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January 31, 2018

VIA ELECTRONIC DELIVERY

Honorable Kathleen H. Burgess
Secretary
New York State Public Service Commission
Three Empire State Plaza, 19th Floor
Albany, New York 12223-1350

RE: Case 14-M-0101 – Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision (REV)

NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID: CLIFTON PARK DEMAND REDUCTION REV DEMONSTRATION PROJECT- Q4 2017 REPORT

Dear Secretary Burgess:

Niagara Mohawk Power Corporation d/b/a National Grid ("National Grid") hereby submits for filing its quarterly update to the Clifton Park Demand Reduction REV Demonstration Project Implementation Plan covering the period of October 1, 2017 to December 31, 2017 ("Q4 2017 Report") as required by the REV Demonstration Project Assessment Report ("Assessment Report") filed by the New York State Department of Public Service Staff ("Staff") with the Commission on December 1, 2016 in Case 14-M-0101.

Please direct any questions regarding this filing to:

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National Grid looks forward to continuing to work collaboratively with Staff as it proceeds with the implementation of the Clifton Park Demand Reduction REV Demonstration Project.

Respectfully submitted,

/s/ Karla M. Corpus

Karla M. Corpus
Senior Counsel

Enc.

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Demand Reduction
REV Demonstration Project
in
Clifton Park

Q4 2017 Report

January 31, 2018

nationalgrid

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1.0 Executive Summary

On January 17, 2017 Niagara Mohawk Power Corporation d/b/a National Grid ("National Grid" or the "Company") filed an implementation plan for the Demand Reduction REV Demonstration Project in Clifton Park (the "Project"), which is designed to provide residential customers in the Town of Clifton Park ("Clifton Park" or the "Town") with price signals, tools and information, enabled by infrastructure investments and distributed energy resources ("DER"), to reduce electric demand during peak times and inform the Reforming the Energy Vision ("REV") Proceeding.[1]

The Project aligns with the New York Public Service Commission's ("Commission") *Order Adopting a Ratemaking and Utility Revenue Model Policy* Framework ("REV Track Two Order") wherein the Commission asserts "[o]ne of the most important objectives of REV is improving overall system efficiency including the efficiency of capital investment to create value for customers. Toward that objective, electric peak reduction is among the most immediate priorities for REV implementation."[2] National Grid believes that it is possible to create more responsive relationships with customers by leveraging critical infrastructure, customer outreach and engagement, deep energy insights and actionable information, as well as price signals and DER products and services, which incentivize customers to reduce peak electric load and overall electric and gas energy use. Toward that end, the following elements are included in the Project:

- Infrastructure
  - Advanced Metering Functionality ("AMF")
  - Volt/VAR Optimization (includes Conservation Voltage Reduction) ("VVO")
- Customer Outreach & Engagement
- Deep Energy Insights & Actionable Information
- Price Signals
  - Peak Time Rewards ("PTR")
  - Voluntary Time-of-Use ("VTOU") Rate
- DER Services
- Utility supported Community Choice Aggregation ("CCA")

The premises of customers participating in the Project are contained within the town limits of Clifton Park as shown below. The total number of impacted customers is approximately 14,400.

Key activities and milestones accomplished this quarter (Q4 2017) are summarized as follows:

[1] Case 14-M-0101, *Proceeding on Motion in Regard to Reforming the Energy Vision* ("REV Proceeding"), National Grid Demand Reduction REV Demonstration Project in Clifton Park Implementation Plan (filed January 17, 2017)("Implementation Plan").
[2] REV Proceeding, Order Adopting a Ratemaking and Utility Revenue Model Policy Framework ("REV Track Two Order")(issued May 19, 2016), p. 72.

Key Item	Outcome
PTR Season 1 results evaluation	Results from PTR Season 1 were reviewed and evaluated and are summarized in this report. Determined that certain process adjustments will be made prior to PTR season 2.
IS and ADA efforts	Advanced Data Analytics (“ADA”) and Implementation Services (“IS”) entered support mode.
VVO efforts	Installed eight-teen (18) of thirty-one (31) Advanced Capacitors (49% of total VVO field equipment).
Customer Outreach	Conducted Community Outreach Focus Group meetings in Clifton Park.
Marketing	Reviewed program metrics and marketing strategy based on initial lessons learned, making adjustments to go-forward plan.
Points and Rewards	Experienced over three times (3x) gain in Points and Rewards enrollment since beginning of the Project.
Web Portal	Customer login activities indicated up to twenty-six point five percent (26.5%) of customers accessed the system during PTR season 1.

Project Elements

A visual of the Project's key services and offerings are provided below. Except for VVO, customers can opt in or opt out of each Project element. A description of each Project element is included with the individual sections of this quarterly report.

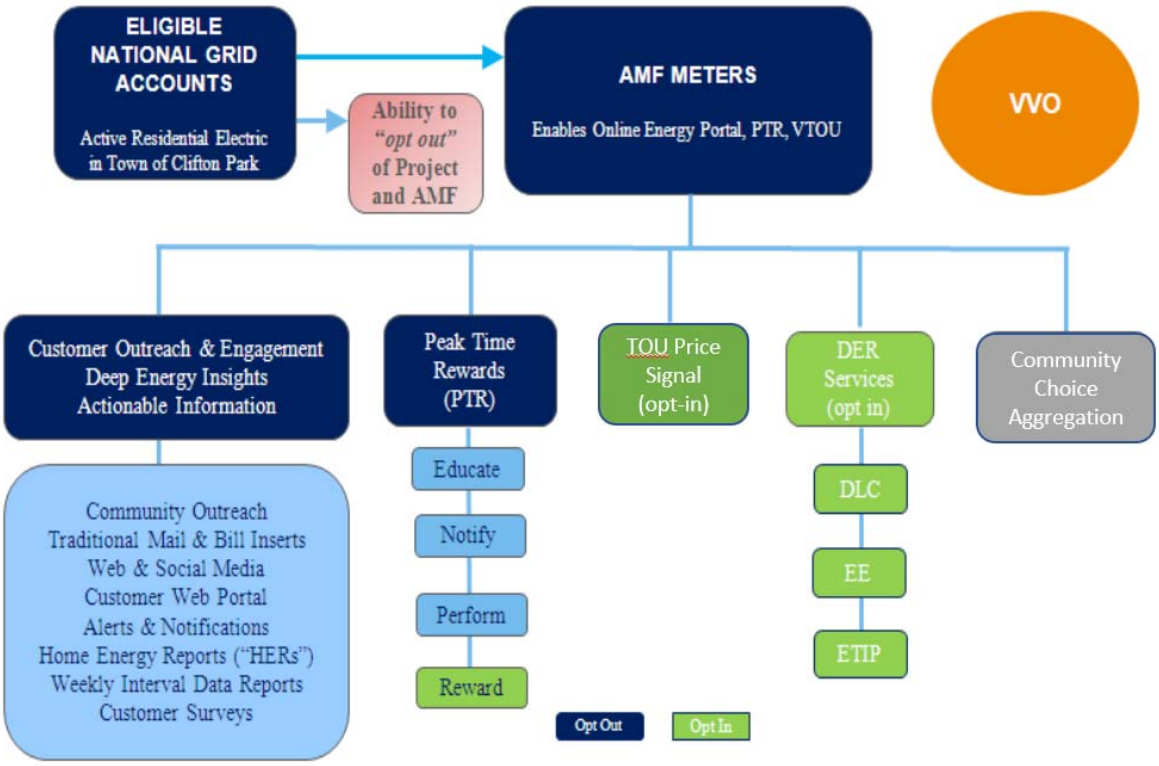


Figure 1: Project Elements

2.0 Highlights Since Previous Quarter

The following highlights key activities accomplished to date on the Project, as well as key activities planned for the next quarter.

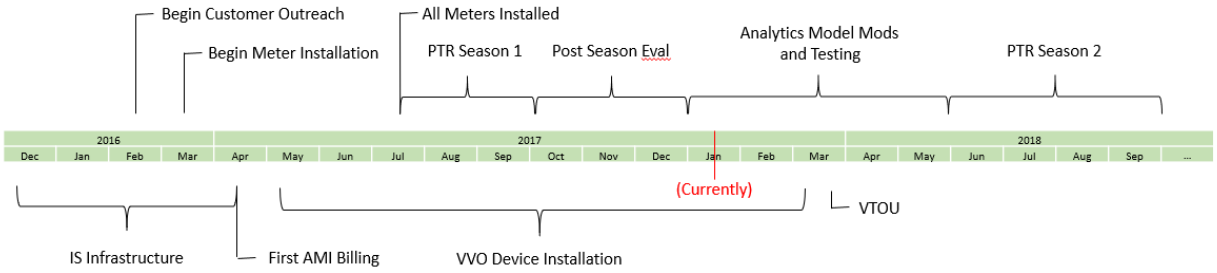


Figure 2: Work Plan Summary

2.1 Major Task Activities

2.1.1 Advanced Metering Functionality

AMF deployment in Clifton Park has replaced existing National Grid electric and gas meter reading and billing processes for customers that have not opted out of the Project. AMF meters are read and select portions of data are transferred over the cellular network to National Grid for utility billing. Portions of data are also transferred to the Project's partners over secure networks to enable various elements of the Project, including the customer web portal. Interval data is used for deployment of PTR, all customer billing, and to support authorized Project evaluation activities.

