



## DEFINITIVE PROPOSAL FORM 1.4

### APPROACH TO O&M SERVICES

PSEG Puerto Rico LLC (the Qualified Respondent) hereby acknowledges and affirms that the attached documentation (i) constitutes its full and complete submission for Definitive Proposal Form 1.4, (ii) meets the requirements described in Section 4.1.4 (*Approach to O&M Services*) of the RFP and (iii) addresses the topics below, at a minimum.

Capitalized terms not defined herein shall have the meaning set forth in the Request for Proposals for Puerto Rico Electric Power Transmission and Distribution System issued by the Puerto Rico Public-Private Partnerships Authority on February 1, 2019 (as amended, the “**RFP**”) or the final form of the Puerto Rico Transmission and Distribution System Operation and Maintenance Agreement (the “**O&M Agreement**”). If there is a term defined in both, and their definitions conflict, the definition in the O&M Agreement shall prevail.

1. Detailed description of the proposed approach to the O&M Services (Annex I (*Scope of Services*) of the O&M Agreement) including, at minimum, the following:
  - a. T&D System Operations
  - b. Capital and Operational Improvements to the T&D System
  - c. Government, Public & Media Relations
  - d. Testing, Reporting and Records
  - e. Customer Service
  - f. Human Resources
  - g. Information Technology
  - h. Supply Procurement
  - i. Financial Management and Accounting
  - j. Emergency Response
  - k. Development of Integrated Resource Plan
  - l. Asset Management & Maintenance
  - m. Safety Management
  - n. Administration of System Contracts
  - o. Environmental Management
2. Detailed description of the experience and credentials of the Qualified Respondent’s proposed management team.
3. Federal funding experience and plan for management and procurement of federal funds.
4. Corporate culture and description of alignment of the same with the Project’s objectives.
5. Role and responsibilities of each member of the consortia, as applicable.
6. Organizational Structure of ManagementCo and ServCo.

7. Commitment to the social welfare of the people and communities of Puerto Rico.
8. Commitment to use of local resources and approach to involve local Puerto Rican entities.

*[Signature page follows]*

PSEG Puerto Rico LLC

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**QUALIFIED RESPONDENT**

Company Name

Daniel Eichhorn

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Name of Qualified Respondent's  
Authorized Official

President - PSEG Puerto Rico LLC

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Title



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Signature of Qualified Respondent's  
Authorized Official

November 25, 2019

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Date

## 1.4 Approach to O&M Services

#### 1.4.0 PSEG Puerto Rico's Approach to O&M Services

*PSEG Puerto Rico will provide PREPA with a proven management team that has a track record of success in managing, operating, and maintaining electric T&D system infrastructure*

##### Management Philosophy

Figure 1.4.1 describes the overall management philosophy of the PSEG companies, starting with our vision of being a recognized leader for people providing safe, reliable, economic and green energy by following a business strategy that promotes operational excellence, financial strength and disciplined investment that meets PSEG's strategic objectives. Leveraging our Company's Operating Excellence Model (OEM), PSEG will assist P3 in identifying areas for process improvement, recommend better practices for PREPA's consideration and implement those approaches.



Figure 1.4.1 PSEG's Operational Excellence Model

##### People Providing Safe, Reliable, Economic and Green Energy

Health and Safety is our number one priority. The Health and Safety (H&S) System and the health and safety councils form the backbone of the health and safety culture throughout the PSEG companies. Our Company is committed to the safety of its employees, customers and the public. PSEG Puerto Rico will leverage our Company's comprehensive H&S System, which will require a commitment of time and other resources from management and union employees.

Our corporation keeps customers at the heart of everything we do, with unparalleled track record of being recognized as an industry leader in both reliability and customer service. We are continuously looking for ways to improve and enhance reliability for our customers. Through significant investments in our infrastructure and distribution systems, we have increased resiliency to continually deliver reliable service. PSE&G and PSEG Long Island crews are in neighborhoods every single day, no matter the weather, to provide high-quality service.

Likewise, we have substantial experience both preparing for and responding to storms; as well as in building storm-hardened and resilient systems. Examples of these include: PSE&G's 'Energy Strong' program in New Jersey to harden and increase the resiliency of the system after the impacts of Superstorm Sandy and Hurricane Irene, and PSEG Long Island's management of the hazard mitigation projects funded by FEMA.

Furthermore, economic leadership means providing energy at a fair, reasonable price. We work diligently to find economical ways to provide the energy our New Jersey and Long Island customers need at the most affordable cost. Promoting and investing in energy efficiency and renewables helps customers find new ways to reduce their bills and create clean solutions and a sustainable future for all of our stakeholders.

### **Balanced Scorecard**

Our management philosophy as outlined above is implemented every day through a continuous focus on performance and process improvements. A key tool we use in measuring and monitoring business performance, executing strategy and driving performance improvements is the Balanced Scorecard. In fact, we have been recognized by Norton and Kaplan's Balanced Scorecard Hall of Fame. PSEG will incorporate our Company's Balanced Scorecard approach and other tools and techniques outlined in the Continuous Improvement section later in this document to promote Operational Excellence at PREPA.

### **Use of Best Practices**

PSEG will drive continuous improvement at PREPA by looking to industry and national / international standards for quality and process improvement to benchmark performance, guide process improvement, and enable governance of critical functions. As mentioned above, our enterprise has been recognized as an industry leader for our use of benchmarking and best practices implementation.

### **Support the Communities We Serve**

We are committed to our customers, shareholders, employees and the communities where we do business. We invest in the local economy, environment and infrastructure to make the communities where we operate, better places to live and work. Our employees have been giving back to the communities where we live and work, and PSEG employees will likewise support the local communities in Puerto Rico.

### **Business Continuity Planning**

During the Front-End Transition, PSEG will evaluate any existing PREPA Business Continuity Plans and recommend changes. PSEG will evaluate the impacts of loss of systems, people, or assets and provide alternate and backup systems for high risk areas to enable continuity in cases of emergency. Each of our key business processes are designed with continuity, contingency and redundancy built into the base case.

### **Sustainable Business Processes**

As illustrated in our annual sustainability report, we have shown dedication to addressing climate change, upgrading its aging infrastructure, and investing in workforce development. For the past 12 years, we have been included in the Dow Jones Sustainability Index (DJSI), a list comprising the leading 20 percent of North American companies in terms of sustainability performance (See Appendix 1.4.A PSEG Sustainability Report).

### **Ability to Respond to Changing Business Requirements over Time**

The attributes of the above overall management philosophy will provide the framework for the PSEG leadership team to adjust to changing business requirements by identifying objectives, putting metrics in place to track performance and instituting best business practices. We have regularly responded to changing business requirements on current and past programs. PSEG will apply these approaches in working with PREPA.

### **Achieving a Cooperative Team Environment with PREPA**

PSEG will achieve a cooperative team environment with PREPA and foster an open and inclusive work culture. The PSEG leadership team will work collaboratively with PREPA in a spirit of complete transparency.

### **Senior Management Autonomy Relative to Centralized Corporate Control**

PSEG Puerto Rico will establish a management organization that possesses the necessary autonomy, flexibility, and empowerment to drive activities to achieve sustainable results.

### **PSEG Brand Name**

Our corporate brand is synonymous with our reputation – it reflects our commitment to customers and position as an industry leader. As a 116-year-old company, our roots are deep and our reputation for quality public service. We invest in the economy, environment and infrastructure to make the communities we serve better places to live and work. We are an award-winning company, recognized for the dependability of our service, the diversity of our workforce and our commitment to providing customers with safe, clean and reliable energy. We are proud of our record of environmental stewardship as we lead the way toward a clean energy future.

PSEG understands the importance of a new and unique brand identity in the marketplace for PREPA. As the Most Trusted Brand for the third year in a row by business electric customers, according to Escalent, we are proud to bring the PSEG brand and reputation to Puerto Rico.

### 1.4.1.a T&D System Operations

#### Operations Management

*PSEG will bring the knowledge and experience of PSEG enterprise to drive transformational improvement to PREPA's T&D System*

#### Operating Philosophy

Our business model of operational excellence, with safety always our first priority, is driven by a culture of continuous improvement to the benefit of customers, employees and other stakeholders. The PSEG team will bring to PREPA our deeply ingrained values and practices in achieving reliability, an achievement PSE&G has reached for the last 17 years by winning PA Consulting's ReliabilityOne Mid-Atlantic Achievement Award for superior electric reliability, as well as receiving the National Reliability Excellence Award in 2011, 2008, 2007, 2005 and 2004. Likewise, PSEG Long Island was recognized by the American Public Power Association (APPA) as a 'Diamond' Reliable Public Power Provider (RP3)<sup>®</sup> for providing reliable and safe service to its customers. PSE&G and PSEG Long Island maintain technical and operational excellence, consistently performing better than mainland U.S. median benchmarks in operational metrics and Occupational Safety and Health Administration (OSHA) recordable events. See Figure 1.4.2 for reliability performance against top quartile and median for categories of System Average Interruption Index (SAIDI), System Average Interruption Frequency Index (SAIFI) and Customer Average Interruption Duration Index (CAIDI), which shows PSE&G consistently in the top quartile with solid performance and continued improvement.

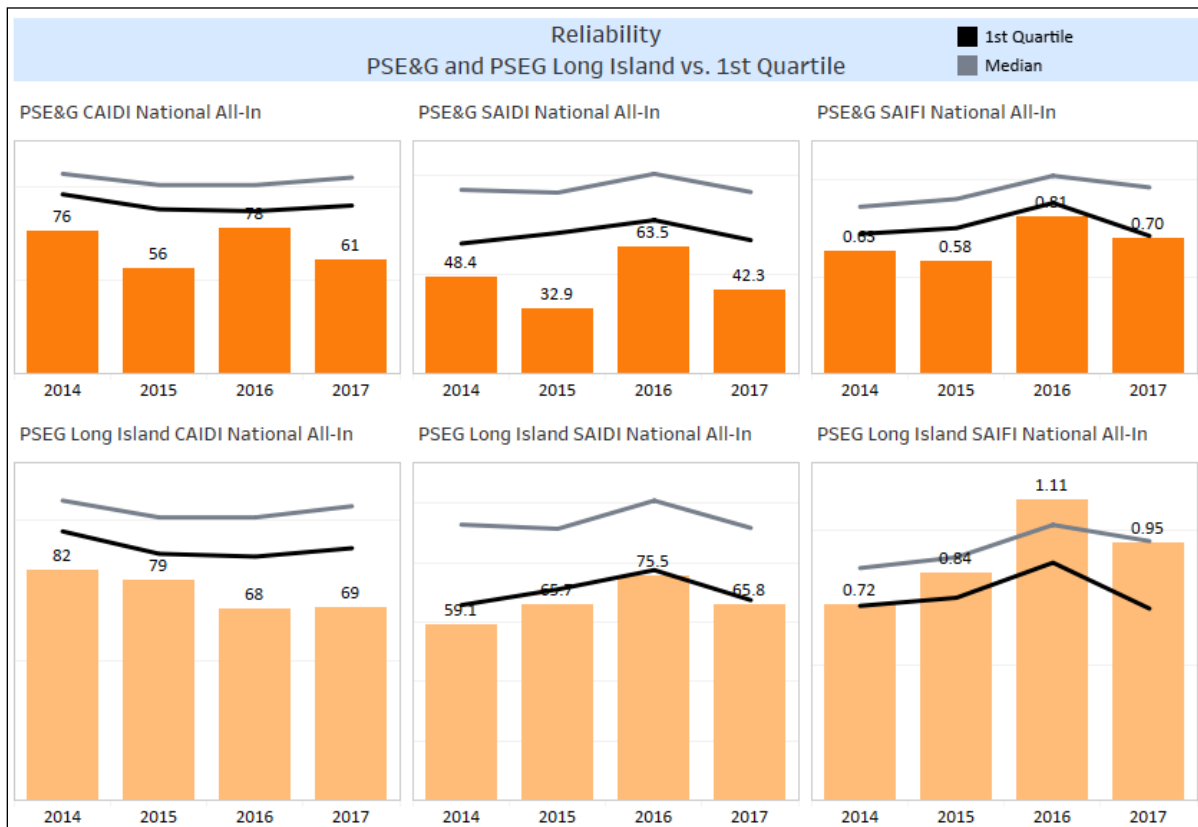


Figure 1.4.2 Reliability Performance against Top Quartile and Median - SAIDI, SAIFI and CAIDI



In addition, PSEG understands the importance to PREPA of providing superior customer service and providing value to PREPA's customers. Consistent with our Company's Core Commitments, PSEG will operate under a coordinated policy of treating customers with respect, providing value to customers, and doing everything possible to resolve customers' concerns on the first call. This philosophy has allowed PSE&G to rank at or near the top quartile on each of J.D. Power and Associates customer satisfaction surveys for the East region for the past several years. Furthermore, PSEG Long Island made significant progress in improving reliability and stabilizing costs through transformative investments in infrastructure as well as maintenance procedures. In conjunction, PSEG will leverage the sustainable practices of our companies and implement effective process changes as conducted by PSEG Long Island.

### **Staffing Philosophy**

Dispatchers, Troubleshooters, and Operators (as defined in the Operator Recruitment and Staffing Plan) are staffed 24-hours a day, 7-days a week for basic coverage. Operations supervision is scheduled on a 5-day, 16-hour basis; however, they are available on a 24/7 basis. Overhead and Underground Construction personnel are utilized to assist in restoration of customers during normal business hours.

### **Performance and Condition Monitoring and Assessment**

The Outage Management System (OMS) and other available data sources will be utilized by PSEG to identify areas in need of immediate remediation. Supervisory Control and Data Acquisition (SCADA) equipment and technology will be used to accurately assess system conditions. OMS provides intelligent analysis of calls and incident information received from customer information and interactive voice response systems, as well as telemetry data from sources, including Advance Metering Infrastructure (AMI) and SCADA. Alarm and event management modules provide dispatchers with alerts and notifications configured to match their areas of interest. The storm assessment module displays a summarized state of affairs for storm outages and damage to help prioritize repairs. SCADA equipment and technology provides real-time monitoring and control in the control centers for the various real-time processes.

PSEG Long Island completed the initial phase of AMI integration with OMS. AMI is being used to validate single customer outages in OMS. AMI single outages are confirmed, which provides the following benefits: reduced no-trouble found truck rolls, reduced need for outbound calls to customers and expedited restoration time. After completing full integration of OMS with AMI, PSEG Long Island will automatically recognize a customer's loss of power, allowing PSEG Long Island to dispatch a crew to a customer's home for repairs more expeditiously than ever before. This technology will better enable the utility to locate damage to the electrical grid as a result of a storm, ensuring we get the right crew to the right location with the right equipment, the first time. In addition, using voltage readings provided by AMI, PSEG Long Island will be able to identify power quality issues as a result of equipment that may be failing and in need of repair or replacement before a customer experiences a problem to their electric supply, such as flickering lights. PSEG Long Island also automatically detects and reports high meter socket temperatures to promote public safety by proactively addressing excessive load conditions and making field visits that have identified melting and corrosion on conductors. PSEG Puerto Rico will leverage its knowledge and experience in this area (as referenced in section 1.4.1.g Asset Management) for PREPA.

## Control Centers

We intend to employ an approach for managing PREPA's Transmission and Distribution Operations similar to that of PSE&G. In this regard, PSE&G maintains command centers for both Transmission and Distribution Operations. The Transmission Control Center (TSC) monitors and controls the Bulk Power System. SCADA is used to perform real-time reliability analysis, control all transmission facilities, adjust system voltages, and generation. Contingency analysis, planning studies (thermal, reactive, stability), and state estimation are performed to ensure reliability and efficiency. The TSC is responsible for implementing all emergency procedures up to load shed and system restoration. Transmission switching and safety tagging are directed from the TSC. Planning is also performed at the TSC. Electric Distribution Service Dispatch Operations Centers use SCADA to monitor and operate the Distribution and Sub-transmission system. This includes switching, tagging and responding to customers' issues and interactions. The Distribution Service Dispatch Center directs the work of Troubleshooters, Service Mechanics, Street Lamp Inspectors, and Substation Operators; receives records; and dispatches customer and emergency calls; and initiates and coordinates the steps and orders necessary to prepare lines for work and to restore service.

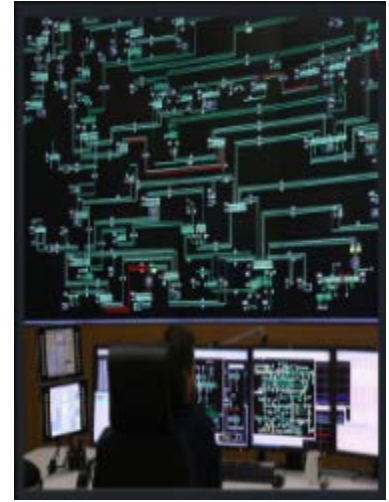


Figure 1.4.3 PSE&G Transmission Control Center

## Operations Improvements

We will perform a rigorous analysis on a regular basis to maintain reliability in operations. For example, the poorest performing facilities are identified annually, and remediation plans are established and include activities such as vegetation management, lightning protection, branch fusing, and animal protection. In addition, reliability reports will be utilized quarterly to identify and remediate emerging problem areas. Moreover, reliability measures are reviewed at the district and facility level on a monthly basis to identify the poorest performing circuits. Resources will be redirected as needed to address areas not meeting the PSEG Puerto Rico's reliability targets.

## Quality Assurance and Quality Control Programs

In order to ensure quality in reported information, daily operations we will review reports for correct reporting. In addition, mobile data terminals are utilized by line crews to provide up to the minute status updates and information.

## Regulatory Matters

Our Regulatory department will work closely with the T&D strategy group to address energy regulatory PSE&G matters. This includes proceedings such as, but not limited to:

- Siting Construction of Facilities
- Ratemaking
- Policy rule makings
- Environmental permitting
- Land use permitting

- Zoning infrastructure
- New program approvals
- Customer disputes regarding infrastructure
- Third Party billing matters

#### 1.4.1.b Capital and Operational Improvements to the T&D System

*PSEG will have access to the Corporation's significant experience in executing large-scale T&D projects and PSEG Long Island's FEMA experience to complete projects schedule and on budget*

We intend to employ an approach for managing PREPA's T&D planning process similarly to that of PSE&G. In this regard, the PSE&G T&D planning process identifies all necessary investments to maintain and strengthen the grid in adherence with appropriate planning criteria. The key PSE&G stakeholders from Planning & Engineering, Operations, Asset Management, and Substation / Protection / Data Communications organizations identify the investments needed for current and future years. Decision makers consider the implications of regulations, safety and reliability needs, and load growth projections. PSE&G and PSEG Long Island use the Spend Optimization Suite (SOS) system as a decision support tool for project selection. The SOS tool scores projects in accordance with how they meet strategic objectives, and the success criteria that underlie each strategic objective. SOS determines the value impact of funding the project and the risk impact of deferring the project based on answers to questions regarding each criterion. The SOS optimization process in conjunction with the opinion of the SMEs and the feasibility to execute a project allow management to conduct multivariable decision-making on a number of competing business factors. Capital projects are vetted with the T&D Project Council to gain concurrence of the portfolio and realign the portfolio as needed when an emergent need arises. Ultimately, the projects are presented to the Senior Leadership Utility Review Board and the Capital Review Committee for final approval.

PSE&G has a focus on ensuring the on time, on scope, and on budget execution of large transmission and distribution construction projects, which includes overseeing project management, project controls, licensing and permitting, and commissioning. PSE&G's construction management organization also includes a mobile construction workforce and an environmental projects and services organization.

As an infrastructure company, PSE&G has an outstanding record of consistently delivering challenging projects on schedule and on budget. PSE&G has developed a team of experienced professionals who support the entire project life cycle of a transmission project. This team includes individuals focused on environmental assessment and permitting, project engineering, project management, project controls, procurement, construction, public affairs and community outreach, commissioning, operations and maintenance, and regulatory compliance. PSE&G's transmission engineering team has experience designing transmission line projects in voltages ranging from 69kV to 765kV.

PSE&G's experience with overhead, underground, and station work in New Jersey makes PSE&G well-suited to construct transmission solutions in environmentally challenging and densely populated portions of Puerto Rico. Some examples of the non-traditional construction methods recently deployed by PSE&G include:

- The utilization of alternative construction techniques (helicopter, wetland matting, etc.) to minimize the environmental impact of projects and to optimize construction sequencing

- The siting, permitting, and construction of numerous projects; including GIS stations, in concentrated, urban areas across northern and central New Jersey
- The utilization of horizontal directional drilling under the Newark Bay to accommodate two underground circuits in the Bergen Linden Corridor Upgrade Project
- The successful creation of a temporary routing of the Appalachian Trail to minimize the length of the trail through the right-of-way of the Susquehanna Roseland project. The initiative minimized the negative visual impacts of the project and ensured that hikers were separate from the habitats of key endangered species in the area

Below is a list of representative projects that PSE&G owns, is constructing, or operates:

Project	Circuit Miles	Voltage (kV)	Cost	Scope	In-Service Dates
Metuchen-Trenton-Burlington 230kV Conversion Project	54	230	Up to \$739M	Upgrade overhead transmission lines to 230kV; 12 station upgrades	2021 Target Completion
Bergen-Linden Corridor Upgrade Project	30	345	Up to \$1.2B	1 new station; 9 station upgrades, new overhead and underground lines	2019 Target Completion
Sewaren-Metuchen 230kV Conversion Project	14	230	\$125M	Convert existing lines to 230kV; 4 station upgrades	August 2016
Northeast Grid Reliability Project	69	138/230	\$975M	11 stations, upgrade overhead transmission line (50 miles) and underground transmission lines (19 miles)	July 2016
Mickleton-Gloucester-Camden	16	230	\$435M	2 new 230kV overhead lines; 3 new 230kV underground lines, upgrade 5 stations	2015
Susquehanna-Roseland	45	500	\$790M (PSE&G portion)	New 500kV overhead lines, construct new 500kV GIS station and expand an existing station	2014 (PSE&G portion); Energized 2015
North-Central Reliability Project	55	230	\$390M	Upgrade existing 138kV transmission line to 230kV; convert 7 existing stations to 230kV	2014
Burlington-Camden Network Reinforcement Project	37	230	\$399M	Reconfigure overhead transmission lines and upgrade	2014
Bayonne 3 <sup>rd</sup> Source	5.5	230	\$123M	New underground transmission line from Bayonne to Marion stations	2013

Table 1.4.1 PSE&G's Representative Projects

#### 1.4.1.c. Government, Public & Media Relations

*PSEG will develop and maintain strong relationships with stakeholders, tailoring the needs of each group to respectfully accommodate interests and concerns*

The PSEG companies build strong relationships with their stakeholders, this is essential to maintain a high level of trust, understanding and service. We engage with stakeholders in various ways to understand their needs and find that we learn a lot in the process. Connecting with our customers, investors, employees, communities, government officials, regulators and suppliers helps us run a better business to meet environmental and social expectations.

We attempt to take a proactive approach to:

- Educate stakeholders on our operations
- Support and engage in local community activities, initiatives and betterment programs
- Respond openly and immediately to stakeholder concerns about construction, design, operation and environmental compliance of our operations
- Give stakeholder a voice in decisions that could impact them

Our Regional Public Affairs managers are an important face of stakeholder engagement in each region of our utility service area. They are trained and experienced in addressing public concerns and facilitating public hearings for stakeholders. They manage each step of stakeholder engagement and make critical decisions to continually improve engagement policies.

