Metered DER Ownership Emphasizes Importance of Cost Certainty

In addition to project portability, the project team learned that nearly all of the solar PV developers sell remote net metered projects to financing partners upon commissioning. Ownership change enables the securitization of the offtake agreement income and tax equity. As such, developers are most interested in getting a positive business case with certainty up front and will trade costs up to the economic tipping point versus accepting uncertainty.

Thus a proven track record and a strong forecast of curtailment exposure is a key to customer acceptance. Our work with these two demonstration projects will be an important step in providing an increased confidence level for future implementations by validating the project team's curtailment assessment methodology.

Last In First Off Principles of Access Recommended for Initial FICS Demonstration Sites

The project team consulted with representatives from ScottishPower Energy Networks, which is currently in the last year of a four-year, £8.4M ANM implementation funded under the United Kingdom's Low Carbon Networks Program. The initiative includes ANM implementation in several constrained system areas.

In addition to covering a range of lessons learned and recommendations on the technical ANM implementation, ScottishPower provided valuable lessons learned around customer acceptance for developers with generators managed under ANM. For example, certain U.K. Distribution Network Operators have produced curtailment estimates that were too conservative on small-scale DER generation growth not subject to Principles of Access.[9] ScottishPower emphasized

[8] NYSEG/RG&E's Opportunity Zone maps geospatially present distribution system topology for several service divisions, detailing feeder voltage and phasing to help guide developers' project siting to feasible locations.
[9] In New York, small-scale DERs would include projects under 50 kW that are not subject to a CESIR.

the importance of including sufficient head room for DER growth in upfront FICS modeling, such that small-scale DERs do not cut into managed generation capacity unexpectedly.

The U.K. Distribution Network Operators have taken varying approaches for upfront developer education and operational engagement for generators managed under ANM. ScottishPower is implementing Last In First Out Principles of Access for the generators participating in its ANM trial. ScottishPower's reasoning aligns with the Principles of Access overview provided in the FICS Implementation Plan, the simplicity of the Last In First Out approaches ensures it is transparent to all system stakeholders and achieves consistency for both existing DERs and new DERs.

To date, DER developers engaged as part of FICS have expressed a preference for the Last In First Out approach for the initial demonstration sites. In other words, if another developer proposes a new DER on the same distribution feeder or constrained area where an ANM scheme is deployed, that developer must either pay for the system reinforcement to resolve the constraint impacting the managed DER or join the ANM scheme such that ANM operations are applied to the new interconnection first.

This is not to say that the Pro Rata, Shared approach cannot be instituted in the future in other constrained system areas, where the interconnection timing and conditions allow for generation curtailment to be divided evenly among all constraint-contributing DERs.

4.2 FICS Phase 2 Options

At the project team's update meeting with Staff held on April 4, 2016, Staff requested that the project team propose ideas and options for a potential second phase to FICS that further tests revenue opportunities leveraging the ANM platform to be implemented as part of the current demonstration scope (Phase One). Based on lessons learned to date, the project team is assessing feasibility of a potential FICS Phase Two scope focused on using ANM to support a future non-wires alternative (NWA) implementation.

The project team would work with NYSEG/RG&E's NWA team members to evaluate the performance needs of upcoming NWA opportunities. Based on the assessment results, the project team may submit a demonstration filing proposal detailing the process to deploy a local ANM scheme supporting the NWA opportunities under consideration, utilizing the core ANM platform integrated in NYSEG's and RG&E's Energy Control Center.

NYSEG/RG&E could then solicit dispatchable DER capacity under the procurement process structured like NYSEG's recent Java NWA RFP. If installed, the dispatchable DER capacity would be used to manage the local capacity constraint, with ANM acting as the distributed control platform to coordinate DER operations. The core concepts of FICS Phase One and Phase Two would be the same: coordinating DER operations to maximize utilization of existing distribution system infrastructure. This concept could enhance the revenue stream for NYSEG/RG&E created by future NWA investments.

4.3 Conclusions

Through Q1 2016, the FICS project team has identified two leading DER candidates, where leveraging ANM can reduce interconnection cost and maximize the utilization of the existing distribution system. The project team has met three of the four core FICS objectives, and while not attaining the initial external revenue objective to date, has proven a positive return on investment in the ANM platform.

While solar PV portability under remote net metering is a current prohibitor of widespread FICS adoption, AVANGRID sees positive use cases for ANM at present, expects system constraints to grow with increasing DER penetration, and sees potential new uses cases and functionality for the ANM platform that advance simple DER interconnection to DER integration and optimization.