AMF deployment commenced at the end of the first quarter of 2017. Letters introducing Clifton Park customers to Smart Energy Solutions and postcards alerting customers of the AMF installation timeframe were distributed prior to installations. This allowed for a period during which customers could opt out of the AMF metering technology, as well as certain other aspects of the Project.

Customers choosing not to have AMF installed have been directed to a specialized team at the National Grid Contact Center, which in turn directs Customer Meter Services ("CMS") not to install an AMF technology for those customers. Those customers will instead retain their existing automatic meter reading ("AMR") meter, or if they had previously elected the "AMR Opt-Out Option", retain a non-AMR meter. Additionally, during the Project term, customers have the option to have their AMF meter removed and replaced with an AMR meter at no cost to the customer.

The AMF opt-out rate remains unchanged since the previous quarter at eight point eight percent (8.8%), or 1,256 premises. AMF meter opt-outs include customers that: 1) called into the National Grid Customer Contact Center; 2) informed CMS field workers in-person that they did not want the

meter; or 3) where National Grid was unable to gain access to account premises after three (3) attempts at access were made without success.

National Grid will continue to monitor AMF opt-outs as the Project continues and new customers move into the Town of Clifton Park and others move out. The National Grid Customer Contact Center will continue to accept customer requests to install or remove the AMF technology and process orders.

2.1.1.1 Information Services ("IS") Activities

Timeframe	Completed Milestones
4th Quarter 2017	• Resolved remaining production issues identified in Itron systems.
	• Implemented changes to correct data gap in the gas readings between Itron and OPower.
	• Implemented "Green Button" download capability for AMI electric meters.
	• Continued Project support via National Grid's IS Support team.

2.1.1.2 Meter Installation Activities

As of the end of December 2017, 13,214 electric AMI meters and 11,561 gas ERTs were installed within Clifton Park.

Timeframe	Completed Milestones
4th Quarter 2017	• Continued to support normal business practices related to move-in/out of customers.
	• Installed an additional 62 electric meters and 112 gas ERTs.

2.1.2 Volt/VAR Optimization ("VVO") Device Installations

National Grid will enhance the efficiency of the electric distribution system through the installation of software and devices that better regulate the voltage of the distribution system. These system enhancements will benefit all customers connected to those substations being upgraded. Working with the Project's VVO partner, Utilidata, National Grid started installing devices on the electric distribution system that monitor voltage along with advanced controllers for voltage regulators and reactive capacitors.

National Grid will evaluate the extent to which optimized regulation of the voltage and power factor of the electric distribution system benefits customers, ultimately reflected by improved feeder power factor, flatter voltage profiles, reduced feeder losses, reduced peak demand, and reduced energy consumption by customers. National Grid's targeted efficiency gain through the VVO portion of the Project is approximately three percent (3%).

VVO installation scope includes:

- Three (3) substation transformer load tap changers;
- Eleven (11) feeders, including:
  - Eleven (11) estimated, twelve (12) actual line voltage monitors;
  - Thirty-nine (39) estimated, thirty-one (31) actual advanced switching capacitors; and
  - Eight (8) estimated, six (6) actual pole top regulators
- A central controller and data concentrator installed at the National Grid Control Center in Liverpool, New York;
- Supervisory control via National Grid's Supervisory Control and Data Acquisition ("SCADA") and Energy Management System ("EMS"); and
- Cellular connectivity between all field, substation devices, and the data concentrator.

Timeframe	Completed Milestones
4th Quarter 2017	• Installed eight-teen (18) of thirty-one (31) Advanced Capacitors (49% of total VVO field equipment).
	• Designed one-hundred percent (100%) of circuit monitoring device locations.
	• Installed VVO server at National Grid facility in Liverpool, New York.
	• Completed Grooms Substation transformer #2 controller upgrade.

2.1.3 Customer Outreach

National Grid has engaged residents of the Clifton Park community to learn about the Project and solicit input. The strategies include:

- Community outreach;
- Mail and bill inserts; and
- Web and social media.

Community Outreach

The National Grid marketing team performed studies of Clifton Park residential customers to assess areas of concern and to present recommendations. The studies were conducted by Market Probe moderators, a third-party market research group, via:

- An Online Bulletin Board ("OBB") made available to three (3) customer segments, spanning three (3) days (September 26-28, 2017), and
- Two (2) in-person focus groups held in Clifton Park (October 10, 2017).

The key findings and recommendations resulting from the focus groups are presented in Appendix A.

Mail and Bill Inserts

Prior to the installation of AMF, National Grid delivered a set of communications via standard mailings to introduce Clifton Park customers to Smart Energy Solutions and notify them of the imminent arrival of the AMF meter technology. Customers were asked to contact National Grid if they did not want to receive a new AMF meter. Each letter spoke to the key benefits of the Project and touched upon key Project elements available immediately and in the future.

These communications were sent in the form of direct mail and bill inserts.

Thereafter, National Grid also sent out a series of meter installation notifications letting customers know when their new meters would be installed. Included in these communications was an invitation to attend one of the Company's customer outreach and education meetings to learn more about the Project, ask questions, and interact with the National Grid team.

Following the installation of an AMF meter, customers received educational materials focused on the various Project elements, such as enrolling in PTR. Bill inserts will continue to be incorporated four (4) times per year as new Project elements are rolled out, and media updates will be on-going throughout the year. Additionally, video tutorials have been created and were made available on the National Grid website.

Web and Social Media

National Grid continues to expand the existing Clifton Park micro-site, a component of the Company's current http://www.nationalgrid.com website, to include information on the Project for all Clifton Park residents.

The Project website includes the following information:

- Frequently Asked Questions Video overview of the Project:
    - https://vimeo.com/209611691/bd2127692f;
- Frequently Asked Questions pdf:
    - https://www.nationalgridus.com/media/pdfs/resi-ways-to-save/cp_faqs.pdf;
- Information about PTR and the VTOU rate as the Project elements are rolled out;
- DER product and service options available (*e.g.*, PTR); and
- http://www.ngrid.com/cliftonpark will be updated throughout the year to announce the rollout of new products and services.

National Grid also proactively monitors open social media sites to join any conversations regarding the Project and to help answer questions about it.

The Project tracks customer interaction with the Opower web portal. Emails, bill inserts, direct mailings, and social media contributed to raising awareness of the information available to customers, as evidenced by increasing levels of interaction throughout the PTR season. Customer outreach activities continue outside of the PTR season to encourage ongoing customer engagement.

Areas of the portal experiencing common customer interaction include:

- My Energy Use;
- Ways to Save;
- Compare My Bills;
- Dashboard; and
- Home Energy Audit.

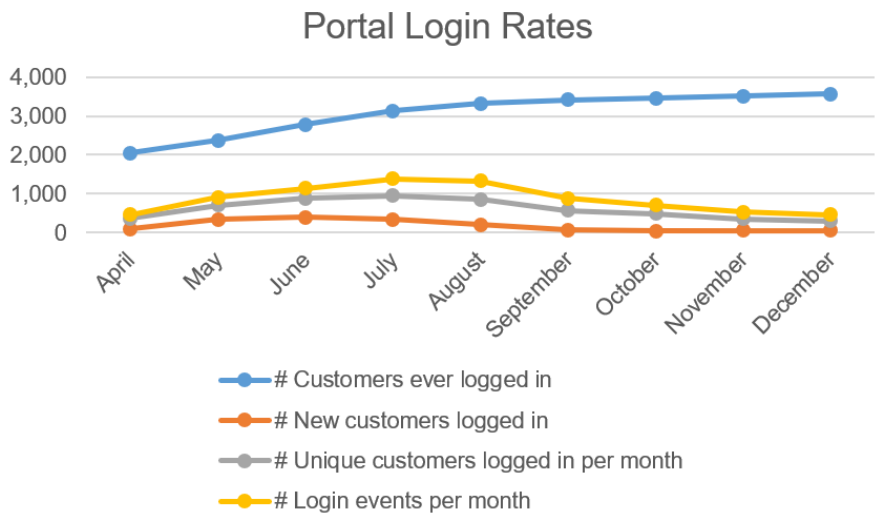


Figure 3: Portal Activity

Opower's data drill-down tools facilitate National Grid's data investigation and assists with understanding where additional marketing efforts are needed. Below is a sample of how the data can be parsed for evaluation.