In 2015, our Company established its Stakeholder Engagement Council. Governed by a charter, the council is led by an executive from our External Affairs organization and includes representatives from different parts of the company. The role of the council is to consider key issues the company is facing (short- and long-term), while also considering the interests and concerns of our key stakeholder groups and devising engagement strategies to find common denominators and design mutually beneficial strategies.



Figure 1.4.4 PSEG's Stakeholders

Accountability is one of our most important core values, informing our efforts to build even stronger stakeholder relationships. We recognize that credibility ultimately depends not on words but on living up to our commitments and taking responsibility for our actions and results.

The importance of maintaining good, transparent lines of communications with its stakeholders cannot be overemphasized. Our experience is that different stakeholder groups prefer to communicate in different

ways. PSEG provides numerous channels tailored to the needs of each group for our stakeholders to communicate their interests and help us address issues or concerns.

#### 1.4.1.d. Testing, Reporting and Records

*PSEG Puerto Rico is commitment to transparent reporting and actionable information exchange*

Our Company's success in improving performance across key performance metrics is based on a culture of continual improvement and data driven / quantified performance target setting methodologies. The sections below summarize several important elements of PSEG Puerto Rico's plan to meet the performance metrics, which will be ultimately included in the O&M Services.

#### Reporting and Information Exchange

Our Company has a long-standing commitment to transparent reporting and actionable information exchange. PSEG will utilize the Balanced Scorecard in order to drive operational, cost and customer satisfaction parameters. The Balanced Scorecard provides a high-level measurement of performance across the utility operations and is accompanied with drill down techniques to obtain transparent, detailed data and get to the heart of an issue in order to resolve it. This rigorous measurement system uses extensive benchmarking to ensure it evaluates performance not only against prior year results, but against the best in the industry. PSEG will incorporate this approach for measuring business performance to identify opportunities for performance improvements. In addition, our focus on documenting our processes through our Operational Excellence Model will ensure safe and reliable operations and a smooth succession of employees and service providers. We will work closely with the Administrator and PREB and we fully recognize the importance of transparent and open relationships with our stakeholders.

#### Management Controls

Besides utilizing the reports and formal control procedures referenced above, PSEG management will apply a hands-on approach to controls, leadership and motivation, frequently visiting field locations and working with small groups of employees in a personal setting. Through this, management will develop a personal connection with employees, which will empower and encourage them to develop ideas to improve processes and performance. Management will also strongly encourage employees to speak up when there is an issue that requires special attention including, empowering each employee with the responsibility and authority to stop any unsafe work practices.

#### Internal Controls

PSEG will develop, implement and maintain a system of internal controls to provide reasonable assurance that the reports and disclosures made by the company related to its finances, operations and/or performance are complete and accurate. PSEG and its employees and contractors will be required to:

- Understand and comply with the system of internal controls maintained in their respective organizations related to company operations
- Report and record transactions, events, conditions and changes in events and conditions related to the company's operations in an accurate, complete and timely manner and in accordance with generally accepted accounting principles
- Ensure that transactions related to the company's operations are properly authorized, transacted and approved



- Report and record all control failures, transactions, events or changes in events or conditions relating to the company's operations that have the potential to adversely affect the ability of the company to record, process, summarize, report or disclose data regarding such operations

### Continuous Improvement

PSEG will establish a continuous improvement program to enhance operating performance, operational efficiency and PREPA's cost effective delivery of services to customers. Employing our Company's Operational Excellence Model (OEM) and Balanced Scorecard approach, PSEG will assist PREPA in identifying areas for process improvement, recommend and implement best practices.

As mentioned previously, PSEG will implement a balanced scorecard that will drive long-term strategy implementation, performance measurement, and performance improvements across PREPA's utility operations. PSEG will incorporate this approach for measuring business performance to identify opportunities for performance improvements.

The Operating Excellence Model integrates the best features of both Lean and Six Sigma process improvement tools in order to eliminate waste by streamlining processes and providing a systematic approach for accomplishing work. Process improvement teams will be deployed to evaluate specific processes and recommend improvements. PSEG will implement the Operating Excellence Model to instill a culture of continuous improvement, empowering the ServCo employees to proactively identify opportunities for improvement, implement new approaches, and measure the results.

PSEG will stay abreast of research and development, the goal of which is to increase operational efficiency and effectiveness and improve maintenance practices. We will monitor industry advancements and technological changes in the operation, maintenance, and repair of T&D systems, including customer care and related services, and recommend improvements in current programs and practices.

### Benchmarking and Best Practices

Our Companies have been recognized by American Productivity & Quality Center (APQC) organization and industry peers as a leader in benchmarking analysis. PSEG will bring to PREPA its expertise and experience in benchmarking and leveraging best practices from across the industry. PSEG will utilize validated national data using multiple benchmarking panels / consortiums as well as the Company's own Peer Panel group. We have developed benchmarking evaluations on up to 51 operating companies using criteria garnered for contractually identified performance metrics.

The panels for which we benchmark include:

- **PSE&G Peer Panel**

The PSE&G Peer Panel has been conducted by PSE&G since 1993 and is an electric and gas study. In 2019, 65 electric and gas companies participated. The survey focuses on metrics such as safety, availability, customer service, system reliability, construction, operation and maintenance, environmental, and public safety

- **AGA / EEI Benchmarking**

AGA / EEI is a Customer Services benchmarking study by the American Gas Association and the Edison Electric Institute. In 2019, 55 utility companies participated in this study, and it consists of the following sections: General Information, Customer Information Systems (CIS), Field Services, Meter Reading, Billing, Cash Posting, Contact Center, Business Offices, Revenue Protection Assurance, Credit and Collection, Commercial & Industrial Account Management, and Customer Services Website

- **First Quartile Consulting**

First Quartile's benchmarking efforts revolve around United States and Canadian utilities who are very involved in shaping and focusing the questionnaire every year. First Quartile conducts two separate studies – one in T&D and one in Customer Services. The T&D study focuses on the functional areas around transmission, substation, and distribution, with the main metrics being around cost, safety, project portfolio, and storm restoration. The Customer Services study reviews the functional areas for call center, field services, meter reading, billing, payment, and collections, and metrics such as costs, service levels, efficiency measures, safety, first contact resolution, and social media usage. Both studies collect data during the first half of the year to give ample time for reviews and data validation

- **Other Studies and Reports**

There are a number of other studies and reports from which benchmarking data can be extracted, such as public reliability reports, and J. D. Power Customer Satisfaction surveys. The following data sources have been utilized for 2019 benchmarks:

- Southern Company Distribution
- NY DPS Report
- Public Utilities Commission (PUC) Report
- PJM
- JD Power
- FERC data

### **Performance and Accountability Measures**

The Company's non-represented employees participate in a Performance Management review semi-annually. This encompasses mid-year and year-end performance reviews, development activities (job knowledge, skills, behavioral), goal setting (updated quarterly), and compensation and planning processes. Performance management and feedback, combined with career goal and career development



discussions encourages communication and feedback, and strengthens the link between individual performance and the team's goals and initiatives. The results of the individual year-end performance management review are factored into the calculation of each employee's annual merit increase along with the business unit and company-wide results.

Bargaining unit employees receive a performance appraisal once per year. The appraisal process is designed to drive improvement across the organization and provide formal performance feedback. It focuses on availability / attendance, safety, quality and quantity of work, interpersonal skills, job knowledge, judgment, innovation and initiative. Additional training is identified, and the employee has an opportunity to provide feedback. Employees who are not meeting performance expectations are managed through our Positive Discipline Program, which focuses on recognition of good performance and addresses areas for development at their earliest stage to support a high-performance workforce. Most often development areas are addressed through effective coaching and counseling. However, if the need arises for formal corrective action, the process is progressive, with a series of oral and written documentation, culminating in termination.

This process reinforces our corporation's commitment to continuous improvement through effective management of performance and accountability.

#### **Employee Skills Assessment**

PSEG will assess non-represented employee skills during mid and annual review periods based on the employee's job performance to date, achievement of key goals, and objectives against performance expectations as set forth in the company's core commitment values – Safety, Integrity, Continuous Improvement, Customer Service and Diversity and Inclusion. PSEG will also utilize various methods of collecting feedback based on the business need. These include 360-degree feedback tools designed to enable exempt associates to see how peers, direct reports and management view their skills and behaviors.

Qualified external candidates for union positions are provided the opportunity to "test out" of Apprenticeship Programs as determined by the Joint Evaluation Qualification Committee. The assessments include an interview, written test, and practical demonstrated abilities tests.

#### **Incentive Compensation Sharing**

PSEG will establish an incentive compensation program to reward senior management and management employees based on individual performance and achievement of key PSEG performance metrics. As part of the annual performance assessment of employees, employees will be evaluated based on goals that encompass all aspects of their work responsibility. Employee performance measures will be aligned with PREPA's goals and objectives and the performance of the ServCo against identified key performance metrics.

Under our incentive compensation policy, senior managers will be rewarded for achieving customer and performance based objectives as well as managing PREPA operations and assets effectively. To provide transparency, target incentives are earned based on communicated and formulaic methods involving a combination of individual performance, operational results and overall performance of the corporation.

#### 1.4.1.e. Customer Services

*PSEG will provide PREPA a portfolio of exceptional customer operations processes including customer engagement, customer-facing technologies, meter-to-cash, customer contact, low-income outreach, and storm communications that will improve customer satisfaction and operational efficiency*

PSEG Long Island has demonstrated the ability to overcome monumental challenges and to build a strong track-record of improving customer service and customer satisfaction since its formation on January 1, 2014. Superstorm Sandy struck Long Island, New York in October 2012 during the LIPA-PSEG Long Island transition period. Superstorm Sandy was the deadliest and most destructive, as well as the strongest, storm of the 2012 Atlantic hurricane season and inflicted billions of dollars of damage in its multi-state path. Superstorm Sandy was the second costliest storm on record in the USA until surpassed by hurricanes Harvey and Maria in 2017. When PSEG Long Island assumed operations on January 1, 2014, it faced the lowest residential customer satisfaction ranking in U.S. electric utility history. Customers believed rates were the highest in the nation, political leaders were still angry from post-Superstorm Sandy outage restoration, and news media coverage was extremely negative.

A PSEG Long Island Customer Services leadership team was formed from a combination of former PSE&G leaders and external hires from outstanding utilities with specific experience in Revenue Operations (National Grid), Meter Services (Dominion Resources) and Customer Experience and Utility Marketing (Florida Power & Light). The new team was in place on January 1, 2014, and immediately began to employ its considerable and diverse experience. PSEG will take a similar approach in building a diverse and talented leadership team.

PSEG Long Island's main objective for Customer Services was the achievement of its negotiated Customer Services improvement metrics as delineated under its Operating Services Agreement (OSA) with LIPA. Customer Services contributes to these Key Performance Indicators (KPIs) in the areas of customer satisfaction, customer service, storm response, and budget compliance.

Customer satisfaction is primarily measured via J.D. Power surveys for both residential and business customers, which contain measures in the following areas: power quality and reliability; price; billing and payment; corporate citizenship; communications; and customer service.

Examples of other customers services KPIs include: After Call Surveys, Personal Contact Surveys, Average Speed of Answer, Abandonment Rate, Days Sales Outstanding, and Net Write Off Per \$100 of Revenue, among others.

Storm response metrics for which Customer Services is responsible are measured via the New York State Department of Public Service Storm Scorecard, which evaluates storm preparation, operational response and communications. The Customer Services storm response organization is directly involved in the preparation and communications sections of the storm scorecard.



Figure 1.4.5 LIPA News Coverage

As previously noted, there was widespread perception among LIPA customers, elected officials and other stakeholders that Customer Services needed to improve after Superstorm Sandy. For example, LIPA had generally ranked in the fourth quartile in J.D. Power customer satisfaction and the 2012 J.D. Power Residential and Business Customer Satisfaction Surveys scored LIPA in the fourth quartile of performance in almost all categories. In no category was LIPA's performance better than third quartile in 2012. The negotiated metrics in the OSA were designed to produce measurable performance improvement in customer service and they accomplished their intended purpose.

During transition, before PSEG Long Island assumed operations, the Customer Services transition team analyzed all elements of the Customer Services function with the goal of developing plans to achieve the OSA metrics. PSEG Long Island staffed and organized its Customer Services function based on PSE&G's proven organizational model. PSE&G was, and remains, ranked in the top quartile for overall customer satisfaction in J. D. Power's East Large Region Electric.

For PREPA, PSEG proposes a Customer Services organization modeled after PSEG's utility services providers: PSE&G and PSEG Long Island. The organization would include the following functions:

- Customer Contact Center and Billing
- Revenue Operations
- Customer Technology
- Customer Experience and Utility Marketing
- Meter Services

#### Customer Contact Center and Billing

*PSEG will provide billing and call center operations, utilizing state-of-the-art technology and highly trained and motivated employees to provide meaningful and sustainable improvement for PREPA's customers*

PSEG will look to the experiences and capabilities from both PSE&G and PSEG Long Island to drive transformational change in the Customer Contact and Billing function for Puerto Rico's electric customers. PSEG's call centers will handle emergency and outage calls, 24 hours per day, 7 days a week and accept general inquiries during normal business hours. Operations will include Customer Service Representative (CSR) handled calls, social media inquiries, email and chat inquiries by customers. PSEG's utility services providers efficiently process monthly billing services for its 3.3 million electric customers, and our customer billing operations support complex rate structures involving time of use and interval billing.

PSEG Puerto Rico Customer Contact and Billing will consist of four major functions:

1. **Call Center Operations:** Responsible for all calls related to electric service and customer issues for all customers
2. **Workforce Management, Planning and Forecasting:** Responsible for the scheduling of call center operations and back office billing
3. **Back Office Billing:** Manages bill exceptions, offline and special billing
4. **Third Party Billing and Bill Presentment:** Responsible for the day-to-day bill presentment operations

### Call Center Operations

PSEG's Call Center Operations will be responsible for all calls related to electric service and customer issues. The types of calls this group handles include billing, payments, collections, service initiation, outages and general customer inquiries. Figure 1.4.6 shows PSEG Long Island's performance in its two most basic call center metrics: Average Speed of Answer and Abandonment Rate since assuming operations of LIPA's electric utility on January 1, 2014.

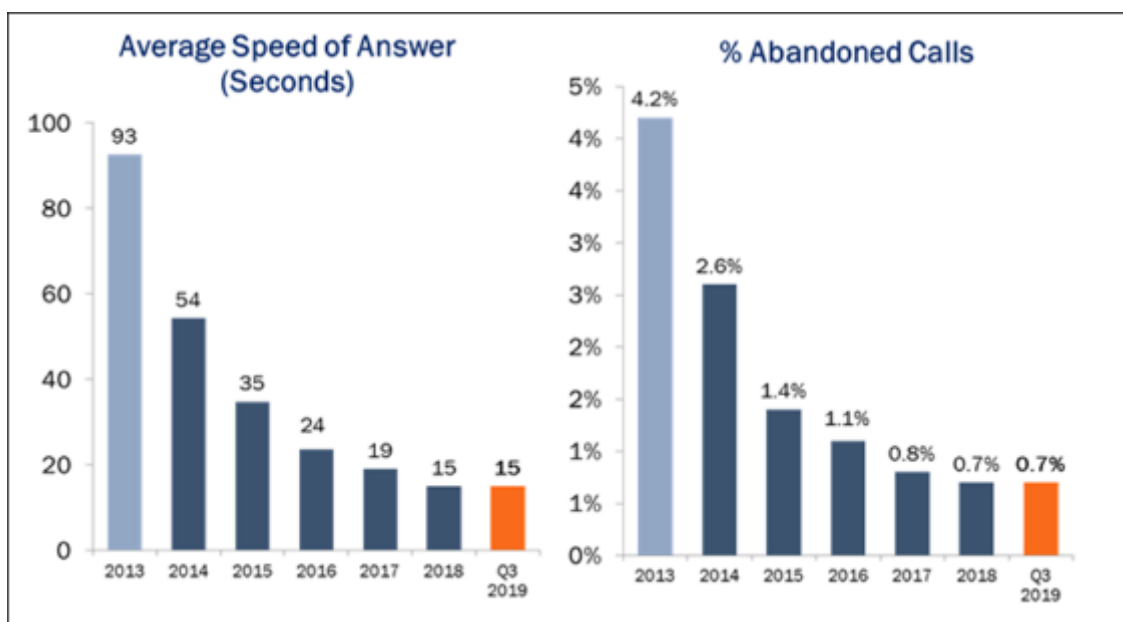


Figure 1.4.6 PSEG Long Island Average Speed of Answer and Abandonment Rate

PSEG will also employ customer surveys similar to those at PSEG Long Island to measure customer satisfaction and identify areas needing attention. PSEG Long Island collects customer feedback using three surveys which serve as leading indicators of customer satisfaction: After Call Survey Residential, After Call Survey Business and Personal Contact Survey. Customers are encouraged to provide anonymous feedback after being served by PSEG Long Island employees in the following areas: Call Center, Major Accounts, Energy Efficiency Hotline, Electric Service, and Customer Offices. Figure 1.4.7 reflects PSEG Long Island's survey results are all greater than 95 percent and have shown dramatic improvement since assuming operations of LIPA's electric utility on January 1, 2014.

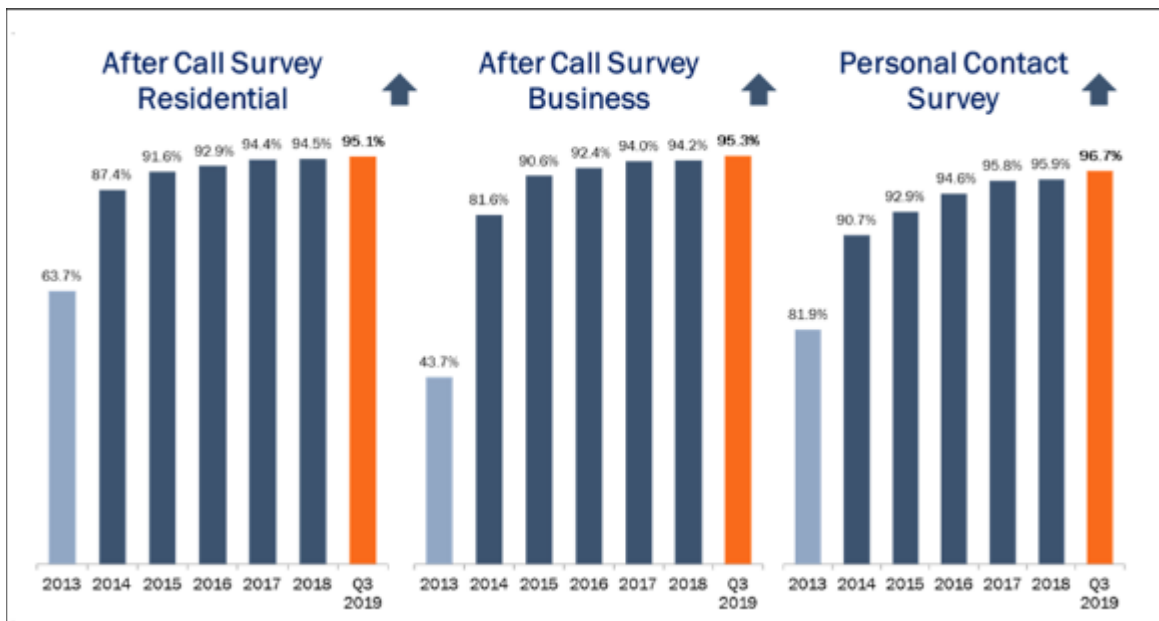


Figure 1.4.7 PSEG Long Island After Call Survey Residential, After Call Survey Business and Personal Contact Survey

### Workforce Management, Planning and Forecasting

PSEG's Workforce Management, Planning and Forecasting group will be responsible for scheduling Call Center Operations and Back Office Billing. In addition, this group will be responsible for critical technology that will enable its workforce to perform their job duties. Moreover, this group will be responsible for the tracking and reporting of KPIs and employee performance scorecards.

### Back Office Billing

PSEG's Back Office Billing group will manage bill exception processing, offline and special billing. Furthermore, the Back Office Billing group will complete field investigations and handle the process for updating the Customer Information System (CIS) as needed. Finally, this group will provide overflow manpower support for the Call Center during periods of high call volumes.

### Third Party Billing and Bill Presentment

PSEG's Third Party Billing and Bill Presentment group will be responsible for day-to-day bill presentment operations, inclusive of data entry, testing and verification, and management key processes including printing, postage, bill messages and inserts. In addition, this group will be responsible for the maintenance of the billing rate structure in CIS to ensure accurate customer billing via implementation and testing.

### Revenue Operations

*PSEG will provide outstanding financial stewardship of collected revenues, improved customer satisfaction, low income customer outreach, and leverage process improvements and state-of-the-art technologies to make it easier than ever for customers to pay their electric bills*

PSEG Puerto Rico will look to the experience from both PSE&G and PSEG Long Island to drive change in the Revenue Operations function for PREPA. PSEG Puerto Rico will benefit from the knowledge of PSEG utility services providers. PSEG utility services providers currently process billions of dollars of customer payments through multiple payment channels; manage the credit and collections process;

operate 30 customer offices across its territories; manages energy theft and diversion; and administers internal controls as required.

PSEG's Revenue Operations group will include six major functions: Back Office Collections, Payment Processing, Revenue Integrity, Internal Controls, Revenue Reporting, and Customer Offices.

1. **Back Office Collections:** Responsible for the overall collections' strategy and process
2. **Payment Processing:** Responsible for the timely and accurate processing of customer payments. PSEG Puerto Rico will provide the following types of payment options to its customers: credit card, online banking, text, email, ACH transfer, physical check, cash, money order and third-party payment stations
3. **Revenue Integrity:** Responsible for the identification, prevention, and correction of metering conditions causing lost revenue
4. **Internal Controls:** Responsible for Customer Operations' inventory of key controls
5. **Revenue Reporting:** Provide management and oversight of offline transactions and financial reports that support financial statements
6. **Customer Offices:** Provide customers the ability to transact business at customer offices

PSEG's Revenue Operations group will also provide support for low income customer programs that provide customers with utility bill assistance. This group will work with external organizations to seek partnership opportunities and to secure more comprehensive customer support.

Figure 1.4.8 shows PSEG Long Island's steady improvement in its major credit metrics: Net Write-Offs per \$100 of Billed Revenue; Accounts Receivable Greater than 90 Days; and Days Sales Outstanding since assuming operations of LIPA's electric utility on January 1, 2014. PSEG will work diligently to achieve continuous improvement for PREPA in this area.

