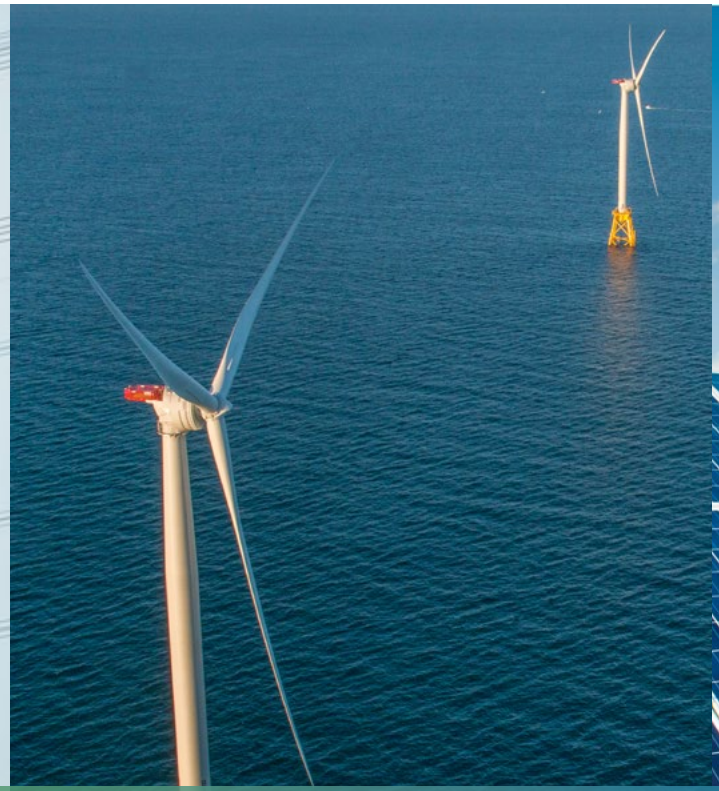
LIPA
Long Island Power Authority



LONG ISLAND POWER AUTHORITY

# POWERING LONG ISLAND'S CLEAN, RELIABLE, AFFORDABLE ENERGY FUTURE

## 2018 BUDGET

LIPA
Long Island Power Authority

Customers
**Residential: 1,007,736**
**Commercial: 121,948**

2017 Peak Demand
**5,134 MW on July 20, 2017**

Generating Capacity
**5,782 MW**

Energy Requirements
**20,963,562 MWh**

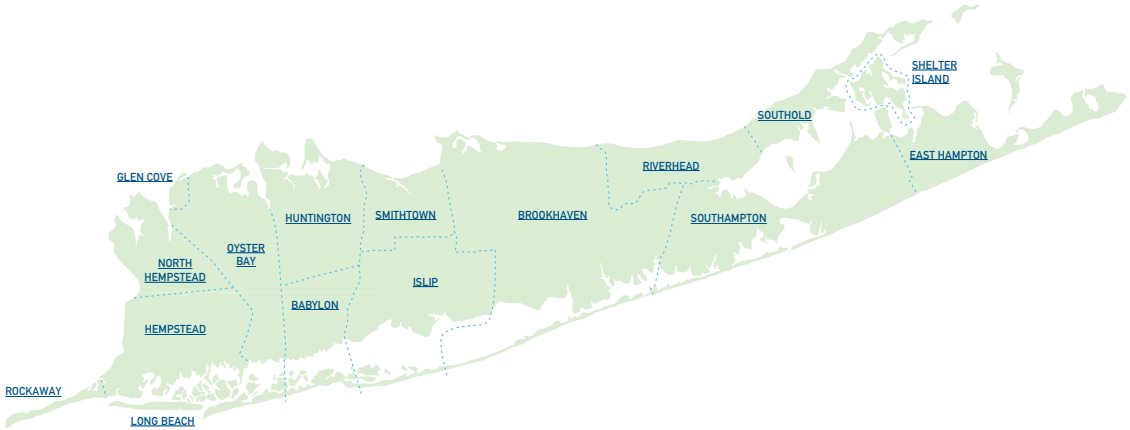
Transmission System
**1,378 miles**

Distribution System
**9,000 overhead**
**5,000 underground**
**~189,000 transformers**

Substations
**177 Substations**
**28 Transmission**
**149 Distribution**

2018 Budget:
**Operating: $3,600,381,000**
**Capital: $756,715,000**

Mission Statement:
LIPA is a not-for-profit public utility with a mission to enable clean, reliable, and affordable electric service for our customers on Long Island and the Rockaways.

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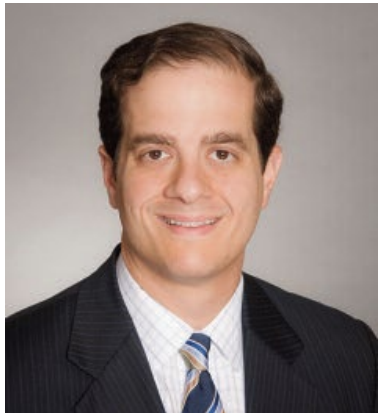
# BUDGET MESSAGE

Dear Stakeholders,

In the four years since the LIPA Reform Act of 2013, LIPA, together with PSEG Long Island, has advanced its mission to enable clean, reliable, and affordable electric service for our customer-owners on Long Island and the Rockaways.

Budgets rarely excite the senses, but they are critical to guiding the future of a public service organization like LIPA. As a not-for-profit electric utility, LIPA's electric rates reflect its costs. Budgets balance cost and service quality and prioritize limited dollars. ***LIPA's 2018 Budget enhances the value we provide to our customer-owners and maintains a prudent fiscal path.***

This year's budget includes a discussion of the goals of our organization and our priorities for 2018.



**Thomas Falcone**
**Chief Executive Officer**

## The LIPA Reform Act of 2013 Prioritized Customer Satisfaction

"A journey of a thousand miles begins with a single step," according to a Chinese proverb. Where are we on our journey towards high customer satisfaction?

Let us begin at the beginning. LIPA acquired the Long Island Lighting Company in 1998. The motivation was customer dissatisfaction over the high cost of electricity.[1] The aim was to reduce cost using the advantages of public power, including access to tax-exempt financing, exemption from corporate taxes, and eligibility for federal disaster recovery grants. Day-to-day operations were run by a neighboring private utility, and the transaction reduced electric rates by 20 percent. Customer satisfaction, however, continued to struggle with LIPA regularly ranked at or near the bottom of electric utilities in our region, according to J.D. Power.

[1] *Electric rates on Long Island had increased due to the construction and subsequent decommissioning of the Shoreham Nuclear Power Station.*

A study by the Long Island Association found that PSEG Long Island will **increase the economic output** on Long Island **by over $3 billion** from 2016 to 2018

Things that cannot continue eventually end, and Superstorm Sandy in October 2012 prompted needed reforms, after a long period of LIPA and its predecessor company not meeting customer expectations.

The LIPA Reform Act of 2013, initiated by Governor Andrew M. Cuomo and the State Legislature, preserved the ***cost advantages of public power, while reforming LIPA's governance and business model to prioritize customer satisfaction.*** The Reform Act also capped run-a-way property tax increases hidden in electric bills[2] and reduced LIPA's cost of debt, using another entity with higher credit ratings to refinance the majority of LIPA's bonds. These were significant steps forward.


## LIPA's Public-Private Partnership with PSEG Long Island

The next significant step occurred on January 1, 2014 when PSEG Long Island took over day-to-day operations of LIPA's electric system from our prior contractor. This public-private partnership with PSEG Long Island combines the cost advantages of public power with the experience of a neighboring utility with a ***strong record of customer satisfaction.***[3]

Our 12-year contractual arrangement with PSEG Long Island provides:

- direct accountability of PSEG Long Island to our customers, and
- pay-for-performance, with PSEG Long Island compensated based on meeting operational, service, and customer satisfaction goals, within budgeted spending levels.

Budgets must be reasonable for the task, but results, not spending, determines PSEG Long Island's compensation for managing LIPA's electric grid.

PSEG Long Island **supports 900 local companies** by purchasing over **$120 million** of goods and services each year

[2] *The 2 percent property tax cap applies only to property directly owned by LIPA. Unfortunately, LIPA still faces runaway taxes on over-taxed Long Island power plants that are under contract to LIPA, which account for 39 percent of LIPA's property tax payments.*

[3] *PSE&G is ranked in the top 25 percent of utilities in the 2017 J.D. Power Electric Utility Residential Customer Satisfaction Study, East Region, Large Segment, with a score of 727.*

How has this arrangement worked so far? ***PSEG Long Island has met 90 percent, 86 percent, and 92 percent of performance goals, respectively, for the first three years of our management contract.*** During this period, PSEG Long Island has:

- renovated and opened new customer service offices,
- reduced call wait times to among the best in the industry,
- lowered customer complaint rates to among the lowest of the New York utilities,
- increased point-of-service customer satisfaction survey results to among the best in the industry
- improved the clarity of information on customer bills and on their website, and
- introduced new customer facing technology to better manage outages and communicate with customers experiencing a service interruption.

New Interactive Outage Map

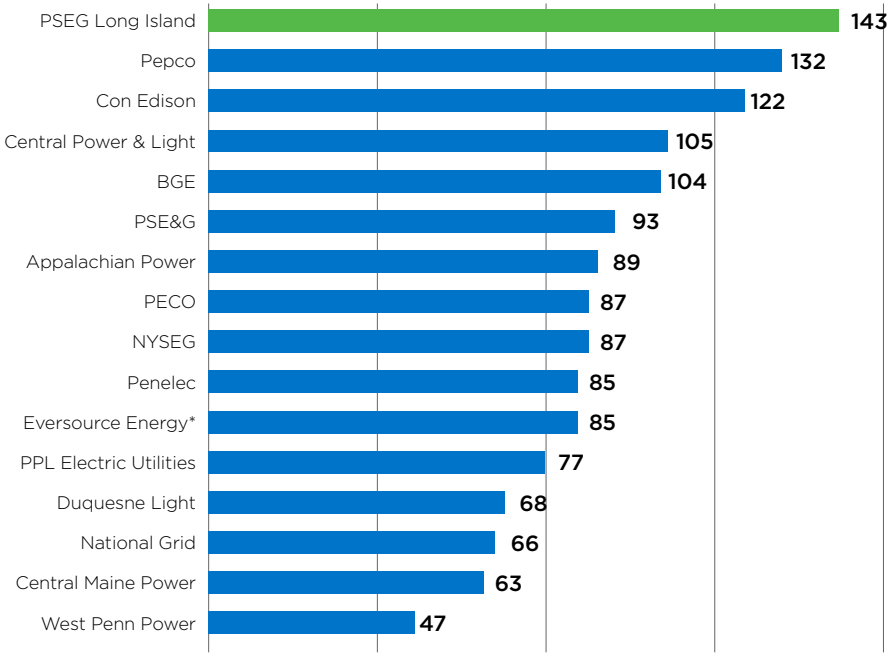

Text Message Outage Reporting


New Bill Format and Website

We learn the most from our most dissatisfied customers, and PSEG Long Island has reduced their ranks by so much that we are ***the most improved electric utility in the nation for customer satisfaction since 2014,*** as shown in Figure 1a. We need to continue this trend to reach our goal of ranking in the top 25 percent of utilities, as shown in Figure 1b.

Figure 1a: PSEG Long Island is the Most Improved Utility in Nation

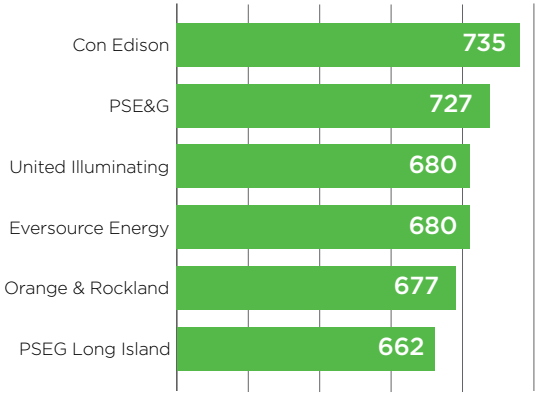
Change in JD Power & Associates Residential Customer Satisfaction Scores 2013 vs 2017




**2013 Eversource Energy is the average of NSTAR (611) and Connecticut Light & Power (580)*

Figure 1b: J.D. Power Rankings for 2017

Regional Utility Comparison

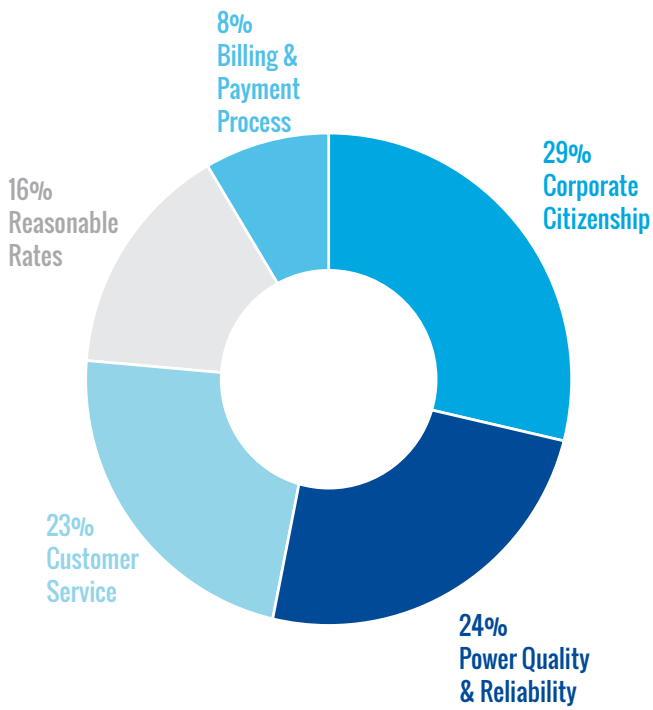


## These Are A Few of Our Customers' Favorite Things...

Picture yourself in an episode of the long-running television game show *Family Feud*. The host asks "what do customers want from their electric utility?" You hit the buzzer. What is the survey's number one answer?

You might guess "low price." Electricity is a commodity and, much like gasoline or car insurance, people may simply want the lowest bill possible. Notably, ***research shows that customers want value from their electric bill and price is only one of several elements of our service,*** as illustrated in Figure 2.

Figure 2: Major Components of Residential Customers Satisfaction for Electric Utilities




*Source: Smith, Douglas L., et al., "Assessing Residential Customer Satisfaction for Large Electric Utilities," May 2015.*

Research shows that **customers want value** from their electric bill and price is only one of several elements of our service

## What Do Customers Want?

- **Corporate Citizenship**, including environmental stewardship, help reducing their electric use and bills, support for local civic organizations, and efforts that aid local economic development,
- **Power Quality and Reliability**, including avoiding outages, promptly restoring outages, timely and accurate communication during outages, avoiding power surges, and advice on how to be safe around electricity,
- **Customer Service**, including friendly, knowledgeable agents, and resolving customer issues the first time,
- **Reasonable Rates**, including a reasonable monthly electric bill and the availability of pricing options that meet varying customer lifestyles and needs, and
- **Helpful Billing and Payment Processes**, including bills and websites with useful information, many methods and a reasonable amount of time to pay bills, and budget billing options.

Value is our customers' assessment of both the price and the quality of our service. LIPA and PSEG Long Island's goals must reflect the totality of our customers' expectations if we are to provide value for their dollars.

Validating the customer research, PSEG Long Island's increases in satisfaction since 2013 occurred during a period with roughly flat customer bills.[5] ***Our recent increases in customer satisfaction are from better meeting our customers' expectations, providing them with greater value for their dollars***.

## The Importance of Goals to an Organization Providing a Public Service

Electric utilities are public service organizations. Look, for example, at the number of utilities with the words "public service" in their name, or the most common title for utility regulators, "public service commissioners."

In most parts of our economy, a business provides value to its customers or ceases to exist.

For public service organizations, like utilities, governments, and schools, having customers does not indicate value, as customers have limited opportunity to choose providers. Rather, ***effectiveness can only be measured by setting goals for our organization and using those goals to evaluate spending decisions and results.***

As Yogi Berra said, "if you don't know where you're going, you might not get there."

## Our Goals Are...

One of LIPA's strengths is that it is governed by local citizens for the benefit of our community. The nine members of LIPA's Board of Trustees are appointed by our State's elected officials, serve without pay, and "eat their own cooking," using the same electric service as their neighbors.

LIPA's Trustees have high goals for our organization, based on what our customers value. You can see how our goals align with our customers' expectations. Our Trustees publish both our goals and our annual results on our website.[6]

[5] *Average residential customer bills have declined approximately 3 to 4 percent since 2013 due to lower fuel prices.*
[6] *For all our goals and results, see "Mission, Values and Governance" on LIPA's website.*

Figure 3 summarizes LIPA's goals. These goals guide our budgetary tradeoffs between cost and service in meeting the totality of our customers' expectations.[7]

Figure 3: LIPA's Goals

### Corporate Citizenship

- Add 800 megawatts[8] of of clean energy by 2030, enough to power 300,000 homes and meet Long Island's share of New York's 50 percent Clean Energy Standard
- Reduce Long Island's energy use by 950 megawatts by 2030, by supporting energy efficiency programs and behind-the-meter renewables, enough to power 380,000 homes[8]
- Attract businesses to Long Island and the Rockaways, benchmarking our activities against the best practices of other electric utilities

### Power Quality and Reliability

- Invest in our electric grid so its reliability stays among the top 25 percent of utilities, equivalent to fewer than one power outage a year for the average customer or 99.99 percent reliability[9]
- Prioritize our reliability investments to address small pockets of the electric grid that are less reliable than average
- Provide timely and accurate outage restoration information to customers using new tools, technologies, and communication channels

### Reasonable Rates and Fiscal Sustainability

- Maintain electric rates competitive with the New York City metropolitan area
- Run programs that assist low-income customers by limiting energy costs to 6 percent of household income
- Provide innovative billing options like electric vehicle and smart home rates
- Limit borrowing to fund infrastructure investments to industry standards of 64 percent or less of capital spending
- Raise LIPA's bond ratings to "mid-A" by 2022 to reduce interest costs for customers and demonstrate the soundness of our fiscal plans
- Reduce the hidden taxes and fees that account for 15 percent of Long Island's electric bills, while providing a net benefit to only 2 percent of LIPA's customers, by challenging excessive local property tax assessments on the electric grid

### Customer Service and Satisfaction

- Invest in processes, people and systems so measures of customer service are among the top 25 percent of utilities by 2018[10]
- Achieve customer satisfaction among the top 25 percent of utilities by 2022, as measured by J.D. Power

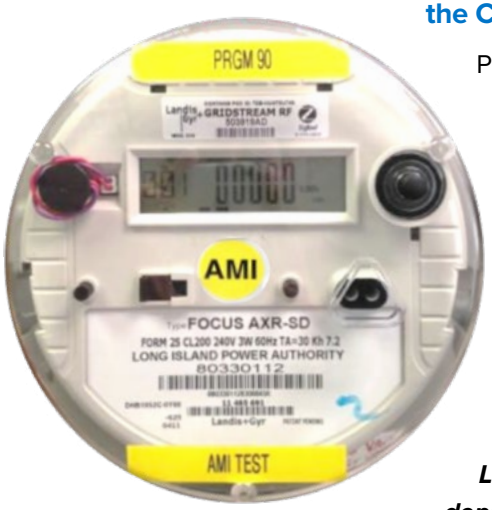
### Helpful Billing and Payment Processes

- Provide customers with information, education and tools, such as smart meters and convenient payment options, to manage their electric use and relationship with the utility according to their needs

*[7] The Board of Trustee's policies guide the discussions between LIPA staff and PSEG Long Island on initiatives, performance metrics, and their cost. The Department of Public Service also provides independent recommendations to the LIPA Board on cost and service quality through rate cases and management audits.*
*[8] Estimate; assumptions for Clean Energy Standard rules, sales forecasts, and the amount and types of clean energy resources will change through 2030.*
*[9] A car as reliable as the electric grid, traveling at 40 miles per hour, could drive 24-hours a day, 365 days a year, for 350,000 miles, on one hour of service.*
*[10] Customer service measures include after call and point of contact customer surveys, customer complaint rates, and call center operation metrics.*

# MEETING CUSTOMER EXPECTATIONS

## Smart Meters to Modernize the Customer Experience




PSEG Long Island is using smart meters to enhance customer value by improving service while saving money.[11] Today, 50,000 of LIPA's 1.1 million customers have smart meters, accounting for 34 percent of sales.[12] ***PSEG Long Island's universal deployment of smart meters over five years will transform our customer experience*** by:

- Providing customers with information and tools to manage their energy usage,
- Replacing six estimated customer bills per year with bills based on actual energy use in fifteen-minute intervals,[13]
- Enabling new pricing plans that better meet customers' lifestyles and needs,
- Improving reliability by allowing PSEG Long Island to predict and prevent outages,
- Reducing outage duration by detecting outages before customers notify the utility,
- Enabling pro-active text, phone, and email communication with customers about their usage and outages, such as high bill alerts and automatic verification of outage restoration,
- Conserving energy and improving power quality by better managing voltage on the grid, and
- Reducing fleet travel by 1.3 million miles per year, the equivalent of 52,000 gallons of gasoline and 290 tons of carbon emissions.