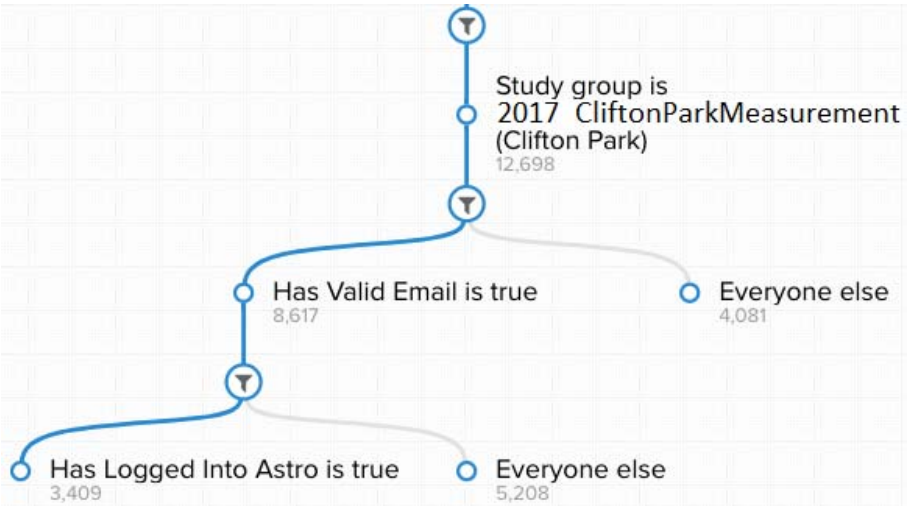


Figure 4: Sample Email Data Evaluation

Timeframe	Completed Milestones

Timeframe	Completed Milestones
4th Quarter 2017	• Completed working session in November with all stakeholders to determine Project roadmap.
	• Scheduled Town Hall meeting and working session with Opower.
	• Kicked-off segment-based portal engagement marketing campaign via email and digital channels.
	• Launched marketing campaign and introduced digital channels (*e.g.,* online banners, google search, social media, email, telemarketing) and invited residents to Town Hall meeting.
	• Focus groups were conducted during September and October in Clifton Park.
	• Promoted "Green Button" download capability for AMI electric meter owners.

2.1.4 Peak Time Rewards ("PTR")

Through a single marketing message, "Reduce Your Energy Usage and Earn a Gift Card Reward," National Grid seeks to incentivize Clifton Park customers to reduce electric use during specified peak times. Participating customers are rewarded for curtailing electric load through behavioral actions such as turning off lights and adjusting their thermostats or utilizing customer-controlled technology.

Key elements of PTR include:

- Event performance analytics performed on all customers with AMF;
- No penalties for failure to reduce load during PTR events;
- Pre-event and post-event email notifications;
- Rewards earned by those enrolled in "Points and Rewards"; and
- Rewards awarded based on participation in up to twenty (20) PTR events per year.

National Grid reviews load forecasts for the New York Independent System Operator ("NYISO") system and Zone F (which includes Clifton Park), as well as local Clifton Park weather forecasts, to determine whether to call a PTR (a/k/a "Conservation Day") event.

PTR events are entered into two (2) systems; one triggers customer event notifications to Clifton Park customers and the other sets in motion the energy use predictive model, which will compare predicted values to actual AMF metered usage, to determine curtailment participation. Over 8,000 pre-event emails notifying that a conservation event is scheduled are sent out to Clifton Park customers for each event.

Upon determination of whether each account has curtailed, each customer electric service account is assigned a value of 'true' or 'false' for each event, based on its curtailment determination. Those accounts enrolled in the Points-and-Rewards program which are assigned a value of 'true', are then awarded points.

National Grid tracks customer enrollments in PTR as a measure of customer engagement. Enrollment in Point-and-Rewards has increased each month as the Project has progressed. PTR

enrollment enables customers participating in PTR events/Conservation Days to earn rewards. A summary of PTR enrollment in 2017 is set below.

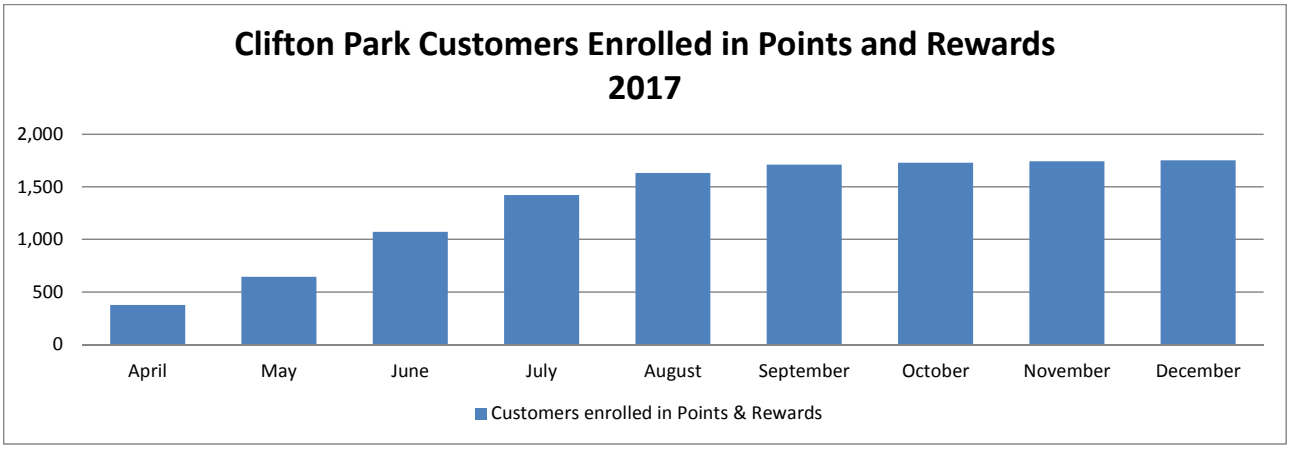


Figure 5: Points & Rewards

Post event email communications are sent out notifying customers if they curtailed or not, whether they earned points, and provide information about enrolling in in Points-and-Rewards. As an example, for the July 20, 2017 event, post event communications were distributed as follows:

Distribution of July 20th Post-Event Emails (Total 8,473)		
	Enrolled in Points & Rewards	Not Enrolled
Curtailed	837	4,384
Did Not Curtail	434	2,818

Post-event communications provide information on how to enroll in Points-and-Rewards for those not yet enrolled, and how to participate in PTR events.

Timeframe	Completed Milestones
4th Quarter 2017	• Evaluated PTR Season 1 results.
	• Monitored web portal login activities by customers, which indicated up to twenty-six point five percent (26.5%) of customers accessed the system during the PTR season.
	• Proposed predictive model changes.
	• Proposed threshold savings change (minimum curtailment) to 1.0 kWh savings per customer per event, for rewards eligibility.
	• Proposed increased rewards per event, from 100 points to 500 points, per participant.

During PTR Season 1, seven Conservation Days were called. In addition, the Project team ran three (3) “non-events” which ran the predictive model with no customer notifications, to gain additional insights into the model and to establish baseline comparison criteria. The table below summarizes the events, including the value of the factors used in calling an event (*i.e.,* forecasted maximum loads expressed in MW, maximum temperature in degrees Fahrenheit).

Date	Time	Hours	NYISO	Zone F	Temp	Note
JUL 20	1PM-5PM	4	28,487	1,968	85	
AUG 2	2PM-6PM	4	26,934	1,988	86	
AUG 15	2PM-6PM	4	24,647	1,814	83	
AUG 16	2PM-6PM	4	25,323	1,777	82	
AUG 22	2PM-6PM	4	28,108	2,101	87	
AUG 23	2PM-6PM	4	24,363	1,772	77	Non-Event (post-emails)
AUG 31	2PM-6PM	4	20,911	1,459	73	Non-Event
SEP 14	1PM-5PM	4	19,921	1,072	78	Non-Event
SEP 18	1PM-5PM	4	22,462	1,772	80	Same day call (Monday)
SEP 26	1PM-5PM	4	23,574	1,907	87	

Figure 6: Event Summary

For 2018, additional factors may be considered for event threshold. Coordination with Demand Response programs and distribution level peak data will be used.

The predictive model determined curtailment of 13,167 meters (on average) for each event. The gross data model determined that forty-eight to sixty-eight percent (48% - 68%) of meters used less energy than predicted during the defined events. Rewards for curtailment were awarded to accounts enrolled in the PTR program. The chart below represents that number of accounts awarded PTR curtailment points per event. No points were awarded for the non-events; however, the chart indicates the number of accounts that would have received points had they been actual events.

