



Utility 2.0 Long Range Plan 2015 Annual Update

Prepared for Long Island Power Authority

December 31, 2015

Table of Contents

Executive Summary	2
Section 1 – 2014 Utility 2.0 Plan Filings	2
1.1 July 1, 2014 Filing.....	2
1.2 October 6, 2014 Update.....	3
Section 2 – NY DPS Recommendation in April 2015	4
Section 3 – PSEG Long Island 2015 Update	5
3.1 Advanced Metering Initiative.....	5
3.2 South Fork Supply and Load Relief	6
3.3 Glenwood and Far Rockaways Load Relief	7
3.4 Renewable Resources Procurement	7

Executive Summary

This document provides PSEG Long Island's 2015 annual update to the Utility 2.0 Plan ("Utility 2.0 Plan" or "Plan") related programs. PSEG Long Island continued working on its Utility 2.0 Plan filed in 2014, incorporating DPS recommendations, NY State initiatives, and applicable initiatives undertaken by other utilities in the state in 2015. The status update and near-term plans for the select Utility 2.0 Plan initiatives in 2015 are provided below.

Section 1 – 2014 Utility 2.0 Plan Filings

In accordance with Public Authorities Law Section 1020 - f(ee) and the Amended and Restated Operations Services Agreement ("OSA") dated December 31, 2013, PSEG Long Island submitted a Utility 2.0 Long Range Plan on July 1, 2014 for consideration by the Long Island Power Authority ("the Authority") and review by the New York State Department of Public Service ("DPS"). This inaugural Plan provided a foundation for further modernizing PSEG Long Island's service territory, saving energy, and improving the environment.

As required by the OSA and the Public Authorities Law, each year PSEG Long Island will update the Utility 2.0 Plan and, as needed, refine the approach based on our experience, developing state and regulatory policies, input from a broad set of stakeholders, and ongoing development of new technologies.

1.1 July 1, 2014 Filing

The July 1, 2014 PSEG Long Island Plan¹ contained a proposal to invest over \$200 million spread over a 4-year period (from 2015-2018). This Plan included specific programs designed to result in an estimated 185 MWs of peak demand savings to benefit the Authority and all its customers, as well as energy savings and incentives that directly benefit participants. This proposed Plan included a number of investments in direct load control ("DLC"), demand response, energy efficiency, distributed generation, advanced metering infrastructure, and other initiatives to enhance the customer experience, contribute to clean energy policy goals, and cost-effectively defer the need for power resources and, in some cases, transmission and distribution infrastructure.

The following guiding principles were applied in the development of this Plan:

- Integrate Utility 2.0 solutions into PSEG Long Island's long-term system and capital planning for transmission, distribution, and supply;
- Empower customers with energy choices tailored to their needs and preferences;
- Enhance system efficiency and resiliency to maintain a reliable system at an affordable cost; and

¹ The July 1, 2014 filing can be accessed here: https://www.psegliny.com/files.cfm/2014-07-01_PSEG_LI_Utility_2_0_LongRangePlan.pdf

- Support development of a sustainable market for clean energy investments.

The Plan focused on improving energy efficiency and reducing peak load to address emerging resource and system needs across Long Island and in targeted load pockets. The programs were designed to encourage participation from customer segments that face barriers to existing clean energy programs, such as: low income customers, public agencies, and hospitals.

The Plan also included the South Fork load pocket (*i.e.*, adding distributed supply and demand-side resources) and targeted deployment of Advanced Metering Infrastructure (“AMI”) to large commercial and industrial customers, as part of capital budget investment programs.

1.2 October 6, 2014 Update

On October 6, 2014, PSEG Long Island submitted an update to the original Plan filed on July 1, 2014². This update took into consideration stakeholder feedback solicited through a technical conference, a number of public hearings, and public comments submitted to DPS. It also reflected collaborative discussions held with the Authority and DPS to refine analysis and enhance the Plan.

This update included:

- Portfolio revisions for better alignment with the goals of the Authority and the state. The overall Plan investment expanded from \$215 million over four years and 185 MWs of savings proposed in the July 1 Plan, to \$345 million over four years and 250 MWs of savings;
- A revised compensation plan, which optimized the value of the program for customers by utilizing the Authority’s low-cost capital and establishing performance-based incentives; and
- Updated cost effectiveness tests including avoided costs of capacity, energy, and, where applicable, avoided transmission and distribution infrastructure.

This update provided further details on the program design, and updated estimates of program costs and benefits, including expected carbon emissions savings. The Plan, as proposed, included specific program enhancements that:

- Expanded the demand savings goal for the Direct Load Control program, reflecting a commitment to achieve higher customer participation in the program;
- Proposed an opportunity for additional load and infrastructure relief in the Rockaways in addition to the assistance program for multi-family buildings and government facilities;
- Doubled the Residential Home Energy Management program, which offered customers additional information on their energy use and strategies for reducing their bills;
- Expanded the Advanced Metering Initiative to provide additional customers with technology that provided real time energy use and cost data; and

² The October 6, 2014 filing can be accessed here: http://www.dps.ny.gov/longisland/PSEG-LI_Utility_Plan_October_Update.html

- Proposed several new initiatives, including support for electric vehicle charging infrastructure, demonstration of battery storage technology as part of a micro grid and utility-scale solar PV.