## Better Prepared on the 5-Year Anniversary of Superstorm Sandy

Superstorm Sandy made landfall on Long Island on October 29, 2012. The storm was among the most destructive natural disasters in history, causing:

- $70 billion of property loss across the eastern United States,
- unprecedented damage to LIPA's electric grid from sustained high winds and severe flooding, and
- power outages for over 95 percent of our 1.1 million customers.

*[11] PSEG Long Island's plan for smart meter deployment is part of the Utility 2.0 Plan available on their website.*
*[12] Smart meters have primarily been deployed to LIPA's largest customers.*
*[13] Residential customers' meters are currently read on a bi-monthly cycle.*

Severe flooding on the south shore of Long Island damaged 100,000 homes and businesses, making it unsafe to re-energize properties without inspection. Superstorm Sandy, a tropical storm, was followed by a Nor'easter nine days later that dropped snow on an already weakened electric grid, causing an additional 120,000 customer outages.

Superstorm Sandy Flooding

At peak, ***15,000 lineman and crews from across the United States repaired 38,000 points of damage on Long Island's electric grid***, including 122 transmission lines, 376 distribution circuits, 50 substations, 4,900 poles, 2,900 transformers, 7,600 cross arms, and 426 miles of wire.

85 percent of LIPA's customers were restored within a week and all customers within 16 days. ***The repair costs exceeded $700 million***, which was mostly funded by federal disaster recovery grants and insurance.

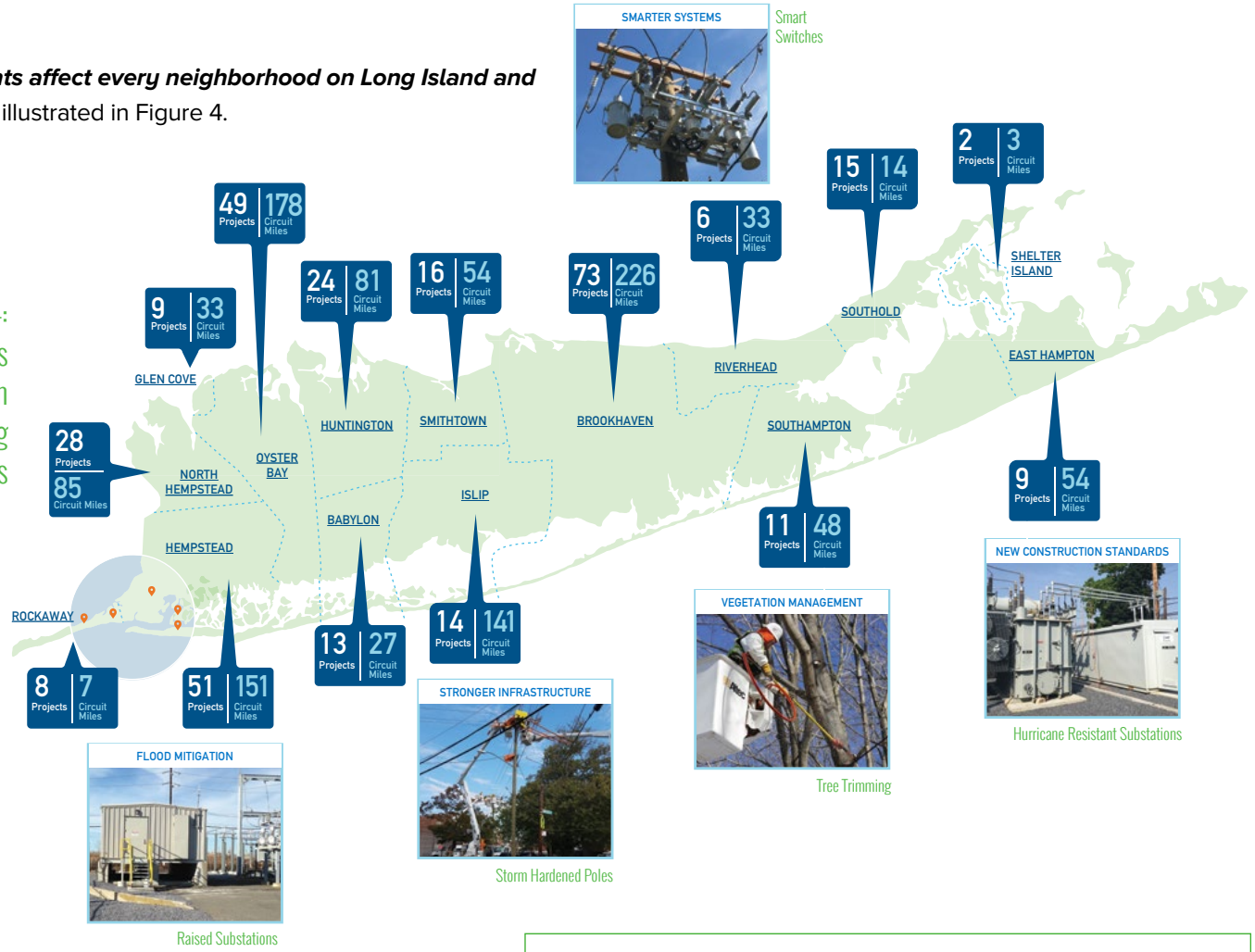
PSEG Long Island is making our electric grid more resilient to future storms

Are we more prepared for an event like Superstorm Sandy than we were five years ago? ***PSEG Long Island is making our electric grid more resilient*** by implementing a:

- $730 million storm-hardening program, 90 percent funded via an agreement between Governor Andrew M. Cuomo and the Federal Emergency Management Agency ("FEMA"), including:
  - Upgrading 1,000 miles of distribution circuits with stronger wire and poles by 2019,
  - Installing 900 smart switches by 2019, to isolate damage and minimize the number of customers affected by outages, and
  - Rebuilding and storm hardening 12 substations flooded during Superstorm Sandy at higher 500-year flood levels,
- robust new tree-trimming program, with nearly our entire 10,000 miles of overhead lines trimmed under the program for the first time by the end of 2017,
- new outage management system, with improved ability to identify and manage outages, coordinate resources, and communicate with customers through text messages, email, and phone notifications.

***These improvements affect every neighborhood on Long Island and the Rockaways,*** as illustrated in Figure 4.

Figure 4: Long Island's $730 million storm hardening improvements




Major storms will continue to cause power outages. ***A robust resiliency program reduces the damage a storm causes and speeds restoration time.*** And when the next major storm hits Long Island, PSEG Long Island will have more tools to communicate with customers while our public power business model will provide access to federal disaster recovery grants, reducing cost for customers.

Flooded Substation After Sandy

New Elevated Substation Raised to 500-Year Flood Level

## Implementing New York's Reforming the Energy Vision

The absence of a federal energy policy has spurred innovation among the states. In New York, Governor Andrew M. Cuomo launched Reforming the Energy Vision or REV, among the most ambitious energy policies in the country. ***REV enables customers to make informed choices that reduce their electric bills, supports clean energy innovation and economic development, and protects the environment.*** REV's clean energy goals include:

- Reducing greenhouse gas emissions by 40 percent by 2030 and 80 percent by 2050,
- Increasing renewables to 50 percent of New York's electricity by 2030 ("50x30"),
- Lowering energy consumption in state buildings by 23 percent by 2030, and
- Installing 2,400 megawatts of offshore wind by 2030, enough to power 1.25 million homes.[14]

Block Island Wind Farm

Brookhaven National Lab Solar Farm


***LIPA and PSEG Long Island have advanced REV*** with:

- New York's first offshore wind farm, the 90-megawatt South Fork Project,
- New York's three largest utility-scale solar farms, totaling 92 megawatts,[15]
- New York's largest commitment to clean fuel cell technology, over 40 megawatts,
- New York's only feed-in tariff for utility-scale and commercial rooftop solar, over 60 megawatts,
- New York's first utility-scale battery project, totaling 10 megawatts,
- New York's most vibrant behind-the-meter rooftop solar market, with over 40,000 participating customers,
- Energy efficiency programs that help our customers use less electric, helping the environment while saving customers over $385 million in 2018 alone,
- Bring-your-own-thermostat and demand response programs, with 35,000 customers reducing peak load by 34 megawatts,
- Smart wires technology to defer transmission reconductoring projects by automatically shifting power from overloaded to underutilized transmission lines, and
- Behavior-based home energy management reports, with personalized recommendations for customers about home energy use and opportunities to save money.

*14 REV's targets for greenhouse gas reductions are measured from 1990 levels and its targets for energy consumption in buildings are measured from 2012 levels.*

*15 LIPA's utility-scale solar programs include other projects and in total exceed 140 megawatts.*

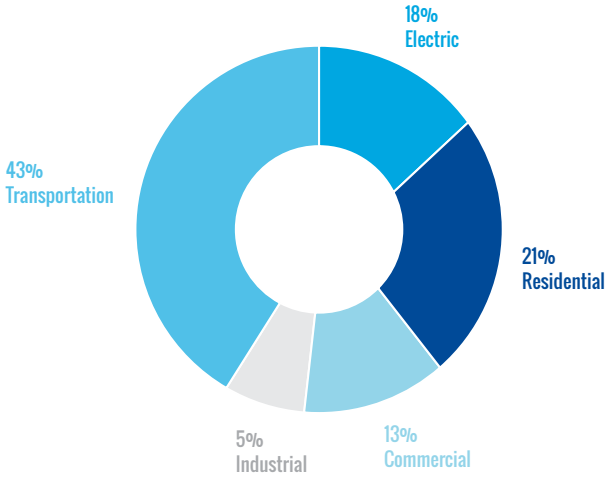
Notably, programs like the South Fork Project, utility scale batteries, fuel cells, and smart wires have cost-effectively deferred transmission and substation projects in load pockets, while simultaneously delivering clean energy and other benefits to the Long Island electric grid.

Together, ***our clean energy and energy efficiency programs will reduce Long Island's carbon emissions by the equivalent of 680,000 typical Long Island homes by 2030***.

## Electric Vehicles Can Reduce New York's Carbon Emissions

Transportation is New York's largest source of carbon emissions, greater than electricity and residential heating combined, as illustrated in Figure 5.

Figure 5: New York's Carbon Dioxide Emissions




*Source: U.S. Energy Information Administration, Energy-Related Carbon Dioxide Emissions at the State Level, January 2017.*

***With rapidly falling battery prices, the electrification of transportation may be among New York's most cost-effective carbon reduction strategies***. A joint study by the Electric Power Research Institute and Natural Resources Defense Council found that electric vehicles ("EVs") in New York today emit the same carbon as cars traveling 125 miles a gallon, roughly five times the average new car. That comparison considers all upstream power plant emissions and line losses. Improving technology and a cleaner electric grid will only enhance the comparison.

Long Island is ideally suited for EVs, with an adoption rate roughly twice the state average. And New York already offers aggressive programs to promote EVs, including rebates of up to $2,000 per vehicle and support for public charging infrastructure. Even without these incentives, EVs are expected to reach parity prices with gasoline-powered cars by 2025.[16]

Declining prices, improving range, and newly released EV models will substantially increase the choices available to consumers over the next several years, and LIPA and PSEG Long Island are actively considering new programs to support EV adoption and the implications for Long Island's electric grid.[17]

With rapidly falling battery prices, the electrification of transportation may be among New York's most cost-effective carbon reduction strategies

[16] *Bloomberg's "New Energy Outlook 2017."*
[17] *The implications of EVs to the electric will depend, in part, on the time of day customers choose to charge their cars.*

## Investing in Large New Power Plants is Risky Business

The electric grid provides a critical service, enabling every other critical service. While the value of the electric grid is unlikely to change, ***the patterns of production and consumption across the electric grid are changing in ways unfavorable to investing in large, new central station power plants.***

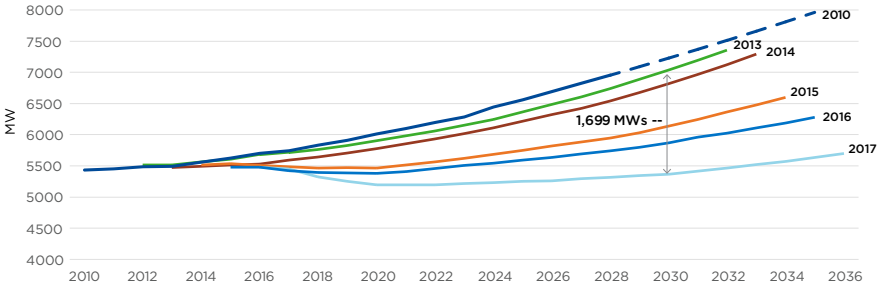
Until recently, electric use and economic growth were closely tied. Figure 6 shows the annual change in energy sales for the last several decades across the United States, with the 5-6 percent growth of the 1960s slowing to 2-3 percent by the 1980s and to flat or declining sales for the last decade. Electric sales are now projected to grow at less than half the rate of the national economy through 2040.[18]

Two of the drivers behind flat electric sales are energy efficiency and behind-the-meter generation. A new refrigerator uses a third of the electricity of a 1970s model, while modern lighting requires a sixth of the energy of an incandescent bulb. And the declining cost of distributed generation has led more customers to self-generate part of their energy needs, displacing production in central station power plants.

Long Island's energy consumption mirrors the national trend, with our peak load forecast for 2030 declining by 1,700 megawatts over the last seven years, or the equivalent of four large power plants, as shown in Figure 7. Most utilities simply need fewer power plants than they expected a decade ago, and the ability to build a large new plant and "grow into it" has been reduced.

Figure 6: U.S. Electricity Growth is Flat


Figure 7: Long Island's Peak Load Forecast has Declined 1,700MW




The Zone K peak load forecast for 2030 has declined by over 24% (i.e., 1,699 MWs) when comparing the 2013 forecast to the 2017 forecast.

[18] *U.S. Energy Information Administration, "U.S. Energy Outlook 2017."*

Another trend is that the cost of clean and distributed energy is rapidly declining towards parity with newly-built natural gas plants. Forecasts show:

- Solar costs falling 66 percent by 2040,
- Off-shore wind costs decreasing 71 percent by 2040, and
- Battery storage costs declining 70 percent by 2030.[19]

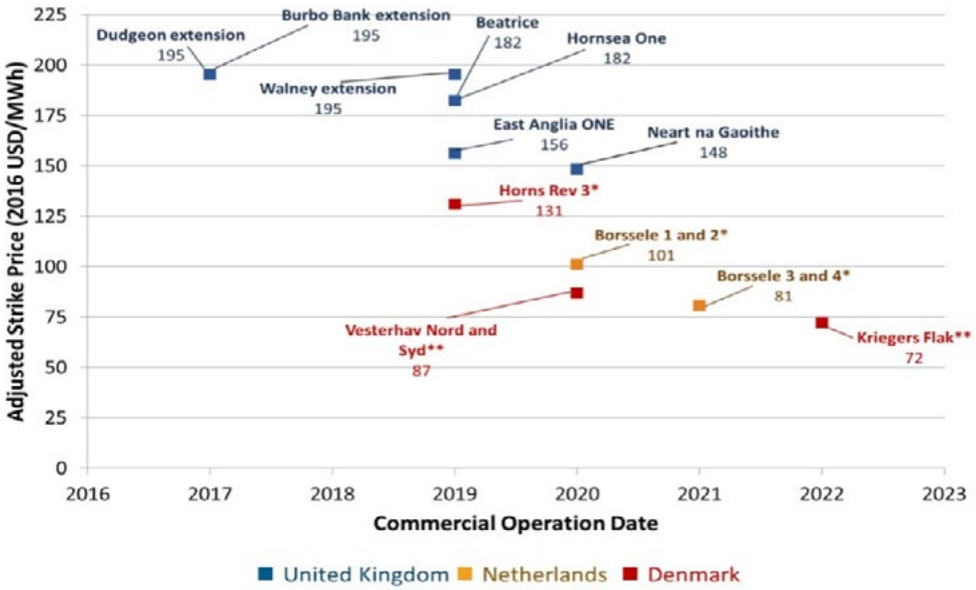
These forecasts merely reflect the continuation of recent trends. For example, Figure 8 shows the rapid drop in the cost of offshore wind in Europe, with new projects in service for 2022 contracted at 7.2 cents per kilowatt hour, or roughly grid parity, due to improving turbine technology and economies of scale.

Solar costs **falling 66 percent** by 2040

Off-shore wind costs **decreasing 71 percent** by 2040

Battery storage costs **declining 70 percent** by 2030

Figure 8: Offshore Wind Continues to Decline in Cost




*Source: NYSERDA*

[19] *Bloomberg's "New Energy Outlook 2017."*

***This coming of age of renewable energy will likely reduce the need for, the run time of, and may impair the value of large, newly-built power plants during their lifetimes***. The electric grid will still need new fossil-fired power plants but will need fewer of them and with different operating characteristics than a grid optimized using today's technology and costs.[20]

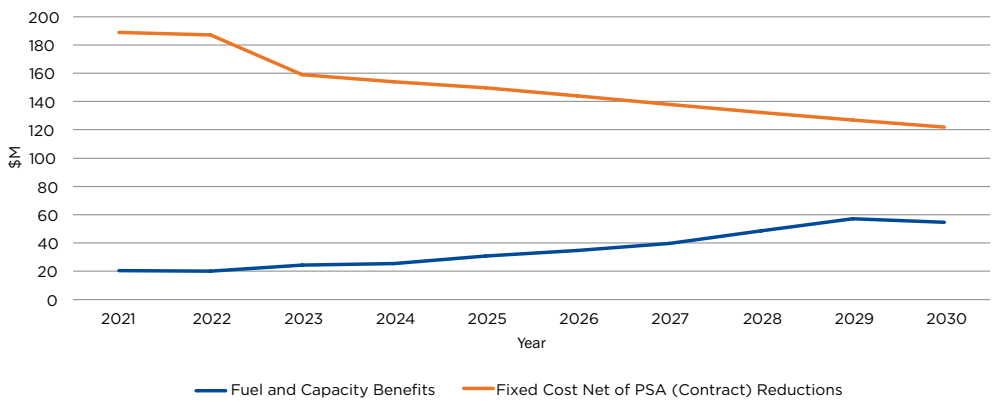
Taking these two trends into account, LIPA and PSEG Long Island recently evaluated[21] replacing three of our large natural-gas fired steam plants with modern combined-cycle technology.[22] As our steam plants run at far below operating capacity and are well-maintained and reliable, our primary consideration was cost. Evaluating the economics of a power plant is like buying a new car. There is the higher new car payment, offset by lower maintenance and fuel expense.

Figure 9 shows the cost to replace the E.F. Barrett steam plant with a 637-megawatt natural-gas, combined cycle plant. The additional fixed costs (orange line) exceed the maintenance and fuel savings (blue line) by a cumulative $1.1 billion through 2030. ***Constructing all three proposed combined-cycle plants would add over $5 billion to customer bills through 2030.***

Constructing combined-cycle plants would add over $5 billion to customer bills

Renewable energy reduces the need to build large new baseload power plants

Figure 9: Barrett Repowering Costs $1.1 Billion through 2030



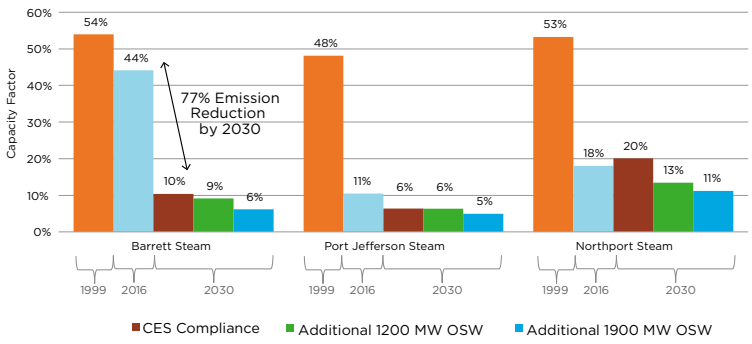

[20] *With increasing renewable penetration, the electric grid will require more ramping resources, like peaker plants and batteries. Peaker plants are optimized for less upfront cost, shorter run time, and greater operating flexibility.*

[21] *LIPA's Integrated Resource Plan and repowering reports are available on the "Reports" section of our website.*

[22] *Steam plants burn natural gas to heat water and create steam, which then runs through a turbine to produce electricity. Combined-cycle plants use natural gas to first power an air turbine, like a jet engine, and then recapture the heat to create steam that runs through a steam turbine. This combined process is more efficient than a steam-only turbine.*

Meanwhile, with flat load growth and cleaner energy coming onto the Long Island electric grid, ***the run time of our existing steam plants is forecast to further decline by up to 77 percent by 2030,*** as shown in Figure 10. A changing electric grid is reducing the production of our older plants, while meeting our needs at less cost to our customers than building new plants.[23]

Figure 10: Run Time of Long Island Steam Plants Will Decline by 2030




## High Property Taxes on Long Island Power Plants

The property taxes on power plants, if reasonably assessed, are fair to both the communities hosting the plants and the electric customers paying the bill. The property taxes are determined by multiplying the value of the property by the local tax rate.