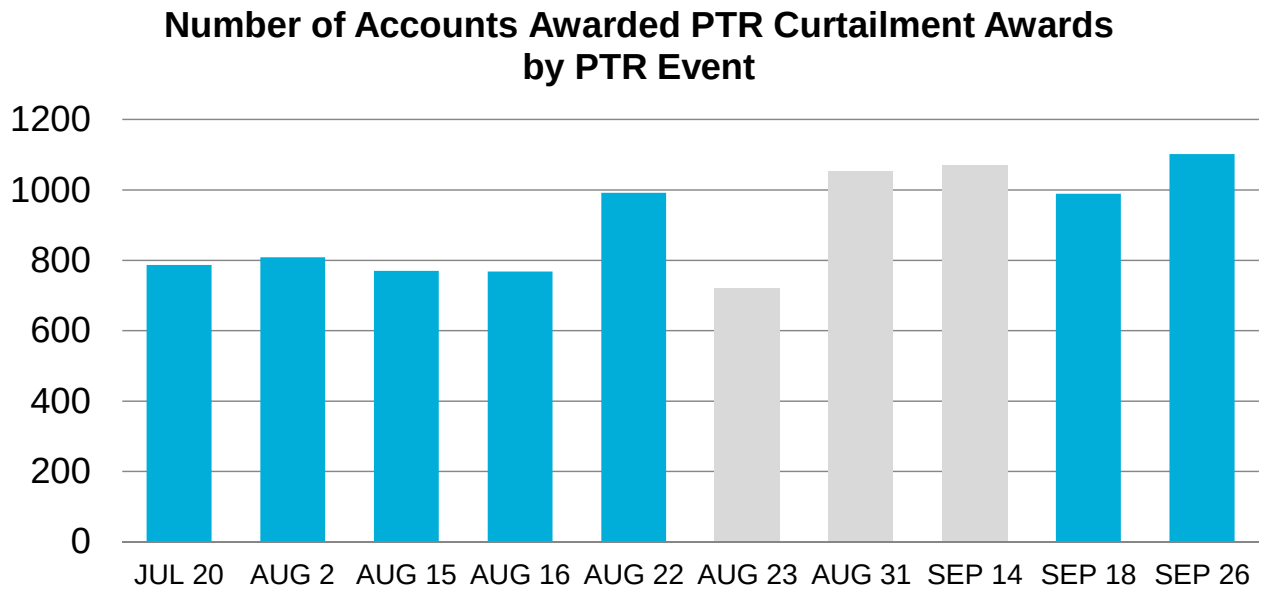


Figure 7: PTR Award Accounts

Further analysis of the PTR event data required data scrubbing. Certain data anomalies were identified that were associated with the presence of net meters, assumptions resulting in predicted values of zero, and actual values of zero (0) believed to be “no reads”. Observations with these characteristics were removed from the analysis of curtailment savings. On average three hundred fourteen (314) observations were removed per event.

In addition to the internally developed ADA predictive model used to award points, National Grid also ran an ITRON curtailment model for redundancy and analytic purposes. The primary event data sets were matched to the ITRON data set, where metered actual usage was equal across the data sets. The chart below represents the cumulative predicted energy use determined by both models and the cumulative metered usage across the scrubbed data.

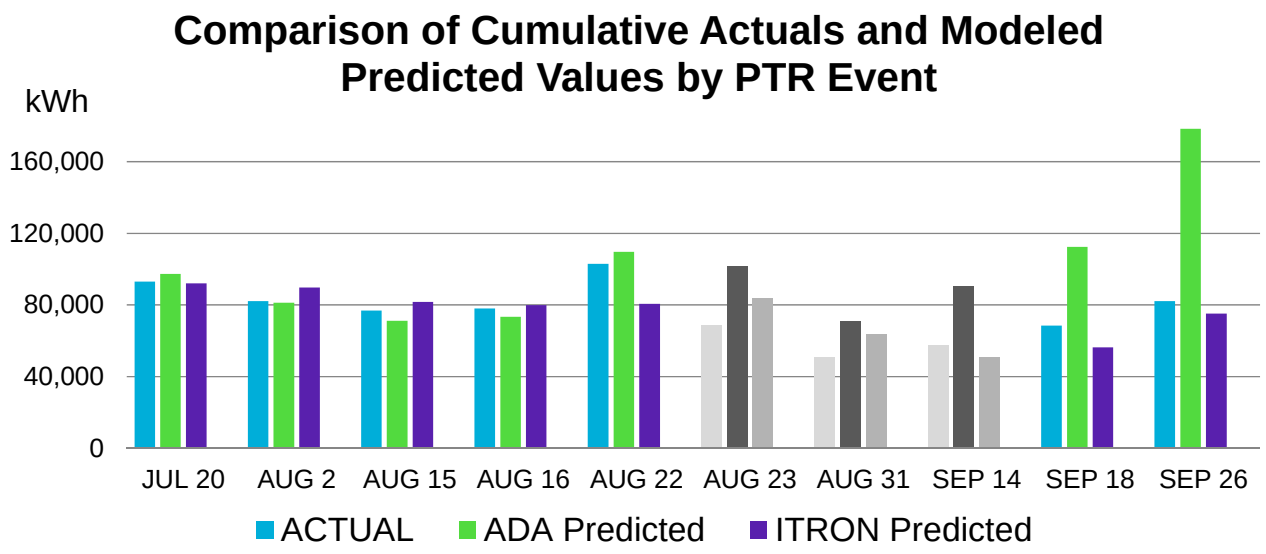


Figure 8: Predicted and Actual Usage

Each PTR event took place during a period of four (4) consecutive hours. The table below is based on the scrubbed data sets, and represents the average hourly curtailment during events for the population determined to have curtailed. Both the primary predictive model and the ITRON model are represented.

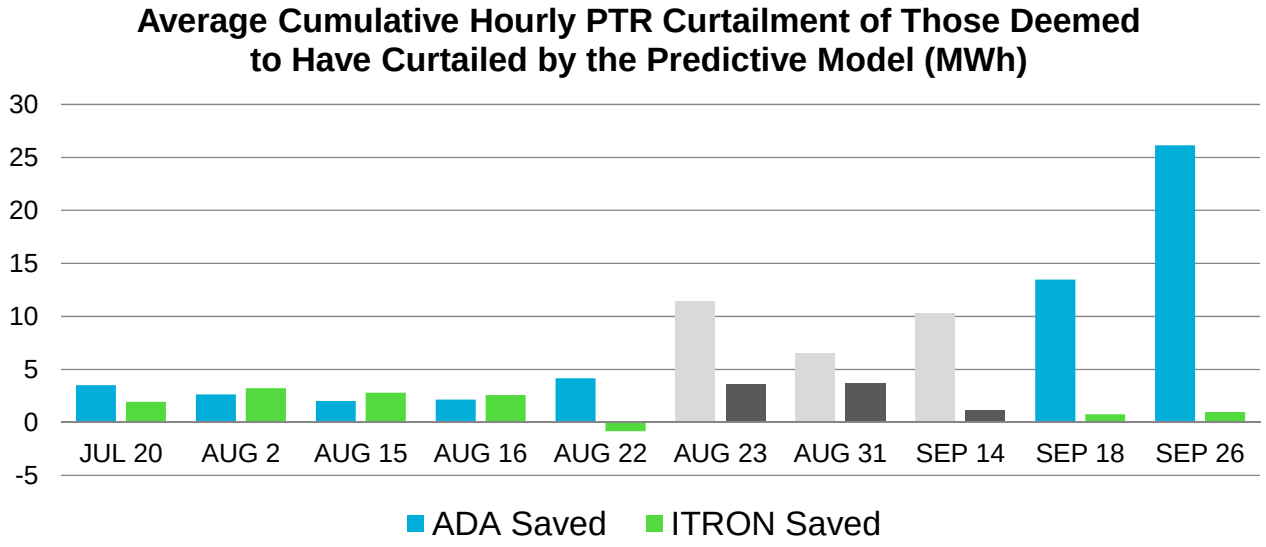


Figure 9: PTR Curtailment

In PTR season 1, PTR participants with determined curtailments were rewarded with one hundred (100) points, which is equivalent to one dollar ($1). The primary predictive model used 0.01 kWh as the minimum curtailment to earn points. It was determined that PTR Season 2 minimum

curtailment per event will be increased to 1.0 kWh to reduce the noise level present in the data. The points associated with each event will also be increased.

Each PTR event spawns pre-event emails to notify customers of the opportunity to curtail electric usage. Approximately fifty-eight to sixty-one percent (58% - 61%) of Clifton Park customers received such notifications, since certain customers opted-out of receiving notifications and valid email addresses were not available for all accounts. The difference between customers receiving emails, those not receiving emails, and those enrolled in the Points and Rewards program are tracked per event.

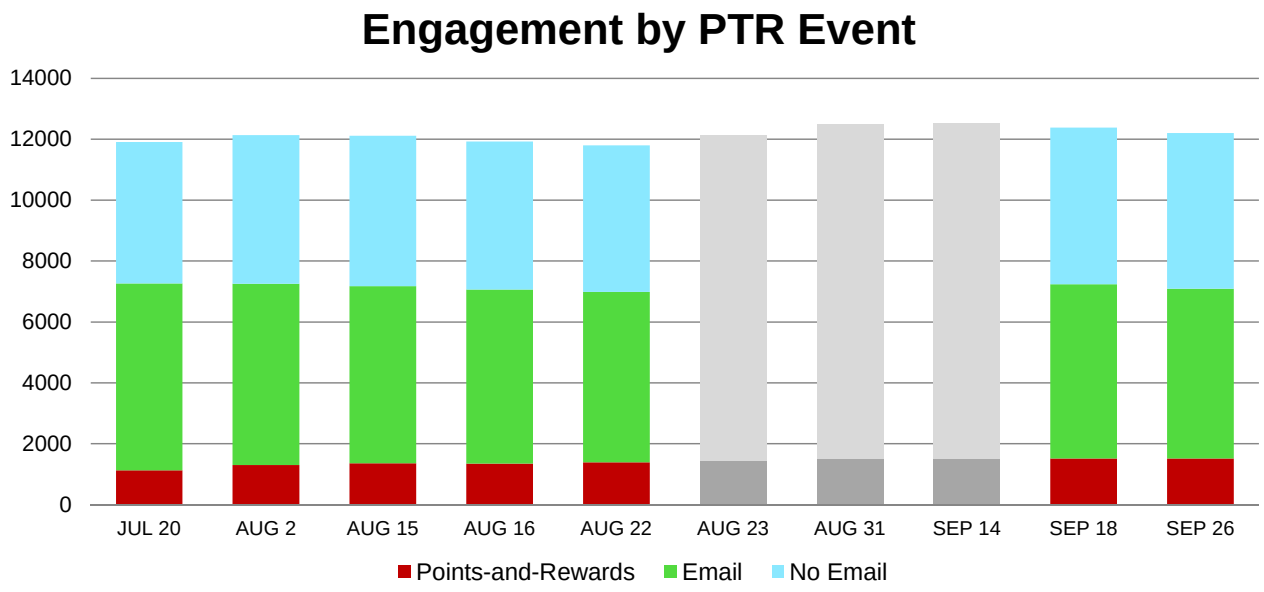


Figure 10: Customer Counts: Email versus No Email (scrubbed data)

