Long Island Power Authority

Powering Long Island: Clean, Lean, and Customer First

LIPA
Long Island Power Authority

2020
PROPOSED
BUDGET

Board of Trustees

Ralph V. Suozzi
Chair

Mark Fischl
Vice Chair &
Chair, Oversight & REV

Elkan Abramowitz
Chair, Governance,
Planning & Personnel

Sheldon L. Cohen
Chair, Finance & Audit

Drew Biondo
Trustee

Mathew C. Cordaro, Ph.D.
Trustee

Peter J. Gollon, Ph.D.
Trustee

Thomas J. McAteer
Trustee

Ali Mohammed
Trustee

Executive Management

Thomas Falcone
Chief Executive Officer

Anna Chacko
General Counsel

Kenneth Kane
Interim Chief
Financial Officer

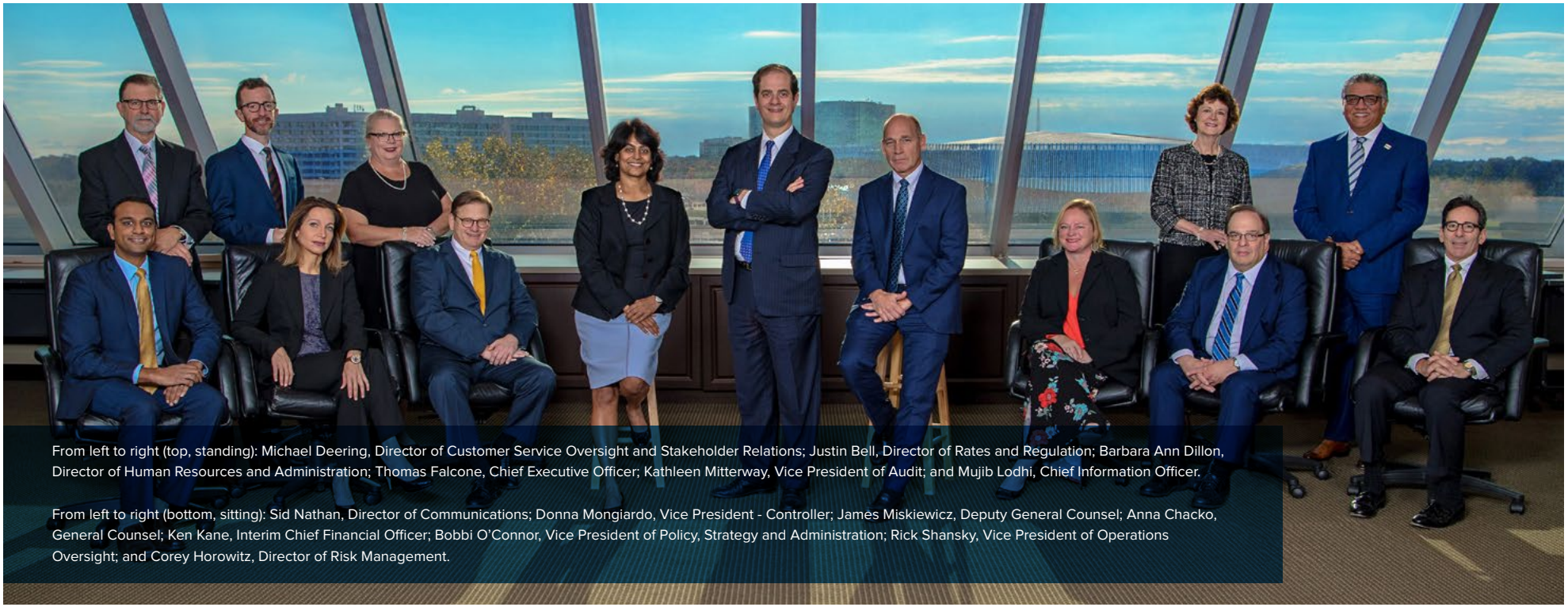
Rick Shansky
Vice President of
Operations Oversight

Bobbi O'Connor
Vice President of Policy,
Strategy, and
Administration

Donna Mongiardo
Vice President, Controller

Kathleen Mitterway
Vice President of Audit

Mujib Lodhi
Chief Information Officer



From left to right (top, standing): Michael Deering, Director of Customer Service Oversight and Stakeholder Relations; Justin Bell, Director of Rates and Regulation; Barbara Ann Dillon, Director of Human Resources and Administration; Thomas Falcone, Chief Executive Officer; Kathleen Mitterway, Vice President of Audit; and Mujib Lodhi, Chief Information Officer.

From left to right (bottom, sitting): Sid Nathan, Director of Communications; Donna Mongiardo, Vice President - Controller; James Miskiewicz, Deputy General Counsel; Anna Chacko, General Counsel; Ken Kane, Interim Chief Financial Officer; Bobbi O'Connor, Vice President of Policy, Strategy and Administration; Rick Shansky, Vice President of Operations Oversight; and Corey Horowitz, Director of Risk Management.

Customers

Residential: 1,033,7600
Commercial: 148,7030

2019 Peak Demand

5,474 MW

Generating Capacity

5,762 MW

Energy Requirements

20,773,082 MWh

Transmission System

1,400 miles

Distribution System

9,000 miles overhead
5,000 miles underground
189,000 transformers

Substations

30 Transmission
152 Distribution

2020 Budget

Operating: $3,760,392,000
Capital: $820,363,000

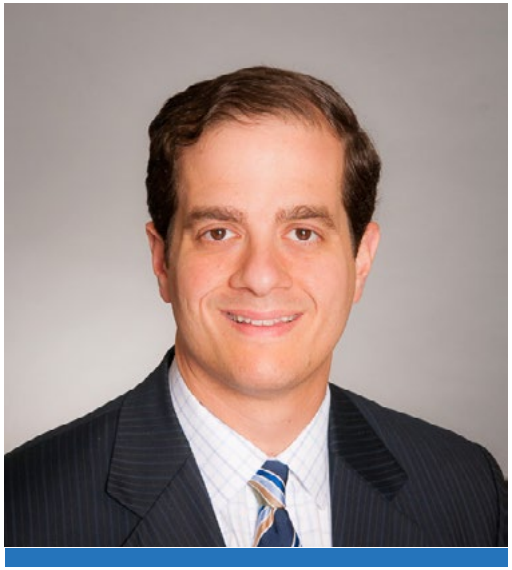
Table of Contents

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.

LIPA
Long Island Power Authority

Budget Message



THOMAS FALCONE
Chief Executive Officer

Dear Customer-Owners and Stakeholders,

Each year, LIPA and PSEG Long Island prepare an annual budget for the review and approval by the LIPA Board of Trustees. The Board sets high expectations for our performance, and those expectations guide our decisions during our budget process.

Our Vision... an electric utility for Long Island that is focused on our customers' needs, providing clean, reliable energy, at the least possible cost... Clean, Lean and Customer First

The Board's priorities are contained in a set of policies available on LIPA's website.[1] They include:

- To achieve **outstanding customer satisfaction**, measured by a third party, that is among the top 25 percent of electric utilities in the country by 2022
- To maintain a **highly reliable electric grid** – within the top 25 percent of peer electric utilities – equivalent to fewer than one power outage a year per customer or 99.99 percent reliability
- To meet Long Island's share of **New York's aggressive climate goals**, including 70 percent renewable energy by 2030 and a carbon-free electric grid by 2040, and
- To **provide electric service at the lowest possible cost**, consistent with sound fiscal and operating practices, including rates that are comparable to or below our neighboring utilities in the New York metropolitan area.

These policies add up to an electric utility for Long Island that is focused on our customers' needs, providing clean, reliable energy, at the least possible cost. **You could call the LIPA Board's vision for our organization "Clean, Lean, and Customer First."**

[1] *For the Board's policies, see www.lipower.org/mission.*

We still have work to do to achieve that vision, but I would like to describe our progress to you and how this budget moves us towards our goal.