Section 2 – NY DPS Recommendation in April 2015

By letter dated April 15, 2015, Ms. Audrey Zibelman, Chief Executive Officer of NY DPS provided the DPS recommendations to PSEG Long Island’s 2014 Utility 2.0 filings³. The letter stated, in relevant part, that:

“We commend PSEG LI in its efforts to align its Utility 2.0 Plan proposal with REV. Aspects of the proposed Plan clearly provide an opportunity and challenge for PSEG LI to demonstrate how new technologies and market based alternatives can provide cost-effective solutions for reliability challenges that were satisfied historically through reliance on centralized power plants and traditional grid infrastructure. At the same time there are aspects of specific programs that need further development and/or justification before PSEG pursues implementation.”⁴

Some of the specific recommendations included:

- The expansion or modification of the DLC program, beyond what is currently budgeted for in 2015, should be considered as part of the ongoing rate proceeding;
- The LIPA Board should approve PSEG Long Island proceeding with its 2015 AMI capital plan to deploy an Island-wide communications network that would act as a backbone for and facilitate the future deployment of AMI functionalities;
- Since the transmission and distribution (“T&D”) deferrals contemplated for the South Fork, Glenwood, and other similar areas are consistent with many of the REV objectives, PSEG Long Island should begin developing and issuing solicitations to solve these grid challenges immediately;
- PSEG Long Island should continue to participate in the activities of those groups and the REV proceeding in general. DPS also recommended that PSEG Long Island initiate or continue the specific REV and market animation related activities such as:
 - Demonstration projects, including opportunities for third parties to exhibit how various rate designs, information sharing, adjusted standby tariffs, and other approaches can be developed to benefit consumers, encourage customer participation, and achieve our shared efficiency and bill management objectives;
 - Consider demonstrations that use advanced distribution systems, including two way communications, real time operation of dynamic load, and other system technologies that support awareness, flexibility and efficiency as tools that support greater penetrations of distributed energy resources (“DER”), including solar, without compromising system reliability; and

³ The April 15, 2015 letter can be accessed here:

http://www.dps.ny.gov/longisland/DPS_Recommendations_of_PSEG_first_annual_long_range_plan.pdf

⁴ *Id.* at pp. 4-5.

- PSEG Long Island should conduct an analysis to determine potential technical barriers and solutions to solar and DER deployment, as well as analyze load shifting/off-peak load development and the benefits such practices can provide to the Long Island T&D system.

Section 3 – PSEG Long Island 2015 Update

PSEG Long Island continued working on its Utility 2.0 programs in 2015, incorporating certain of the DPS recommendations. In addition, PSEG Long Island remains well-informed regarding NY State initiatives, and applicable initiatives undertaken by other utilities in the State and is separately working with LIPA and the DPS concerning its role and the ultimate implementation of REV on Long Island.

Status updates, along with near-term plans, for the select Utility 2.0 initiatives in 2015 are provided below.

3.1 Advanced Metering Initiative

The Advanced Metering Infrastructure (AMI) program objective is to leverage the experience and success of PSEG Long Island's AMI meter installations during the 2010-2014 time period. Consistent with the DPS recommendations, PSEG Long Island developed project plans and began implementation in 2015.

For the near term, the program will expand the AMI communications network to allow 2-way communications across the PSEG Long Island service territory and deploy AMI meters at targeted customers. This work will establish a critical communication backbone to further expand AMI, consistent with future guidance from the Authority and DPS as well as specific business needs

In connection with the installation of the AMI communications network, PSEG Long Island issued a request for proposal ("RFP") in July 2015 to obtain the best possible technical solution, leveraging the experience and the benefits achieved from the recent pilots. The RFPs have been evaluated, and the vendor selection process is nearing completion. Contracts are expected to be signed in the 1st quarter of 2016. The scope of the contracts include:

- Installation of communications network components in 2016;
- Migration of meters, currently serviced by legacy phone based remote reading platform, to AMI and retire the legacy platform;
- Installation of 5,000 AMI meters targeting the largest commercial time of use accounts; and
- Installation of AMI meters on all new solar net metered accounts.

The projected schedule is as follows:

- Finalize the purchase order for AMI meters and network equipment in the 1st quarter of 2016;
- Receive materials and begin installations starting in the 2nd quarter of 2016;
- Complete the network installation by the end of the 3rd quarter of 2016; and
- Install meters for large commercial and solar net metered accounts throughout 2016 and beyond.

The proposed work will allow more efficient tracking of the benefits of smart meters and equip PSEG Long Island with more accurate analysis of the future benefits and create an improved business case.

Costs for this AMI initiative, estimated at \$3.9M, were approved by DPS/LIPA in their final 2015 Utility 2.0 recommendation, and are fully funded in PSEG Long Island's 2016 operating budgets.