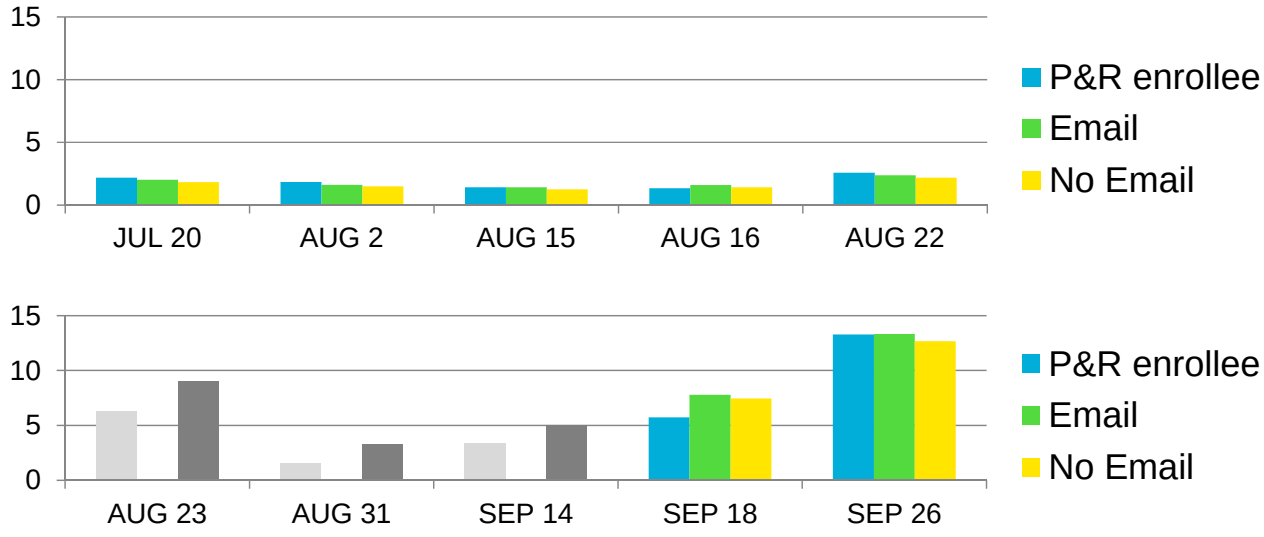


Figure 11: Avg. kWh Savings per Account: Email versus No Email

2.1.5 Advanced Data Analytics ("ADA")

National Grid's Advanced Data Analytics Project team developed the residential energy use predictive model to determine the expected energy use during a PTR event. The predictive model uses prior customer level energy consumption data and event weather conditions to predict customers' energy consumption during events. The predicted values are compared to the actual AMF data to determine whether curtailment has occurred and to ascertain which customers are to be awarded points. The results of these analyses will be used to determine if the aggregated community load meets certain threshold requirements for bidding into the NYISO wholesale electricity market.

Timeframe	Completed Milestones
4th Quarter 2017	• Provided post-PTR go-live support.

2.1.6 Time-of-Use ("TOU") Price Signals

The Voluntary Time of Use ("VTOU") rate was intended to be tested in Clifton Park on an opt-in basis. The VTOU rate, which became effective December 1, 2016,[3] includes three (3) rate periods for supply; on-peak, off-peak and super-peak, as well as an on-peak and off-peak period for delivery.

National Grid recognizes the VTOU rate will not be advantageous for all customers. It is primarily intended for high energy consumption residential households with plug-in electric vehicles ("PEVs"). VTOU particularly caters to PEVs, as it includes a make-whole provision for PEV owners in the first twelve (12) months of adoption, thereby reducing the risk of opting into VTOU.

To broaden the appeal of a TOU price signal, options are being investigated that would allow customers to perform an online rate analysis specific to their historic AMF energy consumption levels to determine if a TOU rate would be a good fit for them. To this end, the Project team is seeking alternative TOU price signal designs to replace mass market promotion of the VTOU rate. Discussions have been initiated with internal and external partners.

Timeframe	Completed Milestones
4th Quarter 2017	• Determined VTOU rate should not be mass marketed to Clifton Park population as it is designed specifically for PEV owners.

[3] *See* National Grid's Electricity Tariff, PSC No. 220, Service Classification No. 1, Special Provision L, "Residential Time of Use Delivery and Commodity Rate."

Timeframe	Completed Milestones
	• National Grid's New York Pricing team commenced modeling an alternative rate design to potentially use as an alternative TOU price signal for the Project. The alternate design incorporates peak/off-peak hours to be consumer friendly.
	• Initial discussions with internal and external stakeholders were conducted regarding development and delivery of TOU price signals, external to the current billing system, where customers would be rewarded points if TOU pricing were determined to be more advantageous.
	• Recommended the removal/modification of REV demo VTOU checkpoint, which would also result in modifications to Smart Home Rate proposal.

2.1.7 Distributed Energy Resource ("DER") Service

National Grid seeks to animate the market by facilitating DER provider services as part of the Project. DER products and services will be opt-in offerings to customers, publicized via the customer engagement channels outlined above, as well as community outreach. DER services may include energy efficiency, demand response, or renewable distributed generation opportunities.

National Grid is continuing to consider additional DER opportunities spanning renewable energy, energy efficiency, and PEVs. Such opportunities include the development of a solar marketplace to help customers evaluate solar energy options, as well as a website that promotes the purchase of energy efficient appliances utilizing rebates.

Timeframe	Completed Milestones
4th Quarter 2017 DER	• Developed a strategy for PEV ride and drive events for Spring/Summer implementation.
	• Began development of a plan to target market Clifton Park for National Grid solar marketplace.
	• Evaluated AMI data for potential use in marketing subsets of customers who are a good fit for new programs such as solar energy, energy efficiency, and eCommerce.

2.1.8 Community Choice Aggregation ("CCA")

National Grid engaged with Clifton Park officials and community members on the potential for adoption of a utility-supported CCA. After the filing of the Project's Implementation Plan, the Town decided to not pursue a CCA.

2.1.9 Project Management Group

The National Grid Project Management Group is a construct of individuals who strive to keep the Project on track regarding scope, schedule and budget, while lending visibility into processes, accomplishments, and financial tracking. This group regularly engages in, and promotes, the following:

- Weekly Core Team Status Reporting;
- Monthly Steering Committee Meetings;
- Monthly General Staff Meetings;
- Quarterly Commission Reporting;
- Issues Tracking;
- Lessons Learned Recording and Review;
- Change Log Processes; and
- Financial Reporting activities.

Timeframe	Completed Milestones
4th Quarter 2017	• Conducted weekly status reviews with core team leads, monitoring progress, providing corrective measure(s), and escalating issues, as needed.
	• Provided weekly updates to National Grid's Finance Department and Performance Excellence Team regarding the Project for management review.
	• Evaluated PTR Season 1 results.

2.1.10 Challenges, Changes, and Lessons Learned

Qtr	Issue or Change	Resulting Change to Project Scope/Timeline?	Strategies to Resolve	Lessons Learned
Q4.17	The Q4 2017 Annual Customer Survey will not be conducted until Q1 2018.	The delay may push back future annual surveys.	Document and regularly communicate strategy and timeline to Project team.	Need to evaluate drivers behind timing of survey (*e.g.,* customer focus groups) and plan accordingly, to maintain Project schedule and objectives.
Q4.17	PTR predictive model results contained anomalies that required additional effort to scrub results.	Additional time and effort was required to understand results of PTR Season 1.	Modifications have been proposed to predictive model prior to PTR Season 2.	Pre-season testing should be added to the Project schedule.
Q4.17	Disparities were found in total customer counts between internal and external systems.	Monthly trending data for customer participation may be impacted.	Multiple systems need to be synchronized prior to the beginning of subsequent PTR seasons.	The correct system of record for customer data should be identified to obtain correct customer account information.
Q4.17	Community Outreach was scaled back after a determination was made that VTOU was not suitable for mass marketing.	Delays in communication resulted in scaled back Customer Outreach.	Develop and timely communicate Outreach strategy and intended schedule.	Plans and contingencies should be put in place to insure consistent and ongoing Outreach activities.
Q4.17	Changes are needed to the predictive model.	Changes to the predictive model must be made prior to start of PTR season 2.	A proposal for modification to the predictive model was submitted to the ADA Project team.	Additional testing prior to deployment of the new model and constant monitoring of results are required.