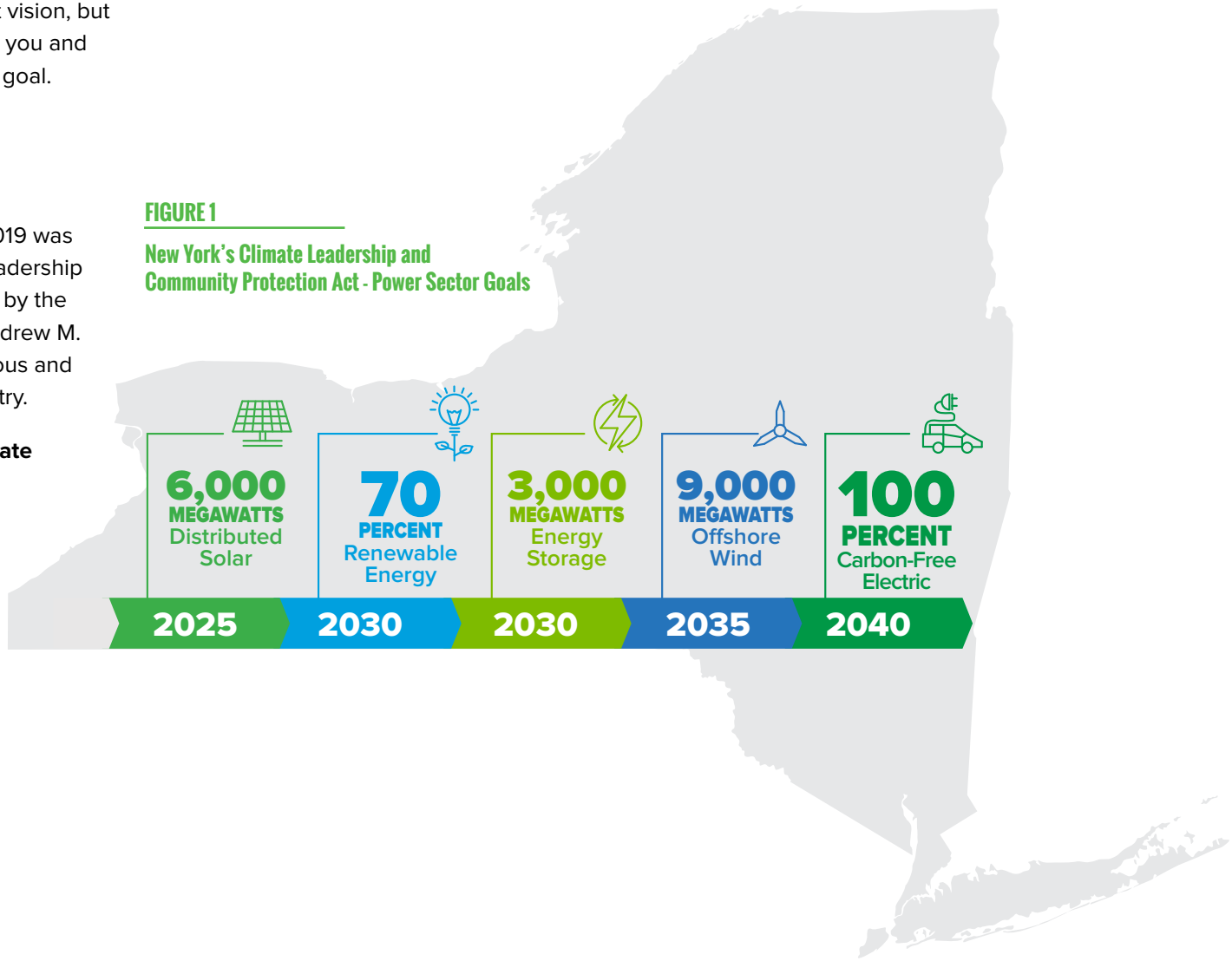
New York's Landmark Climate Act

The most important event for LIPA in 2019 was New York's climate act. The Climate Leadership and Community Protection Act, passed by the Legislature and signed by Governor Andrew M. Cuomo in July 2019, is the most ambitious and comprehensive climate law in the country.

New York's climate act requires the State to reduce economy-wide greenhouse gas emissions 40 percent by 2030 and 85 percent by 2050. The law creates a Climate Action Council[1] to craft a roadmap to these goals, including certain minimum targets for the electric power sector, as shown in Figure 1.

FIGURE 1

New York's Climate Leadership and Community Protection Act - Power Sector Goals



[1] *LIPA is represented on the Climate Action Council by its Chief Executive Officer.*

What New York's Climate Act Means for Long Island's Electric Grid

There are many possible paths to a decarbonized New York economy. Here are four data-driven trends on what it means for New York's electric grid:

- Trend #1: **Electricity Is the Clean Fuel** to Decarbonize New York's Economy
- Trend #2: **Electric Load Will Grow** Substantially Over Time
- Trend #3: **Beneficial Electrification Will Likely Pay for Itself** Through a Higher Load Factor
- Trend #4: **Offshore Wind Is an Abundant New Source of Clean Energy** for Long Island

We will discuss each of these trends in turn and what we are doing to plan for these scenarios.

TREND #1:

Electricity Is The Clean Fuel To Decarbonize New York's Economy

New York's Carbon Emissions by Sector

Let's start by looking at the sources of New York's carbon emissions. Figure 2 shows that **48 percent of New York's carbon emissions are from transportation, 34 percent from residential and commercial buildings, and 14 percent from the electric sector.**

Recent trends in each sector, shown in Figure 3, are informative. **Overall, the State's carbon emissions have declined by 8 percent over the last ten years, which is twice the national rate – a real accomplishment. The electric sector has declined the most – down 36 percent**. The challenge will be in addressing the two largest sectors – transportation, up 5 percent, and residential buildings, down 4 percent.

FIGURE 2

New York's Carbon Emissions
Source: U.S. Energy Information Agency

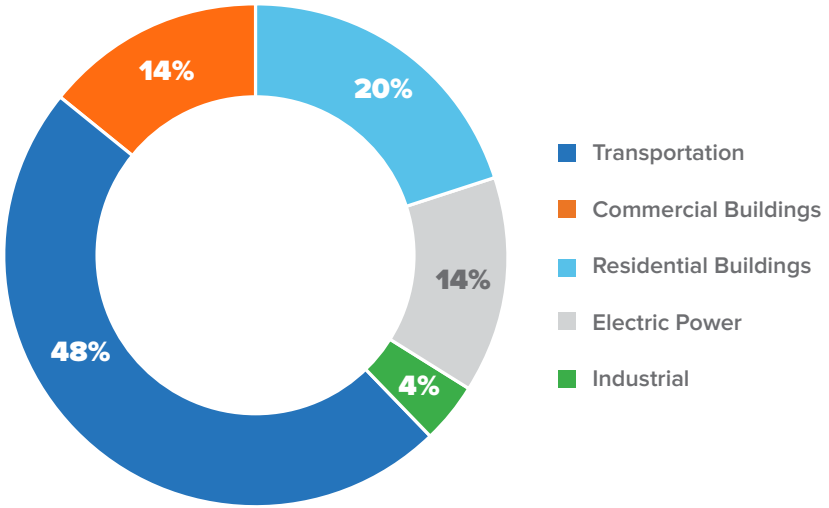


FIGURE 3

New York's Carbon Emissions Since 2009
U.S. Energy Information Agency, 2017 data, released October 23, 2019

	2017 C02 emissions Million metric tons	Change Since 2009
Transportation	74.7	+5%
Residential Buildings	31.3	-4%
Commercial Buildings	22.1	-12%
Electric Power	22.0	-36%
Industrial	7.6	-3%
Total New York Emissions	**156.7**	**-8%**

From these statistics we can state something – **decarbonizing New York's economy by 85 percent over the next thirty years will require new, attractive, carbon-friendly approaches to transporting people and goods, and in meeting the cooking and heating needs of homes and buildings**.

Decarbonization Will Require Electrification of Transportation and Buildings

Interestingly, the future carbon-free electric grid will play a large role in reducing carbon emissions in other sectors -- by providing those new, attractive opportunities to decarbonize transportation and buildings. Not only is it possible to decarbonize transportation and buildings using electricity, studies show that the rapid pace of improvements in batteries and heat pumps make it desirable and cost-effective.

Electric Vehicles Are Right Around the Corner

Electric vehicles ("EVs"), including plug-in hybrids, are already the environmentally-friendly choice for transporting people from place to place.[2] A joint study by the Electric Power Research Institute and the Natural Resources Defense Council found that using an EV in New York emits the same carbon as a car with fuel economy of 125 miles per gallon, roughly five times the average new car.[3] That's with today's grid and not the zero-carbon electric grid of 2040. Similarly, **a PSEG Long Island study found that every electrically fueled-mile on Long Island is 82 percent lower in carbon emissions than a gasoline-fueled mile, using today's grid.**[4]

Auto manufactures are rolling out dozens of new plug-in hybrid and EV models over the next several years, and with improving battery technology, **EVs are expected to reach parity prices with gasoline-powered cars by 2024.**[5] Forecasting consumer trends is a perilous task, but for all these reasons, Dr. Dieter Zetsche, the recently retired CEO of Mercedes-Benz, compared electric mobility to an upside-down ketchup bottle… when consumers decide to switch, a lot may come all at once.