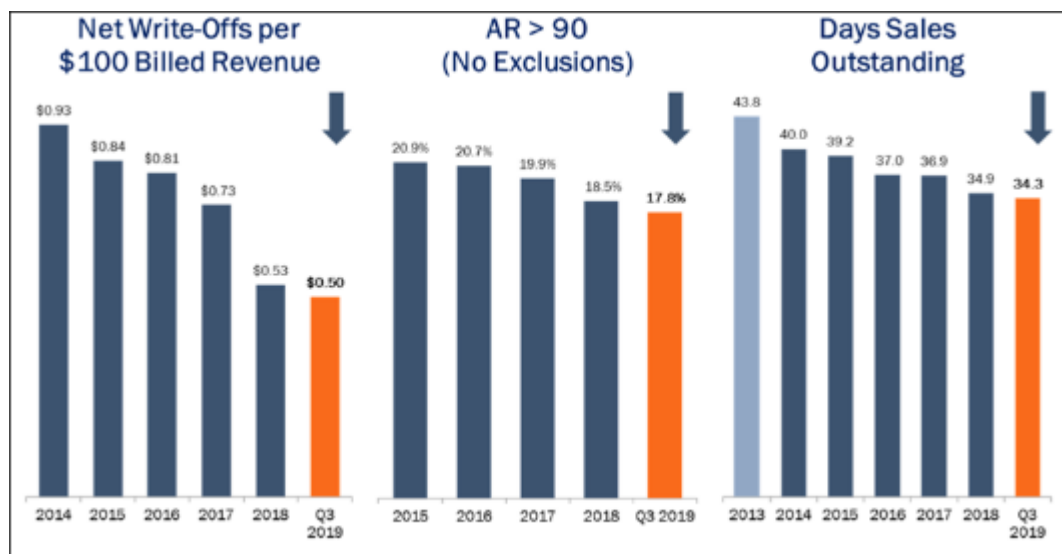


Figure 1.4.8 PSEG Long Island Net Write-Offs per \$100 Billed Revenue; Accounts Receivable Greater than 90 Days; and Days Sales Outstanding



## Customer Technology

*The PSEG Customer Technology team will transform PREPA's customers' experiences by providing a myriad of digital transaction options*

PSEG's Customer Technology team will implement new technologies to improve the customer especially for customer contact during major storms. Customer Technology will oversee the utility's digital engagement including MyAccount, social media, Interactive Voice Response (IVR), Text Alerts, Outage Maps, and other electronic customer-facing platforms such as voice assistant technology (e.g. Alexa).

PSEG will leverage the capabilities of PSEG's utility services providers to design and implement the latest customer technology innovations.

A few examples include:

- **Alexa Pay My Bill:** PSE&G and PSEG Long Island are among the first utilities to offer payment via the Alexa voice assistant channel
- **Salesforce Integration: Web Chat:** Functionality added to our websites, providing an additional customer service channel. Upcoming Salesforce releases will provide a 360-degree view of customer interactions, enhancing overall customer service in all channels
- **Mobile App:** Developing a customer-facing mobile app providing a new channel for engaging customers to report an outage, pay their bill, and see their usage
- **New AMI Portal and Usage Alerts:** Enhanced tools for customers to track their smart meter interval usage data online and provide weekly summaries and threshold usage alerts by text or email
- **New Business Services Portal:** Self-service options for new business customers
- **Data Analytics:** New capabilities to support electric vehicle penetration and reducing theft of service and many other use cases
- **Customer-facing Technologies:** Enhancements to MyAccount, Interactive Voice Response (IVR), MyAlerts, Outage Maps and the Municipal Portal (see Figure 1.4.10 PSEG Long Island – MyAccount)



Figure 1.4.9 Payments to PSEG via Alexa



Figure 1.4.10 PSEG Long Island – Outage Maps

PSEG Long Island's Customer Technology team is also working to implement AMI-enabled capabilities including:

- Outage Management System (OMS) – AMI Integration
- Remote Connect Switch Automation
- Commercial and Industrial Customer Portal
- Rate Modernization

The PSEG Long Island Customer Technology team has received a great deal of industry recognition. PSEG Long Island achieved first quartile and now ranks 10th in the USA in J. D. Power's 2019 Digital

Intelligence Experience Study. PSEG Long Island has also been recognized for numerous Customer Technology accomplishments including:

- Named to *CIO Magazine's* CIO 100 List for 2019 in recognition of innovative use of technology to improve customer service
- Released an Amazon Alexa customer service app that allows customers to ask billing questions, make payments, and get tips for reducing their energy usage and lowering their bills
- Received the **Glowing Engagement Award** for Storm Notification Alerts and resulting customer engagement
- Recognized with the **Illuminating Innovation Award** for its new Municipal Portal, a secured web portal used to communicate with municipal officials and other community stakeholders during outage events

For a complete list of other awards earned by PSEG Long Island (as shown in Appendix 1.4.B):

<https://www.psegliny.com/aboutpseglongisland/awardsrecognition>



## Customer Experience & Utility Marketing

*PSEG will provide PREPA a variety of services aimed at serving its communities, promoting its economic revitalization, educating its customers, gaining customer insights, and improving customer-facing programs and processes*

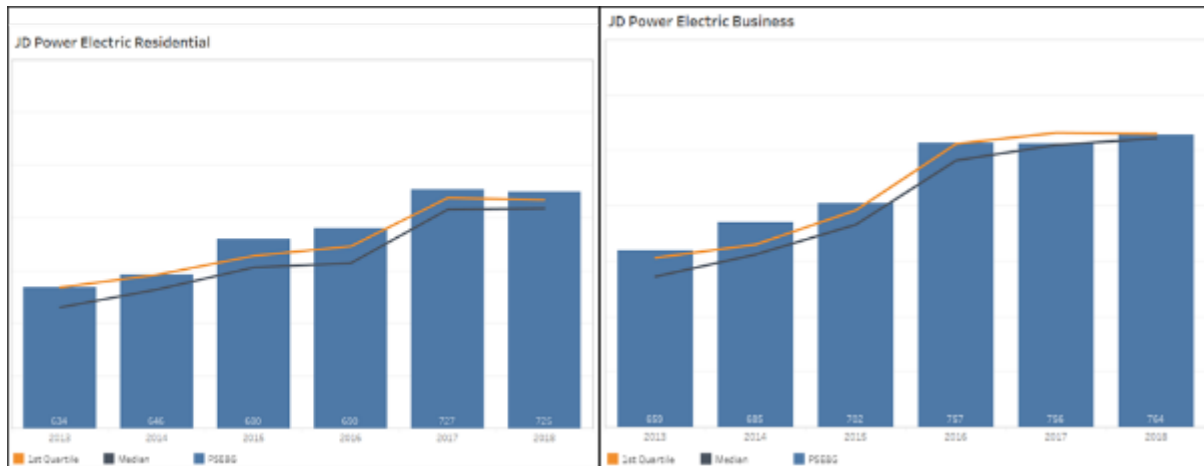
PSEG will look to the experience from PSE&G and PSEG Long Island to drive transformational change in the Customer Experience & Utility Marketing function for PREPA's electric customers. Customer Experience & Utility Marketing will lead customer satisfaction improvement programs, ensure customers are at the heart of everything PSEG does; promote economic development; conduct customer research to improve customer-facing processes; engage employees to support local charities and community organizations; manage the customer complaint process; provide large customer 24/7 support; develop marketing programs and communications; and review customer processes to ensure quality and conformance to procedures.

The PSEG Customer Experience & Utility Marketing function will include:

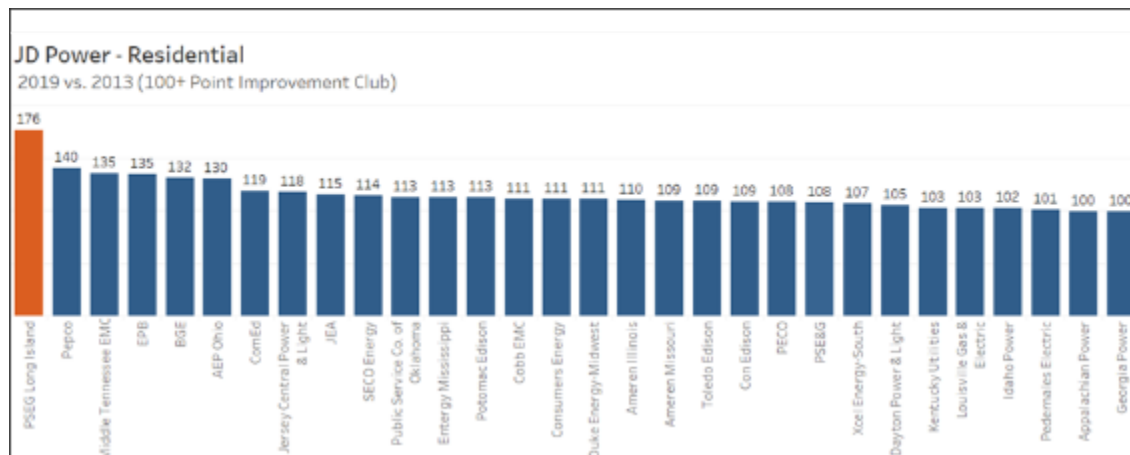
- **Customer Satisfaction Improvement Program:** Ensure customers are at the heart of everything we do
- **Economic Development:** Provide financial incentives to promote economic development
- **Customer Intelligence:** Conduct customer research and uses data analytics to recommend improvements to drive customer satisfaction
- **Community Partnership Program:** Engage employees to volunteer in local communities
- **Customer Relations:** Ensure proper timely resolution of regulatory and executive customer complaints
- **Customer Satisfaction:** Manage customer-centric programs and process improvements to enhance customer satisfaction
- **Major Accounts:** Provide 24/7 support for account issues, billing questions, and power problems for the largest commercial customers and outreach to small and medium businesses
- **Utility Marketing:** Create and execute customer-facing communications focused on brand awareness, customer education and program participation engagement
- **Quality Assurance:** Develop training, scoring, and process improvements to ensure that customer interactions are consistent and professional

Customer Experience & Utility Marketing will oversee a portfolio of customer-centric programs and process improvements to drive customer satisfaction in the following areas across the enterprise: power quality and reliability; price; billing and payment; corporate citizenship; communications and customer service. Customer Experience & Utility Marketing will leverage data from customer research and use data analytics to create practical customer-friendly products, processes and solutions. Overall success is measured by customer feedback from two key sources: J.D. Power Residential and Business Survey results. The graphics in figure 1.4.11 show PSE&G's sustained first quartile performance and PSEG Long Island as the most improved large utility in the USA over the last five years for residential customers and the second most improved for business customers.

*PSE&G – Maintaining Top Quartile Performance (2013 – 2018)*



*PSEG Long Island – J. D. Power Residential Customer Result Improvement (2013-2019 Syndicated)*



*PSEG Long Island – J. D. Power Business Customer Result Improvement (2013-2019 W1 Results)*

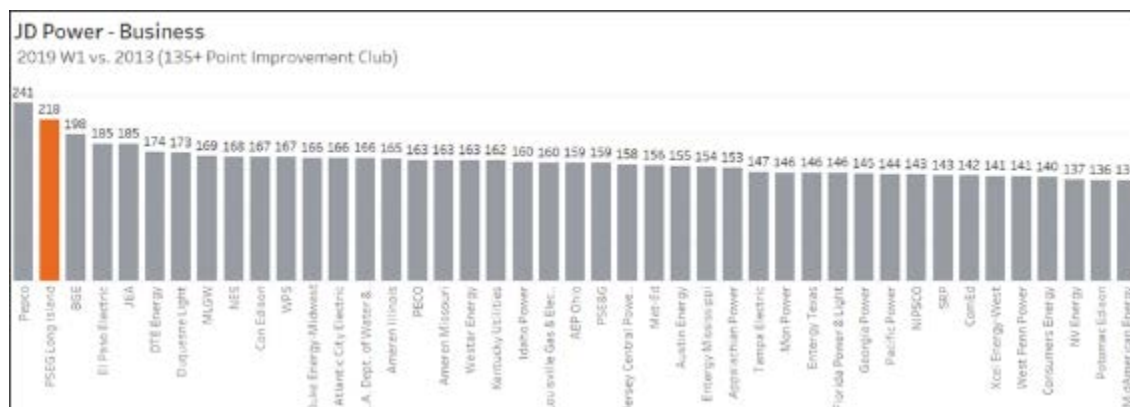


Figure 1.4.11 J.D. Power Residential and Business Survey Results

As shown in figure 1.4.12, approximately 33 percent of PSEG Long Island residential customers and approximately 48 percent of business customers are highly satisfied providing J.D. Power Survey scores of nearly 900 and above.

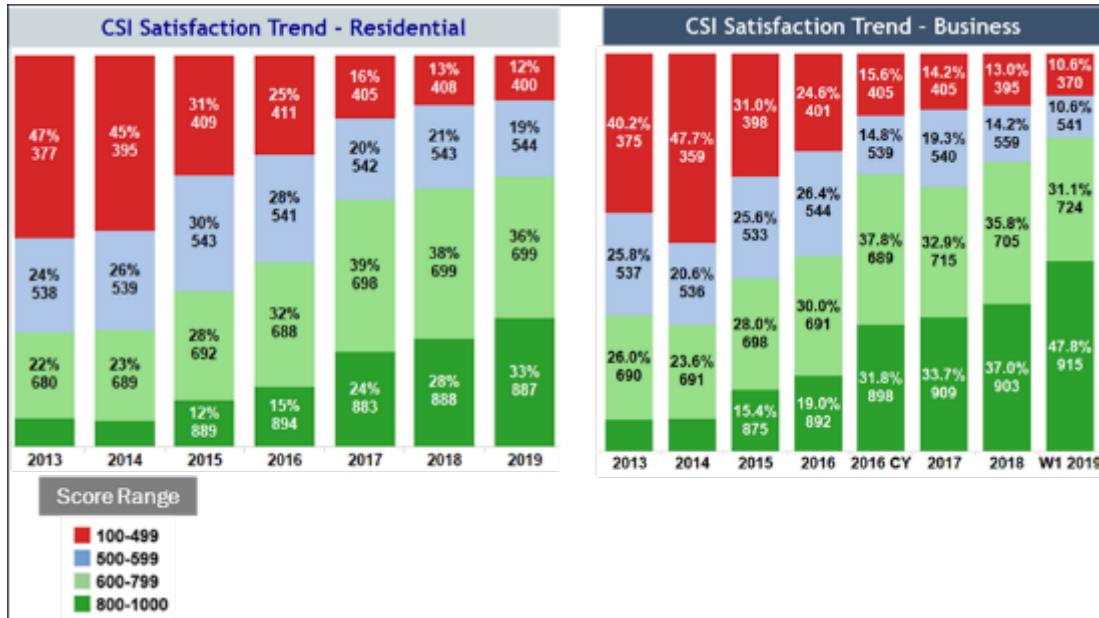


Figure 1.4.12 PSEG Long Island J.D. Power Survey Scores

### Resolving Customer Concerns

PSEG's utility services providers do a tremendous job resolving regulatory and executive complaints, ensuring that all issues are addressed on a timely basis, and supported by all relevant tariffs. For example, customer complaints filed with the New York Department of Public Service have fallen steadily since January 1, 2014 and now PSEG Long Island enjoys the lowest complaint level in New York.

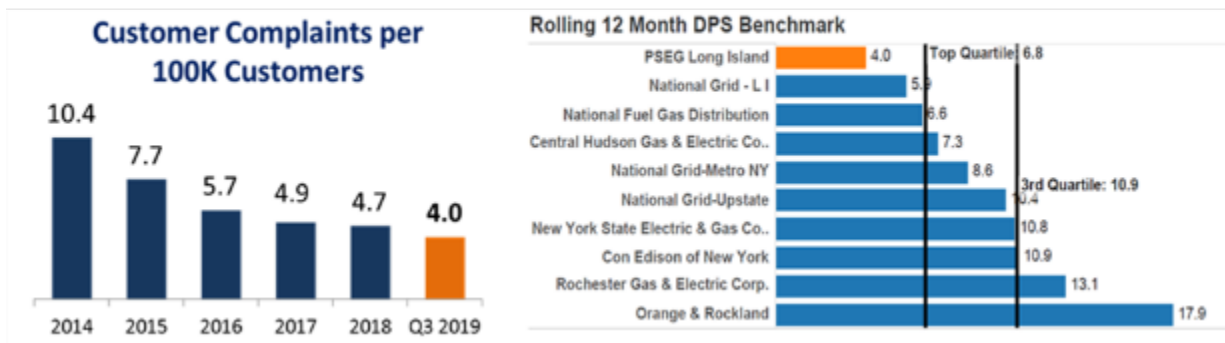


Figure 1.4.13 PSEG Long Island Regulatory Complaints

## Meter Services

*PSEG will bring exceptional capabilities in all aspects of electric metering to greatly improve meter-to-cash processes and enable new capabilities to improve utility operations and customer satisfaction*

PSEG will look to the experiences from both PSE&G and PSEG Long Island to drive positive change in Meter Services for Puerto Rico's electric customers. Meter Services will conduct meter reading (manual, automated meter reading and AMI), perform field collections and other field services including installation and maintenance of all electric meters, provide engineering and meter shop services, and provide technical support for all Meter Services systems in support of operations.

PSEG Meter Services will be comprised of five major groups:

1. **Meter Reading:** Responsible for reading residential and commercial meters
2. **Field Services, Planning and Dispatch:** Responsible for field collections for arrears and for account deposit requests for commercial and residential customers
3. **Measurement Services:** Responsible for the requisition, installation, maintenance, and testing of all electric metering devices and meter shop services
4. **Meter Engineering:** Provide technical support for all Meter Services functions and activities
5. **Measurement Systems:** Manage the AMI, Meter Data Management System (MDMS), Automated Meter Reading (AMR), and Meter Inventory Management System (MIMS) systems, as applicable

### Meter Reading

Meter Reading will be responsible for reading residential and commercial meters. The group will also be in charge of the completion of various field services orders including: connection and disconnection of residential service, special reads, name changes, advanced consumption, collection reconnects, and establishment of new accounts into meter reading routes / billing schedules.

### Field Services, Planning and Dispatch

Field Collections, Field Services, Planning and Dispatch will be responsible for field collection efforts on arrears and active account deposit requests for both commercial and residential customers. This group will also be responsible for performing the following investigations: high-bill complaints, shared metering, energy diversion, advanced consumption, switched meters, rate verifications, electric and magnetic field (EMF) complaints, and TV and radio interference. This group will be responsible for dispatching field personnel to effectively manage workload including turn-on orders after lock for non-payment within 24-hours. With the implementation of smart meters at PSEG Long Island, turn-on order cycle time is being dramatically reduced thereby improving customers' experiences.

## Measurement Services

Measurement Services will be responsible for the requisition, installation, maintenance, and testing of all electric metering devices. There will be two groups within the Measurement Services: field and meter shop. The field group will install meters on new connects, perform turn-on and turn-off orders of three phase, self-contained and instrument-rated meters, replace damaged meters, program meters to support rate tariffs, install, maintain and troubleshoot primary metering (and eventually all AMI field equipment including meters and AMI communications network devices once deployed at PREPA). Their scope involves all customer accounts and meter types including residential, commercial and industrial. The meter shop will work with purchasing to create orders and to maintain inventory to support operations. Measurement Services will also manage the quality assurance program for all metering-related equipment received from vendors and will provide shipping to local yards. The meter shop will also test, maintain and retire meters in support of all regulatory meter sampling programs. The meter shop will manage the asset life cycle of all PSEG metering devices and provide testing and calibration of test standards and equipment for T&D.

## Meter Engineering

Meter Engineering will provide technical support for the AMI system including the network infrastructure (once deployed at PREPA), meter technologies and back-office systems; field work management system and field laptop meter programming software development and maintenance; technical training for the field and meter shop personnel; meter programming; testing, approving, and requisitioning new types of metering and meter test equipment; designing special metering applications (e.g. primary metering and totalized accounts; and reviewing, testing and evaluating meter mounting equipment and switchgear).

## Measurement Systems

Measurement Systems will manage the meter to cash back office systems (as applicable) including: AMI, MDMS, AMR, and MIMS and provide technical support for systems integration support for AMI-enabled capabilities including: outage management, remote disconnection, data analytics, and vendor systems (once AMI is deployed at PREPA). Measurement Systems will be responsible for the operation of meter data acquisition and management systems that provide accurate and timely meter data for customer billing and additional analyses to support company operations. Measurement Systems main objective is to ensure accurate meter to cash processes.

PSEG Long Island has already gained considerable experience with AMI. PSEG Long Island has completed the installation of an AMI communications network throughout PSEG Long Island's service territory; implemented an operational MDMS and AMI web tools; upgraded systems and processes to support billing of all current rates; and has efficiently installed over 425,000 functioning smart meters in partnership with its own bargaining union employees. A full-scale AMI program was approved by the LIPA Board of Trustees in December 2018 and is leveraging PSEG Long Island's previous investments and experience in AMI to modernize the customer experience, increase customer satisfaction, and provide customers with more accurate, timely, and accessible data.

As proposed, PSEG Long Island sought to complete the deployment of AMI across its service territory by 2022 so that it could maximize customer benefits as well as produce operational savings which will have a net positive impact on rates. PSEG Long Island has already implemented new AMI-enabled capabilities such as:

- Providing customers with information and new rate options to better manage their energy use
- Deploying an advanced analytics platform to leverage AMI data to gain critical insights into customer needs and dynamic system conditions to drive enhanced system planning
- Integrating with OMS to expedite outage restoration
- Employing revenue protection solutions that reduce theft

PSEG will be able to use these exciting new features of a modern metering system to transform its meter-to-cash processes.

#### 1.4.1.f Human Resources

*PSEG will provide PREPA a proven history of success in mature human resources processes and services to support its employees*

2018 PSEG Employee Demographics	
<b>PSE&amp;G</b>	<b>7,318</b>
Union (IBEW, Local 855, OPEIU, UWUA)	5,315
Non-Union	2,003
<b>PSEG Long Island</b>	<b>2,409</b>
Union (IBEW 1049)	1,510
Non-Union	899
<b>PSEG Power</b>	<b>2,122</b>
Union (Local 97, IBEW, UWUA, OPEIU)	1,065
Non-Union	1,057
<b>PSEG Services Corporation</b>	<b>1,296</b>
Union	255
Non-Union	1,041
<b>Total PSEG Employees</b>	<b>13,145</b>

Table 1.4.2 PSEG Employee Demographics

PSEG Puerto Rico's HR team will operate by providing sharp focus on efficient and high-quality service delivery, high levels of contribution by HR professionals, integrated HR leadership, role clarity, and strong partnerships with PREPA to support business goals. HR's strategic objectives include:

- Attract, develop and retain capable and talented employees through effective talent management and meaningful total rewards programs and policies (pay, benefits, training, and work environment)
- Leverage key relationships in order to achieve business objectives (employees, business unit leadership, union members and union leadership, federal and state agencies, retirees, outreach partnerships, and employee resource groups)
- Create and sustain an operationally excellent HR service delivery model

Our corporation has strong ethical values and a deep commitment to its employees and understands that success ultimately depends on its ongoing ability to attract, develop and retain highly skilled, diverse and engaged workforce. PSEG will achieve the continuous improvement of operations through a culture that recognizes the value of diversity and inclusion and where all employees are engaged and comfortable speaking up. PSEG employees are the key to achieving operational excellence in providing safe, reliable, economic and greener energy.

Each year, PSEG will review its people strategy to ensure we have the initiatives to deliver on strategic goals. PSEG Puerto Rico will promote an environment where employees develop and utilize skills, feel



comfortable sharing their ideas and concerns, and directly support the achievement of key business objectives. PSEG will invest in its human capital to meet business challenges and contribute to a high-performance culture.

### Employee Engagement

Employee engagement will be an important part of PSEG Puerto Rico's continuous improvement journey. Employee engagement initiatives will focus on issues such as comfort in speaking up, building employee capabilities through the People Strong curriculum, and fostering diversity and inclusion to ensure we move forward effectively as one team. PSEG Puerto Rico wants to build a culture with PREPA where everyone not only contributes, but also feels valued and appreciated, and has a range of opportunities for growth and development.