***LIPA has four aging power plants under contract appraised by the local tax assessors at over 20 times their fair value.[24] If left unchecked, the property taxes on these four plants will exceed $2 billion over the next decade.*** The taxes assessed by these four jurisdictions are more than LIPA pays on brand-new plants built on Long Island.[25]

***The $2 billion billed to LIPA primarily results in lower school taxes in the communities hosting the plants – benefitting less than 2 percent of LIPA's customers***. Those funds could be better spent reducing electric rates, improving customer service, or storm hardening the electric grid, benefitting all LIPA customers.

LIPA has filed tax grievances for the four power plants for every year since 2010. Those cases are working their way through the courts, with the first trial scheduled for mid-2018. The potential tax refunds owed to LIPA's customers by the host communities already exceed $1 billion. LIPA has sought to assist the host communities in their transition to a more sustainable approach to taxation, but amicable agreement has so far proved elusive.

LIPA Pays Over $80 Million Per Year in Taxes for the Northport Power Plant – More Than 20x Fair Value

[23] *LIPA welcomes investment in new, large combined-cycle power plants on Long Island by private companies that have a different market outlook, if the investments are made without guarantees by our customers. The Long Island generating fleet is also aging and some portion of the fossil-fuel fleet will need to be modernized by LIPA over time, particularly the smaller, more flexible plants that can better balance intermittent clean energy sources.*

[24] *Numerous taxing jurisdictions in Nassau and Suffolk counties have had well-publicized, long standing issues in fairly valuing all types of property. LIPA's experience is unfortunately not unique.*

[25] *Power plants, like cars, are worth less with time.*

## 2018 Budget Highlights

LIPA and PSEG Long Island's initiatives in the 2018 Budget advance a mission of clean, reliable and affordable electric service for our 1.1 million customer-owners. The 2018 Budget funds:

- ***Rebuilding 320 miles of our distribution circuits*** with stronger wire and poles, and ***installing 200 smart switches*** to minimize outages on the electric grid, ***improving service for 624,000 customers***, as part of our $730 million FEMA-funded storm hardening program,
- Improving reliability for more than 150 electric circuits and 500 neighborhoods with ***local system upgrades***,
- Replacing over ***60,000 feet of aging underground cable***,
- Placing over ***70 megawatts of utility-scale solar*** and New York's ***first utility-scale batteries*** into service,
- Evaluating Long Island's peaking power plant fleet to facilitate ***greater renewable energy integration***, including offshore wind,
- ***Reducing energy use on Long Island*** through energy efficiency and behind-the-meter clean energy programs by the equivalent of 36,000 typical Long Island homes,
- ***Beginning universal deployment of smart meters***, with 50,000 meters installed in 2018, eventually leading to improvements in all aspects of our service while reducing cost,
- ***Waiving credit card transaction fees*** under a new pilot program to provide customers with greater choice in their payment methods,
- ***Initiating billing and metering system upgrades*** that will eventually provide customers with innovative tools and pricing options that better meet their lifestyles and needs,
- ***Commencing licensing for a 138-kilovolt underground cable*** that will improve the reliability of service to western Nassau County,
- ***Upgrading four substations*** in Nassau County and the Rockaways and adding ***three new substations*** in Suffolk County to improve service reliability and meet load growth in certain areas of the system,
- ***Installing a new undersea cable*** to improve service to Shelter Island,
- ***Deploying Smart Wires*** to cost-effectively defer reconductoring a 69-kilovolt line from Lake Success to Stewart Manor, automatically shifting power from the overloaded to underutilized circuits,
- ***Testing customer engagement*** with several strategies that could cost-effectively defer system investments in load pockets through ***a demonstration program called Super Saver*** in North Bellmore,
- Expanding funding to ***two pilot programs for economic development*** that assist small businesses locating in vacant storefronts and communities revitalizing downtown areas,
- ***Installing 50 EV workplace charging systems***, while developing a long-range EV strategy with targeted investments and innovative pricing and charging options, and
- ***Advancing tax grievances cases*** for four over-assessed power plants, to ensure tax fairness for all Long Island electric customers, with the first trial scheduled for mid-2018.

Figure 11: **2018 Operating Budget**
($ thousands)

| | |
|---|---|
| Operating Revenues | 3,521,694 |
| Grant & Other Income | 78,687 |
| **Total Revenues and Income** | **3,600,381** |
| Power Supply Costs | 1,665,229 |
| Delivery Costs | 696,451 |
| PILOTs, Taxes & Fees | 534,158 |
| Interest Payments | 347,542 |
| Debt Reduction & OPEB Funding | 357,001 |
| **Operating Budget** | **3,600,381** |
| **Fixed Obligation Coverage** | |
| LIPA Debt Plus Leases | 1.39x |
| LIPA & UDSA Debt Plus Leases | 1.24x |

Figure 12: **2018 Capital Budget**
($ thousands)

| | |
|---|---|
| Capital Projects | 566,442 |
| Storm Hardening | 190,273 |
| **Capital Budget** | **756,715** |
| Funding from Operating Budget | 157,873 |
| FEMA Grant | 171,246 |
| Debt Issued to Fund Projects | 427,596 |
| **Funding Sources** | **756,715** |
| **Percent of Capital Projects Funded from Debt** | |
| Including FEMA Projects | 57% |
| Excluding FEMA Projects | 72% |

Note: Operating Budget shown based on revenue requirements. Taxes on power supply have been reclassified to PILOTs, Taxes and Fees

## Financial Summary of 2018 Budget

The 2018 Budget consists of an Operating Budget of $3.6 billion and a Capital Budget of $757 million. The Budget follows the Three-Year Plan for 2016 to 2018 recommended by the Department of Public Service and adopted by LIPA's Board of Trustees in December 2015.

The Operating Budget funds delivery and power supply costs, taxes, and debt service, as illustrated in Figure 11. The Budget achieves 1.39x fixed obligation coverage, consistent with the Board's financial policy target for 2018.

The Capital Budget funds long-life infrastructure investments such as transmission, substations, poles, and wires. The Budget meets the Board's financial policy for borrowing, with new debt funding less than 64 percent of capital spending, as illustrated in Figure 12. ***The Board's policy on borrowing will continue to reduce LIPA's debt ratio towards industry benchmarks.***

The Three-Year Rate Plan included a 0.8 percent increase to forecast charges in 2016, 2.1 percent in 2017, and 2.1 percent in 2018, for a cumulative 5.0 percent over three years. These delivery rate adjustments followed a three-year delivery rate freeze, resulting in average delivery rate adjustments of less than one percent per year over a six-year period.

Electric rates have fixed and variable components. The components of LIPA's electric rates that fluctuate with actual cost – no more and no less – are for conditions largely outside our control like market prices for fuel and purchased power, the volume of electric sales, debt payments, storm restoration costs, and taxes and fees.

Electric bills are forecast to increase by $3.35 per month in 2018, or roughly 2 percent, from their 2017 budgeted level, as shown in Figure 13a. The primary drivers are infrastructure investments, higher storm restoration costs, lower sales, and the expiration of a temporary bill credit at the end of 2017. Due to lower power supply costs, actual electric rates in 2017 have been lower than budget, with savings of approximately $4.30 per month passed on to customers during the year, as shown in Figure 13b.[26]

[26] *Savings assumes an average residential customer using 755 kilowatt hours per month.*

Also shown in Figure 13a, ***electric bills for an average residential customer have remained roughly flat for over a decade, increasing 2.8 percent since 2008.*** This is primarily due to declining fuel costs offsetting other cost increases, although LIPA's electric rates have gone up less than most utilities in our region.

LIPA's electric rates also remain competitive with the other major utilities in the New York metropolitan area, as shown in Figure 14, consistent with our Board's policy on maintaining competitive electric rates.

Figure 13a:
Customers' Electric Bills are Flat Over Last 10 Years

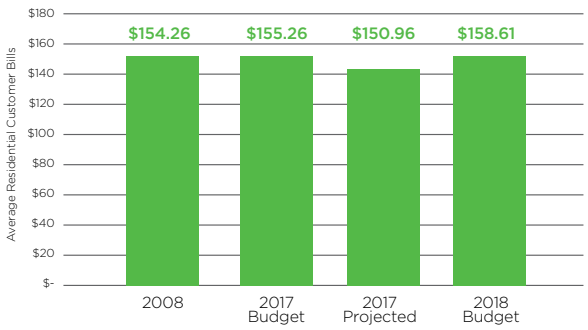



Figure 13b:
2017 Actual Bills Lower Than Budgeted

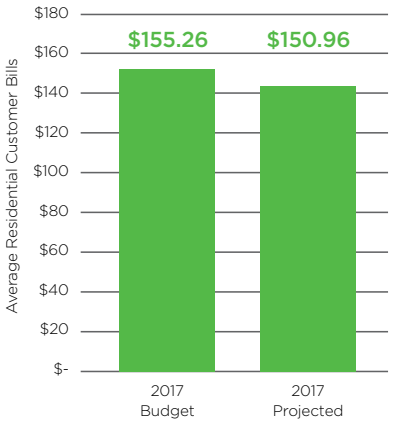
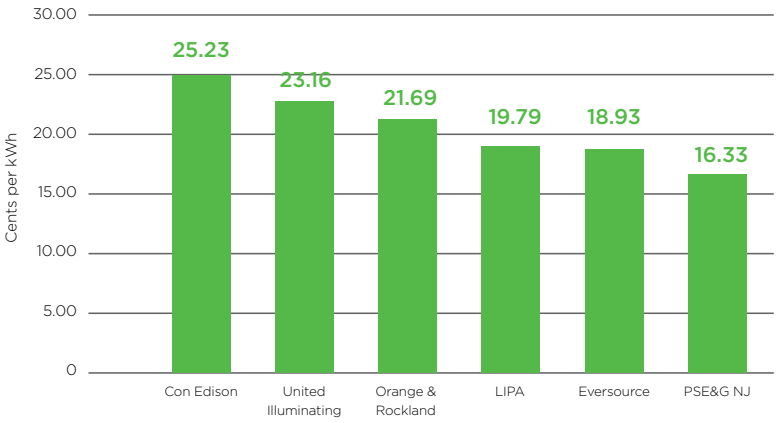



Figure 14:
Residential Electric Rates Remain Competitive for the New York Metro Area




*Source: U.S. Energy Information Administration, 12-months ending August 2017.*

**Electric bills** for an average residential customer **have remained roughly flat** for over a decade

## Conclusion

It is a privilege to work with the LIPA Board of Trustees and the employees of LIPA and PSEG Long Island to realize the vision of the LIPA Reform Act of 2013 for a cleaner, more reliable, and more affordable electric utility for our customer-owners on Long Island and in the Rockaways.

The 2018 Budget reflects the culmination of many months of effort and builds upon several years of planning at LIPA and PSEG Long Island. Our plans are exciting, and our accomplishments since the LIPA Reform Act of 2013 show we are headed in the right direction. We have consulted our means, and our wishes, and put our dollars in the places most valued by our customers.

**Thomas Falcone**
**Chief Executive Officer**

**December 19, 2017**

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# LONG ISLAND POWER AUTHORITY 2018 BUDGET

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**Revenue Requirements**
**(Thousands of Dollars)**

| Description | 2017 | | 2018 | | 2019 | | |
|---|---|---|---|---|---|---|---|
| | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year | Ref. |
| PSEG Long Island Operating and Managed Expenses | $ 629,784 | $ 655,398 | $ 648,983 | $ 19,199 | $ 645,701 | $ (3,282) | 34 |
| PILOTs - Revenue-Based Taxes | 32,482 | 31,338 | 33,127 | 645 | 33,561 | 434 | 30 |
| PILOTs - Property-Based Taxes | 285,772 | 283,917 | 289,280 | 3,508 | 295,065 | 5,786 | 38 |
| LIPA Operating & Deferred Expenses | 124,644 | 122,853 | 108,027 | (16,618) | 108,964 | 937 | 58 |
| **Total Operating & Deferred Expenses** | **$ 1,072,682** | **$ 1,093,505** | **$ 1,079,417** | **$ 6,735** | **$ 1,083,292** | **$ 3,875** | |
| LIPA Deferred Expenses | $ (31,015) | $ (31,015) | $ (31,015) | $ - | $ (31,015) | $ - | 58 |
| PSEG Pensions/OPEBS | (67,798) | (64,310) | (61,298) | 6,501 | (60,590) | 707 | 55 |
| Suffolk Property Tax Settlement | (19,496) | (19,234) | (21,714) | (2,218) | (24,042) | (2,328) | 30 & 40 |
| Visual Benefits Assessment | (429) | (428) | (428) | 1 | (456) | (28) | 30 & 40 |
| **Less Non-Cash Items** | **$ (118,738)** | **$ (114,987)** | **$ (114,454)** | **$ 4,284** | **$ (116,103)** | **$ (1,649)** | |
| Contribution to Pension Trust | $ 22,400 | $ 20,629 | $ 23,576 | $ 1,176 | $ 23,576 | $ - | 55 |
| Swap Payments, LOC Fees and Remarketing Fees | 29,955 | 25,987 | 26,487 | (3,469) | 26,522 | 36 | 44 |
| **Plus Cash Expenditures** | **$ 52,355** | **$ 46,616** | **$ 50,063** | **$ (2,293)** | **$ 50,098** | **$ 36** | |
| **Less Other Income and Deductions** | **$ (33,552)** | **$ (40,106)** | **$ (40,258)** | **$ (6,706)** | **$ (39,386)** | **$ 872** | 40 |
| **Less Grant Income** | **$ (38,363)** | **$ (38,433)** | **$ (38,429)** | **$ (65)** | **$ (38,429)** | **$ -** | 42 |
| **Total Cash Needed to Fund Operations** | **$ 934,384** | **$ 946,595** | **$ 936,339** | **$ 1,954** | **$ 939,473** | **$ 3,134** | |
| LIPA Debt Service | $ 240,919 | $ 248,225 | $ 192,978 | $ (47,941) | $ 204,392 | $ 11,414 | 46 |
| UDSA Debt Service | 264,811 | 264,878 | 324,728 | 59,917 | 327,140 | 2,412 | 46 |
| Fixed Obligation Coverage | 153,958 | 173,585 | 190,669 | 36,711 | 211,201 | 20,532 | 46 |
| **Debt Service** | **$ 659,689** | **$ 686,688** | **$ 708,376** | **$ 48,687** | **$ 742,734** | **$ 34,358** | |
| **Power Supply Charge** | **$ 1,992,875** | **$ 1,857,641** | **$ 1,876,980** | **$ (115,895)** | **$ 1,885,147** | **$ 8,167** | 32 |
| **Total Revenue Requirements** | **$ 3,586,948** | **$ 3,490,924** | **$ 3,521,694** | **$ (65,254)** | **$ 3,567,353** | **$ 45,659** | 30 |

## Revenue Requirements

The Authority's annual revenue requirements are projected to decrease from a budgeted $3.6 billion in 2017 to $3.5 billion in 2018. The primary driver of this change is a decrease in the Power Supply Charge which was partially offset by increases in property tax assessments; and debt service, including fixed obligation coverage, to support the Authority's capital improvement program. These costs are further detailed on the following pages herein.

Beginning in 2016, the Authority's revenue requirements are calculated in accordance with the practices utilized by other large public power utilities in the United States (the "Public Power Model") and reflect the recovery of operating expenses in the current year plus debt and other fixed payment obligations, including fiscally sound levels of fixed obligation coverage.

As set forth on page 26, the Authority's methodology for calculating revenue requirements and fixed obligation coverage excludes certain specified non-cash items. These exclusions reflect the non-cash portion of costs amortized to expense, such as depreciation, amortization, and deferred expenses (the costs of which are generally recovered in revenues through debt service payments) and the portion of expense associated with voluntary contributions to the Authority's OPEB Account, which are made after debt payments each year (and thus are first available to make debt payments and are thus part of fixed obligation coverage). The Authority's financial policies are further detailed herein in the description of debt service and fixed obligation coverage requirements.

For fiscal year 2019, increases are primarily driven by higher property taxes and debt service, including fixed coverage. In an effort to minimize rate increases, the Authority and PSEG Long Island project keeping other total 2019 costs at 2018 levels with the exception of the Utility 2.0 program related costs.

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**Statements of Revenues and Expenses**
**(Thousands of Dollars)**

| Description | | 2016 | 2017 | | 2018 | | 2019 | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year | Ref. |
| **Revenues** | | **$ 3,399,101** | **$ 3,586,948** | **$ 3,490,924** | **$ 3,521,694** | **$ (65,254)** | **$ 3,567,353** | **$ 45,659** | 30 |
| Power Supply Charge | (a) | 1,827,809 | 1,992,875 | 1,857,641 | 1,876,980 | (115,895) | 1,885,147 | 8,167 | 32 |
| **Revenue Net of Fuel Costs** | | **$ 1,571,292** | **$ 1,594,073** | **$ 1,633,283** | **$ 1,644,714** | **$ 50,641** | **$ 1,682,206** | **$ 37,492** | |
| **PSEG Long Island Operating and Managed Expenses** | | | | | | | | | |
| PSEG Long Island Operating Expenses | | $ 441,035 | $ 488,945 | $ 496,938 | $ 516,407 | $ 27,463 | $ 512,887 | $ (3,521) | 55 |
| PSEG Long Island Pensions/OPEBs | | 62,814 | 67,798 | 64,310 | 61,298 | (6,501) | 60,590 | (707) | 55 |
| PSEG Long Island Managed Expenses | | 147,080 | 73,040 | 88,386 | 65,842 | (7,199) | 67,113 | 1,271 | 34 |
| Utility Depreciation | | 150,941 | 167,634 | 170,694 | 189,410 | 21,776 | 216,431 | 27,021 | 36 |
| Accelerated Depreciation of Conventional Meters | (b) | - | - | - | 7,679 | 7,679 | 28,620 | 20,941 | 36 |
| PILOTs - Revenue-Based Taxes | | 37,116 | 32,482 | 31,338 | 33,127 | 645 | 33,561 | 434 | 30 |
| PILOTs - Property-Based Taxes | | 279,239 | 285,772 | 283,917 | 289,280 | 3,508 | 295,065 | 5,786 | 38 |
| LIPA Operating Expenses | | $ 71,180 | $ 93,630 | $ 91,838 | $ 77,012 | $ (16,618) | $ 77,949 | $ 937 | 58 |
| LIPA Deferred Amortized Expenses | | 31,014 | 31,015 | 31,015 | 31,015 | - | 31,015 | - | 58 |
| LIPA Depreciation and Amortization | | 112,096 | 111,781 | 111,818 | 111,801 | 20 | 111,801 | - | 36 |
| Interest Expense | | 349,809 | 331,032 | 334,701 | 343,505 | 12,473 | 353,272 | 9,767 | 44 |
| **Total Expenses** | | **$ 1,682,325** | **$ 1,683,128** | **$ 1,704,955** | **$ 1,726,375** | **$ 43,246** | **$ 1,788,303** | **$ 61,929** | |
| **Other Income and Deductions** | | **$ 43,699** | **$ 33,552** | **$ 40,106** | **$ 40,258** | **$ 6,706** | **$ 39,386** | **$ (872)** | 40 |
| **Grant Income** | | **$ 40,901** | **$ 43,363** | **$ 39,023** | **$ 41,778** | **$ (1,585)** | **$ 47,517** | **$ 5,739** | 42 |
| **Excess of Revenues Over Expenses** | | **$ (26,433)** | **$ (12,140)** | **$ 7,457** | **$ 376** | **$ 12,516** | **$ (19,194)** | **$ (19,570)** | |

Note: (a) National Grid Power Supply Agreement and Nine Mile Point 2 O&M have been reclassified from PSEG Long Island Managed Expenses to Power Supply Charge for presentation purposes for all years

(b) The planned depreciation for 2018 and 2019 reflects increases of approximately $7.7 million and $28.6 million, respectively, from the early retirement of conventional meters as they are replaced by smart meters

## Statement of Revenues and Expenses

The Authority's projection of Revenues and Expenses uses the accrual basis of accounting, which results in a $0.4 million net income in 2018 and a net loss in 2019. Further information on the components of Revenues and Expenses are included on supplemental pages herein.