> "Electric mobility is like with an upside-down ketchup bottle. You know that at some point something will come out. You don't know when, but once it comes, it really does. Then it's bad if you're not prepared.
>
> **— Dr. Dieter Zetsche,**
> recently retired
> CEO of Mercedes-Benz

[2] *Electrified mass transit, like the subway or Long Island Railroad, is even better.*
[3] *Environmental Assessment of a Full Electric Transportation Portfolio, September 2015.*
[4] *Electric Vehicles on Long Island, Costs and Benefits, Gabel Associates, July 2018*
[5] *Outlook, Bloomberg New Energy Finance, 2018*

Heat Pumps Are Attractive for Long Island Consumers Today

Consumer awareness of EVs is high (think Tesla). By contrast, cold climate air-source heat pumps are a phenomenal technology that nobody in the northeast knows about (an opportunity for Elon Musk!). Over 12 million American households, about 10 percent, use electric heat pumps, with most of those homes in the South.[6] **Increasingly efficient heat pump technology now makes air-source heat pumps attractive for Long Island's climate**, as shown in Figure 4. First, the most common question – what is a heat pump? Think of it as an air conditioner operating in reverse. A heat pump uses electricity to extract heat from the outside air, even at low temperatures. **There is no need to drill a well** (that's a geothermal heat pump), and **PSEG Long Island offers attractive rebates, with the upfront cost similar to air conditioning.**

Many New Yorkers could reduce their carbon footprint and save a lot of money heating their home with a modern air-source heat pump — especially those with oil or electric resistance heat, new construction, or consumers desiring to retrofit a home for air conditioning. Figure 4 shows the economics and carbon impact for a typical Long Island single-family home with oil heat and the need to replace an aging central air conditioning unit.

An electric heat pump could reduce heating costs for a typical Long Island home with oil heat by $1,000 per year and reduce carbon emissions by 42 percent. The additional cost of the heat pump would pay for itself in a little over a year. As the carbon intensity of the electric grid declines over the next twenty years, the carbon reduction from using a heat pump could approach 100 percent.

FIGURE 4

Long Island Households Could Save Money and Reduce Their Carbon Footprint with Heat Pumps

Example is for typical Long Island home with oil heat and a need to replace their central air conditioning with a new unit

Source: PSEG Long Island estimate for a three ton unit

	Buying NEW Central Air Conditioner	Buying NEW Air-Source Heat Pump
Upfront Cost*	$6,700	$9,700
PSEG Long Island Rebate		$1,800
Net Cost	**$6,700**	**$7,900**
Annual Home Heat Bill	$1,800	$800
Annual Savings		**$1,000**
Payback period		1.2 years
Carbon Footprint from heating (2020)		**-42%**
Carbon Footprint from heating (2040)		-100%

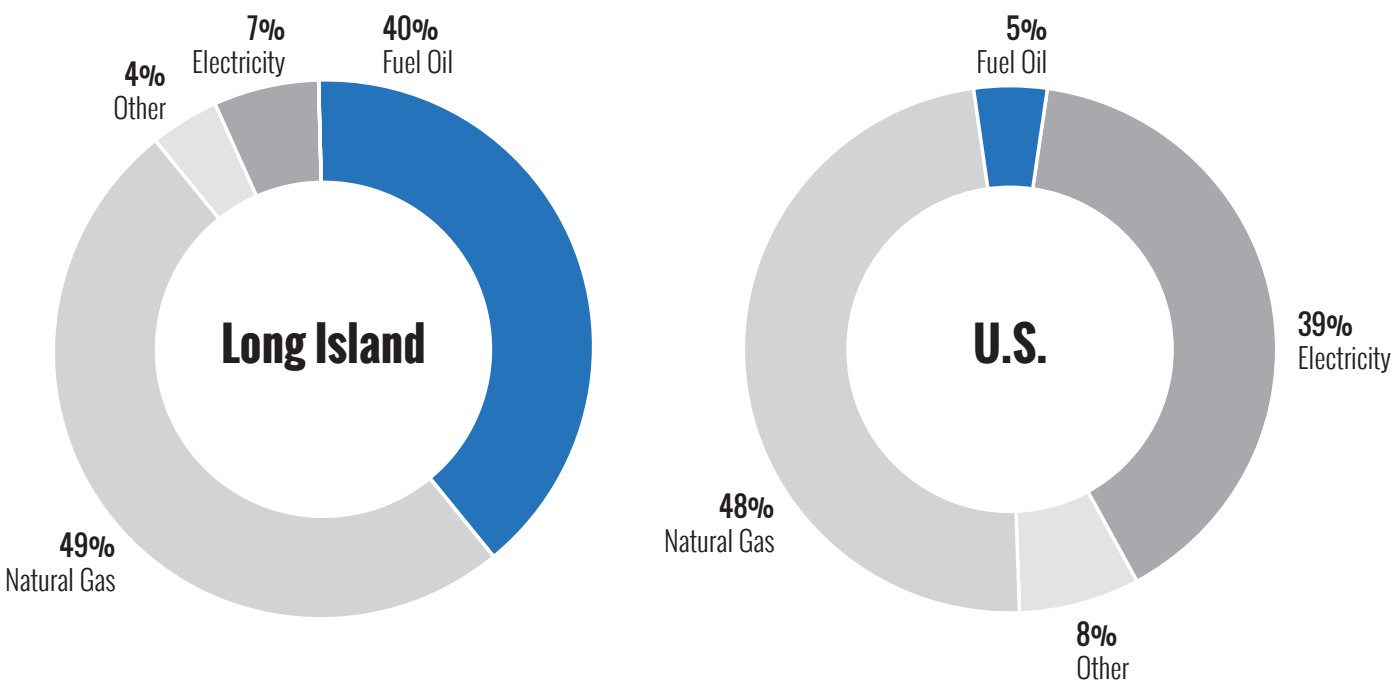
[6] *Residential Energy Consumption Survey, U.S. Energy Information Agency*

LIPA and PSEG Long Island are focused on heat pumps because **Long Island is an ideal market for the technology – 40 percent of homes heat with oil,** as shown in Figure 5. These could immediately save money by switching to an air-source heat pump. In fact, the biggest challenge with heat pumps is that so few consumers and contractors know about them. More on that later.

FIGURE 5

Long Island Homes Heat with Oil at Eight Times the National Average

Source: 2018 American Community Survey, U.S. Census Bureau



TREND #2:

Electric Load Will Grow Substantially Over Time

The trend over the last decade, both nationally and locally, has been for electric load to decline each year. On Long Island, we have New York's leading energy efficiency programs and distributed solar market, accounting for 40 percent of all rooftop solar installations in New York. Together with improving building codes, these programs help customers reduce their electric bills and carbon footprints and decrease LIPA's electric sales by about two percent per year[7]. **The question is – will the trend of declining sales continue? Probably not**, because electricity will provide a larger share of U.S. energy needs in the future, both to meet aggressive climate goals and because of the comfort, convenience, and savings that electrification offers consumers.[8]

32 Megawatt Long Island Solar Farm, Upton, New York

[7] *Absent these programs, electric sales would grow at roughly one percent per year. With these programs, electric sales decline by about one percent per year, or a two percent per year annual reduction in sales.*

[8] *For example, an EV is quicker, quieter, and has 30 percent fewer parts to maintain than a car with an internal combustion engine. It costs less to fuel with electricity than gasoline, and when EVs and plug-in hybrids hit parity prices with conventional cars, many consumers will decide to make the switch.*

With this shift towards electricity as an energy source, electric load will grow even after aggressive economy-wide energy efficiency initiatives, as shown in Figure 6. For example:

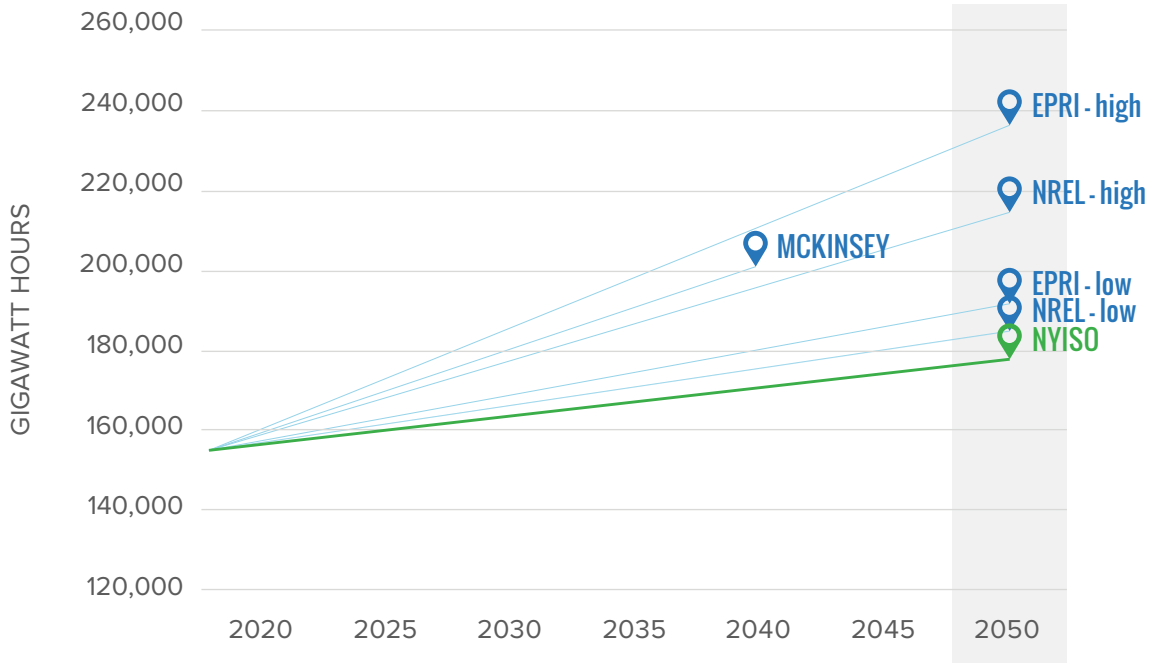
- The National Renewable Energy Lab (NREL) forecasts that **transportation and building electrification could increase electric demand by 20 to 38 percent over their "baseline" forecast by 2050**, with electricity fueling up to 76 percent of vehicle miles traveled, 61 percent of space heating, 52 percent of water heating and 94 percent of cooking;[9]
- The Electric Power Research Institute (EPRI) forecasts that with efficient electrification, **national load growth could range from 24 to 52 percent by 2050**;[10] and
- An analysis by McKinsey & Company forecasts that after aggressive energy efficiency measures, **New York's electric load will grow by one-third by 2040 due to cars and buildings going electric**.[11]

In fact, **EPRI forecasts that electricity could provide up to 47 percent of total U.S. energy needs by 2050, up from 21 percent today and 3 percent in 1950**, while NREL's analysis shows electricity's share of energy consumption could be as high as 41 percent.

FIGURE 6

Forecasts of Growing New York Electric Loads Due to Electrification

Source: 2019 Load and Capacity Data, New York Independent System Operator; EPRI and NREL assumptions applied to New York load



[9] *Electrification Futures Study, National Renewable Energy Laboratory, July 2018*
[10] *U.S. National Electrification Assessment, Electric Power Research Institute, April 2018*
[11] *The Global Relevance of New York State's Clean-Power Targets, McKinsey & Company, July 2019*

LIPA Long Island Power Authority

TREND #3:

Beneficial Electrification Will Likely Pay For Itself Through A Higher Load Factor

The pace of beneficial electrification[12] will be driven by the choices of Long Island's one million households and 150,000 businesses. But it is manageable.

One-third load growth by 2040, for example, sounds like a lot but is only about 1.4 percent per year. Compare that to Figure 7, which shows the annual change in electric sales across the United States for the last several decades. In the 1960s, electric load was growing by six to eight percent per year, roughly doubling every decade. That pace slowed to 2 to 3 percent per year by the 1980s and to roughly zero today. The forecast pace of electrification is modest relative to these historic numbers.

Meeting the growing energy needs of consumers over the next thirty years will require grid modernization and investment, including innovative rate designs, new customer programs, and smarter grid technologies.

Minimizing the cost of beneficial electrification will require finding new ways to actively, and conveniently, manage demand for customers to minimize coincident peak on the electric grid.

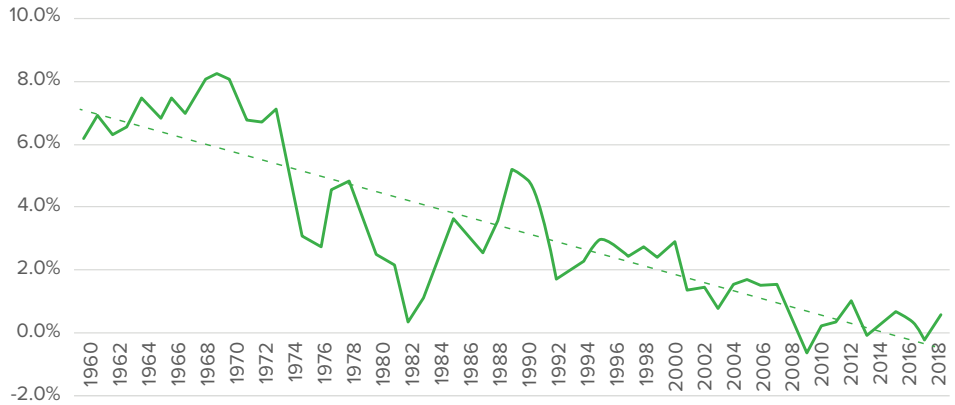
A PSEG Long Island study[13], for example, found that electric vehicle charging could contribute 142 megawatts (+2.8%) to Long Island's peak by 2025 if customers charge their cars as they currently do, but that programs offered by the utility to better coordinate charging, such as off-peak charging discounts and managed charging, could reduce that to 41 megawatts (+0.8%).[14]

Even better, that same PSEG Long Island study found that, **despite the need to invest in the electric grid to meet new EV load, the investments pay for themselves,** as many of the fixed costs of operating and maintaining the electric grid are spread over more kilowatt-hour sales.

FIGURE 7

U.S. Electricity Growth Since 1960

(Percentage Growth, Three-Year Rolling Average)
Source: Monthly Energy Review, U.S. Energy Information Agency, October 2019



[12] *Beneficial electrification is a term for replacing fossil-fuels with electricity in a way that reduces overall emissions and energy costs.*

[13] *Electric Vehicles on Long Island, Costs and Benefits, Gabel Associates, July 2018*

[14] *Overall system peak is still forecast to fall by 2025; this is solely the effect of EV adoption on coincident peak. The effect of electrification on system peak will grow substantially over time as the market share of EVs increases.*

TREND #4:

Offshore Wind Is An Abundent New Source Of Energy For Long Island

Long Island's electric grid is built around a handful of large power plants and transmission ties. Electricity flows primarily from those few large sources to more than 1.1 million homes and businesses. Those large power plants were sited in locations that made sense for the technologies of the day – access to natural gas pipelines or barges for oil deliveries and the need to be close to a body of water for cooling.

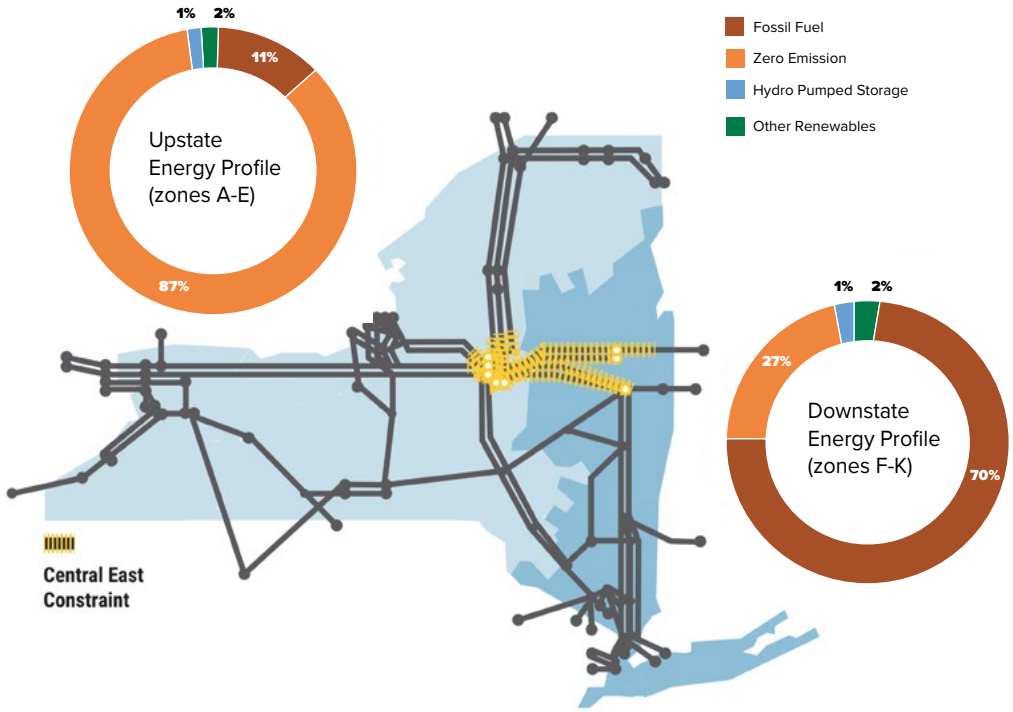
As we transition to a 100 percent carbon-free electric grid by 2040, the task becomes different – to move clean energy from where it is to where it's needed.