PSEG will identify and manage numerous risks and opportunities through its people strategy. This will become evident by PSEG's commitment of maintaining employee and public safety, good relations with labor unions, and engagement with employees.

To maintain engagement, PSEG will keep its employees informed through a variety of communication forums. The PSEG Intranet (myPSEG) will provide PSEG employees with a wide range of helpful information on their total rewards package including salary and benefits, retirement plans and services. PSEG will maintain an electronic catalog of policies, practices and procedures so employees know exactly how to excel. Internally, public information will be communicated through myPSEG, daily Outlook Online emails and PSEG Outlook, an employee newsmagazine. In addition, frontline supervisors and management teams routinely convey information of importance to their employees.

Taking great care of customers, starts with making sure PSEG takes great care of its employees. PSEG will continually strive to provide employees with a market competitive total rewards package, which supports the strategic objectives to attract, retain and develop a high-performing and diverse workforce.

PSEG will conduct market research and analysis and adjust its reward programs periodically to ensure we remain competitive with the marketplace. PSEG's comprehensive rewards package empowers employees to be their best.

Lifestyle and employee wellbeing are essential to a safe and high-performance culture. PSEG recognizes the importance of offering comprehensive benefits to its employees and dependents. PSEG will make available additional services beyond traditional benefits to support and encourages employee wellbeing including physical, emotional, financial and social health. PSEG may leverage the Company's "Be Well Program" which focuses on employee risk factors that impact employees' performance and drives up health care costs. PSEG may also provide a variety of programs to support employee wellbeing, which include on-site fitness centers, health screenings, customized weight loss programs, walking challenges and incentives. A strong corporate wellness council, consisting of various union and management personnel, has played a significant role in promoting employee wellbeing and related programs.



## Strong Union Relationship

Our companies have a long established history of maintaining a positive and collaborative relationship among its employees, management, and unions. PSEG's Labor Relations team will provide day-to-day guidance in accordance with union agreements and company policies and practices, resolve grievances at the lowest level, develop and implements training, and negotiate timely and fiscally responsible agreements in support of the company's strategic objectives and business goals.

Outlined below are some statistics from PSE&G and PSEG Long Island:

- PSE&G and its unions have reached three contract extensions since 2011 while still achieving mid-term agreements
- PSEG Long Island and its unions have reached two contract extensions and one contract since 2014 while still achieving mid-term agreements
- These mid-term agreements are often reached through interest-based bargaining to resolve underlying issues, needs and concerns in support of the company's business goals. For many years, our Company and its unions have worked together when economic reasons require plant closings or position eliminations to minimize the impact on affected employees through retraining and redeployment rather than layoffs. One example is the partnership between PSEG Long Island and its union when the company decided to fully deploy smart meters over 4 years. Recognizing that the deployment would result in the elimination of traditional meter reading, the company committed to using union employees for smart meter deployment and the parties worked together to create an innovative labor strategy that included the use of temporary workers and the creation of a career path that allows for a more productive and flexible workforce. Our Company and its unions have worked collaboratively to support legislation in support of the company's strategic objectives, including modernizing infrastructure and improvements to safety, reliability and service for its customers
- There has not been a work stoppage at the PSEG Companies since 1982.

Additional Human Resources information can be referenced in Section 1.6. Operator Recruitment and Staffing Plan.

### 1.4.1.g Information Technology

*PSEG will combine strong capabilities in IT transition and operations services with systems integration expertise to allow PREPA to meet the challenges of their changing business environment while provisioning high quality, reliable, cost effective, and secure services for its customers*

PSEG will have access to our corporation's significant experience and proven track record with IT transition and operations services. Our IT teams have supported organizations during the transition of their legacy technologies and operations across varying organizational structures into diverse system technologies. In the first 18 months of the LIPA-PSEG Long Island transition, PSEG Long Island employed best practices and economies of scale, migrating over 300 applications to modern platforms and established both primary and disaster recovery data centers. These activities included deploying an integrated, award-winning SAP Enterprise Resource Planning solution that provided high levels of operational automation and business insights; setting up a new digital customer experience supported by a Sitecore "responsive web" solution; and establishing a CISCO Interactive Voice Response system to

automatically handle customer calls. Over the past couple of years, PSE&G and PSEG Long Island have continued their digital transformation journey (as shown in Table 1.4.3), which favorably positions PSEG to support PREPA with the modernization of its IT infrastructure.

IT Transformation Examples	
Activities	Description
<i>New Systems</i>	SAP, IVRU, OMS, Meter Data Management System (MDM), Advanced Distribution Management System (ADMS)
<i>Data Migration</i>	Migration of on premise data centers to the Amazon Web Services (AWS) public cloud with a goal to retire on premise environments within the next 3 years
<i>Digital Engagement</i>	Enabled new digital channels (i.e. Amazon's Alexa, Text Alerts, enhanced IVR, etc.)
<i>Machine Learning</i>	Launching a Salesforce-enabled Service Center to leverage machine learning to anticipate the 'Next Best Action' for every customer and deploying a contextual Customer Mobile Application
<i>AMI Meters</i>	PSEG Long Island is implementing full-scale AMI over four years, and has implemented a new Meter Data Management system to modernize time of use rate structures to promote customer engagement
<i>Data Analytics Platform</i>	Establish an open data analytics platform that will incorporate data from AMI meters, connected thermostats, smart devices and provide new levels of operational and customer service insights
<i>Cyber Security</i>	First utility to join the US Department of Energy CRISP Program and deploy 'consequential' policy for employee phishing test failures and achieving the highest cyber security BitSight score of 810 in the industry globally

Table 1.4.3 PSEG IT Transformation

This base of experience enables PSEG to manage the transition of PREPA's IT and ongoing operations in a way that is compatible with PREPA's goals for transition (examples provided in Appendix 1.4.C). Figure 1.4.14 lists the value-added IT Services that will be leveraged by PSEG Puerto Rico from PSEG's utility service providers.

PSEG Puerto Rico will Provide Tremendous Value-Add in the Delivery of IT Services
<ul style="list-style-type: none"> <li>• Broad transition and integration experience, allowing for seamless transitions with migration toward open, modern, cost effective tools supporting “Plug and Play” and data transparency</li> <li>• Consistently achieves the lowest IT cost per user, per customer, and as a percent of revenue of the Gartner UNITE benchmarks of 20 of the largest USA utilities</li> <li>• Standards for IT governance and controls meeting all NERC CIP, SOX, and other regulatory standards</li> <li>• Extensive application, infrastructure and service vendor relationships that will be leveraged on PREPA's behalf, including relationships with most of PREPA's current commercial off-the-shelf (COTS) vendors and other industry leading COTS vendors</li> <li>• Hosting services, disaster recovery services, supporting “Green IT”</li> <li>• High quality support services at all levels, with continuous improvement resulting in high customer service ratings. PSEG IT has achieved first quartile or first decile critical system availability for the last 10 years</li> <li>• Exceptionally strong data and cyber security capability and experience combined with growing smart grid capabilities. PSEG IT achieved a BitSight score of 810, the highest in the industry worldwide. PSEG follows the Cybersecurity Capability Maturity Model (C2M2) and publishes a quarterly cyber security scorecard that captures key elements like patching, encryption, alert response, admin rights management, vaulting, and other key cyber security metrics</li> <li>• Strong capability in providing information transparency through the use of Tableau and AWS big data solutions for:                         <ul style="list-style-type: none"> <li>– Data Mart / Warehouse and applications reporting with hundreds of utility metrics available from safety, availability, asset performance, and customer experience, etc.</li> <li>– Creation of Services Management Portal with program status, scorecards, dashboards</li> <li>– ServiceNow Employee Self Service portal for many IT services</li> </ul> </li> <li>• Packaging these services in a way that can be effectively transitioned at the end of contract</li> <li>• Deep “Technical Pockets” from parent organizations and vendors that will be leveraged for Technology Innovation Assessments, PREPA opportunity assessment and to quickly and effectively provide broader services when needed</li> </ul>

*Figure 1.4.14 PSEG Utility Services Providers' IT Experience*

PSEG will use best practices to support PREPA based on internal experiences and the knowledge of its customers' experiences and the knowledge gained through vendor relationships. Combined with our advanced software delivery methodologies, process improvement methodologies and the knowledge and experience of the ServCo team, PSEG will effectively enable the use of technology to continuously improve PREPA's processes and services to its customers.

Additional IT information can be referenced in the Front-End Transition Plan Section 1.5.5.

#### 1.4.1.h Supply Procurement

*PSEG will provide PREPA with effective procurement systems, expanded purchasing power, a strong supplier network, with a focus on local supplier relationships*

PSEG is committed to acquiring materials and services in the most cost-effective manner, and on a best value basis, considering quality, cost, performance, services provided, risk, and other relevant sourcing requirements. Sources will be considered and selected in multiple ways, including:

- Corporate agreements
- Teaming agreements (where applicable)
- Competitive bid process
- Open market

If strategic to PREPA, PSEG Puerto Rico can also seek to improve the sourcing of equipment locally, a process that PSEG's utility services providers have previously instituted. PSEG will use a global network of suppliers to support achieving PREPA's goals and manage a supplier diversity program that institutes outreach efforts at key supplier diversity events, monthly measurements and reports of progress, training program for all procurement professionals, and online support portals.

PSEG will institute a supplier diversity process modeled after the plan followed by our Companies for over 30 years, utilizing a number of processes and initiatives to grow business relationships and expenditures with certified minority, women, veteran and service disabled veteran-owned businesses. In 2017, our Company achieved historic results by spending more than \$532 million or 18.6 percent with MWVBE's due in part to internal performance goals, aggressive outreach methods, business advocacy partnerships, education, mentoring and communication.

Primary outreach initiatives are hosting company-sponsored complementary external supplier diversity procurement fairs to connect and interview minority, women, veteran, and service disabled veteran-owned businesses for potential procurement opportunities with the procurement organization and senior leaders. Each fair includes a supplier workshop on "How to do Business with PSEG with Business Success Tips" and a diverse supplier presentation. We help to expand attending business suppliers' opportunities by including the prime suppliers, New Jersey-regulated utilities, and major New Jersey corporations at each of its fairs.

We are an active corporate member of numerous external supplier diversity advocacy organizations that share extensive minority, women, veteran, and service disabled veteran-owned business databases for involvement in procurement processes.

After Superstorm Sandy, LIPA sought to fund certain hazard mitigation measures using grant funds received from the federal government. When FEMA funding for specific hazard mitigation work became available, PSEG Long Island utilized FEMA compliant processes.

PSEG Puerto Rico Will Provide Value-Add in Delivery of Procurement Services
<ul style="list-style-type: none"> <li>Established relationships with supplier partners for priority availability and shipping</li> <li>Existing reseller and other corporate pricing agreements that will be leveraged under the OMA</li> <li>Pre-negotiated best volume discounts in the industry</li> <li>Highly experienced / trained supply chain management team producing world-class acquisition cycle times</li> <li>Streamlined acquisition processes for significant reduction in typical procurement-related costs</li> </ul>

Figure 1.4.15 PSEG Puerto Rico's Procurement Services Delivery

#### 1.4.1.i Financial Management & Accounting

*PSEG will bring the necessary skills and experience to ensure a seamless financial transition and provide accurate, timely and complete financial management services during ongoing operations*

PSEG's approach to financial management will be to instill sound and proactive business processes, supported by an integrated financial toolset that will allow PSEG Puerto Rico to produce timely, compliant financial reports and filings for its many stakeholders, drive transparency in financial reporting and planning, and ensure financial integrity, completeness and accuracy through a set of established business process controls that will be internally and externally audited.

PSEG brings the necessary skills and experience to ensure a seamless financial transition and provide accurate, timely and complete financial management services during operations. These financial management competencies are shown in Figure 1.4.16.

PSEG Puerto Rico Financial Competencies
<i>Financial Management of a Separate Subsidiary</i>
<i>Budgeting and Forecasting</i>
<i>Fiscal and Purchasing Controls</i>
<i>Generally Accepted Accounting Principles (GAAP), (FERC), and New York State Public Service Commission (NYSPSC) Financial Accounting</i>
<i>Tax Filing and Reporting</i>
<i>Financial Analysis (Variance &amp; Revenue)</i>
<i>Financial Closing (within 7 business days)</i>
<i>Monthly, Quarterly, Annual Financial Reporting</i>
<i>Federal American Recovery and Reinvestment Act (ARRA) Reporting</i>
<i>Department of Energy Reporting</i>
<i>Commonwealth and Local Financial Reporting</i>
<i>Depreciation Analysis of T&amp;D assets</i>
<i>Maintenance of General and Sub Ledger</i>

Figure 1.4.16 PSEG Puerto Rico's Financial Management Competencies

## Financial Reporting, Budget and Forecasting

PSEG's approach will be transparent in its financial reporting, budgeting (capital and operating) and forecasting. This will be accomplished, in part, by employing a financial management business process that emphasizes openness and collaboration with PREPA in financial operations.

## Fiscal and Purchasing Controls

Ensuring the highest integrity of the financial data is of critical importance. We will establish a department of independent auditors to ensure compliance with established processes and that proper checks and balances are being performed. This independent audit group will accomplish its objectives by using a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, internal control and governance processes.

## Accounting Systems and Controls

Accounting systems and controls will be provided by a dedicated, core group of professionals. The financial statements, filings and account reconciliations will also be subject to a series of internal and external audits. We will leverage PSEG corporate accounting experiences to issue audited financial statements; implement Sarbanes-Oxley internal controls; and comply with FEMA accounting and reporting requirements.

### 1.4.1.j Emergency Response

*PSEG has deep and award-winning experience in emergency preparedness and outage restoration after major storms*

## Emergency Preparedness, Storm Response and Restoration

### Demonstrated Emergency Preparedness

Having earned the Edison Electric Institute Award for outstanding restoration efforts after Superstorm Sandy in 2012 and Hurricane Irene in 2011, PSE&G demonstrated exemplary ability to restore power, as well as communicate before, during and after significant events, to PSE&G's regulators and customers. During the LIPA-PSEG Long Island transition, Long Island was significantly affected by Superstorm Sandy, requiring PSEG Long Island to establish an extremely robust storm process. PSEG Long Island has made noteworthy improvements to the storm process over the years including customer-facing technologies and enhanced customer communications. Prior to, and during major outage incidents, senior leadership at PSE&G and PSEG Long Island maintain an ongoing and open dialog to discuss and share information regarding impending weather situations. This proactive dialogue helps to ensure the complete and timely "situational awareness" between leadership teams and provides a platform to facilitate discussion regarding potential sharing of personnel resources and other support functions. Proven processes which are informed by our lessons and those of PREPA will be implemented to ensure that Puerto Rico is well-positioned in the event of a major storm.

### Stakeholder Communications

Understanding that effective stakeholder communications are paramount to the success of storm restoration efforts, PSEG will employ a comprehensive storm communication plan to ensure proactive communications are provided before, during and after all storms based on the knowledge gained from our utility service providers. PSEG Long Island developed and implemented initiatives to improve the way it communicates with its customers and key stakeholder groups not only in advance of and during large-

scale storm events, but throughout the entire year so that stakeholders are better prepared and informed when storms do occur. For example, enhanced outage maps for both mobile and desktop devices provide customers the ability to view outages, report an outage and receive outage updates on estimated restoration times via social media. Media and news relationships will be used with continual press releases and media interviews during storms to communicate restoration status updates. PSEG will have a dedicated liaison organization supporting all levels of government that will focus on critical facilities and escalation processing. In addition, there will be personalized outreach and daily contact with key elected officials by executives and conference calls with municipal leaders and elected officials. Community awareness programs, employee training, and drills / exercises will be conducted to ensure that customers, employees, and key stakeholder groups are better informed and prepared for when disasters strike.

### Emergency Operations Center

With award-winning experience in emergency preparedness, our Company's employees continuously monitor and track all significant events with potential impact to projects or territory and makes emergency preparations in advance. This includes weather-related, political, and public events, as well as security threats that may impact the service territory and customers. These events are monitored at a central Emergency Operations Center (EOC). Conference calls and reports are utilized to monitor progress and determine if a supplemental workforce is needed and/or if personnel need to be re-allocated to focus on other affected areas in the territory. The EOC also provides information to internal stakeholders such as Executives, Management, Communications, Regulatory, Human Resources, Labor Relations, Information Technology (IT) and Customer Service personnel. The EOC also provides information to external stakeholders such as government and regulatory entities. PSE&G utilizes the Incident Command Structure (ICS) as the formal platform for emergency response. This includes organizational structure, training and coordination with external stakeholders such as local, state and government authorities.

### Restoration Philosophy

PSEG's restoration philosophy will focus on matters involving public safety, critical customers, and maximizing the number of customers restored. Storm event severity will drive restoration strategy including staffing, logistics, and estimated restoration times. PSEG Puerto Rico will utilize OMS, which will serve as the centralized trouble analysis tool, along with an integrated computer aided dispatching platform to manage restoration. OMS will also integrate customer outage calls, smart meter (eventually) outage signals, SCADA, and field crew reports on a single platform.

### Staffing Philosophy

Operations and maintenance personnel are on duty 24-hours per day, 365-days per year for immediate response to emergency events. Maintenance and repair supervisors involved in all aspects of electric distribution systems are on call 24-hours per day, 365-days per year. If an incident resulting in equipment damage or failure occurs, an on-call supervisor is notified immediately to evaluate and address the situation.

With smaller storms, Operations and Construction personnel are utilized for primary, secondary and service restoration. This is monitored at the central EOC. Conference calls and storm reports are utilized to determine if supplemental manpower is needed and/or if personnel must be moved to other areas in the territory. The central EOC also provides information flow to management, communications personnel and to governmental and regulatory entities.



With medium level storms, the workforce is supplemented with pre-trained office personnel (technical and clerical) to staff service restoration processes and to perform roles such as damage assessment, utility EOC on-call, and utility EOC liaison and stand-by wires duties. Underground (UG) construction, maintenance, meter and transmission personnel are utilized to repair downed services. The ‘all hands-on deck’ approach has proven to be effective, integrating all resources to support restoration activities.

With larger storms, as appropriate, all qualified personnel are utilized and supplemented with Mutual Assistance from the federal government, other utilities and contractors.

### **Storm Operations Manual**

As noted above, after assuming operations in 2014, PSEG Long Island developed a Storm Operations Manual modeled after PSE&G’s Storm / Outage Restoration Plan (as shown in Appendix 1.4.D), which describes internal classifications to determine storm levels and the decision making process behind activities of the Emergency Restoration Plan (ERP) and Emergency Response Implementation Procedures (ERIP), either partially or in totality. We will use our experience and knowledge to develop a Storm Operations Manual for that is uniquely suited PREPA.

Furthermore, the manual will describe the responsibilities of all personnel, inclusive but not limited to, the President and Chief Operating Officer, Incident Commander, Restoration Officers, Safety, Health and Environmental Officer, Legal Officer, Liaison Officer, Public Information Officer, Section Chiefs, Operations Branch Directors, Planning Section Chief, Logistics Section Chief and Finance / Administration Section Chief.

To ensure effective and efficient restoration, PSEG will conduct ongoing training for all personnel. Division personnel will be trained in all areas of restoration and participate in annual exercises which review every job function from supervisory to non-supervisory activities. Office personnel will be required to complete an annual training administered via an online training system, Learning Management System. Those that are assigned as Liaisons to the Divisions, Offices of Emergency Management and PSEG Puerto Rico call centers will receive additional training on the use of OMS, the Escalation Process and other topics related to maintaining communication between the Divisions and key stakeholders. Customer Operations and IT personnel will attend annual refresher meetings with Electric Delivery personnel, both in the office and the field.

The Storm Response Manual will provide a detailed outline of the storm procedure from preliminary actions, to pre-storm actions to post-storm actions supporting restoration objectives:

- Prompt clearing of public hazards
- Restoration of critical facilities / customers
- Restoration of plant facilities
- Communication with customers

## Managing Disaster Recovery Operations and FEMA

PSE&G and PSEG Long Island have substantial experience in building storm-hardened and resilient systems. PSEG's Energy Strong Program and PSEG Long Island's implementation of hazard mitigation projects funded by FEMA were designed to harden the systems after the impacts of Superstorm Sandy and Hurricane Irene.



*Figure 1.4.17 PSE&G Raised Switching Station*

Since Superstorm Sandy, PSE&G has invested \$1.2 billion in raising, relocating and protecting 26 electric switching and substations; deploying smart grid technologies to better monitor system operations; installing smart communication devices at 111 stations to allow for remote detection of outages; and making additional circuits available to 260 critical facilities to improve resiliency. Likewise, following Superstorm Sandy, LIPA became a sub-grantee of a Public Assistance Grant from FEMA (Hazard Mitigation Grant). PSEG Long Island, as part of the operation services, provides project management, design, construction and certain administration for LIPA's Hazard Mitigation Grant, which has been performed under streamlined procedures in the Superstorm Sandy Recovery Improvement Act and Section 428 of the Stafford Act. The project, which addresses strengthening priority mainline circuits, elevating substation equipment, installing reclosers, and strengthening damaged transmission lines, is on track for successful completion within the monetary limits of LIPA's grant.

PSEG Long Island's FEMA Hazard Mitigation Program ("FEMA Program") began construction in October 2015, and when complete will upgrade approximately 1,025 miles of mainline overhead circuits and install 894 reclosers on 319 circuits. The upgraded overhead mileage in the program represented approximately 41% of the three phase mainline mileage on the system. The primary purpose of this program is to harden LIPA's distribution system following the damage incurred after Super Storm Sandy to reduce both the number of customers impacted and the duration of future storm events. Construction is expected to be complete by first quarter 2020 within the grant budget of \$715 million.

Based on the performance analysis of FEMA circuits in both storm and non-storm events, PSEG Long Island customers have realized the following benefits for the FEMA program.

Reportable Results	Benefit
<i>Damages Per Mile (FEMA vs. Non-FEMA)</i>	42% Reduction
<i>SAIFI</i>	26% Improvement
<i>SAIDI</i>	26% Improvement
Storm Results (All excluded outage events)	Benefit
<i>Incidents Per Mile (FEMA vs. Non-FEMA)</i>	33% Reduction
<i>SAIFI</i>	62% Improvement
<i>SAIDI</i>	60% Improvement

Table 1.4.4 PSEG Long Island Customers have Realized Benefits of the FEMA Program

The numbers above include the entire circuit results after the FEMA Program construction was complete. On average, however, the FEMA Program upgraded only 63% of each circuit's mainline. A further analysis of events and outage impact of FEMA mitigation circuit miles versus un-mitigated circuit miles indicates that the performance of the improved sections of the circuits show even more improvement.

Reportable Results	Benefit
<i>Damages Per Mile (FEMA mitigated vs. Non-FEMA mitigated miles)</i>	68% Reduction
<i>SAIFI</i>	73% Improvement
<i>SAIDI</i>	78% Improvement
Storm Results	Benefit
<i>Damages Per Mile (FEMA mitigated vs. Non-FEMA mitigated miles)</i>	75% Reduction
<i>SAIFI</i>	90% Improvement
<i>SAIDI</i>	97% Improvement

Table 1.4.5 Further Analysis of Events and Outage Impact of FEMA Mitigation Circuit Miles Versus Non-mitigated Circuit Miles Indicates Even More Improvement

The improvements at the circuit level have also translated into benefits at the system level. Figure 1.4.18 shows the SAIFI improvement trend from 2016 to 2019.