3.0 Next Quarter Forecast

During the 1st Quarter of 2018, the Project team will continue Phase 2 of the Project.

3.1 Check Points/Milestone Progress

3.1.1 Summary

	Checkpoint/Milestone	Anticipated Start-End Date	Revised Start-End Date	Status
1	Phase I: Network Configuration and Meter Deployment; PTR Operations	1/2/17 – 6/16/17	1/2/17 - 7/17/17	Complete
2	Phase 2: VVO; VTOU; REV Operations and Evaluation	6/19/17 – 9/30/19	6/19/17 – 9/30/19	

Key

- On-Track
- Delayed start, at risk of on-time completion, or over-budget
- Terminated/abandoned checkpoint

3.1.2 Work Stream – 1st Quarter 2018

Work Stream	Future Milestones	Status
Information Systems ("IS")	• Support Project via National Grid's IS Support team.	
Meter Installation	• Support normal business practices related to move-in/out of customers.	
VVO	• Install one-hundred percent (100%) of VVO field equipment; thirty-one (31) capacitors and six (6) three-phase regulators.	
	• Commission one-hundred percent (100%) of VVO field equipment.	
	• Install one-hundred percent (100%) of circuit monitoring devices.	
	• Commission one-hundred percent (100%) of circuit monitoring devices.	
	• Complete Elnora Substation transformer controller upgrade.	
	• Commission overall VVO system.	
	• Conduct study to evaluate overall system performance.	
Customer Outreach	• Develop first customer case study.	
	• Conduct community outreach meeting in Clifton Park.	
	• Develop communications strategy for rollout of TOU and other DER promotions based on newly developed product roadmap.	
	• Develop communications strategy for market penetration.	
	• Complete annual baseline research survey.	
	• Create internal goals reporting template.	
	• Conduct marketing summit to refine outreach strategy with external partner.	

Work Stream	Future Milestones	Status
PTR	• Implement and test modifications to ADA predictive model based on PTR Season 1 results evaluation.	
	• Evaluate and implement modifications to rewards program, including kWh savings threshold and total points rewarded per event.	
	• Perform comparative analysis of in-house predictive model to external predictive model results.	
ADA	• Provide post-PTR Season 1 support to Project team.	
	• Provide predictive model modifications prior to commencement of PTR Season 2.	
	• Evaluate additional AMI data analytics to capitalize on availability of meter data.	
TOU	• Evaluate potential for new price signal that is market appropriate.	
	• Design alternate points and rewards structure for external TOU price signal that rewards customers for reduced demand.	
DER	• Identify sub population for target marketing of solar installations.	
	• Commence working with PEV partners to develop and schedule a ride and drive event in the summer of 2018.	
	• Promote the e-Commerce page.	
Project Management Group	• Conduct weekly and monthly Project update meetings.	
	• Monitor and report Project success Key Performance Initiatives.	
	• Continue tracking, monitoring and controlling the Project schedule, tracking on a weekly basis.	
	• Continue tracking, monitoring and controlling the Project financials, tracking on month-by-month basis.	
	• Continue to identify, monitor and manage risks and issues as they arise.	
	• Continue weekly status reporting.	

4.0 Work Plan and Budget Review

4.1 Updated Work Plan

ID	Task Name	Start	Finish
1	Clifton Park Integrated Program Plan	8/22/2016	9/23/2019
2	IS	3/31/2017	8/4/2017
3	ADA	4/17/2017	6/30/2017
4	Design	5/8/2017	5/31/2017
5	Initial Testing	5/31/2017	6/15/2017
6	Development	5/30/2017	5/31/2017
7	Testing	4/17/2017	6/15/2017
8	Meters	3/17/2017	7/28/2017
9	VVO	2/24/2017	3/16/2018
10	Field Devices	10/13/2017	3/9/2018
11	Substations	2/24/2017	2/2/2018
12	Elnora Substation	12/1/2017	2/2/2018
13	Grooms Substation	2/24/2017	2/2/2018
14	Xformer 1	4/28/2017	6/30/2017
15	Xformer 2	2/2/2018	2/2/2018
16	Utilidata Server	8/18/2017	3/16/2018
17	PTR	4/28/2017	9/30/2019
18	Phase 1	4/28/2017	5/29/2017
19	Phase 2	7/17/2017	9/30/2019
20	Outreach (O&E)	8/22/2016	3/23/2018
21	Phase 1 Marketing Communications	2/13/2017	10/20/2017
22	Direct Mailings Traditional Mail and Inserts	2/2/2017	2/13/2017
23	Points and Rewards Enrollment	5/16/2017	6/6/2017
24	Conservation Day letter	6/19/2017	6/19/2017
25	Bill Inserts	7/6/2017	7/6/2017
26	Pricing	3/30/2018	3/30/2018
27	Meter Installation Notifications	3/3/2017	6/2/2017
28	Community Outreach meeting	4/27/2017	1/8/2018
29	Contact Center Training	5/10/2017	5/10/2017
30	Opt-out Monitoring	6/30/2017	9/29/2017
31	AMO	6/5/2017	9/30/2019
32	Project Management Operations	2/20/2017	9/30/2019
33	Procurement	8/22/2016	4/10/2017

4.2 Updated Budget

The overall Project budget remains unchanged from that reported in previous quarterly reports. However, $13,063,123 has been shifted from fiscal year 1 (2017) to fiscal year 2 (2018), given additional time needed to set up the network and configure meters prior to commencement of the installation process[4].

Project Task	4th Quarter Actual Spend	Project Total Spend to Date	Project Budget[5]	Remaining Balance
CapEx				
	$ 225,690	$ 7,856,189	$ 12,516,057	$ 4,659,868
OpEx				
	$ 731,002	$ 6,934,529	$ 14,437,176	$ 7,502,647
Total	**$ 956,692**	**$ 14,790,718**	**$ 26,953,233**	**$ 12,162,515**

A difference between the Implementation Plan budget ($26,819,336)[6] and the current revised budget ($26,953,233) exists due to an increase in actual meter costs and associated fees. The overall difference is $133,897.

[4] Fiscal year 1 consists of April 1, 2016 through March 31, 2017; fiscal year 2 consists of April 1, 2017 through March 31, 2018.
[5] The Company updated the Project budget to reflect incremental costs, and to illustrate costs that are capital or operating expenses.
[6] Case 14-M-0101, *supra* note 1, p. 33.

5.0 Progress Metrics

Checkpoint[7]	Progress / Target Completion
Infrastructure	
AMF Acceptance vs. Opt Out	Continuing to monitor opt-out rates as Project progresses, and through the life of the Project. Current opt-out rate is eight and eight tenths percent (8.8%).
VVO System Benefits	Establishing infrastructure required to enact VVO and monitor progress. Completion of equipment installation targeted for 2018 Q1.
Customer Outreach and Engagement / Deep Energy Insights and Actionable Information	
Customer Outreach and Engagement	Continuing engagement through life of the Project. Annual surveys tracked against initial baseline survey.
Customer Energy Portal Engagement	Continue customer engagement metrics related to portal use, PTR participation, etc.
Price Signals	
PTR	Began PTR in July 2017; continue evaluation through life of the Project regarding participation rates and curtailed load.
TOU Price Signal	National Grid is seeking external delivery of TOU price signal.
DER	
DER Opportunities	National Grid continues to consider additional DER opportunities for Clifton Park customers and will continue to investigate appropriateness of prospective providers during Q1 2018, to include Solar Marketplace, PEVs, and e-Commerce.

[7] *See* Implementation Plan, pp. 24-26, for specific metrics.