New York's electric system is a "tale of two grids," with an upstate and downstate region, as shown in Figure 8. **The upstate region is predominantly rural and 87 percent of its energy is already zero-carbon**, including the State's large hydro-electric projects and nuclear power plants. The downstate region, including Long Island, is densely populated and primarily supplied by fossil-fuel units. **Transmission constraints limit the ability to deliver power from upstate to downstate, or between local load pockets downstate, particularly in New York City and on Long Island**.

FIGURE 8

New York's Electric Grid by Fuel Mix

Source: New York Independent System Operator, 2019 Power Trends

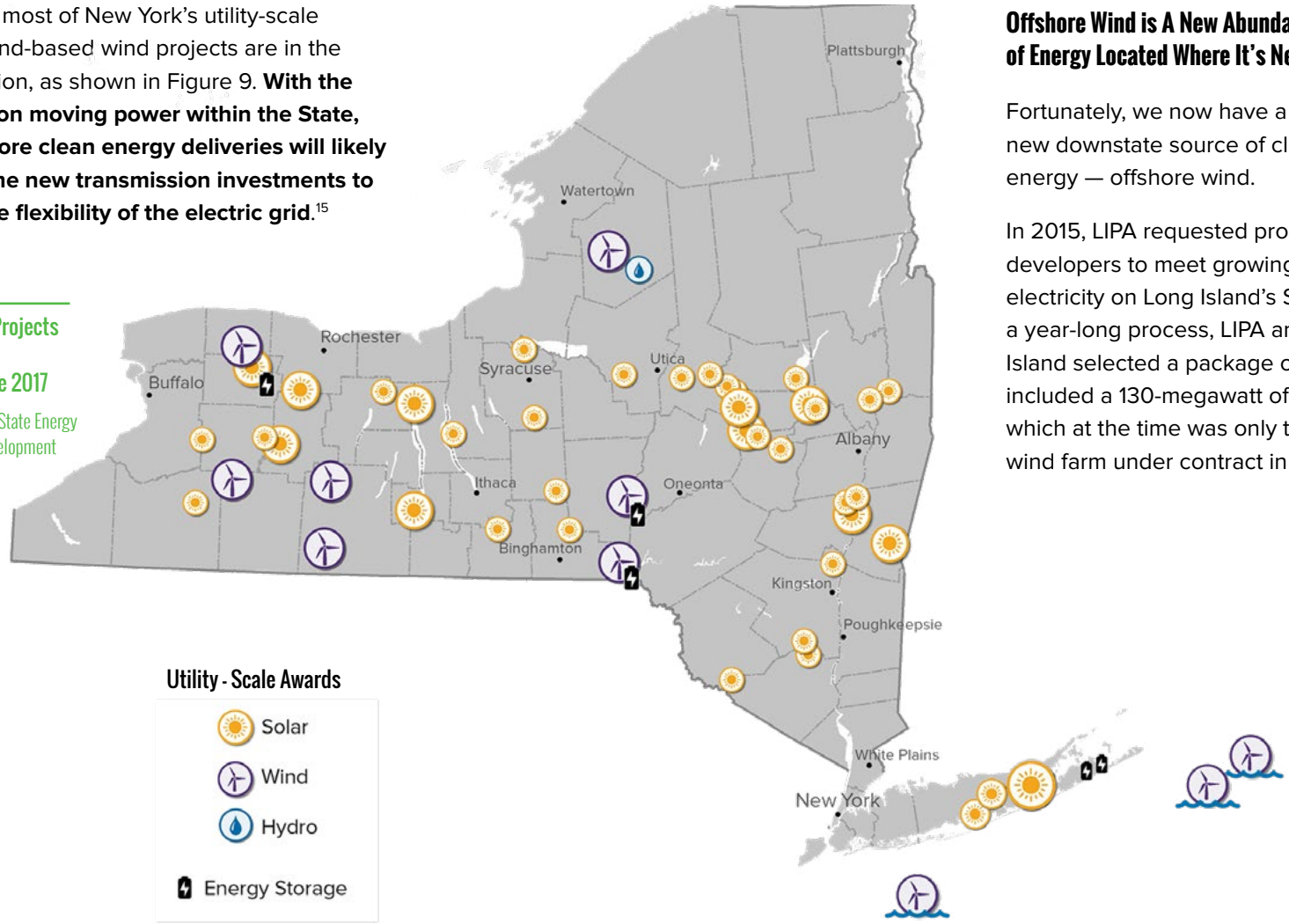


Meanwhile, most of New York's utility-scale solar and land-based wind projects are in the upstate region, as shown in Figure 9. **With the limitations on moving power within the State, enabling more clean energy deliveries will likely require some new transmission investments to increase the flexibility of the electric grid.**[15]

FIGURE 9

Clean Energy Projects Awarded in New York Since 2017

Source: New York State Energy Research and Development Agency and LIPA



Offshore Wind is A New Abundant Source of Energy Located Where It's Needed

Fortunately, we now have a large new downstate source of clean energy — offshore wind.

In 2015, LIPA requested proposals from developers to meet growing demand for electricity on Long Island's South Fork. After a year-long process, LIPA and PSEG Long Island selected a package of projects that included a 130-megawatt offshore wind farm, which at the time was only the second offshore wind farm under contract in the country.[16]

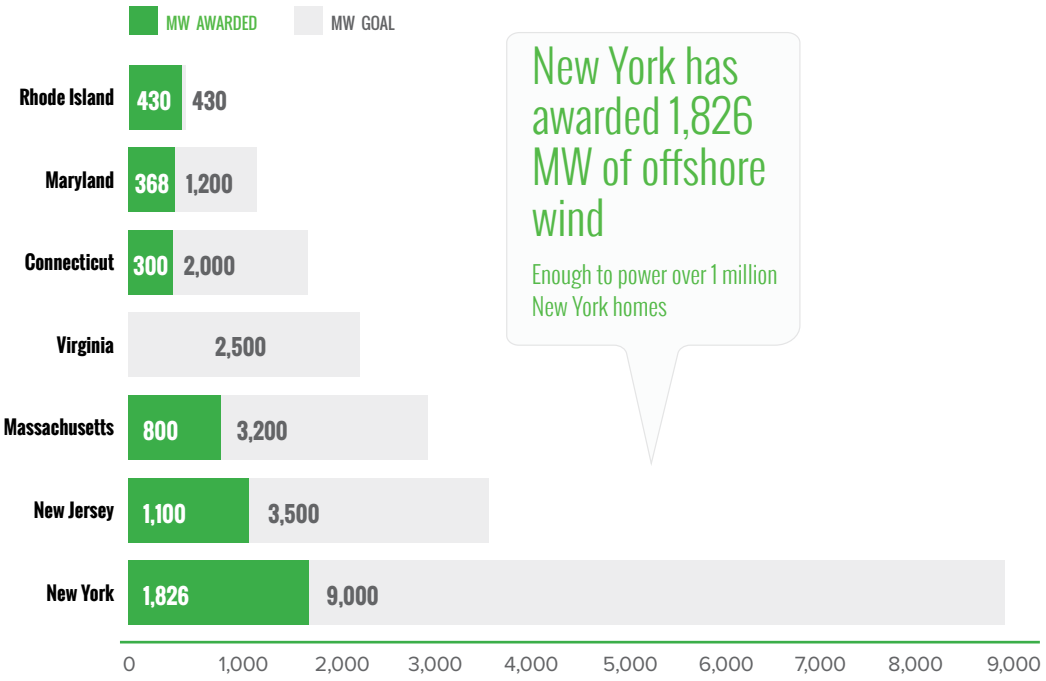
[15] A portion of clean energy deliveries can take the place of existing fossil-fuel plant electric flows too.

[16] The South Fork Offshore Wind Farm was originally 90 megawatts but was later upsized to 130 megawatts using new turbine technology.