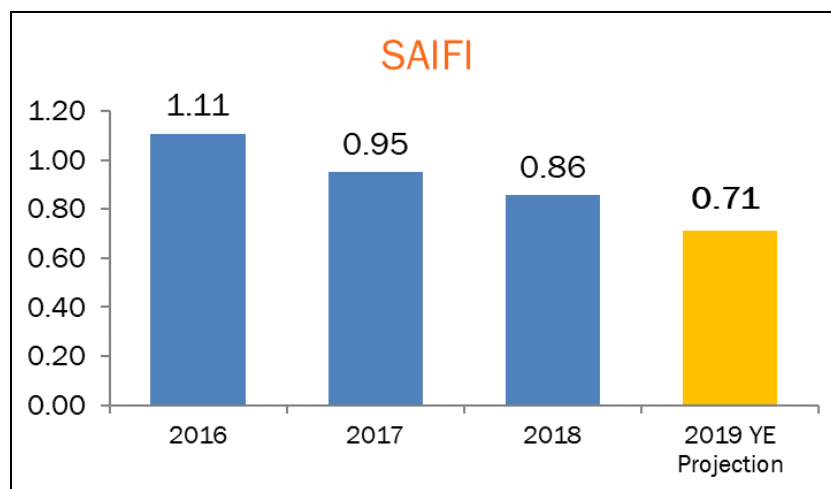


Figure 1.4.18 PSEG Long Island SAIFI Improvement Trend from 2016 to 2019

### Hurricane Maria Support

PSEG Long Island sent employees, contractors, vehicles and equipment to Puerto Rico to support the restoration of its electrical grid after Hurricane Maria caused severe damage across the island.



Figure 1.4.19 PSEG Long Island Crews Work on Restoring Power and Engage with a Translator from Puerto Rico

"At PSEG Long Island, responding to crises and helping those in need, is what we do best," said Dan Eichhorn, President and Chief Operating Office of PSEG Long Island. "Our employees showed no hesitation when asked to volunteer and join New York Power Authority (NYPA) and New York's other utilities to support Puerto Rico and reconstruct the electrical grid to provide safe electrical power. This is



a prime example of our employees' commitment to always being there to help others in need, just as Long Islanders were supported after Superstorm Sandy."<sup>1</sup>



*Figure 1.4.20 PSEG Long Island Crews Work in the Neighborhoods Affected by Hurricane Maria*



*Figure 1.4.21 PSEG Long Island Crews Received a Warm Welcome from Many People in Puerto Rico as they Helped Rebuild the Island's Hurricane-Ravaged Infrastructure*

Below is an after-action video of PSEG Long Island's participation in PREPA's Hurricane Maria's response efforts:

<sup>1</sup> PSEG Long Island Supports Recovery Efforts in Puerto Rico  
<https://www.prnewswire.com/news-releases/pseg-long-island-supports-recovery-efforts-in-puerto-rico-300563620.html>



[PSEG Long Island Supports Puerto Rico Hurricane Maria Restoration](#)

#### 1.4.1.k Development of Integrated Resource Plan

*PSEG will use its experience with integrated resource planning to ensure PREPA provides safe, reliable and cost-effective electricity service to its customers, while meeting public policy and environmental objectives*

The following subsections briefly describe what PSEG's views on certain of the more fundamental components of the Integrated Resource Planning (IRP).

##### Enhance Reliability and Resiliency

Reliability refers to the ability of the electric system to supply the power and energy requirements of customers at all times (adequacy) and the ability to withstand sudden or prolonged disturbances (resiliency). Reliability planning is a critical issue because power supply and demand must be instantaneously balanced, moment by moment, across the entire power system in order for it to be stable and secure. If there is any material discrepancy for even momentary periods of time, parts of the system may have to be curtailed or the system can collapse, as has happened on a few rare but dramatic occasions.

##### Optimize Economic Decisions

It is imperative that PSEG provide safe and reliable electric service to its customers and comply with related policy and environmental requirements while having minimal, or at least manageable, impact on customer rates and bills. Accordingly, cost-effectiveness and impact on customer rates and bills are a central consideration when evaluating alternative resource options.

##### Adhere to or Exceed Environmental Mandates

PSEG will promote a healthy environment through compliance with applicable environmental laws and regulations and demonstrated leadership in energy efficiency and renewable energy development. This strategy can be supported by the following environmental objectives:

- **Encourage Efficiency:** Supporting and providing incentives to encourage greater energy efficiency by customers, to reduce their electricity use and bills, create local jobs in the clean energy industry, and improve the environment
- **Encourage Clean Customer Technology:** Supporting and providing incentives to encourage greater customer investment in renewable energy technologies to diversify energy resources, create local jobs in the clean energy industry, and improve the environment
- **Utility Scale Renewables:** Supporting the development of utility-scale renewable energy projects

- **Balance the Impact on Customer Costs:** Balancing environmental considerations with the impact of investments on customers' electricity bills

### Scope

An IRP typically examines the long-term resource needs of customers and the demand-side management, generation and transmission resource options available for meeting those needs under a range of scenarios. An IRP usually covers a 20-year study period, with the first 10 years considered to be the actionable period. Resource needs identified beyond the 10-year actionable period are identified but any action regarding those resource needs would be deferred and re-analyzed in future IRP studies, normally repeated on a 5-year cycle but with interim updates as needed.

### The IRP Process

The IRP development process reflects a disciplined, structured, and collaborative approach to examining resource needs and alternative resource options during the planning period. The actionable period is intended to highlight the period of time during which, if a need is identified, that active planning to meet that need would begin.

The approach to developing the IRP, in general, includes the following elements:

- A comparison of load forecasts against available capacity resources to identify system resource needs
- Identification of resource solutions, i.e., conventional technologies, renewables, repowerings, etc. This determination is made by assessing the range of available technology solutions to meet identified resource needs
- Development of key assumptions
- Use of sophisticated reliability and production cost models
- Identification of case sets
- Conducting sensitivity analyses around case sets

Figure 1.4.22 graphically depicts a high-level view of the multi-step IRP development process. Naturally, each step consists of numerous sub-steps, or task and activities, but the graphic connotes the comprehensive and inclusive nature of the process, which starts with a capacity needs assessment and ends with public outreach and feedback.



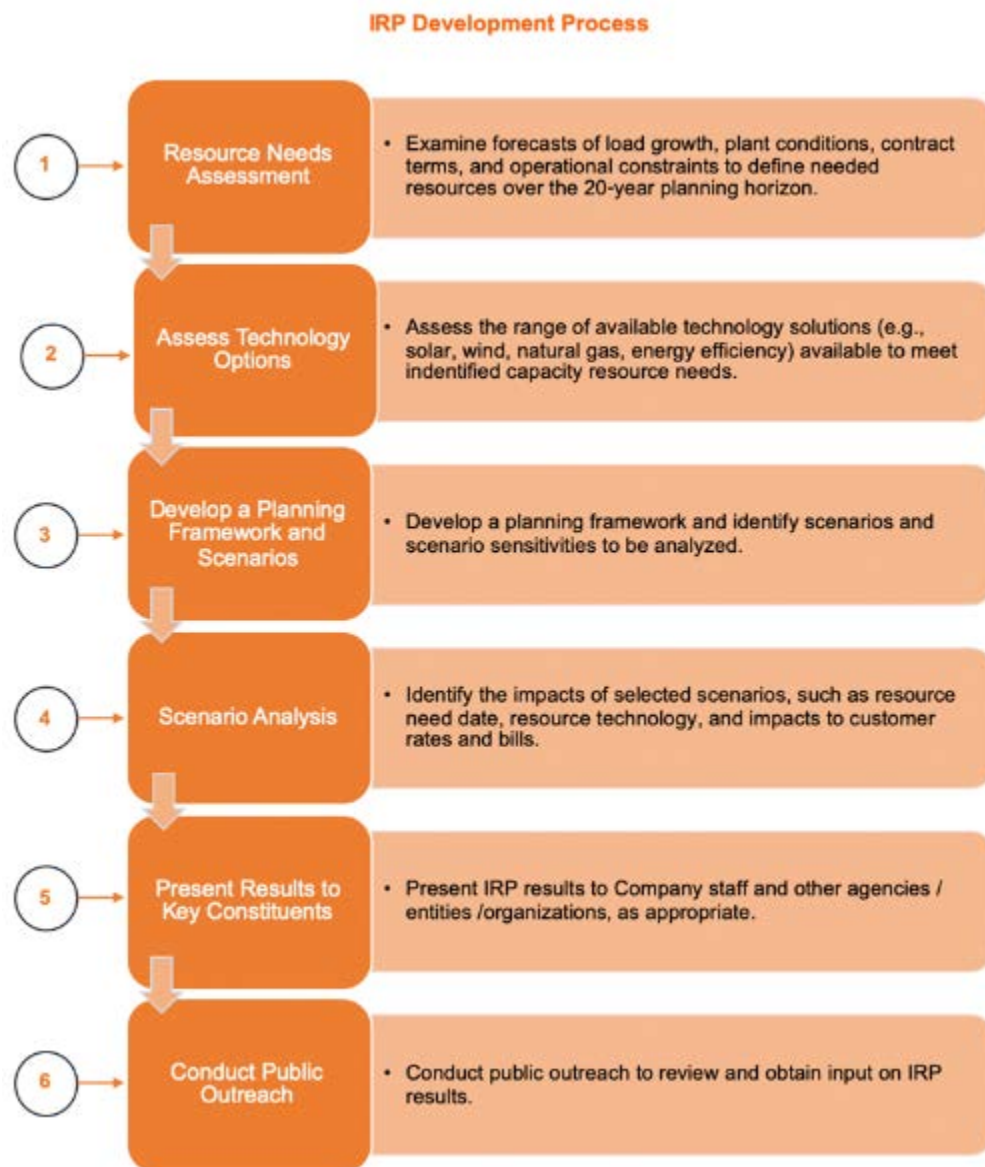


Figure 1.4.22 Multi-step IRP Development Process

Each of the steps in IRP development is briefly described in following sections.

## Resource Needs Assessment

The initial step of IRP development involves the evaluation of the peak load forecast against existing system resources to identify the quantity of resources, e.g., demand-side management, generation and/or transmission, needed during the planning period, as well as the timing of when those resources are needed. The identification of resource needs is based on the application of the planning criteria and incorporates a number of key assumptions, including those related to fuel prices, transmission topology, and asset condition and performance characteristics. In order to determine anticipated resource needs, sophisticated simulation software is used. Examples of such software include:

- **General Electric's Multi-Area Reliability Simulation (MARS):** The MARS program enables the user to quickly and accurately assess the reliability of a generation system comprised of any number of interconnected areas
- **General Electric's, Multi-Area Production Simulation (MAPS):** The MAPS program integrates highly detailed representations of system's load, generation, and transmission into a single simulation
- **Financial Model:** The logic should conform to Company's financial objectives

Typically, a key element of the resource needs assessment is a condition assessment of the existing generating and transmission assets.

## Assess Technology Options

IRP usually considers a range of technology solutions and resource options. This crucial step in IRP development identifies the most technologically appropriate and cost-effective resource to fill the need given the large array of options available. The assessment evaluates various conventional, renewable and distributed generating technologies based on a comparison of technical features, cost, performance, and emissions characteristics. The technology assessment should also include information on transmission and energy efficiency options.

## Develop a Planning Framework and Scenarios

This step of the process involves the development of a planning framework and scenario structure that allows for evaluating the impact of a variety of potential future states, as defined by changes in key assumptions.

## Scenario Analysis

Core scenarios are evaluated to measure the relative changes in capacity need date, customer rates, customer bills, emissions, etc.

## Presenting Results

IRP development is a technical, highly analytical undertaking but its results, and the process employed to obtain those results, should be understood by policy makers, relevant agencies and the public. Presentation, interim and final IRP results, and the ability to challenge and discuss underlying assumptions, are key elements of a successful IRP.

## Public Outreach

Ultimately, all citizens are subject to the ramifications associated with IRP development. Although ratepayers shoulder the cost of electricity production and delivery, everyone is affected by major decisions related to the environment, reliability and resiliency. As such, communication, outreach and

public input is key to ensuring that the results of the IRP and its implementation are understood and supported by a majority of the public.

#### 1.4.1.1 Asset Management & Maintenance

*PSEG will provide effective asset management services to ensure high reliability and customer satisfaction and leverage industry best practices*

##### Overall Plan for Managing Assets

PSEG will use its experience in managing assets, consistent with industry best practices, to develop its approach for asset management and maintenance, including:

##### Asset Management Organization

Create an Asset Management (AM) organization that ensures the prudent asset maintenance and replacement decisions are made based on data, trends and detailed analysis, and in accordance with AM established equipment and design standards. The Asset Management team will be responsible for:

- Inside plant engineering and design standards including equipment specification standards
- Overall system planning
- Overall system protection philosophy
- Capital facilities replacement strategy
- Budget planning and controls
- Inside and outside plant technical support and standards
- Maintenance planning / scheduling / tracking
- O&M cost optimization
- Advanced technology and deployment

##### Field Operations

Facilitating field operations structure will be the accountability of an Area Manager for a specific area in Puerto Rico. The responsibilities will include:

- Distribution operations (including centralized distribution dispatching)
- Substation operations (both transmission and distribution)
- Substation maintenance, as directed by AM
- Local distribution engineering and construction
- Local customer interface

## Construction

PSEG will create a construction team that will be responsible for engineering and construction of new transmission and distribution assets throughout the Island in accordance with Asset Management mandated system requirements and design standards. The construction organization will be responsible for:

- Facilitating a centralized Engineering and Construction group for Inside Plant Facilities
- Facilitating a centralized Engineering and Construction group for Outside Plant Facilities
- Determining the regulatory environment (both commonwealth and federal), the compatibility of systems, work rules, voltages, construction designs, etc. that may allow synergistic ties between PREPA and PSEG Puerto Rico for emergency operations and mutual support

## Demonstrated Experience Managing Significant Assets

As an electric infrastructure company located in one of the most congested areas of the United States, PSE&G has a record of consistently delivering challenging transmission projects on schedule and on budget. The majority of PSE&G's operations are in New Jersey – a state with some of the most stringent environmental and permitting regulations in the country. PSE&G's experience with overhead, underground, and station work in New Jersey will be made available to PSEG to assist in construction of transmission solutions in environmentally challenging and densely populated portions of Puerto Rico. PSEG Puerto Rico will implement an organizational and operational structure that can effectively manage PREPA's electric utility system, both underground and above ground.

## Types of Assets and Services Managed

PSEG's utility services providers combined operate over 2,100 miles of transmission lines, 20,000 miles of distribution lines, and other assets and services (as shown in Appendix 1.4.E).

## Plans / Procedures for the Introduction of New Technologies

PSEG plans to develop and introduce new technologies to meet business and operational requirements. For example, PSE&G has recently implemented several projects that are consistent with FERC formula rates for advanced transmission technologies and the BPU standards for efficient cost recovery for distribution technologies. These projects were conceived and engineered in the PSE&G Asset Management organization and managed and constructed by the PSE&G Project Management and Construction organization. Examples of current technology projects are described in Table 1.4.6. In addition, the PSEG Energy Cloud Smart Operations Group has identified and introduced new technologies that improve system reliability, safety and lowers cost. Our experience can be used to benefit PREPA and its customers.

Current Technology Projects	
<i>Distribution</i>	Solar 4 All® program provides for the development of 158 Megawatt (MW) of utility owned grid-connected solar systems (roof, ground, brownfield / landfill, and pole-attached), which includes 3 MW of solar and storage resiliency pilot projects
<i>Distribution</i>	Fiber-Optic Network Monitoring System (NMS) provides real-time status and condition of underground assets, loading on all transformers, operating data such as voltage and currents, operational control of network protectors and cable fault locations
<i>Transmission</i>	Evaluating an integrated, high-speed fiber optic communications network or backbone along its transmission system and has installed fiber on three sub-transmission circuits

Current Technology Projects	
<i>Transmission / Distribution</i>	Implementation of transformative technologies: <ul style="list-style-type: none"> <li>• Machine Learning: pre-storm assessment, damage assessment, and storm restoration</li> <li>• Drones: deploy Unmanned Aircraft System (UAS) / vehicle based image drones to capture local damage assessment in hard to get areas</li> <li>• Robotic Process Automation: improve work layout and clerical productivity by automating repetitive design functions</li> <li>• Data analytics: providing divisions with productivity dashboard reports.</li> <li>• Augmented Reality: visualized assets and provide data to field workers</li> </ul>
<i>Transmission / Distribution</i>	Installation of SCADA equipment at key substations and deployment of a centralized distribution SCADA master station which enables remote control and visibility of distribution circuits and rapid diagnosis of circuit conditions during severe weather events
<i>Distribution</i>	Provided a limited program where workplace charging equipment was provided to organizations free of charge to generate interest in electric vehicles and to gather data on equipment operation and usage

Table 1.4.6 Current Technology Projects

## Power Quality

The increased use of sensitive consumer and industrial process equipment and systems has raised an even greater need for electric utilities to be actively involved in assuring that the highest level of power quality is provided to their customers. PSE&G has long regarded power quality as an integral responsibility. For decades before the recent advent of microprocessor-based technologies, PSE&G maintained strong engineering and customer service performance related to the steady state level of electric power being delivered. With the advent of the microprocessor era and the further impact posed by technological and economic factors in the commercial and industrial sectors, power quality has taken on an even greater emphasis especially in terms of extremely brief and barely detectable power fluctuations and disturbances.

PSE&G's role in assuring customers achieve the highest level of power quality is straightforward:

- To maintain reasonable and adequate levels of power quality as delivered by the utility's distribution system considering accepted utility industry practices, applicable national and international standards, and sound business economics
- To assist end use utility customers in achieving optimal levels of power quality suited to their business and personal needs
- To raise the level of power quality awareness among utility staff, end-use customers, vendors and manufacturers, consultants and contractors to ensure that power quality can be optimized from source to end utilization

PSE&G's Power Quality Program also addresses radio / television / cable TV interference concerns, EMF inquiries, solar photovoltaic system integration and performance issues, and other miscellaneous electric power phenomena concerns raised by customers.

## Distribution System Design

PSEG will look to the knowledge of system design from PSE&G. PSE&G has operated and maintained automated sectionalizing devices on its distribution system since the 1960's. Currently, PSE&G has over 2,700 pole-mounted sectionalizing devices in service and plans to install over 1,800 in the next three years as part of its Energy Strong storm hardening program. These devices limit the customers impacted

by events on the system and allow for both automated and remote operation to restore customers. PSEG Long Island also has 2,200 pole-mounted sectionalizing devices including over 1,000 that have been added as part of a successful FEMA funded storm hardening program.

### Cost Optimization Programs

PSEG will monitor its cost structure and actively engaged in cost optimization programs similar to PSE&G. PSE&G has demonstrated capability in achieving operational excellence at a low cost through a robust Asset Management organization that effectively manages operational priorities and financial resources. PSE&G consistently achieves better than top quartile performance in distribution operations and maintenance cost benchmarks.

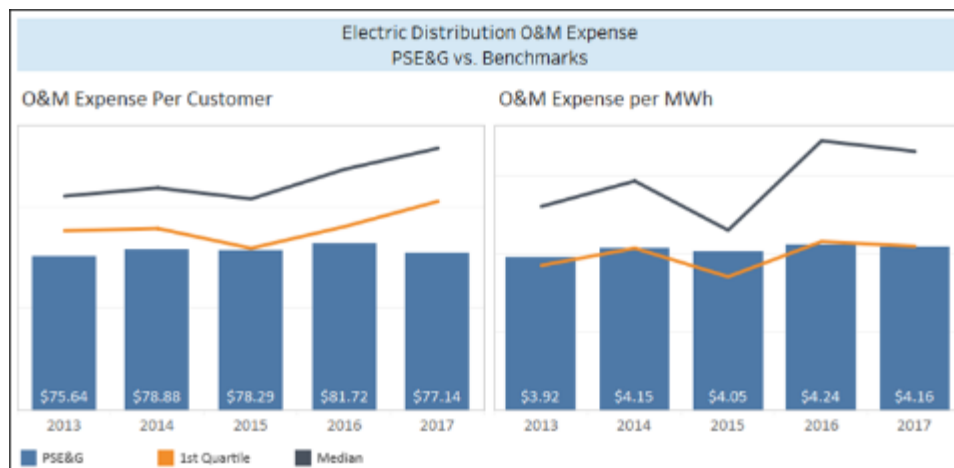


Figure 1.4.23 PSE&G Consistently Achieves Better than Top Quartile Performance in Distribution Operations and Maintenance Cost Benchmarks

Some examples of recent optimization programs include:

- **Inside Plant CMMS:** A knowledge-based system that monitors all major inside plant equipment: relays, circuit breakers circuit switchers, disconnects, transformers and load tap changers. CMMS utilizes all equipment monitoring and testing programs and monitors preventative maintenance and corrective maintenance costs. The system issues alerts when equipment operational parameters fall outside of acceptable windows or are in an abrupt rate of change. CMMS is also used to prioritize equipment scheduled for replacement
- **Outside Plant CMMS:** Based on the success of the Inside Plant CMMS, we have developed a system for the distribution outside plant that targets minimized SAIFI at optimal cost by targeting circuit reinforcement and identifying worst performing circuits annually
- **Organizational Efficiency Initiative.** A comprehensive review of the entire PSE&G organization began last year to increase overall efficiency, maintain customer performance indices, while optimizing O&M costs. All accepted recommendations are expected to be implemented by 2023. PSE&G conducts regular organizational efficiency reviews, previous programs were initiated in 1999, 2003, 2006, 2011 and 2018
- **Work Management System (WMS):** The system utilizes both SAP R/3 and CGI's PragmaCAD to provide an integrated work management solution for electric outside plant construction and engineering. This system provides fully loaded unit cost information through the real-time



collection of equipment (poles, wire, transformers, etc.) and cost data, including breakdowns of labor, material and outside services data to identify opportunities for improvement

## Maintenance Management

*PSEG's team is highly confident that its maintenance philosophy and focus on performance will be effectively applied to the maintenance of PREPA's electric infrastructure*

## Maintenance Philosophy

PSEG will use best practices to deliver a highly effective maintenance management approach. PSE&G's nationally recognized reliability performance is closely coupled with a highly effective, on-time, flexible, and cost-optimized Inside Plant (IP), as described in Table 1.4.7, and Outside Plant (OP), as described in Table 1.4.8, maintenance management system. Maintenance is tracked, prioritized and scheduled based on its classification. Preventative maintenance for IP and certain OP equipment is prioritized based on condition assessment or the risk that a particular component is likely to fail based on historical norms for similar components; last maintenance of the component; service duty; system criticality, or the potential number of customers affected and potential outage duration. The remaining OP preventative maintenance is prioritized and scheduled based on pre-determined maintenance schedules. Corrective maintenance is performed as needed and is a basis for the condition assessment of the device.