The factor contributing to the projection of net loss is the amortization of certain non-cash regulatory assets to expense, including non-cash employee benefits (OPEBs) for PSEG Long Island employees (see page 55) and other deferred expenses (see page 58). This includes an increase in depreciation associated with the early retirement of conventional meters as they are replaced by smart meters. Without this change, 2018's projection of net income would have increased from $0.4 million to $8.1 million and in 2019 the projected net loss of $19.2 million would have been a net income of $9.4 million.

As shown on page 46, despite these "book" net losses, the Authority is forecasting to achieve higher levels of fixed obligation coverage and increase the amount of cash flow available to fund its capital program in lieu of debt financing through 2019. This is consistent with the Authority's financial goals to improve its credit ratings and reduce reliance on debt funding of its capital plan over five years.

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**Sales and Revenues**

| Description | 2016 | 2017 | | 2018 | | 2019 | |
|---|---|---|---|---|---|---|---|
| | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year |
| **Sales of Electricity (MWh)** | | | | | | | |
| Residential Sales | 9,463,401 | 9,237,712 | 9,097,836 | 9,239,265 | 1,553 | 9,038,072 | (201,193) |
| Commercial Sales | 9,581,965 | 9,728,068 | 9,451,503 | 9,625,647 | (102,421) | 9,682,857 | 57,210 |
| Other Sales to Public Authorities/Street Lighting | 554,624 | 555,815 | 556,357 | 533,528 | (22,288) | 527,252 | (6,276) |
| **Total Sales of Electricity (MWh)** | **19,599,991** | **19,521,596** | **19,105,696** | **19,398,440** | **(123,156)** | **19,248,181** | **(150,259)** |
| **Revenues by Sector (Thousands of Dollars)** | | | | | | | |
| Residential | $ 1,819,445 | $ 1,899,797 | $ 1,825,693 | $ 1,893,044 | $ (6,753) | $ 1,893,650 | $ 606 |
| Commercial | 1,430,165 | 1,517,895 | 1,476,688 | 1,500,458 | (17,437) | 1,543,816 | 43,357 |
| Other Public Authorities/Street Lighting | 64,731 | 73,902 | 68,353 | 73,723 | (179) | 66,163 | (7,559) |
| ESCO Revenue | 45,469 | 107,798 | 90,813 | 105,383 | (2,415) | 98,290 | (7,093) |
| Power Supply Charge Deferral | 34,627 | - | 1,061 | - | - | - | - |
| Other Regulatory Amortizations and Deferrals | (22,860) | (45,266) | (3,128) | (80,100) | (34,834) | (62,826) | 17,274 |
| Miscellaneous Revenues | 27,523 | 32,821 | 31,444 | 29,186 | (3,636) | 28,260 | (926) |
| **Total Revenues** | **$ 3,399,101** | **$ 3,586,948** | **$ 3,490,924** | **$ 3,521,694** | **$ (65,254)** | **$ 3,567,353** | **$ 45,659** |
| **Revenues by Component (Thousands of Dollars)** | | | | | | | |
| Delivery Charge (RDM Target) (a) | $ 1,372,822 | $ 1,467,547 | $ 1,417,947 | $ 1,515,714 | $ 48,167 | $ 1,556,893 | $ 41,179 |
| Power Supply Charge (a) | 1,793,182 | 1,992,875 | 1,856,580 | 1,876,980 | (115,895) | 1,885,147 | 8,167 |
| Energy Efficiency and Renewable Energy (DER) | 46,637 | 52,342 | 51,147 | 56,178 | 3,836 | 52,875 | (3,304) |
| New York State Assessment | 12,505 | 8,880 | 10,609 | 10,510 | 1,630 | 10,618 | 108 |
| Suffolk Property Tax Settlement | 48,990 | 44,318 | 44,056 | 45,274 | 956 | 46,234 | 960 |
| Visual Benefits Assessment (VBA) | 928 | 948 | 972 | 948 | (0) | 948 | - |
| Revenue Related PILOTS | 37,116 | 32,482 | 31,338 | 33,127 | 645 | 33,561 | 434 |
| RDM Collection (b) | 47,630 | - | 60,575 | 3,963 | 3,963 | - | (3,963) |
| DSA Collection/(Refund) | - | - | (11,677) | 29,915 | 29,915 | 15,644 | (14,271) |
| Power Supply Charge Deferral | 34,627 | - | 1,061 | - | - | - | - |
| Other Regulatory Amortizations and Deferrals | (22,860) | (45,266) | (3,128) | (80,100) | (34,834) | (62,826) | 17,274 |
| Miscellaneous Revenues | 27,523 | 32,821 | 31,444 | 29,186 | (3,636) | 28,260 | (926) |
| **Total Revenues** | **$ 3,399,101** | **$ 3,586,948** | **$ 3,490,924** | **$ 3,521,694** | **$ (65,254)** | **$ 3,567,353** | **$ 45,659** |

Note: (a) 2016 Actual capacity costs of $478 million were reclassified from Delivery Charge to Power Supply Charge to be consistent with the current presentation

(b) The 2017 RDM Collection amount of $60.6 million reflects a combination of the 2016 uncollected delivery revenue shortfall of $15.0 million as well as the estimated shortfall in the 2017 delivery revenue. The 2018 RDM Collection amount of $4.0 million reflects only the 2017 estimated uncollected delivery revenue shortfall to be charged to customers in 2018. The expected 2018 delivery revenue shortfall is included in the Delivery Charge (RDM Target) above.

## Sales and Revenues

Revenues are derived primarily from retail sales of electricity to residential and commercial customers. Also included are revenues from electric sales to public authorities and for street lighting. In accordance with the Authority's Tariff for Electric Service (the "Tariff"), the Authority's Delivery Charge recovers the costs associated with maintaining and improving its transmission and distribution system and serving its retail customers. Additionally, the Authority recovers those costs associated with purchasing and producing electric energy (fuel and purchased power) through the Power Supply Charge. Finally, the Authority has various surcharges and non-electric service charges, such as those to recover costs associated with its distributed energy programs, assessments, revenue-related PILOTs, fees for pole attachments, late payment charges to customers whose bills are in arrears, and other miscellaneous service fees.

PSEG Long Island's sales forecast projects an approximately 0.7% decline in sales annually through 2019, reflecting the impact of PSEG Long Island's energy efficiency programs combined with voluntary measures taken by customers, PV rooftop solar, and improvements to standards and codes. Any surplus/shortfall in delivery revenue due to sales being higher/lower than budgeted will be recovered through the Revenue Decoupling Mechanism. The forecast assumes historically average weather conditions over the period.

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**Power Supply Charge**
**(Thousands of Dollars)**

| Description | 2016 | 2017 | | 2018 | | 2019 | |
|---|---|---|---|---|---|---|---|
| | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year |
| **Capacity** | | | | | | | |
| Capacity Charges | $ 406,771 | $ 407,742 | $ 399,487 | $ 401,805 | $ (5,937) | $ 417,154 | $ 15,348 |
| National Grid (PSA) | 231,559 | 260,395 | 261,939 | 263,864 | 3,469 | 269,480 | 5,617 |
| **Total Capacity** | **$ 638,330** | **$ 668,137** | **$ 661,426** | **$ 665,669** | **$ (2,468)** | **$ 686,634** | **$ 20,965** |
| **Purchased Power** | | | | | | | |
| Purchased Power | $ 388,616 | $ 430,438 | $ 376,811 | $ 367,021 | $ (63,417) | $ 344,273 | $ (22,748) |
| **Total Purchased Power** | **$ 388,616** | **$ 430,438** | **$ 376,811** | **$ 367,021** | **$ (63,417)** | **$ 344,273** | **$ (22,748)** |
| **Commodity** | | | | | | | |
| Natural Gas | $ 329,391 | $ 283,057 | $ 285,643 | $ 262,475 | $ (20,582) | $ 254,098 | $ (8,377) |
| Fuel Oil | 45,410 | 76,083 | 21,795 | 49,614 | (26,469) | 53,210 | 3,596 |
| **Total Commodity** | **$ 374,801** | **$ 359,140** | **$ 307,438** | **$ 312,089** | **$ (47,051)** | **$ 307,308** | **$ (4,781)** |
| **Renewables** | | | | | | | |
| Renewable Power | $ 90,896 | $ 136,519 | $ 136,618 | $ 135,007 | $ (1,512) | $ 136,664 | $ 1,657 |
| **Total Renewables** | **$ 90,896** | **$ 136,519** | **$ 136,618** | **$ 135,007** | **$ (1,512)** | **$ 136,664** | **$ 1,657** |
| **Other** | | | | | | | |
| Transmission | $ 37,540 | $ 47,907 | $ 41,652 | $ 42,902 | $ (5,005) | $ 42,742 | $ (160) |
| Nine Mile Nuclear Fuel | 40,040 | 45,585 | 42,266 | 43,346 | (2,240) | 46,381 | 3,035 |
| Regional Greenhouse Gas Initiative (RGGI) | 17,600 | 36,842 | 10,690 | 20,698 | (16,144) | 22,717 | 2,019 |
| Zero Emissions Credits | - | 34,397 | 38,311 | 45,862 | 11,466 | 50,014 | 4,152 |
| Fuel and Power Supply Management Services | 19,757 | 19,225 | 19,247 | 19,924 | 699 | 20,289 | 365 |
| Other | 3,024 | 3,379 | 11,869 | 12,711 | 9,332 | 12,538 | (172) |
| **Total Other** | **$ 117,962** | **$ 187,335** | **$ 164,034** | **$ 185,443** | **$ (1,892)** | **$ 194,682** | **$ 9,239** |
| **Pass Through Property Taxes** | | | | | | | |
| National Grid (PSA) | $ 200,958 | $ 195,633 | $ 195,633 | $ 196,016 | $ 383 | $ 199,600 | $ 3,585 |
| Fast Track Units | 11,528 | 11,629 | 11,637 | 11,725 | 97 | 12,008 | 282 |
| Nine Mile | 4,719 | 4,044 | 4,044 | 4,010 | (34) | 3,978 | (32) |
| **Total Pass Through Property Taxes** | **$ 217,205** | **$ 211,306** | **$ 211,314** | **$ 211,751** | **$ 445** | **$ 215,586** | **$ 3,835** |
| **Total Power Supply Costs** | **$ 1,827,809** | **$ 1,992,875** | **$ 1,857,641** | **$ 1,876,980** | **$ (115,895)** | **$ 1,885,147** | **$ 8,167** |

Note: 2016 Actual capacity costs of $478 million were reclassified from Delivery Charge to Power Supply Charge to be consistent with the current presentation

## Power Supply Charge

Power Supply Charges were budgeted at $2.0 billion in 2017 and are forecasted to decrease by $116 million in 2018 and then increase by $8 million in 2019. The primary driver of the decrease is lower projected commodity prices, net of the impact of the Authority's hedge positions, which reduces the cost of Long Island generated energy as well as the cost of purchased power.

Fuel and purchased power cost projections are prepared utilizing a generation economic dispatch model that considers, among other variables, the availability and thermal efficiency of generating resources, delivered fuel prices, and environmental regulatory requirements.

In addition to the cost of fuels consumed in generation and purchased power, power supply costs include the cost of emission allowances, generation and transmission cable capacity, the Authority's share of costs charged by the New York, New England and PJM independent system operators ("ISO"), electric power wheeling, payments made to Energy Service Companies ("ESCOs") in accordance with the Long Island Choice program, Zero Emission Credits associated with the adoption by the New York State Public Service Commission of the Clean Energy Standard, services received under energy, power and fuel management agreements, fuel hedging program costs, and energy from renewable resources.

Beginning in 2017, the Authority's 18% share of the operation and maintenance expenses related to the Nine Mile Point 2 nuclear generating station, the National Grid Power Supply Agreement, and certain PILOTs, have been reclassified to the Power Supply Charge. This change was made to be consistent with how all other New York State electric utilities classify capacity costs. The results for 2016 have been restated to reflect this change.

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**Operating and Deferred Expense**
**(Thousands of Dollars)**

| Description | | 2016 | 2017 | | 2018 | | 2019 | |
|---|---|---|---|---|---|---|---|---|
| | | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year |
| **PSEG Long Island Operating Expenses** | | **$ 503,849** | **$ 556,743** | **$ 561,249** | **$ 577,705** | **$ 20,962** | **$ 573,477** | **$ (4,228)** |
| **Capital Lease Offsets** | (a) | **$ -** | **$ -** | **$ (5,764)** | **$ (5,436)** | **$ (5,436)** | **$ (5,111)** | **$ 324** |
| **PSEG Long Island Managed Expenses** | | | | | | | | |
| Uncollectible Accounts | | 19,325 | 25,647 | 20,928 | 22,923 | (2,724) | 23,541 | 618 |
| Storm Restoration | (b) | 112,338 | 34,077 | 59,088 | 34,854 | 777 | 34,854 | - |
| NYS Assessment | | 12,505 | 8,880 | 10,609 | 10,510 | 1,630 | 10,618 | 108 |
| Accretion of Asset Retirement Obligation | | 2,656 | 4,253 | 2,638 | 2,831 | (1,422) | 3,052 | 221 |
| Miscellaneous | | 256 | 183 | 887 | 160 | (23) | 160 | - |
| **Total PSEG Long Island Managed Expenses** | (c) | **$ 147,080** | **$ 73,040** | **$ 88,386** | **$ 65,842** | **$ (7,199)** | **$ 67,113** | **$ 1,271** |
| **Total PSEG Long Island Operating and Managed Expenses** | | **$ 650,929** | **$ 629,784** | **$ 649,635** | **$ 643,547** | **$ 13,763** | **$ 640,590** | **$ (2,957)** |
| **LIPA Operating Expenses** | | | | | | | | |
| Management Fee (including incentive) | | $ 70,900 | $ 75,034 | $ 72,963 | $ 74,604 | $ (430) | $ 76,283 | $ 1,679 |
| Capitalized Management Fee | (d) | (11,323) | (12,779) | (10,904) | (30,632) | (17,853) | (31,322) | (689) |
| LIPA Operating Costs | | 11,604 | 31,375 | 29,780 | 33,040 | 1,666 | 32,988 | (52) |
| **LIPA Operating Expenses** | | **$ 71,180** | **$ 93,630** | **$ 91,838** | **$ 77,012** | **$ (16,618)** | **$ 77,949** | **$ 937** |
| **LIPA Amortization of Deferred Expense** | | **$ 31,014** | **$ 31,015** | **$ 31,015** | **$ 31,015** | **$ -** | **$ 31,015** | **$ -** |
| **LIPA Operating & Amortization of Deferred Expenses** | | **$ 102,195** | **$ 124,644** | **$ 122,853** | **$ 108,027** | **$ (16,618)** | **$ 108,964** | **$ 937** |
| **PSEG Long Island & LIPA Total Operating & Deferred Expenses** | | **$ 753,124** | **$ 754,428** | **$ 772,488** | **$ 751,574** | **$ (2,854)** | **$ 749,554** | **$ (2,020)** |

Note: (a) Due to a change in the accounting treatment for vehicle leases, the lease expense incurred in PSEGLI's operating budget is reclassified to Depreciation and Capital Interest expense, however, these leases are included in PSEGLI's operating expenses as reflected on the Revenue Requirements page
(b) 2017 Storm Restoration costs, Approved and Projected, reflect changes in accounting for assessments
(c) 2016 Actual excludes National Grid Power Supply Agreement and Nine Mile Point 2 O&M costs of $478 milion that were reclassified to Power Supply Charge to be consistent with the current presentation
(d) Effective in 2018, a new methodology based on the PSEGLI company labor allocation will be adopted for determination of the Capitalized Management Fee

## Operating and Deferred Expenses

Total Operating and Deferred Expenses were $754.4 million in the approved 2017 Operating Budget and are planned to be $751.6 million in 2018 and $749.6 million in 2019.

Operating and Deferred Expenses are comprised primarily of costs associated with operating and maintaining the Authority's Transmission and Distribution (T&D) system. They consist of three major expense categories: (i) PSEG Long Island Operating Expenses (which constitute the expenses for which PSEG Long Island must remain within 102% of budget in order to earn incentive compensation); (ii) PSEG Long Island Managed Expenses (expenses for which PSEG Long Island manages the expense but which are substantially outside of the control of PSEG Long Island); and (iii) the Authority's Operating and Deferred Expenses. PSEG Long Island Operating Expenses include costs related to the following major areas: Transmission and Distribution, Customer Services, Business Services, Power Markets and Energy Efficiency and Renewable Energy Programs. The budget for the Energy Efficiency and Renewable Energy Programs provides for additional peak load reductions as well as customer-based solar and wind distributed generation, among other things. PSEG Long Island Operating Expenses for 2018 and 2019 include additional costs related to the Utility 2.0 Plan. These costs are associated with projects aimed at integrating Distributed Energy Resources ("DER") in the Authority's electric grid.

PSEG Long Island Managed Expenses includes costs related to assessments, losses on uncollectible accounts, and storm preparation and restoration. The budget includes the continuation of reconciliation mechanisms contained in the Rate Plan for several of the PSEG Long Island Managed Expenses, which are subject to variation for reasons generally outside of the control of the utility, such as storm preparation and restoration costs and PILOTs-property taxes.

LIPA Operating and Deferred Expenses consist of the PSEG Long Island management fee, amortizations of deferred costs, and costs related to the Authority staff and outside professional services, as detailed on page 58. Effective in 2018, Capitalized Management Fee follows a revised methodology based on the PSEG Long Island labor allocation.

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**Depreciation, Amortization and Deferred Expenses**
**(Thousands of Dollars)**

| Description | 2016 | 2017 | | 2018 | | 2019 | |
|---|---|---|---|---|---|---|---|
| | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year |
| **PSEG Long Island Managed Utility Depreciation** | $ 150,941 | $ 163,940 | $ 170,038 | $ 185,688 | $ 21,748 | $ 206,333 | $ 20,644 |
| Accelerated Depreciation of Conventional Meters (a) | - | - | - | 7,679 | 7,679 | 28,620 | 20,941 |
| Depreciation Expense Related to FEMA Capital Projects | - | 3,694 | 655 | 3,722 | 28 | 10,098 | 6,376 |
| **Total PSEG Long Island Managed Utility Depreciation** | **$ 150,941** | **$ 167,634** | **$ 170,694** | **$ 197,089** | **$ 29,455** | **$ 245,051** | **$ 47,962** |
| **LIPA Depreciation and Amortization** | | | | | | | |
| Amortization of Acquisition Adjustment | $ 111,375 | $ 111,375 | $ 111,375 | $ 111,375 | $ - | $ 111,375 | $ - |
| Depreciation - LIPA | 721 | 406 | 444 | 426 | 20 | 426 | - |
| **Total LIPA Depreciation and Amortization** | **$ 112,096** | **$ 111,781** | **$ 111,818** | **$ 111,801** | **$ 20** | **$ 111,801** | **$ -** |
| **Total Depreciation and Amortization** | **$ 263,037** | **$ 279,415** | **$ 282,512** | **$ 308,889** | **$ 29,475** | **$ 356,851** | **$ 47,962** |
| **LIPA Deferred Expenses** | | | | | | | |
| 2014/2015 Pension/OPEB Deferral | $ 9,381 | $ 9,381 | $ 9,381 | $ 9,381 | $ - | $ 9,381 | $ - |
| National Grid Pension/OPEB Settlement | 21,634 | 21,634 | 21,634 | 21,634 | - | 21,634 | - |
| **Total Deferred Expenses** | **$ 31,014** | **$ 31,015** | **$ 31,015** | **$ 31,015** | **$ -** | **$ 31,015** | **$ -** |
| **Total Depreciation, Amortization and Deferred Expenses** | **$ 294,051** | **$ 310,429** | **$ 313,526** | **$ 339,904** | **$ 29,475** | **$ 387,866** | **$ 47,962** |

Note: (a) The planned depreciation for 2018 and 2019 reflects increases of approximately $7.7 million and $28.6 million, respectively, from the early retirement of conventional meters as they are replaced by smart meters.