Since that time, **coastal states like New York, Connecticut, Maryland, Massachusetts, New Jersey, Virginia and Rhode Island have contracted for nearly 5,000 megawatts of offshore wind and set procurement targets for over 20,000 megawatts**, including New York's goal of 9,000 megawatts by 2035, as shown in Figure 10.

FIGURE 10

U.S. Offshore Wind Industry Awards and Policy Commitments



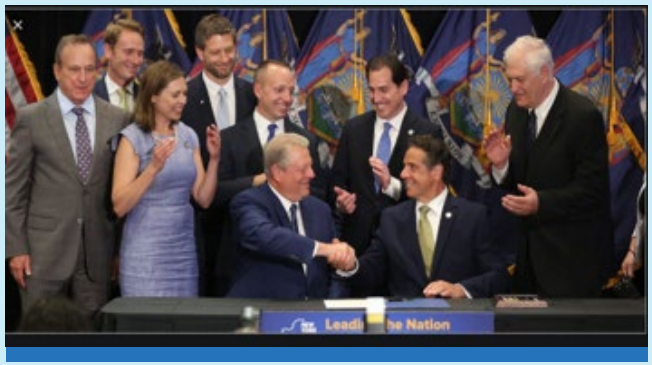
This is great news for Long Island for three reasons:

- A new, rapidly growing industry off our coast is good for Long Island residents and businesses;
- Scale greatly reduces the cost to develop offshore wind projects – a large scale industry, building large scale projects, with a developed supply chain and workforce, will do so at much lower prices; and
- **Offshore wind is a new, abundant, affordable source of clean energy located downstate, near population centers, and near Long Island – where it's needed.**

How much offshore wind might we need? **LIPA's share of New York's 9,000-megawatt offshore wind goal, based on our portion of state-wide energy load, would be about 1,125 megawatts.**[17]

However, offshore wind is likely the least cost resource to meet a substantially larger share of New York's carbon-free electric needs than 9,000 megawatts. **One recent study projected New York will need 17,000 megawatts of offshore wind by 2040 to meet its carbon reduction goals.**[18] That would be an aggressive deployment, but it's not unprecedented – Europe has deployed 17,000 megawatts of offshore wind over the last 12 years. **So while Long Island electric customers may only need 1,125 megawatts to meet the State's goal, it's possible that the New York electric grid may need many times that, and that a significant portion of that energy might come through Long Island on its way to other places**.

[17] LIPA is approximately 12.5 percent of statewide electric demand.
[18] The Global Relevance of New York State's Clean-Power Targets, McKinsey & Company, July 2019



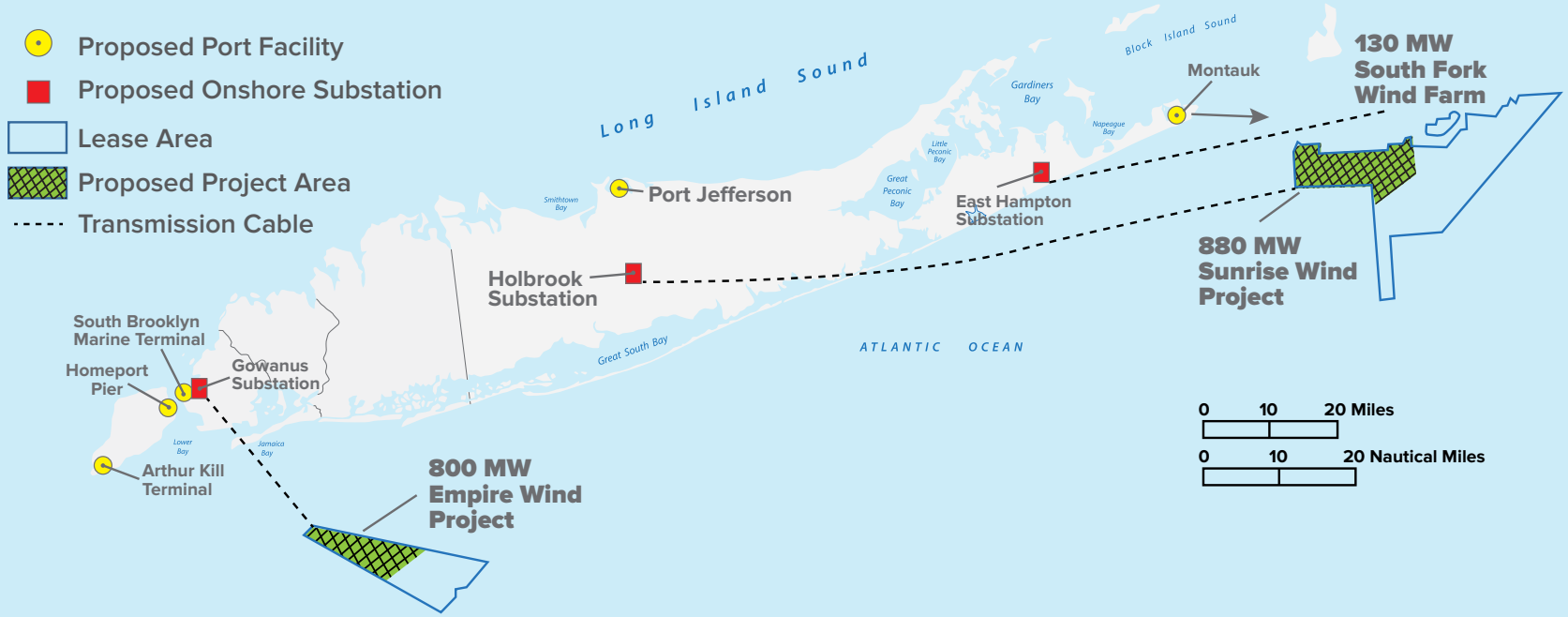
New York now has over 1,826 megawatts of offshore wind under contract, on the way to 9,000 megawatts by 2035. Two of the three New York projects connect to the Long Island electric grid - the 130 megawatt South Fork Wind Farm and the 880 megawatt Sunrise Wind Farm.

Governor Cuomo Announces Largest Offshore Wind Commitment in the Country

Governor Andrew M. Cuomo and former Vice President Al Gore announced the nation's largest offshore wind agreement – and the single largest renewable energy procurement by any state in U.S. history – in July 2019.

The 1,680 megawatts of offshore wind power from Empire Wind and Sunrise Wind will produce enough energy to power over 1 million homes and will create more than 1,600 jobs and $3.2 billion in economic activity.

Governor Cuomo also signed the Climate Leadership and Community Protection Act, which adopts the most ambitious and comprehensive climate and clean energy legislation in the United States.



LIPA Long Island Power Authority

Our Strategy for a Changing Electric Grid

Most people think the utility business is boring (according to my wife). But the next twenty years are going to be exciting! On Long Island, the electric grid will:

- transition to be entirely carbon-free;
- become the clean fuel that transports people and things and heats homes and buildings; and
- accommodate connecting an enormous, entirely new offshore wind industry.

How are we planning to manage all that change? By sticking with the LIPA Board's vision for our organization… Clean, Lean and Customer First. Let me talk briefly about what each of these means and provide examples of how we are advancing the Board's vision in 2020.

Our Focus on…Clean

First, what does it mean for us to run our business Clean? **Clean means providing Long Island with carbon-free energy by 2040 and meeting the State's milestones for energy efficiency, solar, storage, and offshore wind. And it means enabling other sectors of the economy, like transportation and buildings, to decarbonize using zero-carbon electricity.**

