Utility 2.0 Long Range Plan

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PSEG LONG ISLAND
We make things work for you.

The proposed Utility 2.0 investments are designed to benefit all Long Island customers.

- Our Utility 2.0 proposal is a component of a broader set of solutions to improve reliability and customer service while managing the total cost to customers

- This initial proposal focused on 'no regrets' investments that have positive impact
  - Direct Load Control programs to reduce system peaks (deferring other investments)
  - Energy efficiency programs to more efficiently use energy (lowering customer bills and emissions)
  - Related investments (Solar, CHP, geothermal)

- In parallel, PSEG Long Island is integrating better technology and processes to improve operations
  - Call Center – process changes and Interactive Voice Response technology
  - Improving System Reliability – tree trimming program; FEMA grant supports hardening program; incorporating technology and best practices
  - Storm Response – new processes, communications and outage management system
  - Support Services – continuing transition from National Grid during 2014
  - Budget – seeking to improve results, within current T&D budgets

Process and Timeline

• January 1	PSEG Long Island starts engagement under OSA
• April 25	NYPSC initiates Reforming the Energy Vision or “REV” proceeding
• July 1	Filed Utility 2.0 Long Range Plan as required
• July – August	Public Technical Conference and Hearings
• August 29	Initial comments due to DPS LI
• October	PSEG-LI submits updated 2.0 Plan and DPS conducts second round of public comments
• December	Requested recommendation from DPS and approval from the Authority
• 1st half 2015	NY REV proceeding concludes
• 2015 – 2018	Implement Utility 2.0 Plan
• July 1 annually	Utility 2.0 filing and reporting

Coordinated / iterative processes – with:
a) Capital planning process; b) February rate case; c) Integrated Resource Plan

Leverage experience to provide customers with cost-effective solutions and advance marketplace

- PSEG, the Authority, and Lockheed Martin would draw on significant success implementing EE, DLC, and renewable energy programs

- EE and DLC are typically the most cost-effective solutions
  - Cornerstone (along with solar from this and other programs) of a broader proposal
  - Broad set of solutions allow adaptability – seeking input to refine shape and have flexibility as program implemented to optimize cost-effectiveness

- Proposed $200M capital spend by PSEG from 2015 – 2018
  - Customer rate impacts mitigated through total cost savings and proposed long-term investment recovery (vs. current one-year approach)
  - Other elements funded through capital budget process (using LIPA capital).
  - Overall program can be resized, lengthened, mix of financing sources to optimize.

- Utility 2.0 will stimulate market for innovative energy services by educating customers and engaging leading DER providers and local labor force

Existing Programs and RFP's

- Clean Energy Initiative resulted in 170 MW saved through 2009
- Efficiency Long Island has saved 222 MW through 2013, including energy efficiency and renewables.
- 2014 Energy Efficiency and Renewable budget is $94 million; we are on track to achieve 60 MW peak reduction this year, within budget
- Clean Solar Initiative I resulted in award to 50 MW solar PV, and Clean Solar Initiative II resulted in selection of 100 MW solar PV. Clean Renewable Energy Initiative offers further development incentive
- 280 MW Renewable RFP – bids received March 31, 2014. Decision on outcome expected by December 31

Summary of Utility 2.0 Programs

PSEG Long Island Utility 2.0 Long Range Plan 2015 - 2018				
Program	**Description**	**Annual Demand Savings (MW)**	**Annual Energy Savings (MWh)**	**Total Investment ($M)**
Programmable Thermostat Program Modernization and Expansion	Enhance existing direct load control program with modern technology and increase customer participation. Also, test smart plug technology through a pilot program targeting residential room air conditioning units.	100	2,700	$60
Targeted Solar PV Expansion	Provide incentives to commercial behind-the-meter solar PV, targeting Long Island customers unable to access existing incentives.	30	100,000	$45
Residential Home Energy Management	Provide targeted home energy reports and guidance to customers to reduce demand; 250,000 customers targeted.	10	25,000	$8
Incremental Energy Efficiency Expansion	Target additional opportunities for cost effective technology and underserved customers.	10	41,200	$30
Energy Conservation Program for Hospitals	Design and offer energy efficiency retrofit program tailored for hospital customers.	5	28,000	$30
Energy Efficiency Expansion on the Rockaways	Offer energy efficiency enhancements for low-income multi-family housing, public facilities, and other customers on the Rockaways.	5	21,500	$13
Combined Heat & Power	Provide incentives for commercial CHP installations, targeting Long Island customers unable to access existing incentives.	5	39,000	$5
Geothermal Heating and Cooling	Expand rebates for geothermal heating and cooling systems.	5	7,800	$9
	Utility 2.0 Investment	170	265,200	$200
South Fork Improvements	Proceed with various energy efficiency, distributed generation, and direct load control investments, potential combined with battery storage, to defer needed transmission and peaking generation.	TBD	TBD	TBD
Large Customer Advanced Metering Initiative	Deploy advanced metering to 25,000 customers representing 2% of customers but over 20% of the electric load on Long Island.	15	45,000	$15
	Capital Budget Investment	15	45,000	$15
	GRAND TOTAL	185	310,200	$215