3.2 South Fork Supply and Load Relief

The T&D System on the South Fork of Long Island is a semi-isolated load pocket with highly constrained transmission connections with the remainder of the T&D System. This area comprises: (a) the loads served East of the Canal substation; (b) the loads served by the substations east of Buell, including the East Hampton, Buell, and Amagansett substations; and (c) the area comprised of the loads east of Amagansett, that are served by the Culloden Point, Hero, Hither Hills, and Montauk substations.

The objective of the proposed South Fork Supply and Load Relief project is to defer new transmission needed on the South Fork until the year 2022 and to defer transmission needed east of the Buell substation until 2030. In order to achieve the planned deferment of transmission lines, it is forecasted that 63 MWs of peak load capacity resources are required to be installed between 2017 and 2019. Demand reduction, energy efficiency, battery storage, combined heat and power ("CHP"), fuel cells, renewable generation, and peaking generation are intended as eligible resources for this procurement.

On June 24, 2015, PSEG Long Island issued an RFP for supply and load relief resources. The response due date was December 2, 2015.

This South Fork RFP was developed to:

- Acquire additional local power production and/or load reduction resources in the South Fork to meet projected load growth and thereby defer the need for new transmission infrastructure;
- Support load demand to avoid overload of existing transmission assets during transmission outages that limit transmission capacity to the South Fork load area; and
- Support system voltage to avoid voltage collapse during a transmission outage.

Sixteen developers provided 21 responses to the South Fork RFP. The proposals are currently in the process of being evaluated, and the plan is to identify the successful bidders by May 2016 and begin issuance of contracts by the 4th quarter of 2016. Considering the complexities of this procurement, it's anticipated that several contracts will be issued and the contract issuance process will continue, in some cases, until the 3rd quarter of 2017.

Incremental costs associated with the implementation of the South Fork RFP, estimated at \$750K - \$1M, will be recovered through a cost recovery mechanism consistent with PSEGLI's 2015 rate case proceeding and final DPS recommendation adopted by LIPA.

3.3 Glenwood and Far Rockaways Load Relief

PSEG Long Island identified that additional transmission infrastructure will be needed for the Glenwood and Rockaway load pockets by December 2020 to comply with the requirements of the new North American Electric Reliability Corporation (NERC) reliability standards. Adding new supply and load relief resources, a similar Utility 2.0 type approach that is planned at South Fork, could allow PSEG Long Island to defer this conventional transmission infrastructure construction, if it is determined to be more cost effective.

In 2015 PSEG Long Island determined that approximately 300 to 400 MWs of resources are required in total for both Glenwood and Far Rockaway load pockets. PSEG Long Island has analyzed area load profiles, customer load profiles, and substations and associated feeder information which will be incorporated in the development of the RFP documents.

As currently planned, PSEG Long Island will issue the Western Nassau RFP for the Glenwood and Rockaways load areas in January of 2016. Responses to the RFP will be due in the 2nd Quarter of 2016 and proposal selection is targeted for the 3rd quarter of 2016. The eligible resources for RFP bids are: demand reduction, energy efficiency, battery storage, CHP, fuel cells, renewable generation, peaking generation, cycling generation, and base load generation.

Incremental costs associated with the implementation of the Western Nassau RFP, estimated at \$750K - \$1M, will be recovered through a cost recovery mechanism consistent with PSEGLI's 2015 rate case proceeding and final DPS recommendation adopted by LIPA.

3.4 Renewable Resources Procurement

In 2013 and 2014, PSEG Long Island and its predecessor service provider developed and implemented its renewable resources plan through the issuance of the Clean Solar Initiative II (100 MW FIT-2), the Clean Renewable Energy Initiative (20 MW Non-Solar FIT), and a 280 MW RFP. These procurements did not achieve the goal of adding 400 MWs of renewable resources. As a result, PSEG Long Island is seeking additional renewable resources.

The procurement for new renewable capacity and energy seeks to add 210 MWs of new renewable energy generation to its resource portfolio by 2018 through an expanded feed-in-tariff ("FIT") program and a competitive procurement. An RFP for new renewable capacity and energy was issued on December 22, 2015 to secure projects providing beneficial environmental attributes, and the associated energy and capacity of 1 MW or greater. Two feed-in tariffs will be offered; one for solar projects between 200 kW – 1,000 kW and another for fuel cells located in areas that will benefit the electric grid.

Responses to the RFP are due on June 1, 2016 and responses to the feed-in-tariffs will be due in the 3rd quarter of 2016. Evaluation of the RFP and feed-in-tariffs will be coordinated to select the most cost effective mix of renewable resources. Proposal selection is targeted for the 4th quarter of 2016. The amount of renewable capacity selected from these procurements will be adjusted to reflect any renewable resources selected from the South Fork and Western Nassau RFPs. In the

event that projects currently being pursued from the 2013 and 2014 procurements run into development problems, additional resources may be selected from these new procurements to attain the 400 MW renewable resource goal.

Incremental costs associated with the implementation of the expanded FIT, estimated at \$500K - \$700K, will be recovered through a cost recovery mechanism consistent with PSEG LI's 2015 rate case proceeding and final DPS recommendation adopted by LIPA.