Inside Plant (within substations) Inspection & Maintenance Distribution Programs	
Program	Description
<i>Critical 26-kV Oil Circuit Breaker – Relay Maintenance Program</i>	Relays are checked on a four-year cycle for calibration to assure the relays are set correctly. Any relays that are out of calibration or have improper timing are repaired and replaced. The functionality of the relays are tested to determine that the circuitry between the relay and the breakers is intact and the breakers can be tripped by the relays. Any problems detected with the circuitry are repaired before the equipment is returned to service
<i>Critical 26-kV Circuit Breaker – Breaker Maintenance Program</i>	The six-year maintenance cycle consists of complete breaker and compartment maintenance that includes inspection, cleaning, dielectric oil test, megger and breaker timing. Circuit breakers that fail an inspection and/or diagnostic test are replaced if major repairs are required
<i>Infrared Inspections of Switching Stations and Substations</i>	On an annual basis, all infrared inspections are performed at all switching stations and substations. Results are evaluated, and if necessary, corrective actions are developed
<i>Reliability Initiative Program</i>	Examples of initiatives include animal proofing devices to reduce failures caused by animal contact and monitoring developing technologies to be utilized to support the maintenance process
Inside Plant Inspection & Maintenance Transmission Programs	
Program	Description
<i>Circuit Breaker Maintenance</i>	Visual inspection, cleaning, dielectric oil test, moisture checks, heater checks, megger testing, contact resistance and break timing checks
<i>Circuit Switcher Maintenance</i>	Visual inspection, cleaning, alignment adjustment, lubrication, megger testing, contact resistance testing, and timing check
<i>Disconnect Switch Maintenance</i>	Visual inspection, cleaning, alignment adjustment, lubrication and contact resistance testing
<i>Capacitor Bank Maintenance</i>	Visual inspection, cleaning, fuse check
<i>Instrument Transformers Maintenance</i>	Visual inspection, cleaning, double testing and contact resistance testing (CTs only)



<i>Power Transformers</i>	Visual inspection, cleaning, oil testing, doble testing and megger testing
<i>Load Tap Changers</i>	Visual inspection, cleaning, oil testing
<i>General Maintenance</i>	Annual infrared inspections performed at all switching stations and substations; weekly visual switching and substation inspections; and annual battery and generator maintenance
<b>Inside Plant Inspection &amp; Maintenance Overhead Transmission Programs</b>	
<b>Program</b>	<b>Description</b>
<i>Transmission Line General Inspection</i>	General inspection of the structure, hardware, insulators, conductors, foundations and Right of Way (ROW) of all transmission lines. <ul style="list-style-type: none"> <li>• Aerial inspections (20 percent annually)</li> <li>• ROW inspections (20 percent annually)</li> <li>• System patrols (twice a year)</li> <li>• Infrared inspections (once a year)</li> </ul>
<i>Infrared Transmission Hot Spot Inspection</i>	During the summer, 100 percent of the Overhead (OH) system is inspected aerially
<i>Vegetation Management</i>	Inspection and trimming of vegetation along transmission lines in accordance with North American Electric Reliability Corporation (NERC) standard FAC-003-4

Table 1.4.7 Inside Plant Programs

<b>Outside Plant (circuits along the public roadways) Inspection &amp; Maintenance Distribution Programs</b>	
<b>Program</b>	<b>Description</b>
<i>Vegetation Management</i>	A four-year cycle consisting of inspecting and trimming trees along distribution lines based on established tree trimming clearances that give optimum time to return and re-trim prior to branches growing back into wires. Program utilizes industry standards combined with various tools and techniques (Light Detecting and Ranging (LIDAR), Drones, etc.), some of which include tree removal, growth regulators and tree replacement. Our corporate program will be adapted to the conditions in Puerto Rico
<i>Underground Transformer Load Check</i>	Based on a four-year schedule, the program consists of a load check on all radial underground transformers
<i>Network Protector – Visual Inspection and Manual Operation Relay Test Program</i>	All network protectors on full network systems are inspected annually. The visual inspection and manual operation test includes manually and automatically operating the protector; pressure testing the network protector case; recording three phase readings and counter readings; and verifying that all limiters in manholes are intact and carrying out load. All network protectors at spot network locations are inspected annually to verify there has been at least one operation since the last annual test. After the initial installation, network protector electromechanical relays mechanically and electrically tested every three years
<i>Automatic Transfer Switches</i>	Automatic transfer switches are visually inspected annually including a preventative maintenance check and an operational test of the control circuitry
<i>Overhead Line Inspections</i>	On a four-year cycle, distribution lines and sub-transmission lines are inspected utilizing infrared and visual inspection techniques. Circuits are inspected after an unexplained trip-out or lockout
<i>Recloser – Visual Inspection and Control Operation Test Control Maintenance</i>	This program consists of annual visual inspection, control operation test and control upgrades on feeder and tie reclosers. Old electromechanical controls are being upgraded to new microprocessor controls. Oil filled reclosers are visually inspected and receive annual control operation tests and control maintenance

Outside Plant Inspection & Maintenance Underground Transmission Programs	
Program	Description
<i>Pipe Inspection - Maintenance</i>	Corrosion control and civil inspection, testing and maintenance activities: <ul style="list-style-type: none"> <li>• Rectifiers (periodically)</li> <li>• Pipe-to-soil potential measurements entire circuit (annually)</li> <li>• Isolator surge protectors (annually)</li> <li>• Exposed pipe inspection (every three years)</li> </ul>
<i>Spare and Pre-Installed Pipe – Maintenance</i>	Spare pipes are tested annually as part of the corrosion survey of the entire circuit. Spare line pipe installations are pressure checked annually
<i>Termination Inspection, Testing and Maintenance</i>	Termination equipment inspection, testing and maintenance activities <ul style="list-style-type: none"> <li>• Termination visual inspection (weekly)</li> <li>• Termination test “capacitance graded potheads” (every three years)</li> <li>• Termination dielectric fluid sampling and testing (every three years)</li> <li>• Termination maintenance painting (as needed)</li> </ul>

Table 1.4.8 Outside Plant Programs

### Maintenance Staffing Philosophy

Maintenance personnel are scheduled on a five day, 40 hour basis. Staffing should be at a level to perform base load maintenance. Supplemental manpower during scheduled and unscheduled outages shall be a combination of overtime and contracted services.

### Performance and Condition Monitoring and Assessment

Equipment performance is monitored by a combination of SCADA, diagnostic testing (e.g. Dissolve Gas Analysis (DGA) oil analysis and Doble electrical testing) inspections and surveys (e.g. infrared). Also, poorer performing facilities’ outage data are analyzed.

### Quality Assurance and Quality Control Programs

Performance results are measured through a balanced scorecard where performance can be compared to industry standards or benchmarked. Areas showing unacceptable results can be maintained differently through altered intervals or through improved technology.

### Computerized Maintenance Management and Work Tracking

The Computerized Maintenance Management System (CMMS) compiles information such as operational data, inspection data, test results (i.e. Doble tests and oil samples), corrective maintenance costs, and equipment age. Through the use of the CMMS system and SAP, the identity of equipment with excessive preventative and corrective maintenance costs is possible. This can be the basis for prioritized equipment replacement or reconditioning. PSE&G utilizes a proactive condition assessment and maintenance strategy for its electric infrastructure. For example; PSE&G’s Transformer Life Cycle Replacement Program, which was formulated in 2008 for transmission class transformers, is designed to maintain system reliability through appropriate replacement of equipment as directed by condition assessment, maintenance and performance history, age and criticality. The same Life Cycle Replacement Program applies to distribution class transformers. Selection of replacement candidates is based on engineering review of transformer conditions as part of PSE&G’s Condition-Based Maintenance Program with consideration given to:

- CMMS condition assessment scores
- Physical condition of the transformer

- Maximum and average age in each peer group
- Impact on customers and system in the event of failure
- Safety of personnel by monthly reviews of the health of the transformers that puts focus on removing potentially unsafe equipment from service (failure avoidance)

### Inventory Control and Restocking

Substation spare parts are stored and managed at a central location. Used parts are re-ordered as needed. OP material is ordered, managed and stored at the regional locations. Larger items with lower turnover (e.g. certain distribution transformers and underground cable) are managed at a centralized location but stored at regional locations.

### Outage Planning and Management

Each year orders are created for the required IP preventative maintenance work. Necessary outages are planned quarterly and requested as far in advance as required (e.g. transmission outages are requested 60-days in advance). OP outages (supply lines and circuits set-up for work) are scheduled several days in advance.

#### 1.4.1.m Safety Management

*PSEG is committed to protecting the environment, and the health and safety*

#### Methods for Managing Environment Health and Safety

PSEG will conduct its business operations with a commitment to protecting the environment, and the health and safety of employees, contractors, and customers, as well as the general public. PSEG will integrate this commitment into its business planning, engineering designs, and operations by establishing and maintaining management systems to achieve top performance results.

PSEG will promote a people first culture where the health, safety, and the well-being of employees and contractors doing work are its top priority. This culture will provide every employee and contractor the absolute right and obligation to question, stop, and correct any unsafe act or condition. Union-management health and safety councils will be the backbone of the PSEG Health and Safety Program. Employee-led councils at the local, business and company levels will dedicate their time, effort and expertise to achieving a safety culture built on trust, care, knowledge, and communication. Employees will be expected to work collaboratively to identify and increasingly achieve best-practice safety performance.

PSE&G and PSEG Long Island have each successfully addressed and resolved safety issues. Success is measured by key OSHA safety metrics. Figure 1.4.24 shows PSE&G's sustained safety performance, as well as PSEG Long Island's safety improvement over the last several years since assuming operations of LIPA's electric utility on January 1, 2014.

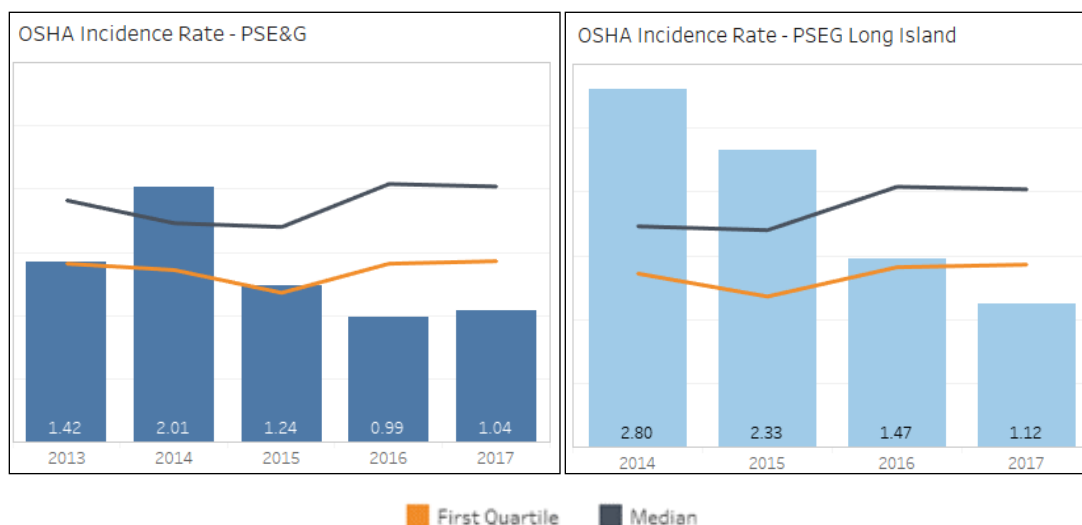


Figure 1.4.24 PSE&G's and PSEG Long Island's OSHA Incidence Rates

PSEG will adhere to, and will strive to exceed, the standards for OSHA compliance. PSEG will seek to continuously achieve best practice safety performance by understanding and integrating state-of-the-art processes and tools. We will utilize both the knowledge gained from the Company's providers of utility services and world-class organizations. PSE&G annually co-sponsors the Utility Peer Panel Best Practice Symposium at its Newark Headquarters to gain cutting-edge learnings for its safety and operational systems. The 2019 symposium included academics from Boston University and West Point Military Academy and SMEs from the Federal Bureau of Investigation, and Exxon Mobil. In addition, PSE&G actively participates in research and development (R&D) organizations such as the Construction Industry Institute and Network of Employee for Traffic Safety. The symposium and R&D organizations give PSE&G access to thinking both inside and outside the industry which help to achieve a first class safety program aimed to achieve top decile performance in all safety areas.



Figure 1.4.25 Hazard Recognition: Energy Release Sources

Supported by a robust training program, all projects and operations are governed by a Safety Standard and Procedures Manual (See Appendix 1.4.F for the Table of Contents of PSE&G's Safety Manual) and a safety program that requires project-specific health and safety plans, job hazard analysis, and pre-job briefings (a.k.a. tailboards). Sustain Hazard Recognition process with job-specific hazard analyses (energy release sources), create a consistent methodology to identify hazards, thereby eliminating or controlling them. PSEG will use this knowledge and will establish seasonal plans to ensure equipment, material and accountability to address weather conditions. When accidents do occur, we will use a comprehensive root cause analysis process to produce learnings that are shared across our Companies through the dissemination of pertinent safety alerts and communications (see Appendix 1.4.G).

#### 1.4.1.n Administration of System Contracts

*PSEG will administer the Systems Contracts following its experience in managing billions of dollars of T&D Infrastructure*

##### Administration of System Contracts

Our Companies have administered contracts for billions of dollars of system improvements utilizing the procurement process below (Figure 1.4.26) . Over this long and deep history our Companies have developed proven methods of contractor performance monitoring and enforcement. In that regard, PSEG will develop policies and procedures for administration and enforcement of rights under the System Contracts it will be responsible to administer. PSEG Puerto Rico will establish a team of employees with experience in contract administration and enforcement to perform this work. This function is of particular importance in the proper administration of Federally Funded projects to maximize recovery of funds.

The PSEG Contract administration manual will cover, among other things, the following important tasks:

- Monitoring contractor compliance
- Adherence to the terms of the contract
- Avoidance waivers or relinquishing contract rights
- Provision of timely contract notices
- Maintaining proper records (including FEMA requirements)
- Avoid field directing and controlling contractor in a way that conflicts with or compromises PREPA's rights under the contract
- Avoidance of improper communication with contractors
- Prompt responses to contractor provided letters, notices, RFIs and change order requests
- Monitoring provision of technical information to contractor
- Monitoring communications with or about the contractor
- Utilization of audit rights
- Monitoring of contract SLAs

##### Procurement and Sourcing Strategy

PSEG will develop procurement and sourcing strategies to facilitate the effective and efficient procurement of materials or services consistent with volume, dollar value, and risk of the transaction. These strategies are consistent with three key business objectives:

- Provide quality materials and services at lowest total cost that meets the overall business requirements
- Maintain the appropriate supplier base as required for continuity of supply and to meet business objectives

- Encourage minority- or women-owned business enterprises (MWBs) and service-disabled veteran-owned businesses (SDVOBs) supplier development

The procurement strategies require that clients involve the Procurement Department in purchases greater than \$20,000. Such transactions may require market analyses, sourcing, supplier credit assessment, negotiation, and provide the highest potential for leverage and cost savings. Low dollar value, high-volume materials or services, are best requisitioned and/or purchased through pre-established methods and agreements such as outline agreements (OAs), master service agreements (MSAs), electronic procurement, automatically generated purchase orders (POs), and procurement cards (P-Cards). Our procurement requirements are intended to minimize cycle time, ensure appropriate governance and provide direct client involvement.

The PSEG procurement process will begin with the identification of the need for materials or services and ends with the issuance of a PO as illustrated by the following seven-step process (further detail included in Appendix 1.5.H - Procurement Instruction 242-1-1).



Figure 1.4.26 PSEG Puerto Rico's Procurement Process Steps, Pre-award and Post-award

**Step 1: Need and Requirement Definition:** Business unit / requestor identifies the requirements for materials and services and provides initial specifications.

**Step 2: Sourcing Strategy Development:** Procurement, in consultation with the business unit / requestor, identifies available suppliers, bidding strategy and compensation strategy (i.e. lump sum, time and material [T&M], unit price, etc.), and analyzes the market and the suppliers serving that market.

**Step 3: Scope of Work (SOW) and RFX Development:**

- **SOW Development:** The business unit / requestor develops the specifications for materials and services, which identifies scope of supply or services, division of responsibilities, location of work or delivery of materials, schedule of performance, and acceptance or performance criteria
- **RFX Development and Execution:** Procurement assembles the form of contract, which includes commercial terms and technical specifications and issues either a request for proposal (RFP) or request for quotation (RFQ) to the selected bidders

**Step 4: Supplier Evaluation / Selection:** Procurement, in consultation with the business unit / requestor, evaluates the bids in accordance with a pre-determined evaluation criterion and selects the appropriate bidder(s) to negotiate and finalize a contract(s).

**Step 5: Negotiations / Contract Development:** Procurement and the business unit / requestor will complete negotiations with selected supplier(s) and prepares a recommendation to award (RTA). Following the appropriate level of corporate functional area expert review, the RTA is approved by the business unit according to its delegation of authority level and the contract is executed. Following full contract



execution, the contract is officially handed off to the business unit / requestor who will assume responsibilities of the contract owner.

**Step 6: Purchase Requisition (PR) Review and Approval:** The business unit / requestor will prepare and approve a purchase requisition in the PSEG Puerto Rico purchasing system.

**Step 7: PO Review and Approval:** Procurement will prepare and approve a PO in the PSEG purchasing system and will forward to the supplier for fulfillment.

#### 1.4.1.o Environmental Management

*PSEG is committed to environmental stewardship, sustainability and awareness*

##### Environmental Stewardship and Reporting Process

PSEG Puerto Rico will look to the knowledge and experiences of the Company's providers of utility services. PSE&G has a mature Environmental Projects and Services organization which oversees all county, state and federal siting and permitting activities. The organization manages any environmental compliance and remediation issues for projects and operations. In addition, environmental targets have been established based upon achieving top quartile performance nationally.



*Figure 1.4.27 Wildlife Crossing Installed Along a Construction Access Road*

The Environmental Projects and Services organization balances the responsibility we have to upgrade and maintain its assets with the obligation to ensure no harm is done to plants, animals and insects living in the work environment. PSE&G employs various approaches that help preserve wildlife habitats, including threatened and endangered species, while still safeguarding its facilities and preserving aesthetics.

PSE&G has experts in environmental science and land use on its team to assess the potential impacts work will have on switching station expansion, transmission line construction, and vegetation management, among others. In-house experts work closely with environmental agencies and advocacy organizations that share PSE&G's interest in preserving and protecting the environment to ensure work plans limit environmental impacts.

For large projects, planning starts years in advance to plan solutions to protect wildlife and sensitive area



*Figure 1.4.28 A Great Spangled Fritillary Lands on a PSE&G Biologist's Safety Vest During a Pollinator Survey on a Transmission Right of Way*

protection during construction. PSEG Puerto Rico will take great care to be a good steward of the environment in carrying out the work of transforming PREPA's electric system. This will consider activities such as building safe wildlife crossings near construction sites, using temporary matting for work areas in wetlands, having certified wildlife monitors onsite to protect wildlife from harm during work activities, planning work around sensitive breeding or nesting seasons, or using specialized helicopters instead of trucks to transport crews and equipment in wetlands and parklands. PSEG Puerto Rico will carefully plan restoration of project sites to return the work areas to a better ecological condition than when it started.

Our commitment to the environment will also be reflected in the work we perform every day. For maintenance of transmission right-of-ways, PSEG will develop vegetation management plans with



regulatory agencies when it knows sensitive habitats or locations of rare species are present. These plans will create a seasonal work plan that optimizes the timing of PSEG Puerto Rico's vegetation management activities so as to minimize impacts to wildlife. For example, instead of mowing most rights-of-way, PSEG Puerto Rico will practice integrated vegetation management to support 'early successional habitat' that is important for a variety of plants and wildlife. Early successional habitat is vital for pollinators as well as an excellent source of food and cover for many species of wildlife.



*Figure 1.4.29 Integrated Vegetation Management to Support Early Successional Habitat*

*This 2-Acre Stretch of Right of Way in Hamilton, New Jersey Consisted Only of Maintained Lawn. PSE&G Started the Conversion of this Land to a Pollinator Meadow in December 2018 (Left Photo). In April 2019, PSE&G Already Sees Growth (Right Photo). By July 2019, Native Grasses were Abundant and the Meadow Was Filled with Thousands of Pollinators*

To establish a consistent and comprehensive approach, PSEG Puerto Rico will provide annual environmental training to its vegetation management and transmission employees and contractors. This training will convey PSEG Puerto Rico's commitments to protect wildlife and obtain the knowledge on how to protect these species while conducting work.

The Company's longstanding partnerships with various conservation groups and regulatory agencies have allowed them to play greater roles in protecting and enhancing wildlife habitats while being able to maintain and upgrade assets. Our reputation with these entities and our commitment to environmental stewardship, sustainability and awareness will inure to the benefit of PREPA.

PSEG Puerto Rico is committed to transforming PREPA's infrastructure in an environmentally responsible manner to provide safe, reliable electric service for their customers. PSEG Puerto Rico understands that customers want and deserve safe and reliable electricity, and a healthy environment.

#### 1.4.1.p Power Markets

*PSEG Puerto Rico will provide PREPA exceptional leadership in managing and executing functions related to power markets including: integrated resource planning; development and evaluation of resource solicitations; contract negotiation and management; oversight of project development; management of monthly power supply charges; and establishment of standardized processes and protocols*

##### Power Supply Management Experience

Depending on the details PREPA's divestiture of its generation assets, PREPA will require power market services. If there is a sale of assets to a third party, or if PREPA retains its ownership and uses another service provider to dispatch its generation assets, then PSEG Puerto Rico will be prepared to provide a Power Markets function. PSEG Puerto Rico will bring experience of power supply management to PREPA as it has at PSEG Long Island. With the divestiture of PREPA's generating assets, this process will be essential. As PREPA's agent, PSEG Puerto Rico's Power Markets group will be responsible for the development of PREPA's purchased power forecasting and management; load forecasting; resource planning and solicitation; proposal evaluation; contract negotiation and administration; power projects development and oversight; and the development of integrated resource plans (IRPs).

More specifically, PSEG Puerto Rico's Power Market responsibilities will include:

- Long-term strategic power supply planning
  - Reliability planning criteria
  - Needs assessment
  - Development / assessment of alternative business model solutions
  - Integrated resource planning
- Resource procurement
  - Development and issuance of request for proposals (RFPs for capacity, energy, renewables, storage, etc.)
  - Evaluation of responses to RFPs including recommendations for selection
  - Contract negotiations
  - Monitoring of construction major milestones
- Contract management / oversight



Figure 1.4.30 News Coverage of PSEG Long Island's Power Supply Management

- Service area transmission interconnection agreements
- Performance monitoring / assessment
- Invoice review and processing
- Peak load and energy forecasts development
  - Development of short- (1-3 years) and long-term (20 years) peak load and energy forecasts
  - Conduct sales variance analysis
- Load research
  - Development of customer class load profiles used in such applications as rate design and customer class cost allocation studies
  - Production cost modeling
  - Development of monthly and annual power supply costs for applications such as: monthly power supply charge for customer billing; annual budget and 5 year projected operating results; RFP quantitative evaluations; rate case planning; and integrated resource planning
- Input into regulatory and policy development

Some examples of important studies undertaken by the PSEG Long Island's Power Market Group that demonstrates our Company's experience include:

**Reliability Criteria Analysis:** Examined alternative On-Island reliability planning criteria (benefits and costs) and recommended adoption of specific criteria. The recommended criteria satisfied NERC and New York Independent System Operator (NYISO) requirements and as a result of its adoption, mitigated the consequences of costly excess capacity.