## Depreciation, Amortization and Deferred Expenses

Depreciation, Amortization and Deferred Expenses were budgeted at $310.4 million in 2017, $339.9 million in 2018 and $387.9 million in 2019.

PSEG Long Island Managed Utility Depreciation consists primarily of depreciation of transmission and distribution, information technology, and FEMA storm hardening assets. 2017 also reflects the impact of a depreciation study completed and implemented in 2016 which led to a $15 million increase in annual depreciation on T&D assets, $6 million in additional depreciation on NMP2 and catch-up depreciation on capital software of $12 million.

The planned depreciation for 2018 and 2019 reflects increases of approximately $7.7 million and $28.6 million, respectively, from the early retirement of conventional meters as they are replaced by smart meters. Depreciation expense will increase throughout the entire smart meter implementation program, which is expected to be completed in 2022, as conventional meters are taken out of service.

LIPA Depreciation and Amortization consists primarily of the amortization of the Acquisition Adjustment related to the merger with the Long Island Lighting Company in 1998, which is budgeted at $111.4 million annually for 2018-2019, and certain LIPA leasehold improvements referred to as Depreciation-LIPA.

LIPA Deferred Expenses are the amortization of certain regulatory assets, the majority of which relate to pension and OPEB expenses for former National Grid and current PSEG Long Island employees that directly serve the Authority's customers, for which the expense is a contractual obligation of the Authority. The amortization of the regulatory asset aligns the cost in reported expenses in a manner similar to this workforce being directly employed by the Authority. See the Authority's audited financial statements for more information.

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**Taxes, Payments-in-Lieu of Taxes and Assessments**
**(Thousands of Dollars)**

| Description | 2016 | 2017 | | 2018 | | 2019 | |
|---|---|---|---|---|---|---|---|
| | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year |
| **PILOTs - Revenue-Based Taxes** | **$ 37,116** | **$ 32,482** | **$ 31,338** | **$ 33,127** | **$ 645** | **$ 33,561** | **$ 434** |
| **PILOTs - Local Property-Based Taxes** | **$ 279,239** | **$ 285,772** | **$ 283,917** | **$ 289,280** | **$ 3,508** | **$ 295,065** | **$ 5,786** |
| **Property Taxes in Power Supply Charge** | | | | | | | |
| National Grid (PSA) Property Taxes | $ 200,958 | $ 195,633 | $ 195,633 | $ 196,016 | $ 383 | $ 199,600 | $ 3,585 |
| Nine Mile PILOTs | 4,719 | 4,044 | 4,044 | 4,010 | (34) | 3,978 | (32) |
| Fast Track Units | 11,528 | 11,629 | 11,637 | 11,725 | 97 | 12,008 | 282 |
| **Total Property Taxes in Power Supply Charge** | **$ 217,205** | **$ 211,306** | **$ 211,314** | **$ 211,751** | **$ 445** | **$ 215,586** | **$ 3,835** |
| **Other Taxes and Assessments** | | | | | | | |
| NYS Conservation Assessment | $ 3,589 | $ 880 | $ 1,795 | $ - | $ (880) | $ - | $ - |
| NYS Department of Public Service | 8,916 | 8,000 | 8,814 | 10,510 | 2,510 | 10,618 | 108 |
| NYS Office of Real Property Services | 159 | 71 | 152 | 160 | 89 | 160 | - |
| **Total Other Taxes and Assessments** | **$ 12,664** | **$ 8,951** | **$ 10,761** | **$ 10,669** | **$ 1,718** | **$ 10,778** | **$ 108** |
| **Total PILOTs, State and Local Taxes and Assessments** | **$ 546,225** | **$ 538,511** | **$ 537,329** | **$ 544,827** | **$ 6,317** | **$ 554,991** | **$ 10,163** |

## Taxes, Payments-in-Lieu of Taxes and Assessments

Payments-In-Lieu of Taxes ("PILOTs") and New York State Assessments are budgeted at $538.5 million in 2017, $544.8 million in 2018 and $555.0 million in 2019.

Revenue-based PILOTs are based on gross revenues received from the sale of electricity and other sources of revenue and are subject to true up to actual cost through a PILOT payments recovery rider. Beginning in 2017, the reclassification of $478.0 million of capacity costs from Delivery Charge to Power Supply Charge creates a reduction to Revenue-based PILOTs due to the lower tax rate charged on commodity costs relative to the delivery charges.

Property-based PILOTs are for payments on Authority owned properties. The LIPA Reform Act establishes a 2% cap in the increase in T&D property based PILOT payments allowable in every year beginning in 2015. Additionally, this cost is reflected in a Staged Update to actual cost in each year.

Additionally, the Authority also incurs real property-based taxes associated with the generating assets under contract through the National Grid Power Supply Agreement ("PSA"). These taxes are budgeted at $195.6 million in 2017, $196.0 million in 2018, and $199.6 million in 2019. The Authority continues to challenge the property tax assessments on the PSA plants, which are significantly over-assessed. These costs, as with all power supply costs, are reconciled to actual costs.

The New York State Temporary Energy and Utility Conservation Assessment is budgeted at $0.9 million in 2017 after which this charge is phased-out. This cost is reconciled to actual cost through the NYS Assessment rider. In addition, a New York State DPS Administrative Assessment will be imposed to recover costs related to DPS' oversight of PSEG Long Island's operations. This cost is approximately $10 million per year.

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**Other Income and Deductions**
**(Thousands of Dollars)**

| Description | 2016 | 2017 | | 2018 | | 2019 | |
|---|---|---|---|---|---|---|---|
| | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year |
| Short-Term Investment Income | $ 2,722 | $ 2,063 | $ 3,308 | $ 3,597 | $ 1,534 | $ 3,597 | $ - |
| Interest from Shoreham Property Tax Settlement | 25,972 | 24,822 | 24,822 | 23,560 | (1,262) | 22,192 | (1,368) |
| Interest from Visual Benefits Assessment | 564 | 448 | 544 | 520 | 72 | 492 | (28) |
| Interest from Nuclear Decommissioning Trust Fund | 5,176 | 2,048 | 3,394 | 3,394 | 1,346 | 3,394 | - |
| Interest from OPEB Fund | 1,198 | 2,132 | 2,188 | 2,889 | 757 | 3,520 | 631 |
| Interest from PSEGLI Funding Accounts | 340 | - | 692 | 692 | 692 | 692 | - |
| Miscellaneous Income and Deductions - LIPA | 6,470 | 2,039 | 3,482 | 3,994 | 1,955 | 3,994 | - |
| Miscellaneous Income and Deductions - PSEGLI | 1,257 | - | 1,676 | 1,612 | 1,612 | 1,505 | (107) |
| **Total Other Income and Deductions** | **$ 43,699** | **$ 33,552** | **$ 40,106** | **$ 40,258** | **$ 6,706** | **$ 39,386** | **$ (872)** |

## Other Income and Deductions

Other Income and Deductions consists of income and interest generated from the Authority's short-term investments, carrying charges accrued on deferred balances related to the Shoreham property tax settlement, earnings on NMP2 nuclear decommissioning trust fund and OPEB account balances, and miscellaneous sources of revenues and expenses, such as income from certain customer-requested work not included in electric rates.

Pursuant to the Three-Year Rate Plan, projected interest rates on short-term investments are updated to then-prevailing interest rates in a Staged Update each fall as part of the annual budget process and differences between projected and actual interest rates are reconciled at year end through the Delivery Service Adjustment.

The 2017 Approved Budget for Other Income and Deductions was $33.6 million. The 2018 Proposed Budget is $40.3 million and the 2019 Projection is $39.4 million. The budget and projection are based on forecasted account balances and interest rates.

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**Grant Income**
**(Thousands of Dollars)**

| Description | 2016 | 2017 | | 2018 | | 2019 | |
|---|---|---|---|---|---|---|---|
| | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year |
| Build America Bonds Subsidy - U.S. Treasury | $ 3,842 | $ 3,763 | $ 3,833 | $ 3,829 | $ 65 | $ 3,829 | $ - |
| FEMA Non-Sandy | 5,044 | - | - | - | - | - | - |
| Efficiency & Renewables - RGGI Funding | 30,600 | 34,600 | 34,600 | 34,600 | - | 34,600 | - |
| **Total Grant Income** | **$ 39,486** | **$ 38,363** | **$ 38,433** | **$ 38,429** | **$ 65** | **$ 38,429** | **$ -** |
| **Recognition of Deferred FEMA Grant / Sandy** | **$ 1,414** | **$ 5,000** | **$ 590** | **$ 3,350** | **$ (1,650)** | **$ 9,088** | **$ 5,739** |
| **Total Grant Income & Deferred Credit** | **$ 40,901** | **$ 43,363** | **$ 39,023** | **$ 41,778** | **$ (1,585)** | **$ 47,517** | **$ 5,739** |

## Grant Income

Grant Income consists primarily of a grant of $34.6 million from NYSERDA Regional Greenhouse Gas Initiative funds to support PSEG Long Island's energy efficiency programs and subsidy payments totaling $3.8 million from the United States Treasury pursuant to the American Recovery and Reinvestment Act of 2009 equal to approximately 35% of the interest on the Authority's debt, which was issued as Build America Bonds. The existing agreement with NYSERDA for the Regional Greenhouse Gas Initiative grant expires at the end of 2018. The budget assumes NYSERDA and LIPA agree to extend the existing agreement in order to continue the financial support of energy efficiency programs.

In February 2014, the Authority signed a Letter of Undertaking with FEMA that provides for $730 million of grant funding for storm hardening measures. To better reflect the nature of this grant it will be amortized to Grant Income in an amount equal to the incremental depreciation expense incurred as a result of the storm hardening program. This amortization is estimated $3.4 million in 2018 and $9.1 million in 2019.

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**Interest Expense**
**(Thousands of Dollars)**

| Description | | 2016 | 2017 | | 2018 | | 2019 | |
|---|---|---|---|---|---|---|---|---|
| | | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year |
| Accrued Interest Expense on Debt Securities | | $ 331,354 | $ 334,314 | $ 340,564 | $ 347,542 | $ 13,228 | $ 360,761 | $ 13,219 |
| Amortization of Premium | | (41,399) | (53,226) | (53,796) | (55,305) | (2,079) | (54,066) | 1,239 |
| **Net Interest Expense on Debt Securities** | | **$ 289,955** | **$ 281,088** | **$ 286,768** | **$ 292,236** | **$ 11,148** | **$ 306,694** | **$ 14,458** |
| **Other Interest Expense** | | | | | | | | |
| Amortization of Deferred Debt Issue Costs | | $ 3,578 | $ 3,209 | $ 3,346 | $ 3,210 | $ 1 | $ 3,033 | $ (177) |
| Amortization of Deferred Losses on Refundings | | 33,111 | 29,013 | 30,702 | 32,128 | 3,115 | 28,768 | (3,359) |
| Interest Rate Swap Payments | (a) | 21,467 | 21,105 | 17,268 | 16,234 | (4,871) | 16,270 | 36 |
| Letter of Credit and Remarketing Fees | (a) | 8,339 | 7,150 | 6,797 | 8,825 | 1,675 | 8,825 | - |
| Interest on Customer Security Deposits | (a) | 1,237 | 900 | 121 | 19 | (881) | 19 | - |
| Bond Administration Costs and Bank Fees | (a) | 895 | 800 | 1,800 | 1,409 | 609 | 1,409 | - |
| Capital Lease Interest | | 383 | - | 804 | 680 | 680 | 531 | (149) |
| Other Interest Amortizations | | (5,620) | (6,242) | (6,467) | (3,363) | 2,879 | (3,484) | (121) |
| **Total Other Interest Expense** | | **$ 63,388** | **$ 55,935** | **$ 54,370** | **$ 59,142** | **$ 3,207** | **$ 55,371** | **$ (3,771)** |
| **Subtotal - Interest Expense** | | **$ 353,343** | **$ 337,023** | **$ 341,139** | **$ 351,378** | **$ 14,355** | **$ 362,065** | **$ 10,687** |
| **Less: Capitalized Interest** | | **$ 3,534** | **$ 5,991** | **$ 6,438** | **$ 7,874** | **$ 1,882** | **$ 8,793** | **$ 920** |
| **Total Interest Expense** | | **$ 349,809** | **$ 331,032** | **$ 334,701** | **$ 343,505** | **$ 12,473** | **$ 353,272** | **$ 9,767** |

Note: (a) Specified line items are included in the Revenue Requirement

## Interest Expense

Interest expense is planned at $343.5 million in 2018 and $353.3 million in 2019. The planned expense for this period is based on forecasted levels of outstanding debt, associated fees, and the amortization of previously deferred debt-related charges and credits. Interest expenses are updated to reflect actual interest rates achieved in the Utility Debt Securitization Authority ("UDSA") October 2017 financing. Actual interest costs have been reflected in the Staged Update each fall as part of the annual budget process and differences between projected and actual interest expense, alongside other components of debt cost, excluding non-cash amortizations, are reconciled at year end through the Delivery Service Adjustment.

Interest expense reflects the accrual of interest on outstanding debt in the calendar year. It can differ from interest payments made to bond holders with respect to timing, but the actual amounts will be the same over time.

Amortization of premiums remains steady in 2018 compared to the 2017 level. A large portion of the amortization of premiums is a result of the issuance of securitization bonds by the UDSA on behalf of the Authority. These bonds were sold at a premium to their par value, and the premium is being amortized over the life of each series of bond issued. This UDSA bond refinance program saved approximately $500 million of present value debt service for LIPA customers.

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**Debt Service Requirements**
**(Thousands of Dollars)**

| Description | 2016 | 2017 | | 2018 | | 2019 | | |
|---|---|---|---|---|---|---|---|---|
| | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year | |
| UDSA Debt Service | $ 222,139 | $ 264,811 | $ 264,878 | $ 324,728 | $ 59,917 | $ 327,140 | $ 2,412 | A |
| LIPA Debt Service on Fixed Rate Debt | 257,646 | 223,570 | 224,007 | 156,543 | (67,027) | 164,895 | 8,351 | B |
| LIPA Debt Service on Variable Rate Debt | 11,939 | 17,349 | 24,218 | 23,602 | 6,253 | 23,548 | (53) | C |
| LIPA Debt Service due to Capital Borrowings | - | - | - | 12,833 | 12,833 | 15,949 | 3,116 | D |
| Subtotal UDSA Debt Service | 222,139 | 264,811 | 264,878 | 324,728 | 59,917 | 327,140 | 2,412 | A |
| Subtotal LIPA Debt Service | 269,585 | 240,919 | 248,225 | 192,978 | (47,941) | 204,392 | 11,414 | E=B+C+D |
| **Total Debt Service** | **$ 491,724** | **$ 505,730** | **$ 513,103** | **$ 517,707** | **$ 11,977** | **$ 531,532** | **$ 13,826** | F |
| **Total Coverage Requirements** | **155,892** | **164,710** | **166,902** | **194,501** | **29,791** | **215,799** | **21,298** | **G** |
| **Total Debt Service plus Coverage** | **$ 647,616** | **$ 670,440** | **$ 680,005** | **$ 712,208** | **$ 41,767** | **$ 747,331** | **$ 35,123** | H |
| **LIPA Long Term Obligations** (a) | **$ 320,264** | **$ 308,115** | **$ 308,115** | **$ 293,274** | **$ (14,841)** | **$ 275,161** | **$ (18,114)** | I |
| Excess Revenue Net of Requirements | $ - | $ (10,752) | $ 6,683 | $ (3,832) | $ 6,920 | $ (4,598) | $ (765) | J |
| **Total Coverage** | **155,892** | **153,958** | **173,585** | **190,669** | **36,711** | **211,201** | **20,532** | K=G+J |
| Projected Coverage Ratio on LIPA Obligations | 1.26 x | 1.28 x | 1.31 x | 1.39 x | | 1.44 x | | L=1+K/(E+I) |
| Board Policy Target Coverage Ratio on LIPA Obligations | | 1.30 x | 1.30 x | 1.40 x | | 1.45 x | | |
| Projected Coverage on LIPA & UDSA Obligations | 1.19 x | 1.19 x | 1.21 x | 1.24 x | | 1.26 x | | M=1+K/(F+I) |
| Board Policy Target Coverage on LIPA & UDSA Obligations | | 1.20 x | 1.20 x | 1.25 x | | 1.25 x | | |

Note: (a) These amounts include PSEGLI office leases

| **Reconciliation of Revenues Net of Requirements** | | | | | | | |
|---|---|---|---|---|---|---|---|
| Uncollectible Accounts | | | | $ (8,465) | | $ (9,083) | |
| Change in Accounting Assessments | | | | 9,185 | | 9,185 | |
| New Initiatives | | | | (3,127) | | (2,203) | |
| Contributions to Pension Trust | | | | (4,550) | | (4,550) | |
| Accretion of Asset Retirement Obligation | | | | 1,667 | | 1,446 | |
| Other | | | | 1,459 | | 607 | |
| **Total** | | | | **$ (3,832)** | | **$ (4,598)** | |

## Debt Service Requirements

Debt service consists of principal and interest payments due to the bondholders. Debt service payments are broken out separately for UDSA debt and Authority debt. Authority debt service declined largely as a result of refinancing debt through the UDSA, resulting in a net savings to customers.

In addition to debt service payments, under the Public Power Model, the Authority also recovers "fixed obligation coverage." Fixed obligation coverage is the portion of the Authority's capital program funded by cash flow in each year rather than by new borrowings. Fixed obligation coverage is a ratio based on the Authority's annual debt service payments and the imputed payments associated with long-term obligations such as power supply contracts and office and vehicle leases.

The 2015 DPS Rate Recommendation endorsed the financial policy proposed by the Authority in the Three-Year Rate Plan filing, which included several components:

(i) **Public Power Model.** The Public Power Model used by nearly all of the country's major public power entities recovers the Authority's operating expenses in each year plus its debt service requirements (including fixed obligation coverage).

(ii) **Mid-A Ratings Target Over Five Years.** At the time of the Rate Plan filing in 2015, the Authority had credit ratings of Baa1 (stable outlook), A- (negative outlook), and A- (negative outlook) (M/S/F), which were the lowest of any large public power utility by several credit categories. The adoption of the Public Power Model combined with the utility's rate adjustment mechanisms, predictable cash flow, investments in operational and system improvements and positive customer service metrics resulted in a ratings upgrade by Moody's to an A3 rating in August 2016, reaffirmed with a stable outlook in September 2016. An improvement from Negative to Stable outlooks by Standard and Poor's and Fitch Ratings further reflect the recognition of the changes at LIPA and offer the potential for future improvements in the Authority's credit ratings. As part of the rate plan, the Authority explicitly adopted a five-year rating target to improve ratings to A2/A/A.

(iii) **Reduce Borrowings to No More than 64% of Capital Spending.** The Authority's "debt ratio" (defined as the percentage of debt in the Authority's capital structure to total debt plus net position) is higher than most utilities. This is a historical legacy. A ratio of 55-65% is typical for large public power utilities like the Authority, whereas the Authority's debt ratio is currently 91.2% (see page 64).

The higher-than-average debt ratio is attributable to the debt incurred to acquire the electric system from its previous owner in 1998. That acquisition resulted in an approximate 20% reduction in customers' electric bills, a benefit that continues today. However, in order to reduce the debt ratio over time, the Authority has adopted a target to reduce borrowings in each year to no more than 64% of capital spending, with the balance funded by cash flow in lieu of new debt. This level is typical for large public power utilities and an industry best practice.

(iv) **Increasing Fixed Obligation Coverage Targets.** To achieve the Authority's goals of improved credit ratings and reduced borrowings over five years, the Authority has achieved the fixed obligation coverage target in 2017 and expects to increase that target gradually as outlined in the table below. Given the Authority's two types of debt – Authority revenue bonds and UDSA securitization debt – the Authority adopted coverage ratios with and without UDSA bonds.