6.0 Appendix A – Focus Group Key Findings

Observation	Recommendation
In general, the Smart Energy Solutions program (the "Program") was positively received, particularly by customers already using their National Grid online profile and embedded O-Power Portal tabs. Customers saw that actively trying to save energy would help them save money. Helping the environment was also mentioned by some, but this motivation was not universal. There was confusion among some customers, especially those who were older and less "wired", as to the actual motivation behind the Program.	The effort to reduce peak load demand to avoid building additional infrastructure, with costs passed on to customers, should be clearly and simply explained, especially to customers with lower levels of engagement, as: • Some customers advise that they feel there is nothing they individually can do to effect real change; and • Some customers appear to suspect National Grid has an ulterior profit motive in trying to get customers to engage in the Program.
Awareness of the Program was spotty. Even some customers who had logged onto their online profile were not sure that they had signed up. Many others recalled receiving emails and brochures, but clearly did not understand the Program well enough to investigate further. However, it should be noted that the focus group itself educated many and prompted them to indicate they would sign up. Finally, some customers still advise that they did not see themselves participating in the Program.	Although there has been quite a bit of outreach in Clifton Park, an integrated communications strategy needs to continue. Customers are overloaded with emails, and many do not bother to look at brochures in bills, particularly if they pay online. In-person demonstrations at venues where customers gather, such as the libraries, malls, and sporting events may be the best way to educate people. There were also suggestions to bring the Program into the local schools, to educate students so that they might pass the knowledge on to adults and encourage them to get involved in the Program.
Most customers felt the online profile was extremely intuitive, even for those in the focus groups who saw the demonstration but did not have a chance to navigate it themselves. The graphs showing energy usage were generally appealing and easy to understand. The groups also indicated there were certain features that could be improved.	Many of the savvier users would have preferred accessing this information in an application on their smartphones, rather than having to log into the National Grid website. The default view on the trended chart is currently set at Monthly, while most people found the Daily graph more useful. In fact, several customers had trouble finding the Daily

	drop-down. Changing the default to Daily would greatly improve the utility of this feature. Some users had technical difficulty returning to the list of "Tips" once they clicked on one. The functionality of this feature should be reviewed and possibly updated.
"Tips" were an appealing feature for many customers, particularly because they could see a quantification of the savings that might accrue by small changes in behavior. However, participants felt that once the tips were read, there was no reason to return to that portion of their online profile.	Consider updating "Tips" on a regular basis, and communicating to customers (largely by email) that it is time to check out the new energy and bill saving "Tips."
Another very appealing feature was "What Used Most." Customers generally liked seeing where they could get the biggest bang for their energy savings efforts. However, some thought the pie chart was too general, and would have liked to have seen the impact of specific appliances.	If technically possible, update the "What Used Most" chart to include specific appliances, along with the payout customers might receive by replacing old appliances with newer energy-efficient ones.
For many participants, "Rewards" were not a motivating aspect of the Program, at least as they currently exist. Not everyone finds gift cards appealing, particularly online gift cards. The amounts of the rewards are insufficient for many, and there is not a clear linkage for them between their conservation efforts and when they would earn enough points to receive a reward. Many advised they prefer rewards to take the form of credit to their monthly electric bills.	Consider revising the methods with which customers are rewarded. Continue offering gift cards and the opportunity to donate to charity for those who are motivated by these types of rewards. Include an option to translate earned points into bill credits. If possible, find ways to increase reward levels. Make it clearer how specific changes in energy consumption result in fewer kilowatt hours, how such reductions earn points, and how many points are required for different levels of reward.
There were several barriers to adoption and use of the portal – some of which can be overcome, and some which can only be slightly mitigated. Perhaps the biggest barrier was "time." Anything that adds another task to a customer's very busy schedule may fall low on their priority list. Additional barriers include: the feeling they have too many log-ins and passwords; "tips" that may be too general; doubts about whether the results will be worth the effort; the absence of a smartphone application; and rewards that are not sufficiently motivating.	Although National Grid cannot overcome inertia, the easier it is to enter and use the portal, the more likely customers will continue to use it. A smartphone application may be an essential tool. Let customers know that once they sign up and log in, it is possible to save their password, may assist in increasing portal usage. "Tips" and "Rewards" were covered previously, and need to be carefully evaluated. A cash-back reward on customer electric bills may be a stronger motivator than gift cards.

7.0 Appendix B – Customer Outreach Material

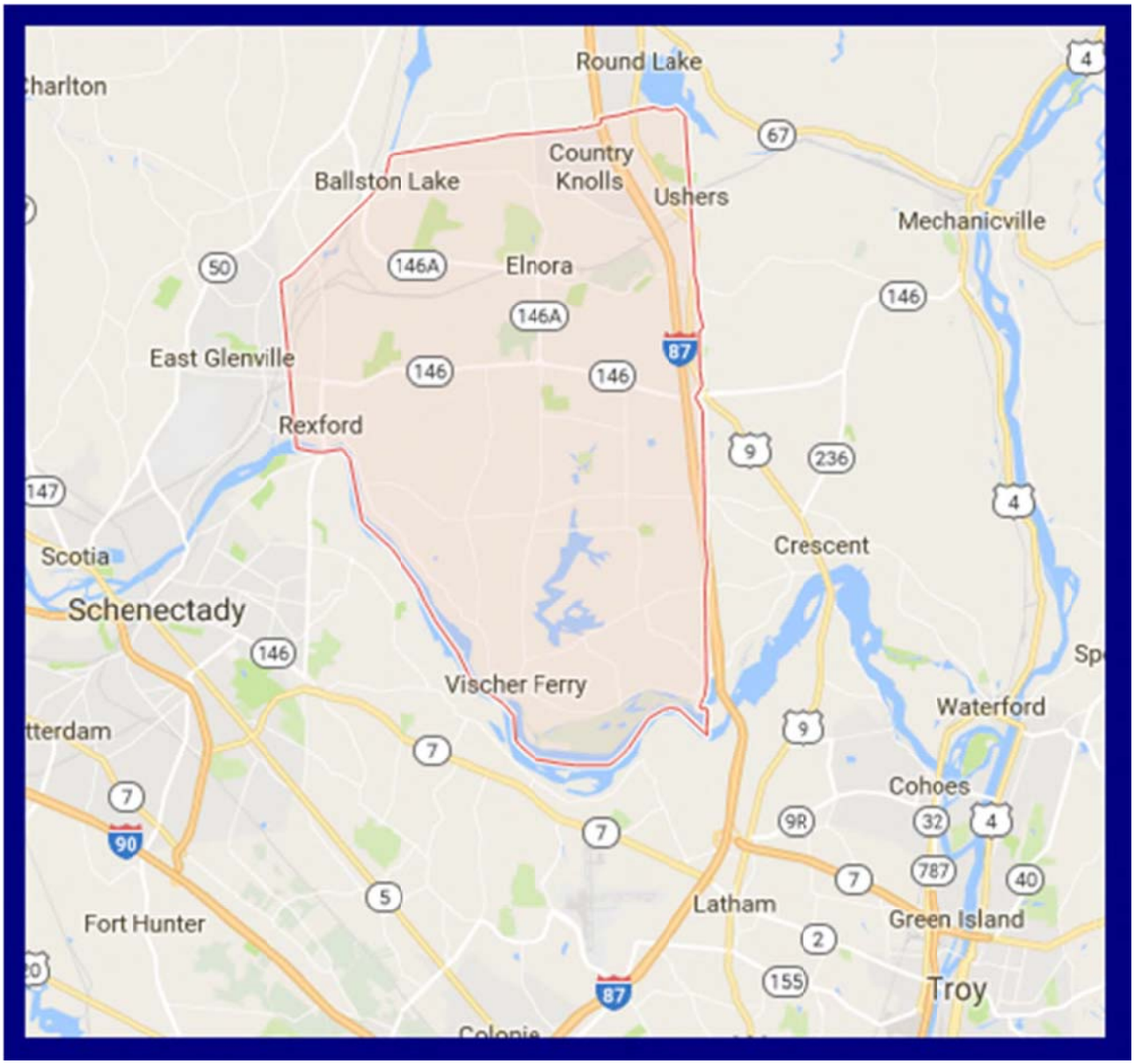
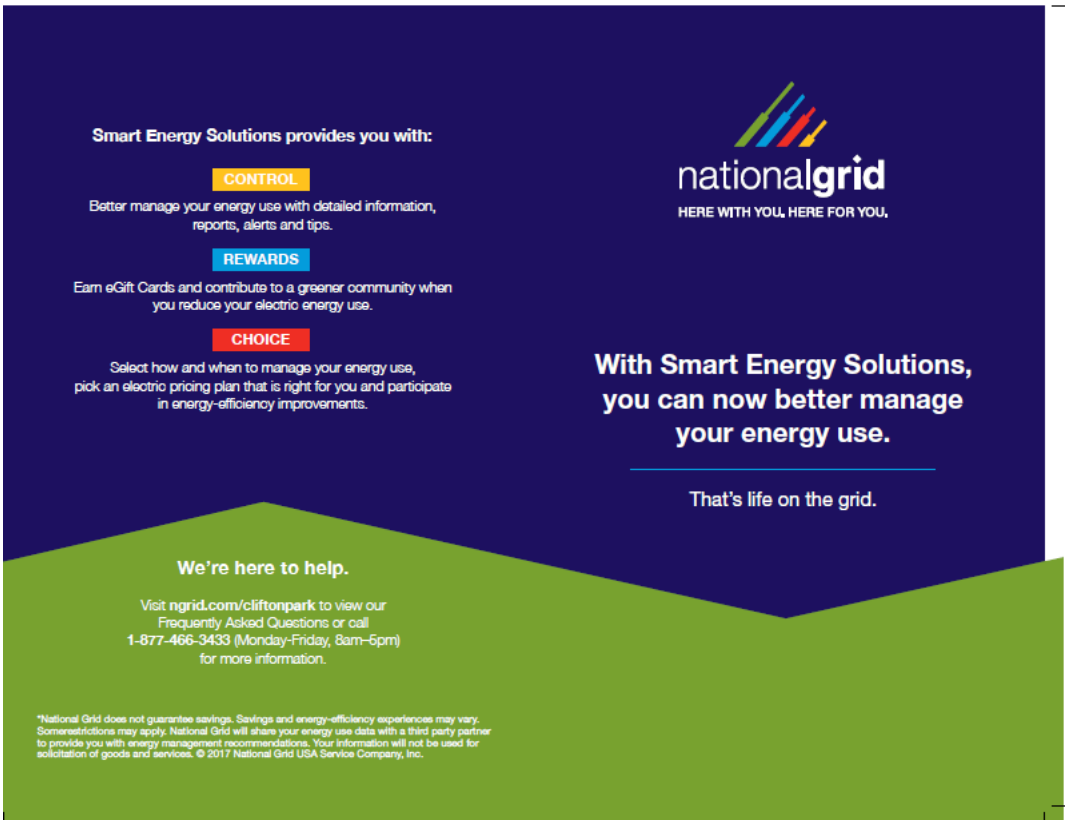