Budgets and goals are estimates and subject to change based on detailed cost effectiveness screening and market potential

Programmable Thermostat Expansion

4-yr Target
100 MW
$60 mil

- Existing direct load control program equipment reaching end of projected useful life. New technologies and communications devices offer significant operational flexibilities and better verification of performance
- Mostly residential central air conditioners, with a limited number of pool pumps and small commercial business A/C units
- Plan to issue an RFP for up to 100 MW of peak demand reduction using updated Wi-fi-based technology
- Will replace existing technology and add new customers with advanced technology

Targeted Solar PV Expansion

4-yr Target
30 MW
$45 mil

- MOU with NYSERDA will provide $60M in RGGI funds for rebates on solar PV systems up to 200 kW DC
- Clean Solar Initiative I & II applications and projects were mostly between 1,500 – 2,000 kW
- Incentives considered in Utility 2.0 Plan for customers installing west-facing systems with a capacity from 200 kW to 2,000 kW
- West-facing systems provide substantially more capacity when needed most, at the time of system peak

Residential Home Energy Management

4-yr Target
10 MW
$8 mil

- PSEG Long Island intends to offer a program targeting behavioral changes that save energy and peak demand
- Prominent U.S. utilities have successfully implemented similar programs with significant sustainable benefits, including customer behavior modifications
- These programs are expected to improve customer satisfaction along with saving energy and peak demand

Energy Conservation Program for Hospitals

4-yr Target
5 MW
$30 mil

- Modelled after a successful program implemented by PSE&G in New Jersey
- Starts with an investment grade audit
- Target deep retrofits such as installation of new chillers for hospitals with a peak demand of at least 1,000 kW
- PSEG to share portion of project costs and finance the customer's contribution

Energy Efficiency Expansion in the Rockaways

4-yr Target
5 MW
$13 mil

- Targets customers facing barriers to existing clean energy programs (e.g., capital availability, expertise)
- Free installation of lighting and room air conditioners for customers in public housing. Room A/C will include a switch for control on peak days
- May also include new energy star refrigerators if cost-justified based on age of old units
- Expanded solar PV where possible in the Rockaways
- Direct installation for small commercial customers

Combined Heat & Power

4-yr Target
5 MW
$5 mil

- Targets residential and small commercial CHP systems 1,300 kW and below
- Added incentive could be offered to critical customers such as police, fire, hospital and emergency management where added reliability is critical
- PSEG Long Island is considering offering incentives similar to what is offered by NYSERDA

Geothermal Heating and Cooling

4-yr Target
5 MW
$9 mil

- One of the most energy efficient means of heating and cooling
- Improves electric system load factor, which is approaching 44% on Long Island
- Reduces summer peak and displaces fuel oil with cleaner, more efficient electric geothermal heating during off-peak periods
- Plan is to offer more generous incentives to stimulate this market

South Fork Improvements

- High growth area on electric system
- System upgrades needed to maintain reliability after 2017
- Plan would be to use a combination of solar PV, direct load control, battery storage, and peaking generation to meet required peak load
- Overall, this plan is lower cost than construction of new transmission lines
- Microgrid on east end is being considered

Advanced Metering Initiative

4-yr Target
15 MW
$15 mil

- 7,500 AMI meters are already in place
- Build the communication backbone so that any customer on Long Island could be read remotely, once AMI is installed
- Target an additional 24,500 of the most cost-effective customers as described on the next slide

AMI Specific details for targeted deployment

- 5,900 largest commercial customers
  - 20-25% of system load
  - Improved revenue management
  - Visibility to granular consumption data
  - Facilitates demand response
- 6,000 long-term estimate customers with hard-to-read meters
  - Improve meter reading baseline read rate performance by 0.5% - 1.0%
  - Improve customer satisfaction
- 8,500 net-metered customers utilizing renewable energy systems
  - Gain insights into DG/solar impacts on system
  - Support additional DG penetration
- 3,950 Retail Choice customers
  - Improve billing (bills now estimated based on the midnight read on the last business day of the month a customer enrolls with or drops a marketer)
  - Reduce disputes with marketers and customers
- 155 Recharge New York customers
  - Improve load settlement with actual interval data versus current estimates

Thank You

We look forward to
continued input
from our stakeholders