**Minimum Fixed Obligation Coverage Ratios**

| Fixed Obligations | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|
| Authority Debt + Capitalized Leases | 1.20 x | 1.30 x | 1.40 x | 1.45 x |
| Authority Debt + UDSA Debt + Capitalized Leases | 1.15 x | 1.20 x | 1.25 x | 1.25 x |

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**Capital and Deferred Expenditures**
**(Thousands of Dollars)**

| Description | 2016 | 2017 | | 2018 | | 2019 | |
|---|---|---|---|---|---|---|---|
| | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year |
| **Transmission and Distribution** | | | | | | | |
| Regulatory Driven | $ 54,873 | $ 12,884 | $ 3,974 | $ 8,130 | $ (4,754) | $ 43,000 | $ 34,870 |
| Load Growth | 68,009 | 162,548 | 165,851 | 188,668 | 26,120 | 230,058 | 41,390 |
| Reliability | 186,278 | 192,183 | 210,529 | 191,845 | (338) | 187,916 | (3,929) |
| Economic, Salvage, Tools, Equipment & Other | 13,366 | 31,156 | 24,057 | 34,569 | 3,413 | 27,160 | (7,409) |
| **Total Transmission and Distribution Projects Excluding FEMA** | **$ 322,526** | **$ 398,771** | **$ 404,412** | **$ 423,212** | **$ 24,441** | **$ 488,134** | **$ 64,922** |
| **Other PSEG Long Island Capital Expenditures** | | | | | | | |
| Information Technology Projects | $ 33,587 | $ 38,180 | $ 23,593 | $ 36,728 | $ (1,452) | $ 25,376 | $ (11,352) |
| Customer Operations | 16,571 | 11,197 | 16,194 | 11,394 | 197 | 11,394 | - |
| Other General Plant Projects | 4,129 | 5,006 | 2,903 | 9,196 | 4,191 | 4,653 | (4,543) |
| Fleet | 7,854 | 27,899 | 20,315 | 8,526 | (19,373) | 6,318 | (2,208) |
| Utility 2.0 | - | - | - | 15,475 | 15,475 | - | (15,475) |
| **Total PSEG Long Island Excluding FEMA and Before Deferred Projects** | **$ 384,667** | **$ 481,053** | **$ 467,416** | **$ 504,531** | **$ 23,478** | **$ 535,875** | **$ 31,344** |
| Budget Amendment to Carryover Projects | - | (4,000) | - | - | 4,000 | - | - |
| FEMA Related Projects | 139,789 | 188,754 | 197,664 | 190,273 | 1,519 | 119,777 | (70,496) |
| **Total PSEG Long Island Capital** | **$ 524,455** | **$ 665,807** | **$ 665,080** | **$ 694,804** | **$ 28,997** | **$ 655,652** | **$ (39,153)** |
| **LIPA Capital and Deferred Expenditures** | | | | | | | |
| Nine Mile Point 2 | $ 19,725 | $ 22,491 | $ 24,320 | $ 15,858 | $ (6,633) | $ 19,461 | $ 3,602 |
| LIPA - Other | 122 | 5,431 | 120 | 7,547 | 2,116 | 7,372 | (175) |
| **Total LIPA Capital Expenditures & Deferrals** | **$ 19,847** | **$ 27,922** | **$ 24,440** | **$ 23,405** | **$ (4,517)** | **$ 26,833** | **$ 3,427** |
| Allowance For Funds Used During Construction | $ 3,534 | $ 5,991 | $ 6,438 | $ 7,874 | $ 1,882 | $ 8,793 | $ 920 |
| Capitalized Management Fee | $ 11,323 | $ 12,779 | $ 10,904 | $ 30,632 | $ 17,853 | $ 31,322 | $ 689 |
| **Total Capital Expenditures & Deferrals** | **$ 559,159** | **$ 712,500** | **$ 706,862** | **$ 756,715** | **$ 44,216** | **$ 722,599** | **$ (34,116)** |
| FEMA Contribution (90% of Project Costs) (a) | (125,810) | (169,879) | (177,898) | (171,246) | (1,367) | (107,799) | 63,447 |
| **Net Capital Expenditures & Deferrals** | **$ 433,350** | **$ 542,621** | **$ 528,964** | **$ 585,470** | **$ 42,849** | **$ 614,800** | **$ 29,330** |
| Deduct Allowance For Funds Used During Construction | | $ 5,991 | $ 6,438 | $ 7,874 | $ 1,882 | $ 8,793 | $ 920 |
| Funding Available from Operations | | $ 153,958 | $ 173,585 | $ 190,669 | $ 36,711 | $ 211,201 | $ 20,532 |
| Contribution to OPEB Fund from Revenue Requirements | | (42,368) | (40,138) | (40,669) | 1,699 | (26,523) | 14,146 |
| Deduct Net Funding of Capital Expenditures | | $ 111,590 | $ 133,447 | $ 150,000 | $ 38,410 | $ 184,678 | $ 34,678 |
| **Funding Required from New Debt** | | **$ 425,039** | **$ 389,080** | **$ 427,596** | **$ 2,557** | **$ 421,328** | **$ (6,267)** |

Note: (a) Amounts not yet reimbursed by FEMA; pending completion of individual projects

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**Capital and Deferred Expenditures**
**(Thousands of Dollars)**

| Description | 2016 | 2017 | | 2018 | | 2019 | |
|---|---|---|---|---|---|---|---|
| | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year |
| **Percent of Capital Funded from Debt:** | | | | | | | |
| Including FEMA spending and reimbursement | | **60%** | **55%** | **57%** | | **58%** | |
| Excluding FEMA spending and reimbursement | | **78%** | **73%** | **72%** | | **68%** | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Reconciliation of Total PSEG Long Island Capital Excluding FEMA** | | | | | | | |
| Approved Rate Case Target | | $ 380,844 | | $ 407,836 | | | |
| Project Carryover from 2016 | | 44,335 | | - | | | |
| **Subtotal 2017 Approved** | | **$ 425,179** | | **$ 407,836** | | | |
| Project Carryover | | (4,000) | | 4,000 | | | |
| Fleet | | 27,899 | | 8,526 | | | |
| Changes in Assessment | | 7,275 | | 9,185 | | | |
| Union Wage Increase | | 365 | | 2,120 | | | |
| Utility 2.0 | | - | | 15,475 | | | |
| Additional Budget Requests | | 20,335 | | 57,389 | | | |
| **Total PSEG Long Island Capital Excluding FEMA** | | **$ 477,053** | | **$ 504,531** | | | |
| FEMA Related Projects | | 188,754 | | 190,273 | | | |
| **Total PSEG Long Island Capital Including FEMA** | | **$ 665,807** | | **$ 694,804** | | | |

# Major Projects

## (Projects with a total cost greater than $25 million)

| | | | Cash Flow ($millions) | | | | |
|---|---|---|---|---|---|---|---|
| **Description** | **Justification** | **In Service Date** | **Project To Date Expenditures through 12/31/17** | **2018** | **2019** | **2020 and Beyond** | **Total Project Cost** |
| **Berry St:** Construct new substation with 2 transformers and 6 new distribution feeders | Meet the load growth in the towns of Farmingdale and Lindenhurst | 2017; 2020 | $ 27.3 | $ 2.4 | $ 5.8 | $ 0.7 | $ 36.2 |
| **Kings Highway:** Construct new substation with 3 transformers and 8 new distribution feeders | Meet the load growth in the towns of Smithtown, Hauppauge and Islip | 2019 | $ 7.8 | $ 22.2 | $ 20.7 | $ 4.0 | $ 54.7 |
| **Shelter Island:** Replace Underground Failed Cable | Replace failed under water cable to provide reliable supply to Shelter Island customers' | 2018 | $ 14.1 | $ 12.0 | $ - | $ - | $ 26.1 |
| **Hempstead:** Upgrade Existing Substation from 23/4 kV to 69/13 kV | Meet the load growth in the Town of Hempstead | 2018; 2020 | $ 6.8 | $ 11.4 | $ 8.1 | $ 6.9 | $ 33.2 |
| **Southampton - Canal:** Install new 69kV underground cable in an existing conduit | Meet the load growth in the South Fork | 2019 | $ 0.2 | $ 14.3 | $ 37.6 | $ - | $ 52.1 |
| **Bridgehampton - Buell:** Install a new 69kV underground cable (approximately 5 miles) | Meet the load growth in the South Fork | 2019 | $ 0.3 | $ 14.3 | $ 31.5 | $ - | $ 46.1 |
| **Ruland Rd - Plainview:** Construct new Underground 69kV transmission line | Meet the load growth to support the Country Pointe Development (commercial and residential) and the new Round Swamp Substation | 2020 | $ 2.8 | $ 10.0 | $ 17.0 | $ 17.0 | $ 46.8 |
| **PSEG LI -Two Way Radio System Replacement:** Replace existing VHF conventional radio system with new territory-wide radio system | Current system is a mix of legacy radio console, mobiles and portable radios with average age of equipment ranging from 10 to 35 years old that vendors no longer support | 2019 | $ 9.8 | $ 19.0 | $ 13.2 | $ - | $ 42.0 |
| **East Garden City - Valley Stream:** Install new 138kV underground cable | Meet new NERC reliability requirements | 2020 | $ 3.6 | $ 8.0 | $ 43.0 | $ 121.3 | $ 175.9 |
| **Nassau Hub (Lindbergh):** Construct new substation with 2 transformers and 6 new distribution feeders. Land purchase is required. | Meet the forecasted load growth for the Nassau Coliseum re-development which includes new: retail stores, restaurants, movie theaters and Police Academy | 2020; 2022 | $ 4.0 | $ 4.9 | $ 17.8 | $ 24.7 | $ 51.4 |
| **Riverhead - Canal:** Install new 138 kV underground cable | Meet the load growth in the South Fork | 2021 | $ 0.1 | $ 1.4 | $ 1.4 | $ 188.6 | $ 191.5 |
| **Substation Security Expansion Project** | Enhance substation security | 2023 | $ 8.9 | $ 0.5 | $ 5.0 | $ 38.5 | $ 52.9 |

## Capital and Deferred Expenditures

Capital and Deferred Expenditures are planned at $756.7 million in 2018 and $722.6 million in 2019. Net of contributions from FEMA, Capital and Deferred Expenditures are planned at $585.5 million in 2018 and $614.8 million in 2019. The 2018 Capital Budget includes a deferral of certain specified 2017 Capital projects into 2018, as shown on page 51.

Transmission and Distribution projects are evaluated using a Project Prioritization and Value and Risk Evaluation protocol using the Spend Optimization Suite (SOS) to determine the projects that have the highest risk for system and company performance. The projects being pursued will improve system reliability and resiliency and include increases from historical spending on the Circuit Improvement Program to address poor performing circuits and the Multiple Customer Outage Program to address customers that experience an unusual number of outages.

In February 2014, the Authority signed a Letter of Undertaking with FEMA that provides for a $730 million storm hardening initiative. As part of this program, FEMA will contribute 90% of the cost to this project.

Information Technology projects include improvements and upgrades to systems that support Transmission and Distribution, Customer Services and Power Markets and Security.

Capital expenditures for Customer Services are primarily comprised of costs associated with residential and commercial meter replacement.

Capital expenditures for 2018 and 2019 include additional costs related to the Utility 2.0 Plan. These costs are associated with projects aimed at integrating Distributed Energy Resources (“DER”) in the Authority’s electric grid.

NMP2 Capital Expenditures relates to the Authority’s share of capital expenses for the NMP2 nuclear generating station of which the Authority owns an undivided 18% interest in one of two nuclear units. These expenditures include cost for capital improvements to the facility and the cost of nuclear fuel.

# Appendix

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**PSEG Long Island Operating Expenses**
**(Thousands of Dollars)**

| Description | | 2016 | 2017 | | 2018 | | 2019 | |
|---|---|---|---|---|---|---|---|---|
| | | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year |
| **PSEG LI Operating Expenses, Including Pensions & OPEBS** | | | | | | | | |
| Transmission & Distribution | | $ 181,825 | $ 189,797 | $ 205,899 | $ 196,491 | $ 6,694 | $ 196,491 | $ - |
| Customer Services | | 114,816 | 117,997 | 117,625 | 124,120 | 6,123 | 124,120 | - |
| Business Services | | 119,316 | 144,025 | 134,140 | 144,025 | - | 144,025 | - |
| Power Markets | | 9,899 | 13,409 | 9,736 | 13,744 | 335 | 13,744 | - |
| Energy Efficiency & Renewable (DER) | | 77,993 | 91,515 | 83,608 | 96,198 | 4,683 | 92,895 | (3,304) |
| New Initiatives | | - | - | 533 | 3,127 | 3,127 | 2,203 | (925) |
| Unrealized Storm Preparation Costs | (a) | - | - | 9,706 | - | - | - | - |
| **Total PSEG Long Island Operating Expenses** | | **$ 503,849** | **$ 556,743** | **$ 561,249** | **$ 577,705** | **$ 20,962** | **$ 573,477** | **$ (4,228)** |
| | | | | | | | | |
| **Total GAAP Pensions/OPEBS Expense** | (b) | **$ 62,814** | **$ 67,798** | **$ 64,310** | **$ 61,298** | **$ (6,501)** | **$ 60,590** | **$ (707)** |
| **Contribution to Pension Trust O&M/Storms** | (c) | **$ -** | **$ 22,400** | **$ 20,629** | **$ 23,576** | **$ 1,176** | **$ 23,576** | **$ -** |

Note: (a) This amount is related to storm preparation costs related to Hurricane Jose, which did not materialize
(b) GAAP cost of retirement benefits included in operating expenses above
(c) Contribution to Pension Trust is the cost of retirement benefits recovered in revenues in the current period to meet ERISA funding requirements

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Reconciliation of PSEG Long Island Operating Expenses** | | | | | | | | |
| Approved Rate Case Target | | | **$ 547,843** | | **$ 562,013** | | | |
| Changes in Assessment | | | 5,579 | | 6,160 | | | |
| Union Wage Increase | | | 723 | | 2,001 | | | |
| FIT Evaluation Costs (DER) | | | 2,598 | | 142 | | | |
| Utility 2.0 | | | - | | 4,262 | | | |
| New Initiatives - Credit Card Fees/Economic Development | (d) | | - | | 3,127 | | | |
| **Total PSEG Long Island Operating Expenses** | | | **$ 556,743** | | **$ 577,705** | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Energy Efficiency & Renewable (DER)** | | | | | | | | |
| Energy Efficiency & Renewable | (e) | | **$ 88,918** | | **$ 91,795** | | | |
| FIT Evaluation Costs (DER) | | | 2,598 | | 142 | | | |
| Utility 2.0 | | | - | | 4,262 | | | |
| **Total Energy Efficiency & Renewable (DER)** | | | **$ 91,515** | | **$ 96,198** | | | |

Note: (d) These items were not included in the three year rate plan
(e) Internal Labor is excluded from the DER Rider

## PSEG Long Island Operating Expenses

PSEG Long Island Operating Expenses are related to five major areas: Transmission and Distribution, Customer Services, Business Services, Power Markets and Energy Efficiency and Renewable Energy Programs. Operating expenses in 2018 reflect an increase of $21 million primarily due to a 2.5% inflationary increase as well as an increase of $4.3 million related to the Utility 2.0 Plan, and $3.1 million related to new initiatives discussed further below. The 2.5% inflationary increase for Business Services was reallocated primarily to the T&D and Customer Service organizations to focus more on system reliability measures, more specifically tree trimming efforts, as well as, customer communication and outreach.

Effective in 2018 PSEG Long Island will report under a reorganized structure that will establish a regional model in T&D with an East and a West division. The reorganization will enhance the capital projects organization while reassigning T&D Services and Projects and Construction to Business Services. Total operating expenses of $577.7 million for 2018 and $573.5 million for 2019 will remain the same, however, budgeted amounts will shift between the various lines of business based on the reorganized structure.

There are three new initiatives that are planned in 2018. The first initiative is the Residential Credit Card Transaction Fee project. PSEG Long Island is seeking to enhance customer satisfaction by eliminating the credit card transaction fee for residential customers. The elimination of fees on credit card transactions will provide customers with more payment options, flexibility of credit card bill dates as well as a growing interest in credit card points and rewards. The second initiative relates to an enhanced Economic Development Program. The program aims to foster economic viability, vibrancy and growth through investment and job retention or creation and encourage economic growth in areas with surplus Transmission and Distribution capacity to more efficiently use the system and lead to lower costs to all customers by spreading the fixed costs over a larger customer base. The third initiative is related to the maintenance and security of the Shoreham facility.

Unrealized Storms Preparation Costs of $9.7 million in 2017 will be recovered through the Delivery Service Charge (DSA) rider. These costs are related to the planning and preparation for Hurricane Jose which did not materialize. As stated in the Department Rate Recommendation, it is critical that PSEG Long Island have no disincentive for prudent utility storm preparations. With use of the budget amendment process, PSEG Long Island has confidence going into storm preparation that the costs incurred for prudent utility storm preparedness will not count against compliance with the O&M budget metric should the subject storm fail to materialize or be less severe.

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**LIPA Operating & Deferred Expenses**
**(Thousands of Dollars)**

| Description | 2016 | 2017 | | 2018 | | 2019 | |
|---|---|---|---|---|---|---|---|
| | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year |
| **LIPA Operating Expenses** | | | | | | | |
| PSEG Long Island Management Fee | $ 70,900 | $ 75,034 | $ 72,963 | $ 74,604 | $ (430) | $ 76,283 | $ 1,679 |
| Capitalized Management Fee (a) | (11,323) | (12,779) | (10,904) | (30,632) | (17,853) | (31,322) | (689) |
| **Total Operating Management Fee** | **$ 59,577** | **$ 62,255** | **$ 62,059** | **$ 43,972** | **$ (18,283)** | **$ 44,961** | **$ 989** |
| **LIPA Operating Expenses** | | | | | | | |
| Employee Salaries & Benefits Expenses | $ 9,043 | $ 12,635 | $ 10,802 | $ 11,151 | $ (1,484) | $ 10,691 | $ (460) |
| Insurance | 1,999 | 2,180 | 1,882 | 2,060 | (121) | 2,106 | 46 |
| Office Rent | 1,703 | 1,802 | 1,799 | 1,737 | (65) | 1,776 | 39 |
| Miscellaneous | (11,731) | 1,978 | 992 | 2,955 | 977 | 3,018 | 63 |
| **Total Labor, General and Administrative** | **$ 1,015** | **$ 18,596** | **$ 15,475** | **$ 17,903** | **$ (693)** | **$ 17,591** | **$ (311)** |
| Engineering | $ 296 | $ 1,500 | $ 1,046 | $ 1,533 | $ 33 | $ 1,483 | $ (50) |
| Legal | 4,509 | 3,878 | 4,078 | 4,500 | 622 | 4,601 | 101 |
| Financial Advisor/Cash Management | 1,606 | 1,604 | 1,590 | 1,860 | 256 | 1,902 | 42 |
| Accounting and Audit Services | 1,464 | 3,340 | 2,880 | 1,770 | (1,570) | 2,328 | 558 |
| Information Technology | 1,033 | 912 | 860 | 633 | (279) | 647 | 14 |
| Risk Management | 258 | 395 | 599 | 465 | 70 | 475 | 10 |
| Grant Administration | 336 | 225 | 519 | 200 | (25) | 205 | 4 |
| Miscellaneous | 1,087 | 925 | 2,732 | 4,177 | 3,252 | 3,756 | (421) |
| **Total Professional Services** | **$ 10,589** | **$ 12,779** | **$ 14,304** | **$ 15,138** | **$ 2,359** | **$ 15,397** | **$ 259** |
| **LIPA Operating Expenses** | **$ 71,180** | **$ 93,630** | **$ 91,838** | **$ 77,012** | **$ (16,618)** | **$ 77,949** | **$ 937** |
| **Deferred Expenses** | | | | | | | |
| 2014/2015 Pension/OPEB Deferral | 9,381 | 9,381 | 9,381 | 9,381 | - | 9,381 | - |
| National Grid Pension/OPEB Settlement | 21,634 | 21,634 | 21,634 | 21,634 | - | 21,634 | - |
| **Total Deferred Expenses** | **$ 31,014** | **$ 31,015** | **$ 31,015** | **$ 31,015** | **$ -** | **$ 31,015** | **$ -** |
| **Total LIPA Cash Operating and Deferred Expenses** | **$ 102,195** | **$ 124,644** | **$ 122,853** | **$ 108,027** | **$ (16,618)** | **$ 108,964** | **$ 937** |

(a) Effective in 2018, a new methodology based on the PSEGLI company labor allocation will be adopted for determination for the Capitalized Management Fee

## LIPA Operating and Deferred Expenses

The Authority Operating and Deferred Expenses are planned at $108 million in 2018 and $109 million in 2019. The 2018 plan represents a decrease of $16.6 million as compared with the Approved Budget for 2017.

The primary drivers of the change is a revised methodology to allocate the PSEG Long Island management fee between operating and capital. The new method more accurately allocates this cost because it will be based on the actual distribution of PSEG Long Island total company labor between operating and capital related activities. Offsetting this reduction is an increase of $1.7 million of LIPA administrative costs. The primary drivers of this increase are non-payroll costs associated with legal litigation support, rate case support, and IT technology investments. Beyond 2018, this category of costs is expected to increase by approximately 2% per year.