Figure 12: Town of Clifton Park



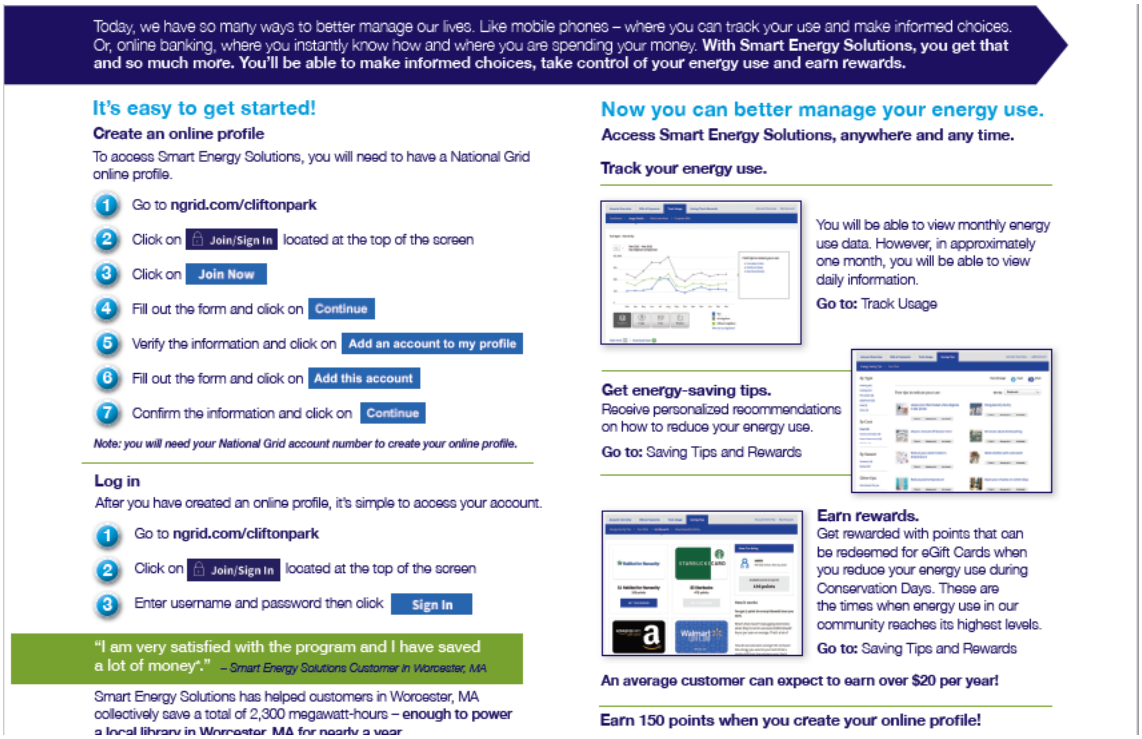


Figure 13: Bi-fold Flyer

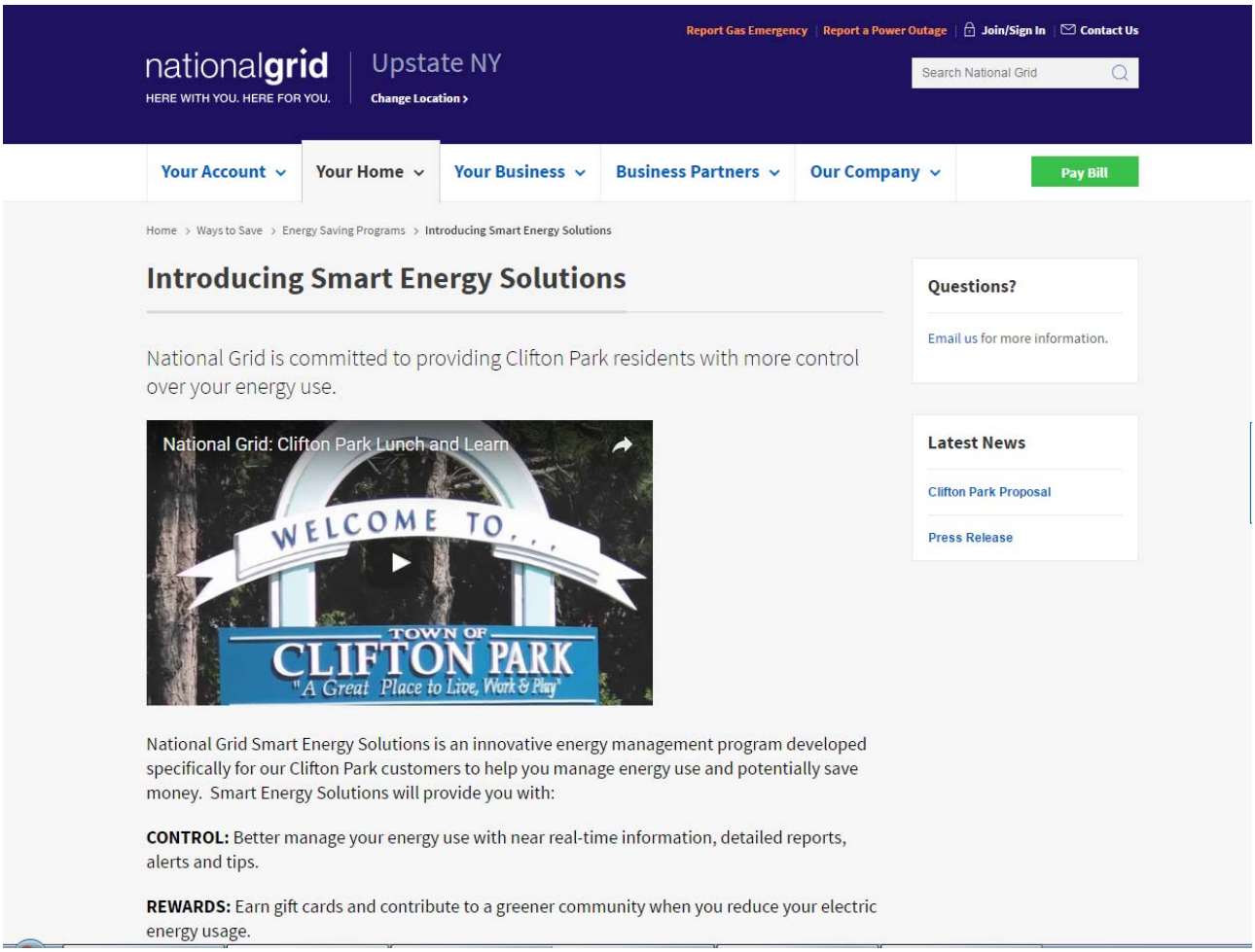


Figure 14: Web Portal Landing Page

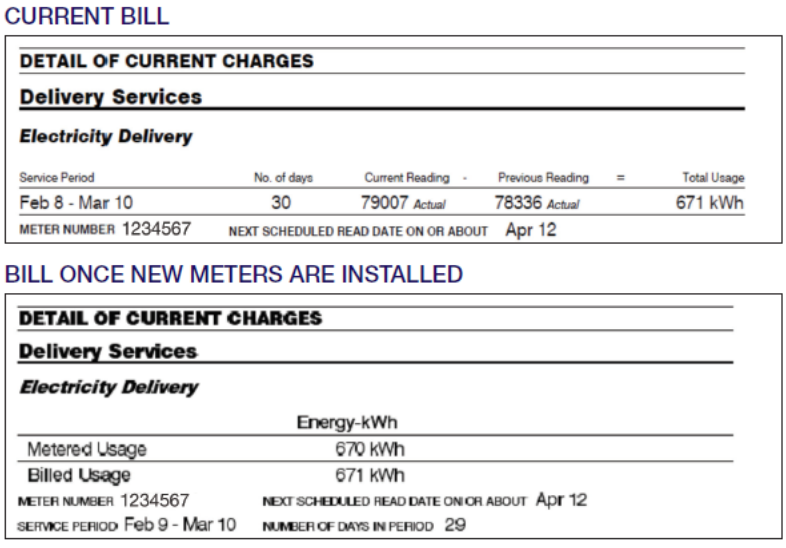


Figure 15: Example of Bill with AMF Meter