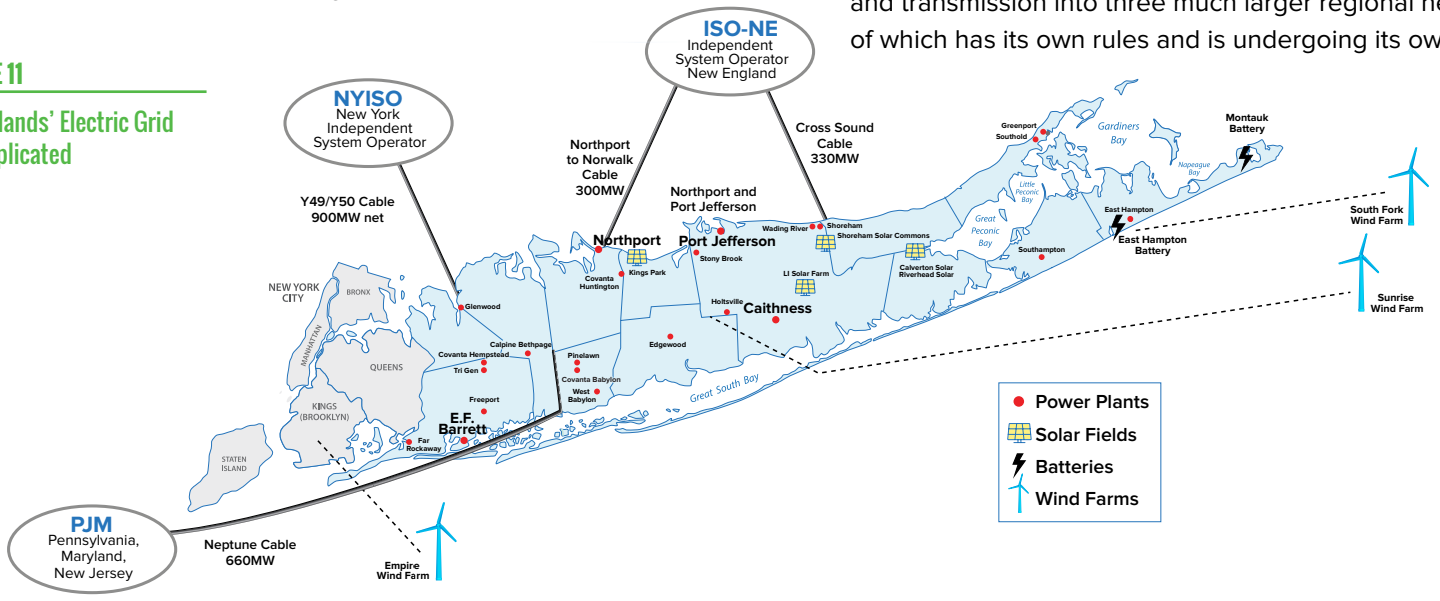
The Long Island electric grid is complicated, as shown in Figure 11, with:

- 15,000 miles of lines
- 32 power plants
- 5,800 megawatts of generation
- 189,000 transformers
- 585,000 poles

The Long Island grid is also interconnected by undersea cables and transmission into three much larger regional networks, each of which has its own rules and is undergoing its own changes.

FIGURE 11

Long Islands' Electric Grid is Complicated



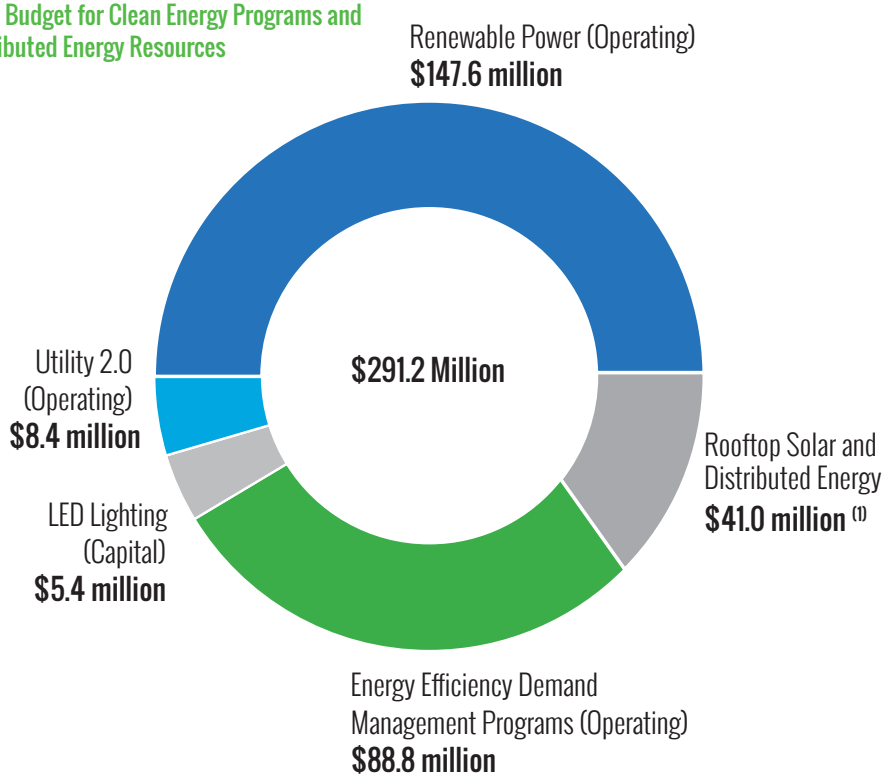
Meeting the State's climate goals means changes to this complex, interconnected network. How will we do that?

- **By studying** future configurations of the electric grid, such as offshore wind interconnected at various locations, and the investments required to enable a reliable, flexible, grid that can respond to fluctuations in load and generation;
- **By piloting technologies and customer programs** to encourage grid efficiency and modernization like innovative electric rate designs, managed EV charging programs, and modern customer platforms that help customers make informed energy choices;
- **By procuring clean energy and investing in energy efficiency and beneficial electrification** to meet Long Island's share of statewide goals;
- **By planning for the future of Long Island's power plants** to ensure an orderly transition to a zero-carbon electric grid by 2040; and
- **By partnering with and educating local communities,** including the communities hosting existing power plants.

The 2020 Budget continues our investment in clean and distributed energy programs with record funding, as shown in Figure 12.

FIGURE 12

2020 Budget for Clean Energy Programs and Distributed Energy Resources



(1) Estimated cost in excess of benefits to non-participating customers.

Long Island's Clean Energy Goals

- 100 percent **carbon free electric grid** by 2040
- 750 megawatts of **distributed solar** by 2025
- 30,000 **heat pumps** by 2025
- 375 megawatts of **storage** by 2030
- 1,125 megawatts of **offshore wind** by 2035

Our Clean Energy Accomplishments

- New York's three largest **utility-scale solar** farms, with total utility-scale commitments of 400 megawatts
- New York's first **offshore wind** farm – 130 megawatts
- New York's most vibrant **distributed solar market**, with 520 megawatts installed, 50,000 customers, and 40 percent of all solar systems in New York - on track to exceed our goal of 750 megawatts of distributed solar by 2025 (see Figure 13 and 14)
- New! PSEG Long Island **Solar Communities** Program for low and moderate-income customers (see page 31)
- New York's most aggressive **energy efficiency programs** measured by load reduction (approx. 1.5-2.0 percent per year)
- Ranked #6 nationwide among 211 utilities for **storage deployment**

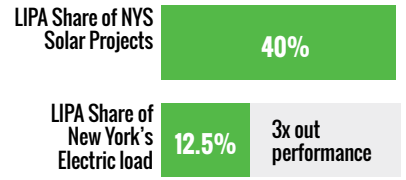
Our Budget for Clean Energy Includes:

- **$89 million for energy efficiency and distributed energy programs**, providing 1.1 million British Thermal Units of energy savings in 2020 (the equivalent of 33,000 Long Island homes);[19]
- **$148 million for utility-scale renewable purchases,** including energy from solar farms in Calverton, Kings Park, Riverhead, Shoreham, and Upton;
- **$41 million for residential and commercial solar and distributed energy systems**, with over 520 megawatts installed or 40 percent of all distributed systems in New York State, as shown in Figure 13.[20] **Long Island is on track to exceed its 750 megawatt distributed solar goal for 2025**, as shown in Figure 14;
- **$8 million for Utility 2.0 programs**, including residential EV charging rebates, EV fast charging stations, an electric school bus pilot program, solar hosting capacity maps, funding to develop an on-bill financing program for heat pumps, and a new energy concierge program to assist customers in making better energy choices;
- **$5 million for new LED Lighting, as part of an $18 million Dusk-to-Dawn program** to replace conventional light fixtures for our commercial customers.

FIGURE 13

Long Island Leads NYS in Distributed Solar Energy

While Long Island accounts for only 12.5 percent of all electric energy produced in New York State, we are the State's top producer of clean, distributed solar energy.