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**Utility Debt Securitization Authority**
**(Thousands of Dollars)**

| Description | 2016 | 2017 | | 2018 | | 2019 | |
|---|---|---|---|---|---|---|---|
| | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year |
| **Operating Revenues** | **$ 278,975** | **$ 263,923** | **$ 262,801** | **$ 330,276** | **$ 66,353** | **$ 332,841** | **$ 2,565** |
| **LIPA Operating Expenses** | | | | | | | |
| Allowance for Bad Debt | $ 1,713 | $ 1,900 | $ 1,761 | $ 2,213 | $ 313 | $ 2,230 | $ 17 |
| **General and Administrative Expense** | | | | | | | |
| Ongoing Servicer Fee | $ 1,903 | $ 2,065 | $ 2,065 | $ 2,265 | $ 200 | $ 2,265 | $ - |
| Administration Fees | 300 | 400 | 364 | 500 | 100 | 500 | - |
| Bond Administration Fees | 316 | 400 | 163 | 250 | (150) | 250 | - |
| Bond Trustee Fees and Expenses | - | 56 | 70 | 70 | 14 | 70 | - |
| Legal Fees | - | 40 | 40 | 40 | - | 40 | - |
| Accounting Fees | 90 | 149 | 203 | 165 | 16 | 165 | - |
| Directors and Officers Insurance | 378 | 390 | 314 | 410 | 20 | 410 | - |
| Miscellaneous | - | 25 | 25 | 32 | 7 | 32 | - |
| **Total General and Administrative Expense** | **$ 2,986** | **$ 3,525** | **$ 3,244** | **$ 3,732** | **$ 207** | **$ 3,732** | **$ -** |
| **Amortization of Restructuring Property** | **$ 104,566** | **$ 101,838** | **$ 101,838** | **$ 166,440** | **$ 64,602** | **$ 174,052** | **$ 7,612** |
| Interest Expense Accrual | $ 164,574 | $ 185,899 | $ 185,279 | $ 201,528 | $ 15,629 | $ 196,118 | $ (5,410) |
| Amortization of Issue Premium | (32,376) | (43,153) | (42,953) | (45,918) | (2,765) | (44,723) | 1,195 |
| Amortization of Issuance Costs | 2,164 | 2,445 | 2,465 | 2,518 | 73 | 2,361 | (156) |
| **Total Interest Expense** | **$ 134,362** | **$ 145,191** | **$ 144,791** | **$ 158,127** | **$ 12,936** | **$ 153,756** | **$ (4,371)** |
| **Reserve Fund Earnings** | **$ 225** | **$ -** | **$ 593** | **$ 550** | **$ 550** | **$ 550** | **$ -** |
| **Excess of Revenues Over Expenses** | **$ 35,573** | **$ 11,469** | **$ 11,760** | **$ 313** | **$ (11,156)** | **$ (380)** | **$ (693)** |

## Utility Debt Securitization Authority

The LIPA Reform Act, as amended, created the Utility Debt Securitization Authority ("UDSA") to issue restructuring bonds in an aggregate amount not to exceed $4.5 billion so as to refinance a portion of the Authority's existing debt at a lower cost. The UDSA has no commercial operations and was formed solely to issue bonds to refinance Authority debt. The UDSA has bond ratings of Aaa(sf), AAA(sf) and AAA(sf) from Moody's, Standard & Poor's and Fitch Ratings, respectively, compared to ratings of A3, A-, and A-, respectively, for Authority issued bonds.

The Authority issued approximately $2.0 billion of UDSA bonds in 2013, $1.0 billion in October 2015, two additional series totaling an additional $1.1 billion in 2016, and $369.4 million in 2017.

The Authority's customer bills recover UDSA Restructuring Charges on every kilowatt hour of energy delivered and the Authority's own delivery charges are reduced by an amount that corresponds to the UDSA charges in each period; however, the UDSA charges are not Revenues subject to the Authority's bond resolutions.

The UDSA's revenues and expenses are consolidated with those of the Authority for financial reporting purposes; and therefore the information on UDSA presented herein is also reflected within the categories of revenue and expense of the Authority's Operating Budgets shown elsewhere. This supplemental page is shown separately as an information item for the reader.

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**Projected Borrowing Requirements and Bank Facilities**
**(Thousands of Dollars)**

| Description | 2016 | 2017 | | 2018 | | 2019 | |
|---|---|---|---|---|---|---|---|
| | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year |
| **Total Capital Expenditures & Deferrals** | **$ 559,159** | **$ 712,500** | **$ 706,862** | **$ 756,715** | **$ 44,216** | **$ 722,599** | **$ (34,116)** |
| FEMA Contribution | (125,810) | (169,879) | (177,898) | (171,246) | (1,367) | (107,799) | 63,447 |
| Deduct Allowance for AFUDC | (3,534) | (5,991) | (6,438) | (7,874) | (1,882) | (8,793) | (920) |
| **Net Capital Expenditures & Deferrals** | **$ 429,816** | **$ 536,629** | **$ 522,526** | **$ 577,596** | **$ 40,967** | **$ 606,007** | **$ 28,411** |
| Net Coverage Funding of Capital Expenditures | (155,892) | (111,590) | (133,447) | (150,000) | (38,410) | (184,678) | (34,678) |
| Proceeds from Prior Borrowings | (411,023) | (130,825) | (174,396) | - | 130,825 | - | - |
| Additional Funding for Reduction of Short Term Debt | - | - | 133,575 | - | - | - | - |
| **Projected Borrowing Requirements** | **$ (137,100)** | **$ 294,214** | **$ 348,258** | **$ 427,596** | **$ 133,382** | **$ 421,328** | **$ (6,267)** |
| **Projected Cost of Issuance on Borrowing Requirements** | **$ (685)** | **$ 1,471** | **$ 1,741** | **$ 2,138** | **$ 667** | **$ 2,107** | **$ (31)** |
| **Projected Borrowing Requirements with Cost of Issuance** (a) | **$ (137,785)** | **$ 295,685** | **$ 350,000** | **$ 429,734** | **$ 134,049** | **$ 423,435** | **$ (6,299)** |
| Series 2014C - Floating Rate Notes | $ - | $ - | $ - | $ 150,000 | $ 150,000 | $ - | $ (150,000) |
| Series 2015C - Floating Rate Notes | - | - | - | 149,000 | 149,000 | - | (149,000) |
| Series 2016A - Floating Rate Notes | 175,000 | - | - | - | - | - | - |
| General Revenue Notes, Series 2015 | 155,625 | - | - | 75,000 | 75,000 | 100,000 | 25,000 |
| Revolving Credit Agreement | - | - | 337,500 | - | - | 350,000 | 350,000 |
| Subordinate Lien Commercial Paper, Series 2014 | 250,000 | 300,000 | 300,000 | - | (300,000) | - | - |
| **Bonds Subject to Mandatory Refinancing & Bank Facilities** | **$ 580,625** | **$ 300,000** | **$ 637,500** | **$ 374,000** | **$ 74,000** | **$ 450,000** | **$ 76,000** |

Note: (a) Excludes premium, if generated it would reduce short term borrowing

## Projected Borrowing Requirements and Bank Facilities

The Authority expects to generate funds from operations of $150.0 million and $184.7 million in 2018 and 2019, respectively. The balance of the Capital Budget will be funded from debt issues. In total, the Authority will fund $756.7 million of infrastructure investments in 2018 with debt funding of $429.7 million, or approximately 57% debt financing and 43% grant and pay-as-you-go funding, reducing the ratio of debt to net tangible assets.

Long Island Power Authority
2018 Approved and 2019 Projected Budgets

**Capital Structure**
**(Thousands of Dollars)**

| Description | | 2016 | 2017 | | 2018 | | 2019 | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Actual | Approved | Projected | Approved | Change from Prior Year | Projected | Change from Prior Year | |
| UDSA Long Term Par Outstanding | | $ 3,965,529 | $ 3,892,931 | $ 4,262,396 | $ 4,139,593 | $ 246,662 | $ 4,008,832 | $ (130,761) | |
| LIPA Long Term Par Outstanding | | 2,774,297 | 3,435,139 | 2,864,214 | 3,167,465 | (267,675) | 3,557,606 | 390,141 | |
| LIPA Short Term Par Balance | | 405,625 | 350,000 | 429,625 | 400,000 | 50,000 | 400,000 | - | |
| **Total Par Outstanding** | | **$ 7,145,451** | **$ 7,678,070** | **$ 7,556,235** | **$ 7,707,058** | **$ 28,987** | **$ 7,966,438** | **$ 259,380** | |
| LIPA Long Term Par To Be Issued | | 582,675 | 268,057 | 350,000 | 429,734 | 161,677 | 423,435 | (6,299) | |
| Par Amount UDSA | | $ 3,965,529 | $ 3,892,931 | $ 4,262,396 | $ 4,139,593 | $ 246,662 | $ 4,008,832 | $ (130,761) | |
| Par Amount LIPA | | 3,762,597 | 4,053,196 | 3,643,839 | 3,997,199 | (55,998) | 4,381,041 | 383,842 | |
| **Total Par Amount** | | **$ 7,728,126** | **$ 7,946,127** | **$ 7,906,235** | **$ 8,136,792** | **$ 190,664** | **$ 8,389,873** | **$ 253,081** | |
| Capital Lease Obligations | | $ 2,021,284 | $ 2,037,996 | $ 1,997,341 | $ 1,824,665 | $ (213,331) | $ 1,660,829 | $ (163,836) | |
| **Total Par and Capital Lease Obligations** | | **$ 9,749,410** | **$ 9,984,123** | **$ 9,903,576** | **$ 9,961,456** | **$ (22,667)** | **$ 10,050,702** | **$ 89,245** | A |
| **Excess of Revenues Over Expenses** | | **$ (26,433)** | **$ (12,140)** | **$ 7,457** | **$ 376** | **$ 12,516** | **$ (19,194)** | **$ (19,570)** | |
| Net Position Before Deferred Grants | | $ 455,066 | $ 406,028 | $ 462,523 | $ 462,899 | $ 56,871 | $ 443,705 | $ (19,194) | |
| Deferred Grants | (a) | 502,213 | 498,519 | 501,558 | 497,836 | (683) | 642,249 | 144,413 | |
| **Net Position** | | **$ 957,279** | **$ 904,547** | **$ 964,081** | **$ 960,735** | **$ 56,188** | **$ 1,085,954** | **$ 125,219** | B |
| **Debt to Capital Ratio** | (b) | **91.1%** | **91.7%** | **91.1%** | **91.2%** | | **90.2%** | | C=A/(A+B) |
| **Debt to Asset Ratio** | (b) | **110.1%** | **105.8%** | **105.5%** | **102.0%** | | **100.4%** | | |

Note: (a) 2017 Budget for Deferred Grant has been updated to reflect the unamortized balance of the deferred grant account. Prior presentation reflected cumulative FEMA asset additions as shown on the Capital and Deferred Expenditures page. This presentation reflects the benefit to Net Position as a result of receiving the FEMA grant.

(b) Debt to Capital Ratio is calculated by taking (i) debt and capitalized leases and dividing by (ii) debt, capitalized leases, and Net Position. Debt to Asset Ratio is calculated by taking (i) total debt and capitalized leases and dividing by (ii) fixed assets and working capital.

## Capital Structure

The Capital Structure outlined on page 64 shows the ratio of debt and net position. LIPA expects to fund its capital investment program utilizing a combination of pay-as-you-go funding from revenue, grants, and short and long-term debt financing through 2019.

After funding $2.8 billion in infrastructure investments from 2016 through 2019, total projected debt outstanding for LIPA and UDSA will rise approximately $659 million.

The Authority has significant capital lease obligation amortization during this period with total capital leases declining by $360 million. Combined debt and capital lease balances across the period increase from $9.7 billion at the end of 2016 to $10.0 billion at the end of 2019. The Authority's Debt to Capital Ratio improves modestly from 91.1% in 2016 to 90.2% in 2019.

## 2018 Approved and 2019 Projected Capital and Deferred Expenditures
(Thousands of Dollars)

| | Location | Investment Description | In Service Date | Total Project Cost | Project To Date Expenditures through 12/31/17 [a] | Approved 2018 | Projected 2019 |
|---|---|---|---|---|---|---|---|
| **Transmission & Distribution** | | | | | | | |
| **Regulatory Driven Projects** | | | | | | | |
| | East Garden City | EGC- Valley Stream (N-1-1) | Dec-20 | 175,894 | 3,619 | 8,000 ** | 43,000 ** |
| | Various | Distribution Monitoring Equipment (DME) Install Program (NERC) | Program | - | 2,104 | 130 | - |
| **Total Regulatory Driven Projects** | | | | **$ 175,894** | **$ 5,723** | **$ 8,130** | **$ 43,000** |
| **Load Growth Projects** | | | | | | | |
| | Park Place | Distribution Feeder - Conversion and Reinforcement and Exit Feeder Projects | Jun-18 | 3,500 | 75 | 3,425 | - |
| | Floral Park | Distribution Feeder - Conversion and Reinforcement and Exit Feeder Projects | Jun-18 | 1,535 | 75 | 1,460 | - |
| | Terryville | Distribution Feeder - Conversion and Reinforcement and Exit Feeder Projects | Jun-18 | 1,000 | 75 | 925 | - |
| | Pilgrim | Replace 13kV switchgear & install new feeder | Jun-18 | 7,130 | 2,279 | 4,851 | - |
| | Pulaski | 6P Pulaski Substation New 13kV Feeder | Jun-18 | 2,595 | 1,695 | 900 | - |
| | Arverne | Underground 13kV feeder extension | Jun-18 | 2,390 | 190 | 2,200 | - |
| | Kings Highway | Establish new 138/13 kV substation | Dec-19 | 54,724 | 7,759 | 22,220 * | 20,780 |
| | Navy Road | Establish new 23/13 kV substation | Dec-18 | 16,476 | 3,607 | 10,800 ** | - |
| | Malverne | Upgrade 69/13 kV substation & distribution feeder | Dec-18 | 18,070 | 8,577 | 8,409 | 1,204 |
| | West Bartlett | Establish new 69/13 kV substation | Dec-18 | 17,326 | 11,336 | 5,738 | - |
| | Barrett | Install new transformer and feeder to Bay Park (Reimbursable) | Dec-18 | 235 | 235 | - | - |
| | Lake Success | Smart Wires - Lake Success to Stewart Manor to Whiteside | Jun-19 | 5,093 | - | 500 | 4,593 |
| | Bridgehampton | Install new 69 kV circuit to Buell | Jun-21 | 46,125 | 254 | 14,350 ** | 31,521 ** |
| | Navy Road | Establish New 2nd 23/13 kV substation | Jun-19 | 16,950 | 640 | 8,750 ** | 7,560 ** |
| | Southampton | Install new 69 kV circuit to Canal | Jun-19 | 52,159 | 188 | 14,350 ** | 37,621 ** |
| | Wildwood | Upgrade 69 kV circuit to Riverhead to 138 kV | Jun-19 | 10,435 | 10 | 4,176 ** | 6,249 ** |
| | Round Swamp | Establish new 69/13 kV substation | Jun-20 | 17,327 | 662 | 4,500 | 7,500 |
| | Ruland Road | Install new 69 kV circuit to Plainview | Jun-20 | 46,828 | 2,800 | 10,000 | 17,000 |
| | Flowerfield | Upgrade 69/13 kV substation & distribution feeder | Jun-20 | 18,157 | 200 | 400 | 1,340 |
| | Roslyn | Expand 139/13 kV substation and feeders | Dec-20 | 9,640 | 352 | 1,000 | 2,600 |
| | Riverhead | Replace Bank 3, 3a, 4 and 4a | Dec-20 | 4,250 | - | - | 3,650 |
| | Massapequa | Establish new 69/13kV substation | Jun-21 | 22,764 | 201 | 3,000 | 1,880 |
| | Riverhead | Install new 138 kV circuit to Canal | Jun-21 | 191,500 | 50 | 1,400 ** | 1,400 ** |
| | Culloden Point | Upgrade substation from 23 kV to 33 kV | Jun-21 | 7,408 | 33 | 1,449 ** | 2,222 ** |
| | Various | Upgrade Transmission Lines from 23 kV to 33 kV | Jun-21 | 1,257 | 31 | 70 ** | 210 ** |
| | Navy Road | Upgrade substation from 23 kV to 33 kV | Jun-21 | 2,208 | 31 | 350 ** | 1,357 ** |
| | Amagansett | Upgrade substation from 23 kV to 33 kV | Jun-22 | 19,091 | 31 | 5,728 ** | 11,232 ** |
| | Buell | Upgrade substation from 23 kV to 33 kV | Jun-22 | 12,930 | 31 | 350 ** | 1,400 ** |
| | East Hampton | Upgrade substation from 23 kV to 33 kV | Jun-22 | 5,670 | 31 | 280 ** | 560 ** |
| | Hither Hills | Upgrade substation from 23 kV to 33 kV | Jun-23 | 11,687 | 31 | 350 ** | 1,250 ** |
| | Hero | Upgrade substation from 23 kV to 33 kV | Jun-21 | 757 | 31 | 84 ** | 171 ** |
| | Berry Street | Establish new 69/13 kV substation | Jun-17; Jun-20 | 36,256 | 27,325 | 2,350 | 5,820 |
| | Hempstead | Convert station to 69/13 kV | Jun-18; Jun-20 | 33,200 | 6,844 | 11,383 | 8,158 |
| | Nassau Hub | Purchase land for substation and establish new 69/13 kV substation | Jun-20; Jun-22 | 51,420 | 4,041 | 4,920 | 17,780 |
| | Various | Distribution Facilities to serve New Business | Blanket | - | 48,169 | 38,000 | 35,000 |
| **Total Load Growth Projects** | | | | **$ 748,093** | **$ 127,888** | **$ 188,668** | **$ 230,058** |
| **Reliability Projects** | | | | | | | |
| | Lake Success | Phase Angle Regulator (PAR) Life Extension | May-17 | 3,374 | 3,120 | 250 | - |
| | Far Rockaway | Land Rights Acquisition | Dec-17 | 7,404 | 1,004 | 6,400 | - |
| | Woodmere | Storm hardening 69kV Control House (Damaged by Sandy) | Dec-17 | 4,932 | 4,195 | 737 | - |
| | Long Beach | Storm hardening substation (Damaged by Sandy) | Dec-17 | 4,380 | 4,017 | 363 | - |

* Includes carry over from 2017. See "Carry Over" table for details
** Includes additional budget request costs. See "Additional Budget Requests" table for details
(a) Project to date expenditures includes projects that began prior to 2017