**2017 IRP Development:** Studied alternatives to meet long-term energy requirements to satisfy New York State's policies including: The Clean Energy Standard (50 percent of all electricity used in New York by 2030 should be generated from renewable sources); 2,400 MW Offshore Wind (OSW) initiatives; and the repowering of two large fossil steam-fired generating facilities (Port Jefferson and Barrett). Such studies addressed annual revenue requirement determinations, customer rate impacts, fuel price and sales sensitivity analyses and emission impacts.

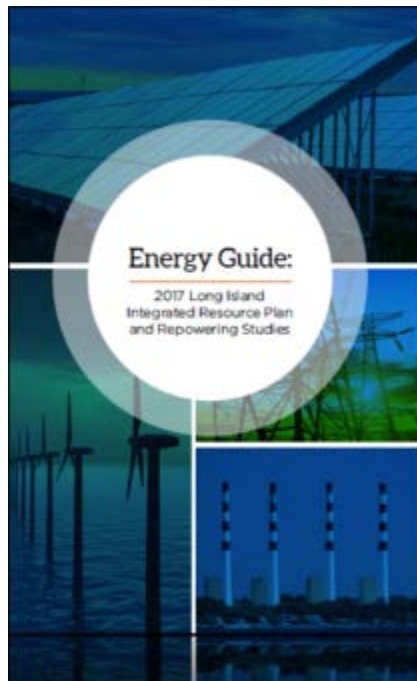


Figure 1.4.31 2017 Long Island Integrated Resource Plan and Repowering Studies

The 2017 Long Island Integrated Resource Plan and Repowering Studies are provided in Appendix 1.4.H.

**Renewables-related RFP:** Prepared and issued multiple RFPs inclusive of renewable energy and storage technologies. Along with the selection of the previously noted Deep Water Wind (DWW) offshore wind project, a solicitation resulted in the selection of two 5-MW, 8-hour battery storage projects, one of which is now in-service.

**Contract Management:** Upon expiration of certain power purchase agreements (PPA), PSEG Long Island successfully renegotiated multiple new contracts resulting in substantially lower prices and more flexible operating parameters, and in other cases, was able to allow the contracts to expire as renewables and storage were integrated into the system.

PSEG Puerto Rico's proposed Power Markets group will perform numerous critical activities for PREPA including the development, solicitation, evaluation, selection and management oversight of an expansive and diverse portfolio of power supply agreements.

#### 1.4.1.q Energy Efficiency and Renewable Sources of Energy

*PSEG Puerto Rico brings to PREPA significant, industry leadership experience with energy efficiency, renewable energy, smart grid, and sustainability programs*

The PSEG companies have extensive experience in designing and operating successful industry-leading energy efficiency and renewable energy programs that promote the expanded adoption of energy efficiency and renewable energy purchases and practices by utility customers. PSEG Puerto Rico will use this experience to provide PREPA with sustainable practices and environmental stewardship.

PSE&G is a recognized leader in environmental, social and governance reporting and transparency having been selected to the Dow Jones Sustainability Index (DJSI) for 12 consecutive years. The DJSI assessment is conducted each year by sustainability investment specialist RobecoSAM. It is based on a

comprehensive review of environmental performance, innovation management, corporate governance, risk management, stakeholder engagement, and talent attraction and retention. Our Company's sustainability reports can be found on [PSEG's Investor Page](#) (as well as in Appendix 1.4.A).

#### **Additional Recognition of PSEG's Providers of Utility Services**

In 2017, PSE&G was named Investor Owned Utility of the Year by the Smart Electric Power Alliance for its innovative approach to adding solar power to New Jersey's energy mix. PSE&G was recognized for building solar farms on over 200 acres of landfills and brownfields through its Solar 4 All® Program. In cooperation with Meridian Health Hackensack University Medical Center, PSE&G was also recognized by the Association of Energy Engineers with the Regional Energy Project of the Year Award for a five-year, \$13.1 million energy efficiency project completed through its Hospital Efficiency Program (all awards listed in Appendix 1.4.I). Additionally, PSEG Long Island was recognized by the U.S. Environmental Protection Agency (which administers the Energy Star program) as the 2019 Energy Star Partner of the Year for its work in helping to lower customers' energy usage and to reduce their carbon footprint.

PSE&G manages energy efficiency, renewables, demand response, battery storage and beneficial electrification programs as shown in Table 1.4.9 that support the ambitious New Jersey and New York public policy goals for clean energy.

PSE&G Programs	
Program	Description
<i>Hospital Efficiency</i>	Provides financial incentives for customized energy efficiency solutions for hospital and healthcare customers. Participants receive a free audit, and assistance in the engineering design of the project. PSE&G pays for all project costs up front, and the customer can pay back their portion of the project cost on their utility bill over a five-year period
<i>Multi-family Efficiency</i>	Provides financial incentives for customized energy efficiency solutions for multifamily customers. Participants receive a free audit, and assistance in the engineering design of the project. PSE&G pays for all project costs up front, and the customer can pay back their portion of the project cost on their utility bill over a five-year period
<i>Direct Install</i>	Provides a financial incentive of 70 percent of the energy efficiency project cost for municipal customers, non-profit customers, and small business customers located in Urban Enterprise Zones. Customers can repay the remaining 30 percent of the cost on their utility bills over a three-year period
<i>Smart Thermostat</i>	Provides a \$150 rebate to residential customers who purchase qualified smart thermostats
<i>Comfort Partners</i>	Provides energy efficient products and equipment upgrades to income eligible residential customers free of charge
<i>My Energy</i>	Provide reports that compare energy usage against neighbors of similar home size and educate customers about energy use of various home appliances and how to save
<i>Solar 4 All®</i>	Provides for the development of 158 MW of grid-connected solar systems (roof, ground, brownfield / landfill and pole-attached), which includes 3 MW of solar and storage resiliency pilot projects
<i>Solar Loan</i>	Provides term loans for 177.5 MW of customer-owned solar systems, which are repaid with Solar Renewable Energy Certificates or cash
<i>Electric Vehicles</i>	Provided a limited time program where workplace charging equipment was provided to organizations free of charge to generate interest in electric vehicles to gather data on equipment operation and usage

PSEG Long Island Programs	
Program	Description
<i>Commercial Efficiency Program</i>	Provides rebates to commercial customers for installation of Light Emitting Diode (LED) lighting, efficient Heating, Ventilation, and Air Conditioning (HVAC) equipment, refrigeration, controls and a variety of other equipment
<i>Efficient Products</i>	Provides rebates to residential customers for the installation of LED lighting, efficient HVAC equipment, variable speed pool pumps, washers, dryers, and a variety of other equipment
<i>Home Energy Audits</i>	Offers free home energy audits to any residential customer who requests one
<i>Home Performance with EnergyStar</i>	Provides incentives for follow-up work that is done after completion of the above audit. Work typically includes attic and wall insulation, heating system improvements, and/or the installation of heat pumps
<i>Home Comfort Program</i>	Provides rebates for high efficiency air conditioning and heat pumps
<i>Residential Energy Affordability Partnership</i>	Provides audits, energy education, and incentives for low income customers to help them reduce energy bills at no charge
<i>Home Energy Reports</i>	Provide reports that compare energy usage against neighbors of similar home size and educate customers about energy use of various home appliances and how to save
<i>Direct Load Control</i>	The Direct Load Control (DLC) program provides incentives for customers to enroll smart thermostats in the program
<i>Commercial System Relief / Distribution Load Relief Programs</i>	The Commercial System Relief Program (CSRP) and Distribution Load Relief Program (DLRP) both provide incentives to commercial customers to reduce peak demand on hot summer days using any means. Customers establish the amount of demand they plan to reduce and enroll in the program through approved aggregators



PSEG Long Island Programs	
<i>Electric Vehicles</i>	Incentives are provided for residential and commercial level 2 smart chargers (220 Voltage)
<i>Heat Pumps</i>	Incentives of up to \$2,000 per ton are available for the installation of ground source heat pumps, and up to \$1,000 per ton for air-source heat pumps

Table 1.4.9 Current PSE&G and PSEG Long Island Programs

The above programs are designed to reduce overall greenhouse gas emissions, while increasing off-peak sales of electricity, thus improving the overall system efficiency.

### PSEG's Utility Services Providers Capabilities and Results

PSEG Puerto Rico will draw upon the extensive energy efficiency and renewables knowledge and experience of the PSEG utility services providers. PSE&G has a staff of knowledgeable and highly-trained energy efficiency and renewable energy experts that are responsible for the development of long-range plans for energy efficiency, renewables, battery storage, demand response, and electric vehicle programs. This team is also responsible for the implementation of these services and delivers services through leading third-party service providers such as Uplight (formerly Tendril, Simple Energy, and Energy Savvy), Energy Hub, Lockheed Martin and AEG. This team is adept at preparing regulatory filings and oversees third party evaluation of program results. Their other activities include:

- Rebate Management
- Energy Efficiency Hotline
- Customer Surveys
- Marketing, Data Collection, Customer Support, etc.

PSE&G has a track record of providing energy efficiency services to underserved populations, including low income customers, small businesses in economically challenged areas, multifamily buildings, government facilities and non-profits. PSE&G's renewable energy programs have put underutilized brownfield space to productive use as solar farms.

### Active Program Initiatives

#### PSE&G Clean Energy Future Filing

To help meet New Jersey's clean energy goals and bolster the state's clean energy economy, PSE&G has taken significant steps in expanding its clean energy deployment through its recent Clean Energy Future Filing with the New Jersey Board of Public Utilities. This program provides a clear pathway to achieving the state's energy goal of 100 percent clean energy by 2050 and providing considerable benefits to customers and the community. The program will not only provide environmental improvements through the reduction of carbon dioxide, sulfur dioxide and nitrogen dioxide emissions, but also lower customer bills and direct and indirect job creation. The Clean Energy Future Program is a six-year \$3.6 billion investment covering four program areas:

- Energy efficiency program totaling \$2.5 billion of investment designed to achieve energy efficiency targets of 2% annual electric usage savings as required under New Jersey's Clean Energy Act
- Electric Vehicle (EV) infrastructure program totaling \$261 million of investment to install EV charging infrastructure for various customer types and applications

- Energy Storage (ES) program totaling \$109 million of investment to deploy battery storage technology and related infrastructure
- Energy Cloud (EC) program totaling \$721 million in investment that includes the installation of approximately two million electric smart meters and associated infrastructure

### Microgrids

PSE&G has been working with eight communities within its service territory to explore the feasibility of “town center” microgrids as part of a New Jersey Board of Public Utility-led initiative. A town center microgrid distributes energy to a cluster of critical facilities within a municipal boundary that can provide essential municipal services and shelter for the public during and after an emergency. A town center microgrid connects multiple customers across multiple rights of way within a municipality. PSE&G plans to learn from this exploration for future adoption in PREPA communities.

### Long Island Utility 2.0 Program

Long Island is a leader in New York’s energy future. To date, PSEG Long Island has led numerous efforts to secure a cleaner and more affordable energy future for Long Island. PSEG Long Island leads New York in energy efficiency and clean energy technology program deployments. Long Island is home to the New York State’s most progressive energy efficiency programs including its three largest utility-scale solar projects, largest rooftop solar market, first utility-scale battery project, and eventually the first offshore wind farm, the 130 MW South Fork Wind Farm expected to be in service by the end of 2022. These initiatives are consistent with Reforming the Energy Vision (REV) and state policies, are cost-effective, and help to reduce demand for electricity throughout Long Island by one to two percent annually. Figure 1.4.32 highlights a few of PSEG Long Island’s notable accomplishments.



*Figure 1.4.32 PSEG Long Island's Notable Accomplishments*

PSEG Long Island has successfully completed several activities to lay the foundation for the programs and projects laid out in this Plan, including:

- **First-of-its-Kind Energy Storage Tariff:** The Behind-the-Meter (BTM) battery program makes use of LIPA’s existing Commercial System Relief Program (CSRP) and Distribution Load Relief Program (DLRP) tariffs to provide incentives for qualifying battery storage equipment (whether paired with solar or standalone) in exchange for enrolling and participating in the programs. The BTM battery program has a lock-in period of 10 years to match the warranty length of most

battery storage systems. The program's goal is to catalyze the local availability of energy storage for the commercial and residential market while providing load relief, especially in those defined areas of the grid where peak demand needs are most critical. The modifications that allow for energy storage also make it possible for net energy metering and Value of Distributed Energy Resources (VDER) customers to participate in the CSRP and DLRP programs for the first time, expanding the capabilities of residential and commercial customers with dispatchable technologies to participate in demand response events

- **Leader in State for Energy Efficiency:** In 2018, savings from PSEG Long Island energy efficiency initiatives represented approximately 1.4 percent of overall utility sales. The efficiency programs continue to support all aspects of the customer base and encompass everything from residential Home Energy Reports (HERs) informing customers with their consumption details and insights on managing their energy use to large-scale combined heat and power (CHP) projects enabling municipal waste water districts to more efficiently provide services for their customers. PSEG Long Island continues to improve its offerings, and recently launched all electric heat pump replacement and new construction programs. The programs enable Long Island to lead by example in fostering a cleaner and more efficient environment for the next generation to inherit
- **Leader in State for Rooftop Solar Photovoltaic (PV):** There are now over 47,000 solar PV systems on Long Island, representing about 35 percent of the systems in the entire state of New York. The residential and commercial solar markets on Long Island were the first to be fully subscribed under the Megawatt-Block Program, meaning that rebates for such systems have been phased out. Even without rebates, PSEG Long Island continues to approve about 500 applications per month for electric interconnection and the market for residential solar PV remains strong
- **Feed-in Tariffs for Solar:** LIPA is the only utility in New York State that has offered feed-in tariffs (FITs) for renewable generation. Thus far, such FITs have led to 108 PPAs totaling 90 MW of solar PV. About 58 MW of this capacity is now in operation, with the remainder in various stages of permitting and construction
- **Largest Utility-Scale Solar Projects:** In addition to the FITs, LIPA has executed PPAs with developers of large utility-scale solar projects located at Brookhaven National Labs (31 MW), and Suffolk County plans to install solar on carports (12 MW)
- **South Fork Portfolio for Non-Wires Solution (NWS):** LIPA has three significant contracts for NWS in the South Fork: 130 MW of offshore wind, 10 MW of battery storage at two locations (80 Megawatt Hours [MWh] each), and 8.2 MW of demand response and energy efficiency
- **Town of Huntington Microgrid:** PSEG Long Island is working with developers for a potential microgrid in Huntington, which has received an award under the State's New York Prize initiative

Figure 1.4.33 shows the impact PSEG Long Island energy efficiency programs are having on the overall system peak demand forecast. As shown, the peak demand forecast has been reduced every year since 2013 as a result of the above programs' efforts to help customers reduce energy usage, and peak demand on the system. This has reduced the need for capital investments in infrastructure and generating capacity required to meet customer needs.

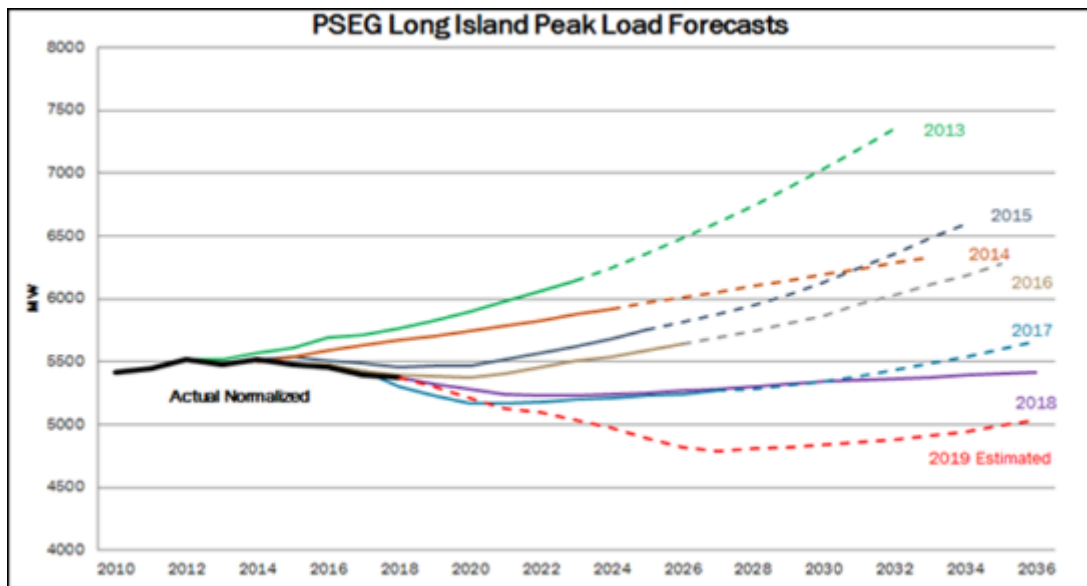


Figure 1.4.33 PSEG Long Island's Peak Load Forecasts

#### 1.4.1.r Other Corporate Functions

Table 1.4.10 describes PSEG Puerto Rico's commitment to utilizing our Company's corporate functions to the benefit of PSEG Puerto Rico as identified in the scope of work for ServCo's provision of O&M Services. To ensure best practices sharing among utilities, certain PSEG Puerto Rico employees may report directly or be matrixed to corporate executives of its affiliates.

Corporate Function	Support for PSEG Puerto Rico
<i>Communications</i>	Assist PSEG Puerto Rico with communications services for major stakeholders that have deep community involvement. Provide communications support for public events, workshops, and seminars, as well as to support government, community and media relations.
<i>Regulatory</i>	Support PSEG Puerto Rico as needed regulatory proceedings and filings. Monitor the regulatory environment for changes or trends that could impact PSEG Puerto Rico and recommend appropriate courses of action.
<i>Finance</i>	Aid PSEG Puerto Rico with budgeting and forecasting, fiscal and purchasing controls, GAAP and FERC financial accounting, financial variance analysis, monthly, quarterly, annual financial reporting.
<i>Information Technology</i>	Ensure PSEG Puerto Rico taps into the technical knowledge gained from PSEG utility services providers and vendors for technology innovation assessments, a PREPA opportunity assessment and to quickly and effectively provide broader services when needed.
<i>Human Resources</i>	Help PSEG Puerto Rico to attract, develop and retain capable talent / leaders through effective talent management and meaningful total rewards programs / policies (pay, benefits, training, and work environment).
<i>Procurement</i>	Share procurement best practices and methods to minimize the cost of purchasing materials and services to support PSEG Puerto Rico operations. Benefit from relationships with supplier partners for priority availability and shipping.
<i>Performance Measurement &amp; Reporting</i>	Give PSEG Puerto Rico the proven tools used in integrated program and balanced scorecard management and provide PREPA with full transparency with performance metrics.
<i>Government Relations</i>	Assist PSEG Puerto Rico in managing government relations both inside and outside of Washington, as well as leveraging relationships with government officials to coordinate, conduct, and assist, at PSEG Puerto Rico's direction, communications with municipal, local, territory and federal representatives and organizations.
<i>Fleet Management &amp; Refueling</i>	Provide PSEG Puerto Rico with full-cycle support for vehicles and equipment, including acquisition, tracking, preventive maintenance, and disposal from the fleet.
<i>Facilities Management (Maintenance, Utilities, Communications)</i>	Bring best practices to PSEG Puerto Rico in managing facilities for utilities, identifying ways to reduce maintenance and utility costs through continuous improvement activities.
<i>Security</i>	Protect PSEG Puerto Rico's workforce, property, critical infrastructure, public image and brand, as well as other tangible and intangible assets from harm, misuse, theft, or energy diversion.
<i>Insurance Management</i>	Provide insurance management services, placing insurance with carriers, and claims management and processing.
<i>Treasury Management</i>	Provide treasury management services and managing PREPA's funding accounts.
<i>Audit / Compliance</i>	Provide independent assurance that the organization's risk management, governance and internal control processes are operating effectively.

Table 1.4.10 Corporate Functions' Support for PSEG Puerto Rico

#### 1.4.2 Detailed Description of the experience and credentials of the Qualified Respondent's proposed management team

*PSEG Puerto Rico will be able to tap into an enterprise that has more than 116-years of proven experience in operating and maintaining electric transmission and distribution systems*

##### 1.4.2.a Experience Managing in a Services Environment

PSEG Puerto Rico understands the importance of PREPA's mission to provide highly reliable and economical electric service with a commitment to superior customer service, accountability and transparency. PSEG Puerto Rico brings significant and relevant experience in all of the elements required to manage the Front-end Transition and O&M Services, thus enabling PSEG Puerto Rico to provide outstanding delivery of service to PREPA's customers. PSEG Puerto Rico will apply commercial best practices and innovative management approaches derived from PSEG utility services providers' experiences which span the areas of complex program management, utility management and site operations.

##### PSEG's Management of New Jersey's Largest Transmission and Distribution System

PSE&G serves 2.3 million electric customers and 1.8 million gas customers and been providing utility services since 1903. PSE&G provides service to 300 urban, suburban and rural communities, including New Jersey's six largest cities. PSE&G has been named the most reliable electric utility in the Mid-Atlantic region for the past 17 years and is a leader in system planning, training, customer service, outage response, renewable energy offerings and economic development.

##### PSEG Long Island is Experience in Managing LIPA's Assets

Our Company has experience in transitioning and managing the operations of a public power authority's electric transmission and distribution assets through the contract between PSEG Long Island and LIPA. PSEG Long Island entered into the contract with the Long Island Lighting Company d/b/a LIPA to manage the system and day-to-day operations commencing on January 1, 2014. PSEG Long Island went through a comprehensive two-year transition process with LIPA and National Grid prior to taking over operational management in January of 2014. PSEG Long Island utilized SMEs to review the current operations; identify gaps from best practices; develop a transition strategy; and implement changes to transition operational management from National Grid to PSEG Long Island.

##### 1.4.2.b Position with Overall Responsibility for the Day-to-Day Services

In November 2019, the PSEG Board of Directors elected Daniel Eichhorn President of PSEG Puerto Rico who will have overall responsibility and authority for day-to-day operational services Dan Eichhorn is a senior executive within PSEG with long tenure and a deep network within our Company; has multiple experiences transitioning and managing businesses; and a demonstrated ability to drive continuous improvement and drive transformational change. A few additional career highlights include following:

- 30-years of utility senior leadership experience in gas and electric distribution; customer service; IT project management; and public-private partnership transition and operations
- Proven track record of achieving results and successful change management
- Original member of PSEG Long Island Transition Team, led transition for customer services and contributor to overall transition process



- President & COO PSEG Long Island, responsible for P&L and budgets exceeding \$1.4 billion
- On-track for successful completion of a multi-year \$730M FEMA storm hardening project in 2020
- Assistant Chairperson for United Way Long Island; Board Member Island Harvest Food Pantry; Board Member Advanced Energy Research & Technical Center, and Board Member PSEG Foundation
- B.S. Electrical Engineering and M.B.A. Drexel University; completed multiple management courses including Center for Creative Leadership; Darden School of Business, University of Virginia; and Idaho University Utility Executive Program

Candidates for PSEG Puerto Rico's proposed management team below the President level are currently being vetted and will be finalized during the Front-End Transition period. However, the basic qualifications that PSEG Puerto Rico envisions for its key executive positions are outlined in Table 1.4.11.

With PSEG's broad experience in the energy industry, we have a deep pool of candidates whom we believe can provide outstanding managerial skills to drive transformational change at PREPA. We have a talented core group of senior leaders in our company who have extensive experience managing our distribution network and other relevant functions and leading large workforces. These individuals are in part the driving force behind PSE&G's being recognized as the most reliable utility in the country, achieving top quartile customer satisfaction and continuously driving to top-quartile performance across its business lines. We are committed to bringing the right team of leaders to PREPA and look forward to holding specific discussions at the right point in this process.

*The Executive biographies found in Appendix 1.4.J indicate the high caliber of our resources*

#### 1.4.2.c Senior Management Qualifications and Experience

Key Senior Management Personnel Position	Qualifications and Experience
<i>Vice President Projects, Construction and Federal Funding Compliance</i>	<ul style="list-style-type: none"> <li>Broad experience in major construction project management in the electric Transmission &amp; Distribution areas</li> <li>Minimum 15 years of experience in engineering; maintenance and asset management; and T&amp;D system construction project management</li> <li>Deep experience and successful record of working within FEMA funding rules and guidelines</li> <li>Knowledge of permitting and environmental requirements</li> <li>Demonstrated skill to coordinate and collaborate with business leaders to ensure effective and well-informed communications that are shared with relevant internal and external stakeholders</li> </ul>
<i>Vice President, Transmission &amp; Distribution Operations</i>	<ul style="list-style-type: none"> <li>Broad experience in electric utility operations</li> <li>Minimum 15 years of experience in operations; maintenance and asset management; and T&amp;D system planning</li> <li>Experience working with the following: SCADA; outage management; work management; inside / outside plant; and equipment, controls; and protection (relay) systems</li> <li>Knowledge of engineering and construction management and energy efficiency and renewable energy programs</li> <li>Demonstrated commitment to environmental, health and safety, emergency response and contingency management</li> <li>Experience in organizational transition</li> <li>Demonstrated expertise in Industrial Relations</li> </ul>
<i>Vice President, Customer Operations</i>	<ul style="list-style-type: none"> <li>Broad experience in customer operations</li> <li>Minimum 15 years of experience in customer operations including call center and meter to cash functions</li> <li>Experience driving operational improvements in credit and collections; revenue operations; field services; utility marketing; large customer support; community relations; metering technologies; and energy efficiency and renewable energy programs</li> <li>Have implemented cutting edge customer facing technologies and programs to drive improvements in customer satisfaction</li> <li>Demonstrated expertise in Industrial Relations</li> </ul>
<i>Vice President, Power Markets</i>	<ul style="list-style-type: none"> <li>Minimum 15 years of experience in operations, maintenance and asset management for utility operations</li> <li>Experience in load forecasting and load research; working with production and mapping models; integrated resource planning with all generation types including renewable and storage; RFP development, contract development and management including measurement and invoicing; and developing power supply charges</li> </ul>
<i>Vice President, Legal</i>	<ul style="list-style-type: none"> <li>Minimum 15 years of legal experience in leadership positions supporting the electric utility space</li> <li>Ability to advise senior management on all legal, compliance, ethics and internal audit issues relative to the OMA as well as on critical business and legal matters</li> <li>Demonstrated leadership experience with the ability to manage a legal team and the key functions under their responsibility</li> </ul>
<i>Sr. Vice President, Shared Services</i>	<ul style="list-style-type: none"> <li>Diverse background in all aspects of utility business operations and services</li> <li>Minimum 20 years combined experience in finance, accounting, supply chain, human resources and IT</li> <li>Demonstrated skill to coordinate and collaborate with business leaders to ensure effective and well-informed communications that are shared with relevant stakeholders</li> <li>Experience leading strategic business efficiency / cost efficiency efforts</li> <li>Background in continuous improvement applied to business services</li> <li>Commitment to business and personal ethics</li> <li>Experience in establishing compliance and audit programs</li> </ul>

Table 1.4.11 PSEG's Senior Management Qualifications and Experience

#### 1.4.3 Federal Funding Experience and Plan for Management and Procurement of Federal Funds

*PSEG Puerto Rico brings to PREPA relevant experience in managing disaster recovery operations and Federal Emergency Management Authority Funding*

##### 1.4.3.1 FEMA Funding and Project Implementation

PSEG Puerto Rico would have access to the experiences from PSEG's utility services providers in administering federal funding grants and executing electric infrastructure improvement plans in Puerto Rico. In response to Superstorm Sandy, LIPA accepted a fixed capped Public Assistance Grant from FEMA, administered under the FEMA Public Assistance Program. This project is authorized under Section 428 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act and is subject to the Public Assistance Alternative Procedures Pilot Program.

This project specifically addresses assets damaged during Superstorm Sandy, as well as redundancy and resiliency in the electric T&D System, and includes:

- Strengthening priority mainline circuits – \$641 million
- Elevating substation equipment – \$10 million
- Strengthening damaged transmission lines – \$5 million
- Installing reclosers – \$74 million

The project's primary focus is to harden LIPA's electric distribution infrastructure to reduce future damage and loss of function by a rate of 20 percent, as applied to 1,025 miles of circuits identified by LIPA as the most vulnerable sections of the Superstorm Sandy-damaged T&D circuits. More specifically, the program mitigates the most vulnerable damaged portions of LIPA's infrastructure consistent with the proposed Section 406 Hazard Mitigation Scope, or through a combination of mitigation measures. The installation of 900 reclosers will improve the resiliency of the system by reducing the number of customers impacted by a single line outage as well as reliance on operator interface to restore customer load. This component of the project includes an upgrade to the existing control and communication systems and creates new tie-points for damaged isolation.

##### 1.4.3.b FEMA Compliance and Project Management

PSEG will draw largely on the experience of PSEG Long Island and bring experience managing projects and complying with federal standards associated with FEMA grants. PSEG Long Island assumed responsibility for the execution of the project in 2014 as part of the obligations under the OSA between LIPA and PSEG Long Island. From the onset of the project, it was determined that the majority of project work would be performed by outside contractors. PSEG Long Island focused on its FEMA-related procurement responsibilities by striving to strictly adhere to FEMA guidelines and the applicable federal and state procurement standards.

In connection with the procurement of each of the above major and minor contracts, federal procurement standards were followed. Here are some examples of steps taken:

- Conducted all procurement transactions in a manner providing full and open competition
- Took necessary affirmative steps to assure the use of small and minority firms, women's business enterprises, and labor surplus area firms when possible

- Procured architectural and engineering (A/E) professional services contracts using a method where both prices were used as a selection factor, along with competitors' qualifications
- Performed a cost or price analysis in connection with every contract and procurement action, including contract modifications, to determine the reasonableness of the proposed contract price.
- Regularly and systematically reviewed contracts, contract items and tasks to ensure that contract deliverables were being provided, and the essential purpose of each contract was being achieved, at the overall lowest and best cost

As to execution of the project, each of the 320 circuits being storm hardened was considered a “project” unto itself. Accordingly, each circuit was assigned its own cost code (Work Breakdown Structure [WBS] number) and all mitigation costs associated with a given circuit can be tracked and accounted for. This enabled PSEG Long Island to track, by individual circuit, all the costs it intends to claim reimbursement for. All such costs were segregated by circuit and detailed documentation was maintained to support the total circuit mitigation costs, for each circuit. PSEG Long Island compiled 320 separate circuit construction completion packages, containing all invoicing and payment documentation necessary to support reimbursement of all hazard mitigation related costs, including project management, engineering, and construction / material costs incurred in connection with the FEMA grant. In support of seeking federal reimbursement PSEG Long Island has maintained source documentation consisting of:

- Monthly invoices, with certified payrolls, daily work sheets and other backup, for each contractor, for every month worked
- Company proof of payment statements, for every contractor invoice
- Each contractor’s contract, amendments and change orders to each contract
- Bills of material for each circuit being mitigated
- Requests for Information (RFIs) evidencing changes to a circuit bill of materials
- Bills of lading pertaining to the delivery of materials
- Evidence of the returns of any unused materials
- Evidence of credits obtained for unused material
- Evidence of proper disposal of circuit waste
- Evidence of material salvage credits received

PSEG Long Island has also established an Office of Government Funds Compliance to support contract administration, compliance awareness and policy development and the government audit compliance. PSEG would use the experience in Long Island to develop a similar structure at PREPA commensurate with FEMA funding received.

#### 1.4.4 Corporate Culture and the Description of Alignment of the same with Project's Objectives

*PSEG will invest in its employees, the community and stakeholders, fostering a safe, reliable, inclusive environment that strives for continuous improvement*

PSEG will bring a culture of knowing that its greatest resource and assets are its employees. Our Company has a defined corporate culture built on several core commitments: Safety, Integrity, Continuous Improvement, Diversity & Inclusion and Customer Service. These core values are the backbone to a culture that PSEG will bring to PREPA.

##### 1.4.4.1 Culture Alignment

The PSEG HR organization will be a strategic and tactical business partner. One of the HR focus areas is to assist the business in aligning the workforce with business goals and objectives. Along with PREPA's transformation will require new HR processes, procedures and a new work culture. HR will develop communications, training and reporting in support of these changes. The key will be communicating, keeping the employee workforce informed, encouraging their involvement and creating employee buy-in. PSEG will ensure positive engagement and support change management efforts through ongoing, consistent communications across all affected audiences, including:

- PREPA staff
- Union and management employees who will move to ServCo
- Employees who may not want to move to ServCo
- PSE&G employees
- PSEG Long Island employees
- PSEG and other employees that may want to be kept informed or may be interested in opportunities as a result of the transition

##### Communications

A communications plan will focus on specific desired behaviors of the internal stakeholders that are impacted by the transition of the utility services management into the ServCo business model managed by PSEG. These behaviors include employees that:

- Remain engaged in their work and continue to work safely and reliably on behalf of PREPA customers
- Understand the culture, values and expectations of PSEG
- View the transition positively and believe the transition will have a very positive impact on both customers and employees
- Are open to change and accept it
- Understand the importance of their role in improving customer satisfaction

Consistency in messaging is critical to the success of the communications plan. The PSEG management team will have extensive experience in delivering messages to all corresponding audiences ensuring the

support and engagement of the public and employees, which is required for a successful transition and ongoing operations.

PSEG will use multiple media to communicate with the workforce including, but not limited to town hall meetings, emails, a PSEG transition website, and newsletters. Effective communication is a best practice and key to minimizing employee anxiety during transition.

### **Change Management**

In parallel to the communications plan, a comprehensive change management plan will be developed to focus on all change management activities. The following highlights the importance of employing a dedicated resource to support change management. Communications alone is not enough to ensure that employees move to desired levels of acceptance and commitment. To be successful during operations, change management plans will be developed and implemented for each functional area and are especially critical as PSEG Puerto Rico moves to a more customer-focused culture.

### **Outreach**

Equally important are the external communications and the impact on the external stakeholders. An outreach plan will be developed that focuses on the desired behaviors of the external stakeholders impacted by the transition. These behaviors include:

- Customers and stakeholders are aware of the transition, gain trust of the new service provider, and believe the transition will be smooth, seamless and in the best interests of PREPA's customers
- Customers and stakeholders believe that PSEG will produce positive results and will provide responsive service to all of PREPA's customers
- Stakeholders believe transition to PSEG will not negatively impact the workforce

The PSEG management team will ensure a culture change strategy including the communications, change management and outreach plans include appropriate inclusion with PREPA, customers, government and political leaders, news media, other Puerto Rico organizations, vendors, non-profits / community organizations, and the financial community. Communication channels include news releases, news conferences, interviews, social media, PREPA web site postings, meetings and email updates, among others.

#### **1.4.4.2 Employee Morale and Motivation**

PSEG strongly believes in a culture that invests in its employees by enriching not only their work lives, but their family and personal lives and wants to attract and retain a highly productive workforce and support PREPA's business goals. As such, PSEG Puerto Rico will provide a breadth of resources designed to motivate employees and aid them in coping with a variety of life issues. Examples of current programs that assist with work / life balance are:

- Flexible work schedules
- Elder care
- Child care services
- Adoption assistance



- Health and wellness programs
- Onsite fitness centers
- Counseling
- Legal services
- Tuition reimbursement
- Gift matching
- Volunteer matching programs

PSEG is committed to working with PREPA to determine which collection of these are appropriate offerings for ServCo employees.

#### 1.4.5 Roles and Responsibilities of each member of the consortia, if applicable

Not applicable to PSEG.

#### 1.4.6 Organizational Structure of ManagementCo and ServCo

Refer to Section 1.6.1 Figure – PSEG’s Proposed Management Company Organizational Structure.

#### 1.4.7 Commitment to the Social Welfare of the People and Communities of Puerto Rico

*PSEG will enhance community relations during projects by engaging all critical stakeholders*

PSEG External Affairs will provide support as needed to ensure electric utility infrastructure projects proceed in a timely manner. The precise approach and overall level of activity for each project can be determined by the PSEG External Affairs team through an in-depth and collaborative review of each project's fundamental elements.

The external affairs process will be built around five parts that are designed to harmonize PSEG’s outreach practices and includes the best practices from PSEG’s other utility services providers. The outreach process for each project is a means of making a good faith effort to accurately inform all stakeholders of the project as it develops, to involve the public in the decision-making process to the maximum extent possible, and to respond to concerns expressed by customers, local officials, regulators, and permitting agencies in a coordinated manner.

#### External Affairs Process

- **Organize:** Meet with project team to review the project scope
- **Assess:** Create route profile, conduct external affairs audit, implement any necessary changes, and calculate the project outreach score
- **Prepare:** Develop outreach strategy, set municipal agenda and schedule meetings, prepare public-facing package information
- **Execute:** Meet officials from host municipalities, review and revise strategy based on municipal input, meet with civic groups and stakeholders with municipal support, implement general outreach strategy, refine as needed

- **Evaluate:** Debrief with team to identify lessons learned, add collateral materials to library of resources, update handbook

### PSEG Makes the Community a Better Place to Live and Work

PSEG Puerto Rico is committed to its customers, shareholders, employees and communities where it does business. PSEG Puerto Rico will invest in the economy, environment and infrastructure to make the places where it operates, better places to live and work. For more than 116-years, PSE&G and its employees have been giving back to the communities. PSEG Puerto Rico is looking forward to building an outstanding workforce of diverse and highly skilled people who will work to transform PREPA's T&D System while giving back their own time and support to the causes that matter most to them. Through the PSEG Foundation, PSEG may support local organizations in Puerto Rico that are powering a brighter future in line with our corporate values. The PSEG Foundation provides supports with impact grants in the areas of sustainable neighborhoods; safety; and science, technology, engineering, and education mathematics (STEM programs).

For PSE&G, 68 percent of total utility spend is New Jersey based. PSEG Puerto Rico would pursue a similar path in Puerto Rico, identifying qualified suppliers to participate in sourcing events. In addition, PSEG Puerto Rico would perform outreach to suppliers for subcontracting, and where appropriate, limit RFPs to Puerto Rico-based suppliers if there is a sufficient number of qualified Puerto Rico based bidders for the work.

In 2012, Superstorm Sandy cut across New Jersey and New York with a surge of wind and water that devastated coastal communities. At one point, 90 percent of PSE&G's electric customers found themselves without power. Homes were moved off their foundations. Electric infrastructure was, in some places, beyond repair. Spurred by their experience with Sandy, students at Stevens Institute of Technology – starting with only an ordinary shipping container – designed and built a prototype for a new kind of sustainable, resilient home meant to withstand the threats of rising sea levels and survive increasingly damaging storms. The Stevens team – a mix of students with experience in engineering, energy efficiency, architecture, communications, management and computer science and guided by the university's expert faculty – created the SURE House, a structure designed to both sustainable and resilient in the face of changing climate. The students' efforts earned national recognition for themselves and for Stevens, winning the U.S. Energy Department's Solar Decathlon against students from the U.S. and around the world. The SURE House is the product of a funding partnership that links PSEG to Stevens – a partnership that produces benefits far beyond our corporation.



Figure 1.4.34 Stevens Team

The PSEG Foundation provided \$325,000 to support development of the Stevens SURE House. The PSEG Foundation also granted \$1.5 million to Stevens in support of research focused on energy conversion and storage. These programs strengthen middle and high school STEM education.

PSEG Foundation's financial contributions to Stevens are part of the more than \$8 million invested each year promoting the vitality of New Jersey and the communities where we do business. The PSEG Foundation provides funding for programs in three key areas: STEM and Workforce Development (37 percent), Sustainable Neighborhoods (49 percent) and Safety and Disaster Preparedness (14 percent). More than 33 percent of all PSEG Foundation grant-making supports diversity and inclusion objectives.

Key funding initiatives include:

- **STEM education:** The PSEG Foundation supports the New Jersey Institute of Technology 2018 Solar Car Team – the university’s first-ever, full-size, solar-powered electric vehicle to compete in the 2,000-mile “American Solar Challenge” competition to design, build, and drive solar-powered cars in a cross-country, time / distance rally event. The team has more than 60 members in 21 majors
- **Sustainability neighborhoods:** The PSEG Institute of Sustainability Studies at Montclair State University (MSU) provides program support for sustainable communities and businesses that complement the Sustainable Jersey program. PSEG’s \$1.3 million funding is matched to provide internship opportunities to students from MSU and other New Jersey universities
- **Safety:** With Sesame Workshop, the PSEG Foundation supported the creation of an emergency preparedness program, “Let’s Get Ready”, and an emergency response program, “Here for Each Other” (\$1.3 million). The programs provide materials in English and Spanish for families, community leaders and educators. Materials are online for easy access and include workbooks about creating an emergency plan, videos, a free app and teach instruction

Sesame Workshop and PSEG Foundation’s new 2018-19 program, “Brave, Strong Resilient” (\$900,000) seeks to build resiliency in children and families with curriculum to help children explore and express their feelings, practice problem-solving strategies and develop patience and confidence.

In 2018, the PSEG Foundation also developed plans to launch a stakeholder engagement and planning process to initiate a five-year, \$5 million Signature Initiative.

A firm commitment to New Jersey and communities served by PSEG is embodied in our name, Public Service. Many things have changed since the founding of PSE&G over 116 years ago, but PSEG’s unwavering commitment to the community – both by the company and its employees has remained a constant.

## Employee Volunteerism

PSEG Puerto Rico plans to promote a robust employee volunteerism program modeled after our Company's programs. Many of the Company's 13,000 employees are active volunteers in the communities where they live and work, making a positive difference on individuals' lives. Our dedicated employees have volunteered countless hours spreading love and needed support throughout our communities. From services for youth to low-income families to schools, emergency responders, arts and animal rescue, the nonprofits our employees dedicate themselves to are as diverse as the employees who support them.



Figure 1.4.35 PSEG Employees Supporting the Community in Building a Playground

## Sustainable Neighborhoods

PSEG Puerto Rico will have a strong commitment to building strong economies with good jobs while protecting the environment at the same time. PSE&G support organizations like Sustainable New Jersey, which support sustainability in our neighborhoods.

## Safety & Preparedness

Consistent with our commitment to safety, PSEG Puerto Rico will seek to keep people and their homes safe, particularly around electricity and natural gas, and to prepare for and respond to emergencies.

## Education & Outreach

PSEG Puerto Rico will support programs that engage, excite and inspire students in STEM subjects. At the same time, these programs prepare students for college and career success by promoting the application and mastery of problem-solving, critical thinking and teamwork skills. PSEG Puerto Rico will proudly support the organizations that provide high-quality, highly technical STEM learning experiences for youth.

## PSEG Long Island is Involved and Engaged in the Local Community

PSEG Puerto Rico will employ the learnings from PSEG Long Island's Community Partnership Program. PSEG Long Island is committed to be a community leader across Long Island and proud that many of the organizations it supports are chosen by its employees (and friends and neighbors) who live in the same



Figure 1.4.36 PSEG Long Island's Community Outreach



communities they serve. PSEG Long Island has been involved in many local community events since assuming operations of the Long Island electric system in 2014.

As part of PSEG Long Island's community commitment, our senior executives also serve as board members for a number of local organizations. Currently, PSEG Long Island's leadership team serves on the board of 23 local Long Island organization's boards.



*Figure 1.4.37 PSEG Long Island Employees Supporting the Community at the Marcum Challenge*

#### Economic Development at PSEG Long Island - Working Together to Revitalize Communities

PSEG Puerto Rico plans to replicate the economic development initiatives at PSEG's utility services providers within their service territories. PSEG Long Island also provides electric rate discounts to customers in certain categories, including:

- Business attraction / expansion rate discounts
- Business incubator rate discounts
- Load-shifting option discount

PSEG Long Island's economic development programs have two main areas of focus:

- Main Street Revitalization Pilot Program – provides financial incentives for projects in a local business district that is expected to improve the economic stability and growth of a municipality
- Vacant Space Revival Pilot Program – encourages occupancy of commercial space in a business district or in an area of existing commercial businesses that has been vacant for a period of one year or more

## PSEG has a History of Environmental Stewardship

Sustainable energy strategies to promote job creation, economic growth and a healthy environment have never been more needed than they are today. PSEG Puerto Rico will be a valuable resource for achieving customers' strong desire for cleaner energy and improved air quality and will leveraging the knowledge and successful approaches from Our company's other businesses. We have long advocated for public policies that support the transition to a cleaner energy future. With a commitment to sustainable and environmental practices, We have been a constituent of the Dow Jones Sustainability Index (DJSI) for North America for 11 consecutive years. The DJSI recognizes forward-thinking companies based on an appraisal of the company's strategy, management and performance in dealing with opportunities and risks deriving from environmental, social and governance factors. PSE&G was one of only six United States utility companies selected for the list (see Appendix 1.4.K for PSEG's Awards and Recognitions).

PSE&G has invested nearly \$2 billion in solar energy, helping to rank New Jersey consistently among the top states for solar development. PSE&G's nationally recognized Solar 4 All<sup>®</sup> program constructed the nation's largest network of pole-attached solar panels. PSE&G's efforts to build solar generation facilities on old landfills and brownfields have also been nationally recognized. PSEG Solar Source has developed two dozen grid-connected solar energy centers in New Jersey and 14 other states.

### 1.4.8 Commitment to Use of Local Resources and approach to involve local Puerto Rican entities

*PSEG Puerto Rico will be committed to the local communities, making them better places to live and work for its customers, employees and shareholders*

PSEG Puerto Rico will be committed to the communities where it does business, investing in the local economy to ensure it leaves them better places to live and work for our customers, employees and stakeholders. PSEG Puerto Rico will draw on the successful approaches employed by PSE&G and PSEG Long Island. For example, in partnership with the City of Newark, New Jersey, PSE&G and a number of other New Jersey employers launched the Newark 2020 initiative to connect 2,020 unemployed Newark residents with work by 2020. With other institutions, PSE&G is combating poverty by connecting unemployed residents with full-time, meaningful, well-paying jobs. Likewise, PSEG Long Island has already created new jobs for local residents and helped over 4,000 businesses stay competitive by reducing overhead costs and saving energy through its energy efficiency programs. Similarly, PSE&G has recently submitted a Clean Energy Future filing pending approval with the BPU that if approved could create over 5,000 green jobs for the community, providing local vendors and businesses the opportunity to work hand-in-hand. PSE&G and PSEG Long Island also have incorporated performance metrics to encourage local sourcing where possible, ensuring that supporting local communities and businesses remains in the forefront of PSEG utility services providers' priorities.