LIPA
Long Island Power Authority

**2018 Approved and 2019 Projected Capital and Deferred Expenditures**
**(Thousands of Dollars)**

| Location | Investment Description | In Service Date | Total Project Cost | Project To Date Expenditures through 12/31/17 [(a)] | Approved 2018 | Projected 2019 |
|---|---|---|---|---|---|---|
| Shelter Island | Replace underground failed cable | Jun-18 | 26,141 | 14,096 | 12,010 | - |
| Arverne | Replace 33 kV Switchgear (Sandy) | Jun-18 | 8,664 | 8,564 | 100 | - |
| Far Rockaway | Replace Dist Swgr 2&11 & Control Wiring | Jun-18 | 6,678 | 6,578 | 100 | - |
| Barrett | Replace 1/2 Switchgear a/w Bank 7 & 1/2 Switchgear a/w Banks 8 & 11 | Jun-18 | 3,785 | 3,685 | 100 | - |
| Fire Island Pines | Install new 23 kV circuit to Davis Park | Jun-18 | 2,919 | 819 | 2,100 | - |
| Garden City | Upgrade 4 kV switchgear to 13 kV | Jun-18 | 2,456 | 882 | 1,545 | - |
| Central Islip | Replace cable between Bank #5 and Switchgear | Dec-18 | 400 | - | 400 | - |
| Valley Stream | Replace Phase Angle Regulator Transformer | Dec-18 | 3,155 | 985 | 2,170 | - |
| Various | S&C SW 3427 at Shore Rd Sub. | Dec-18 | 1,226 | 475 | - | 751 |
| Various | Upgrade substation breaker controls for Non-Reclosure Assurance (NRA) | Dec-18 | 14,635 | 7,628 | 7,000 | - |
| Fire Island Pines | Install new 23 kV circuit to Ocean Beach | Jun-19 | 10,132 | 1,279 | 500 | 5,000 |
| Far Rockaway | Storm hardening 33kV substation (Damaged by Sandy) | Jun-19 | 12,635 | 5,346 | 4,400 | 1,098 |
| Elwood | Install bus tie breaker | Jun-19 | 2,958 | 1,068 | 1,000 | 890 |
| Rockaway Beach | Install Battery House and Elevate Batteries | Dec-19 | 600 | - | 250 | 350 |
| Fire Island Pines | Storm Hardening Substation Structural Support due to Erosion | Dec-19 | 400 | - | - | 400 |
| Barrett | Procure new spare 220 MVA Phase Shifter transformer | Dec-19 | 4,471 | 346 | 1,000 | 2,750 |
| Northport | Procure a New spare 450 MVA Spare Phase Shifter | Dec-20 | 15,088 | - | 184 | 4,794 |
| Various | 69-477 Terminal Alarms | Blanket | - | - | 41 | 100 |
| Various | Accidents | Blanket | - | 13,431 | 4,691 | 4,926 |
| Various | Distribution Feeder Reliability Improvement Program (Minor Extensions) | Blanket | - | 27,140 | 26,722 | 29,766 |
| Various | Distribution Pole Reinforcement | Blanket | - | - | 2,331 | 2,447 |
| Various | Distribution Pole Replacements | Blanket | - | 17,992 | 16,562 | 17,390 |
| Various | Distribution Transforms - Add/Replace | Blanket | - | 27,636 | 26,500 | 26,223 |
| Hicksville | Mobile Units | Blanket | - | - | 173 | 3,000 |
| Various | Multiple Customer Outage Program | Blanket | - | 8,814 | 8,000 | 9,000 |
| Various | Protection Lease Line Upgrades | Blanket | - | - | 800 | - |
| Various | Public Works | Blanket | - | 9,526 | 8,500 | 9,025 |
| Various | Replacement of Aging and Non-Functional Joslyn Type ASUs | Program | - | - | 800 | 5,250 |
| Various | Residential Underground Development Area Rehabilitation Program | Blanket | - | - | 3,944 | 5,247 |
| Various | Substation Equipment Failures | Blanket | - | 6,768 | 5,600 | 7,210 |
| Various | System Spares | Blanket | - | 2,689 | 3,320 | 3,935 |
| Various | Transformer Load Tap Changer Replacement Program | Blanket | - | - | 600 | - |
| Various | Transmission Pole Replacement | Blanket | - | 2,501 | 1,693 | 1,777 |
| Various | Transmission System Failures | Blanket | - | 2,633 | 1,855 | 1,398 |
| Various | Upgrade radio communications to Far Rockaway | Blanket | - | - | 375 | - |
| Various | Distribution Breaker Replacement Program | Program | - | 1,919 | 657 | 745 |
| Various | Distribution System Improvements - Services, Branch lines & Customer Requests | Program | - | 44,307 | 18,000 | 19,000 |
| Various | Mechanical Relay Replacement Program | Program | - | - | 238 | 722 |
| Various | Pipe Type Cable Terminal Pressure Monitoring Upgrade Program | Program | - | - | 200 | 1,446 |
| Various | Protection and Controls Upgrade Program | Program | - | - | 392 | 1,000 |
| Various | Remote Terminal Unit Replacement/Upgrade Program | Program | - | - | 500 | 1,030 |
| Various | Underground Distribution Cable End of Life Replacement Program | Program | - | 30,828 | 11,076 | 13,983 |
| Various | Update Substation Distribution Breaker Racking System | Program | - | 2,880 | 750 | 1,050 |
| Various | Substation Battery Replacement Program | Program | - | 1,050 | 500 | 468 |
| Various | Substation Lightning & Grounding Upgrade Program | Program | - | 1,833 | 250 | 790 |
| Various | Transmission Breaker Replacement Program | Program | - | 9,786 | 2,250 | 2,500 |
| Various | Transmission Cables Cathodic Replacement Program | Program | - | 187 | 353 | 363 |
| Various | Transmission Pipe Type Cable Pump House Refurbishment (Pines and Y-50) | Program | - | 2,317 | 1,300 | - |
| Various | Transformer Life Extension Program | Program | - | - | 720 | 504 |

* Includes carry over from 2017. See "Carry Over" table for details
** Includes additional budget request costs. See "Additional Budget Requests" table for details
(a) Project to date expenditures includes projects that began prior to 2017

LIPA Long Island Power Authority

**2018 Approved and 2019 Projected Capital and Deferred Expenditures**
**(Thousands of Dollars)**

| | Location | Investment Description | In Service Date | Total Project Cost | Project To Date Expenditures through 12/31/17 [a] | Approved 2018 | Projected 2019 |
|---|---|---|---|---|---|---|---|
| | Various | Pipe Type Cable Low Pressure Trip Program | Program | - | - | 1,288 | 1,326 |
| | Various | Upgrade Supervisory Controllers for Capacitor Banks | Program | - | - | 255 | 262 |
| **Total Reliability Projects** | | | | **$ 136,434** | **$ 278,324** | **$ 191,845** | **$ 187,916** |
| **Tools, Equipment, Other, Economic, Salvage** | | | | | | | |
| | East Hampton | Relocate 23kV feeder underground | Dec-18 | 3,545 | 1,045 | 2,500 | - |
| | Various | Two Way Radio System Upgrade Project | Dec-19 | 42,098 | 9,836 | 19,040 | 13,200 |
| | Various | Substation Security Upgrade Project | Dec-23 | 52,898 | 8,936 | 500 | 5,000 |
| | Various | Capital Tools | Blanket | - | 534 | 2,750 | 1,500 |
| | Various | Dusk to Dawn Lighting | Blanket | - | 800 | 612 | 642 |
| | Various | Salvage Blanket | Blanket | - | (647) | (731) | (514) |
| | Various | Transfer Distribution Facilities to new telephone poles | Blanket | - | 3,243 | 3,768 | 4,482 |
| | Various | LIRR Program | Program | - | 4,109 | 2,796 | - |
| | Various | Substation Distribution Protection Upgrades for NRA Implementation | Program | - | - | 434 | - |
| | Various | Support LIRR Right of Way Transmission Pole Replacement Program (OSMOS) | Program | - | - | 2,800 | 2,850 |
| | Babylon | Babylon Solar (100% reimbursable) | Program | - | - | - | - |
| | Shoreham | Tallgrass Solar (100% reimbursable) | Program | - | - | - | - |
| | Various | LIRR Third Track | Program | - | - | 100 | - |
| **Total Tools, Equipment, Other, Economic, Salvage** | | | | **$ 98,541** | **$ 27,855** | **$ 34,569** | **$ 27,160** |
| **Grand Total Transmission & Distribution** | | | | **$ 1,158,962** | **$ 439,790** | **$ 423,212** | **$ 488,134** |

* Includes carry over from 2017. See "Carry Over" table for details
** Includes additional budget request costs. See "Additional Budget Requests" table for details
(a) Project to date expenditures includes projects that began prior to 2017

## 2018 Approved and 2019 Projected Capital and Deferred Expenditures
## (Thousands of Dollars)

| Information Technology Projects by Business Unit | Investment Description | In Service Date | Total Project Cost | Project To Date Expenditures through 12/31/17 (a) | Approved 2018 | Projected 2019 |
|---|---|---|---|---|---|---|
| **Customer Service** | | | | | | |
| | AMI (Automated Meter Integration) System Automation (CAS / OMS / MDM) | 2020 | 2,600 | - | 1,700 | 500 |
| | Customer 360/Customer Analytics | 2021 | 4,000 | - | 1,260 | 1,000 |
| | Paperless Billing Enhancements | 2019 | 860 | - | 430 | 430 |
| | Low Income Customer Program for DPS | 2018 | 850 | - | 850 | - |
| | Mobile App | 2019 | 1,280 | - | 850 | 430 |
| | Commercial Deposits Improvements | 2018 | 430 | - | 430 | - |
| | Outage Map Enhancements (iFactor /OMS) | 2018 | Blanket | - | 300 | 430 |
| | Meter Readings Hand Held (FCS ITRON Upgrade from MVRS) | | - | - | - | 1,280 |
| | Continuous Improvement Meter Data Management System | | - | - | - | 850 |
| | Pinpoint Project to Eliminate SSN#s | 2018 | 850 | - | 850 | - |
| | Preference Management & expansion of MyAlerts | 2019 | 1,600 | - | 850 | 750 |
| | Public Website | 2019 | 1,500 | - | 1,000 | 500 |
| | Telephone Consumer Protection Act Compliance- Master Data | 2018 | 850 | - | 850 | - |
| | Collection- CAS Continuous Improvement Program | 2018 | 550 | - | 550 | - |
| | CAS Continuous Improvement Program | 2018 | Blanket | 880 | 1,000 | 1,000 |
| | myAccount Enhancements- Blanket | 2018 | 3,000 | - | 2,000 | 1,000 |
| | Interactive Voice Response Unit Blanket | 2018 | Blanket | 1,400 | 880 | 880 |
| **Total Customer Service** | | | **$ 18,370** | **$ 2,280** | **$ 13,800** | **$ 9,050** |
| **Transmission & Distribution** | | | | | | |
| | Compatible Units and SAP | 2018 | 2,881 | 1,187 | 1,028 | 77 |
| | Dispatching Damage Assessment & Construction Work | 2018 | 465 | - | 465 | - |
| | DSCADA - Migrate PSEG LI to OSI Platform | 2019 | 8,660 | 270 | 3,510 | 3,375 |
| | WaterRide Software Upgrade | 2018 | 426 | - | 28 | - |
| | EMS upgrade LCP | 2020 | 9,434 | - | 1,787 | 4,340 |
| | Turret Phones for Control Rooms | 2018 | 1,860 | - | 1,860 | - |
| | CGI CAD Upgrade | 2018 | 14,226 | 4,826 | 6,942 | 523 |
| | LI SCADA Network Upgrade to MPLS 2017 | 2019 | 10,714 | 1,709 | 4,407 | 3,511 |
| **Total Transmission & Distribution** | | | **$ 48,666** | **$ 7,992** | **$ 20,028** | **$ 11,826** |
| **Information Technology** | | | | | | |
| | CISO- Replacing SPLUNK with Nitro Security | 2018 | 450 | - | 450 | - |
| | CISO- NAC LI | 2018 | 400 | - | 400 | 400 |
| | Client- CAS Mainframe - Hardware Upgrade | 2019 | 1,500 | - | - | 1,500 |
| | Client- CGI OMS / CAD - 2FA Badge Reader Upgrade | 2019 | 2,550 | - | - | 250 |
| | Client- CGI OMS/ CAD MDT 3G to 4G conversion | 2019 | 1,800 | - | - | 1,800 |
| | Network- LCP to Replace Aging Firewalls and Routers Part A | 2019 | 715 | - | 615 | 100 |
| | Switch- Long Island Switch Replacement Part A | 2019 | 650 | 603 | 500 | 150 |
| | Desktop- Laptops for New Hires Part A | 2018 | Blanket | - | 35 | 300 |
| **Total Information Technology** | | | **$ 8,065** | **$ 603** | **$ 2,000** | **$ 4,500** |

* Includes carry over from 2017. See "Carry Over" table for details
** Includes additional budget request costs. See "Additional Budget Requests" table for details
(a) Project to date expenditures includes projects that began prior to 2017

LIPA
Long Island Power Authority

## 2018 Approved and 2019 Projected Capital and Deferred Expenditures
## (Thousands of Dollars)

| Information Technology Projects by Business Unit | Investment Description | In Service Date | Total Project Cost | Project To Date Expenditures through 12/31/17 (a) | Approved 2018 | Projected 2019 |
|---|---|---|---|---|---|---|
| **Business Services** | | | | | | |
| | AMAG System Upgrade/replacement (Phase 0, RFP) | 2018 | 500 | - | 500 | - |
| **Total Business Services** | | | **$ 500** | **$ -** | **$ 500** | **$ -** |
| **Power Markets** | | | | | | |
| | Disaster Recovery Power Mkts Systems (MAPS,MARS, Spotfire) | 2018 | 400 | - | 400 | - |
| **Total Power Markets** | | | **$ 400** | **$ -** | **$ 400** | **$ -** |
| **Grand Total Information Technology Projects** | | | **$ 75,501** | **$ 10,875** | **$ 36,728** | **$ 25,376** |

es carry over from 2017. See "Carry Over" table for details
des additional budget request costs. See "Additional Budget Requests" table for details
ct to date expenditures includes projects that began prior to 2017

## 2018 Approved Projected Capital and Deferred Expenditures
## (Thousands of Dollars)

| Business Units | Investment Description | Approved 2018 | Projected 2019 |
|---|---|---|---|
| **Utility 2.0** | | | |
| | Advanced Metering Infrastructure Full Deployment Plan | 10,300 | - |
| | Rate Modernization | 2,300 | |
| | Super Saver Program | 2,500 | - |
| | Electric Vehicles Purchase | 375 | - |
| **Total Utility 2.0 Projects** | | **$ 15,475** | **$ -** |

* Includes carry over from 2017. See "Carry Over" table for details
** Includes additional budget request costs. See "Additional Budget Requests" table for details
(a) Project to date expenditures includes projects that began prior to 2017

## 2018 Approved and 2019 Projected Capital and Deferred Expenditures
## (Thousands of Dollars)

| Business Units | Investment Description | In Service Date | Total Project Cost | Project To Date Expenditures through 12/31/17 [(a)] | Approved 2018 | Projected 2019 |
|---|---|---|---|---|---|---|
| **Customer Service** | | | | | | |
| | Purchase Electric Meters | 2018 | Blanket | 7,840 | 4,826 | 4,826 |
| | Install/Remove Meters | 2018 | Blanket | 8,165 | 6,068 | 6,068 |
| | Tools/Equipment | 2018 | Program | 120 | 500 | 500 |
| **Total Customer Service Projects** | | | | **$ 16,125** | **$ 11,394** | **$ 11,394** |
| **Facilities** | | | | | | |
| | Facilities Services | 2018 | Program | 2,902 | 6,162 * | 4,653 |
| | Shoreham Facility Upgrades | 2018 | Program | - | 3,034 ** | - |
| **Total Facilities Projects** | | | | **$ 2,902** | **$ 9,196** | **$ 4,653** |
| **Fleet** | | | | | | |
| | Fleet | 2018 | Program | 20,315 | 8,526 | 6,318 |
| **Total Fleet Projects** | | | | **$ 20,315** | **$ 8,526** | **$ 6,318** |
| **Grand Total PSEG LI Projects with Carryover and Additional Budget Requests** | | | | | **$ 489,056** | **$ 535,875** |
| **FEMA Related Projects** | | | | | **$ 190,273** | **$ 119,777** |
| **Utility 2.0 Related Projects** | | | | | **$ 15,475** | **$ -** |
| **PSEG Long Island, Utility 2.0 and FEMA Related** | | | | | **$ 694,804** | **$ 655,652** |

* Includes carry over from 2017. See "Carry Over" table for details
** Includes additional budget request costs. See "Additional Budget Requests" table for details
(a) Project to date expenditures includes projects that began prior to 2017

## 2017 Carry Over Costs into 2018
## (Thousands of Dollars)

| | Location | Investment Description | 2017 Carry Over Costs |
|---|---|---|---|
| **Transmission and Distribution** | | | |
| Reliability Projects | | | |
| | Kings Highway | Establish new 138/13 kV substation | 3,000 |
| **Total Transmission and Distribution** | | | **$ 3,000** |
| | | | |
| **Business Services** | | | |
| **Facilities** | | | |
| | Hicksville | Operations 2 Renovation | 1,000 |
| **Total Business Services** | | | **$ 1,000** |
| | | | |
| **Total 2017 Carry Over into 2018** | | | **$ 4,000** |

## Additional Budget Requests for 2018 Approved and 2019 Projected
## (Thousands of Dollars)

| | Location | Investment Description | In Service Date | Approved 2018 | Projected 2019 |
|---|---|---|---|---|---|
| **Regulatory Driven** | East Garden City | Install new 138 KV feed to Valley Stream (NERC) | Dec-20 | 2,668 | 43,000 |
| **Total Regulatory Driven** | | | | **$ 2,668** | **$ 43,000** |
| **Load Growth** | | | | | |
| | Riverhead | Install new 138 kV circuit to Canal | Jun-21 | 1,400 | 1,400 |
| | Bridgehampton | Install new 69 kV circuit to Buell | Jun-19 | 14,350 | 31,521 |
| | Southampton | Install new 69 kV circuit to Canal | Jun-19 | 14,350 | 37,621 |
| | Navy Road | Establish New 2nd 23/13 kV substation | Jun-19 | 8,750 | 7,560 |
| | Wildwood | Upgrade 69 kV circuit to Riverhead to 138 kV | Jun-19 | 4,176 | 6,249 |
| | Amagansett | Upgrade substation from 23 kV to 33 kV | Jun-22 | 5,728 | 11,232 |
| | Buell | Upgrade substation from 23 kV to 33 kV | Jun-22 | 350 | 1,400 |
| | Culloden Point | Upgrade substation from 23 kV to 33 kV | Jun-21 | 1,449 | 2,222 |
| | East Hampton | Upgrade substation from 23 kV to 33 kV | Jun-22 | 280 | 560 |
| | Hither Hills | Upgrade substation from 23 kV to 33 kV | Jun-23 | 350 | 1,250 |
| | Various | Upgrade Transmission Lines from 23 kV to 33 kV | Jun-21 | 70 | 210 |
| | Navy Road | Upgrade substation from 23 kV to 33 kV | Jun-21 | 350 | 1,357 |
| | Hero | Upgrade substation from 23 kV to 33 kV | Jun-21 | 84 | 171 |
| **Total Load Growth** | | | | **$ 51,687** | **$ 102,753** |
| **Facilities** | | | | | |
| | Shoreham | Shoreham Facility Upgrades | 2018 | **3,034** | - |
| **Total Additional Budget Requests** | | | | **$ 57,389** | **$ 145,753** |

## LIPA's Relationship with New York State Government

The Long Island Power Authority is a component unit of New York State. The Authority became the retail supplier of electric service in the Counties of Nassau and Suffolk (with certain limited exceptions) and a portion of Queens County known as the Rockaways (Service Area), on May 28, 1998 by acquiring the transmission and distribution (T&D) system of the Long Island Lighting Company (LILCO) as a wholly owned subsidiary of the Authority. The Authority provides electric delivery service in the Service Area, which includes approximately 1.1 million customers. The population of the Service Area is approximately 2.9 million. In order to assist the Authority in providing electric service to its customers, the Authority entered into operating agreements to provide the Authority with the operating personnel, and a significant portion of the power supply resources, necessary for the Authority to provide electric service in the Service Area.

The Authority's role significantly changed as a result of the LIPA Reform Act (Reform Act) which was passed and codified as Chapter 173, Laws of New York on June 21, 2013 by the New York State Assembly and Senate. Under the Authority's new business model, PSEG Long Island was selected as the Authority's service provider pursuant to the Amended and Restated Operations Services Agreement (A&R OSA). Essentially all costs of operating and maintaining the Authority's T&D system incurred by PSEG Long Island are passed through to and paid for by the Authority.

## Budget Process

Under the terms of the LIPA Reform Act and the Amended and Restated Operations Services Agreement, the LIPA Consolidated Budget and Financial Plan are jointly developed by LIPA and the service provider, PSEG Long Island.

The LIPA Consolidated Budget outlines projected spending by major expense and revenue category. The budget reflects the operating and capital costs required to provide electric service in the Service Area. Further, the budget compares total projected spending to the approved Revenue Requirement as per the Rate Plan.

Budget Development Schedule:

- April through October: LIPA and PSEG Long Island develop projections of current year spending and preliminary budget forecasts for the upcoming year and financial plan.
- June through October: PSEG Long Island provides LIPA with preliminary Capital project projections.
- October:
    - PSEG Long Island provides LIPA with a preliminary budget. This includes projections for current year spending as well as a preliminary budget for the years covered by the financial plan. The preliminary budget submission is reviewed by LIPA.
    - LIPA provides PSEG Long Island its portion of the Consolidated Budget by mid-October.
    - PSEG Long Island produces a LIPA Consolidated Budget by the end of October.
    - The LIPA Consolidated Budget is reviewed by senior level staff from both LIPA and PSEG Long Island.
- November:
    - Public Hearings are held in November to solicited comments from the public.
    - The Board of Trustees is briefed on the budget during Budget Workshops.
- December: The Board of Trustees votes on the adoption of the LIPA Consolidated Budget.

Certification

I hereby certify that, to the best of my knowledge and belief after reasonable inquiry, the budget information and financial projections contained herein for the years ending December 31, 2017 through December 31, 2019 have been developed based on reasonable assumptions and methods of estimation and that the requirements of 2 NYCRR Part 203 have been satisfied.

/S/
Thomas Falcone
Chief Executive Officer
Long Island Power Authority

Dated: December 19, 2017

LIPA
Long Island Power Authority

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