[19] *PSEG Long Island 2020 Energy Efficiency Plan*

[20] *Behind-the-meter rooftop solar and distributed energy are incentivized by mass-market electric rates like net metering and the Value of Distributed Energy Resources tariff; these have an estimated net cost in excess of benefits to non-participating customers of $41 million in 2020. The benefits measured include Long Island energy, capacity and distribution system savings and the value of clean energy*

LIPA Long Island Power Authority

PSEG Long Island's Electrification Program Highlights

Electric Vehicles

- 25 Percent **EV Overnight Charging Discount**[1] (Coming 2020)
- New! $500 **EV Residential Charger Rebates**
- New! **Fast Charging Station** Incentives
- Up to $2,000 New York State **Drive Clean Rebate**

Modern Electric Heating

- 15 Percent **Electric Discount** for Winter Heating[2]
- New! **Heat Pump Rebates**
  - > $1,800 to $2,400 for Oil Heat Conversions
  - > $750 for Hot Water
  - > $750 for Pool Heaters
- $8,000 Rebate for **Geothermal Systems**[3]

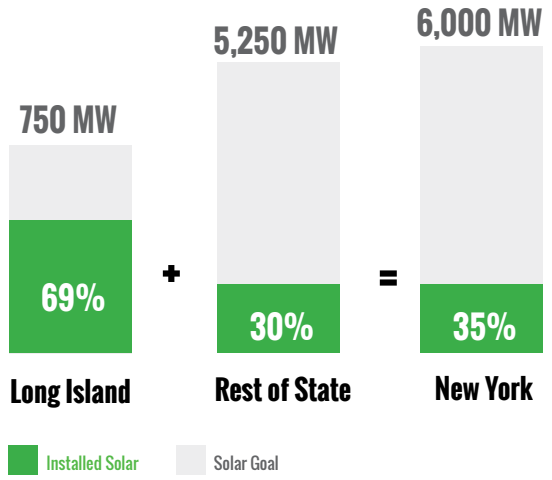
[1] 5 cents per kilowatt hour
[2] 3 cents per kilowatt hour
[3] Average rebate, varies with size, equipment efficiency and current heating fuel

The chart to the left highlights PSEG Long Island's electrification programs including our aggressive plans to encourage beneficial electrification of transportation and heating. Reducing the carbon intensity in these sectors is key to realizing the State's climate goals.

In particular, PSEG Long Island will target greater contractor and consumer awareness of air-source heat pumps in 2020, including new rebate programs unveiled in November 2019. **PSEG Long Island's new air source heat pump programs are part of a goal to reach 30,000 heat pump installations on Long Island by 2025.**

FIGURE 14

Long Island is on Track to Exceed Its Share of New York's 6GW 2025 Distributed Solar Goal



Our Focus on...Lean

What does it mean to operate Lean? **Being Lean means achieving a balance between cost and service quality to get the most out of every dollar.** It means reducing cost in areas that provide less value to customers while investing in customer-facing initiatives.

Figure 15 shows the savings from operating lean. **The $618 million in cost savings in 2020 equals 17 percent of electric bills or about $26 per month for a typical residential customer**. Without operating lean, LIPA and PSEG Long Island would be unable to fund the investments in clean energy, customer satisfaction, and reliability to operate Clean and put the Customer First.

FIGURE 15

$618 Million Customer Savings in 2020 from Being Lean

	Millions
Discontinuing investment in combined cycle plants	$348
LIPA Reform Act 2% Tax Cap	$141
Refinancing existing debt	$60
Renegotiating expiring power purchase agreements	$29
Investing in cost-effective energy efficiency	$19
PSA pension and retirement savings	$8
Smart Meter savings	$7
Reduction to gas transportation costs	$6
Total	**$618**

How will we continue to be Lean?

- **By continuing to operate our business in a fiscally sustainable manner,** with sound credit ratings and reduced borrowing that provides the lowest electric rates to our customer-owners over the long term;
- **By using technology to reduce cost and improve service**, such as the deployment of Smart Meters, customer engagement tools and grid modernization initiatives, which save money while offering customers new electric rate options, better service, and improved power quality;
- **By encouraging cost-effective electrification of vehicles and heating**, thereby reducing Long Island's carbon footprint, while getting more out of the fixed costs of maintaining the electric grid;
- **By seeking efficiencies** in our costs and business practices, like opportunities to refinance debt, reduce contractual costs, and "pre-pay" for electric, thereby securing a discount on our fuel and power costs; and
- **By negotiating reductions to unreasonably high tax assessments**, as any responsible taxpayer would do (see page 22).

Advocating for Leaner Property Taxes on Older Long Island Power Plants

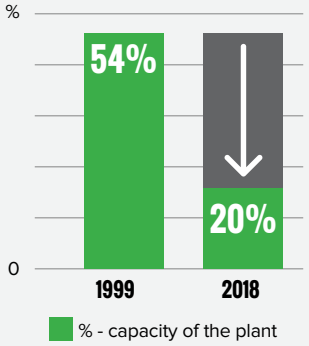
New York's Climate Leadership and Community Protection Act sets aggressive targets to rapidly add new, cleaner sources of energy to Long Island's electric grid. Long Island's older, fossil-fueled power plants run less each year as we transition to a more sustainable electric grid.

Recognizing this reality, **LIPA worked with the Town of Brookhaven and the Village of Port Jefferson to reach a compromise on the tax bills for the Port Jefferson power plant in 2018**. The agreement maintains significant tax benefits for the host community while gradually reducing the cost LIPA's 1.1 million customers pay for the plant's property taxes. LIPA is actively negotiating a compromise with Nassau County for the E.F. Barrett and Glenwood Landing power plants.

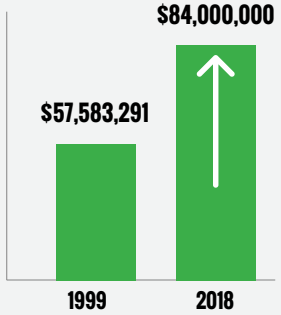
LIPA has attempted to obtain a fair assessment on the Northport power plant from the Town of Huntington for nearly a decade. Now, LIPA and the Town are in court — where an independent third-party will soon determine the value of the plant.

Northport is America's highest taxed property.

Northport Plant Energy Production Down 63%



Northport Plant Taxes are up 43%



Our Focus on...Customer First

What does it mean to put Customers First? **Being Customer First means exceeding our customers' expectations – reliably and responsively**.

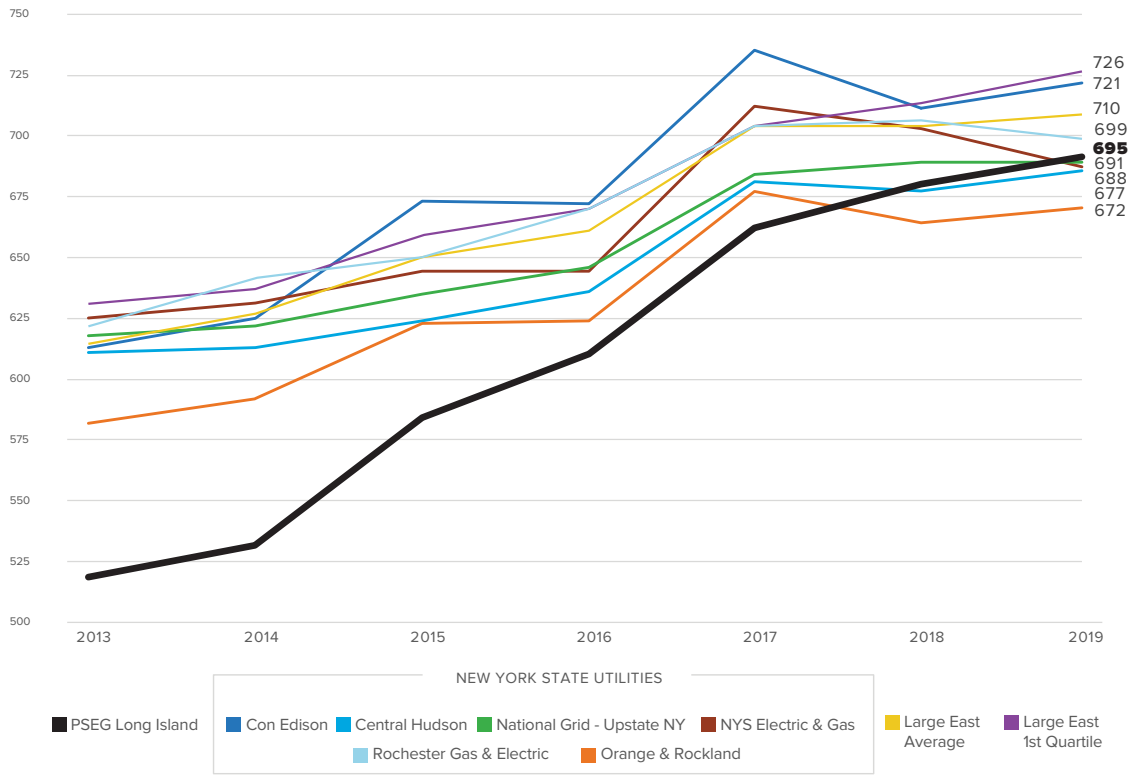
Our business is to provide clean, carbon-free energy for New York's economy. Our competition is gasoline, diesel-fuel, oil, and natural gas. **Electric utilities meet only 21 percent of the country's energy needs. There are many opportunities for our customers to choose to do more business with us, saving them money and reducing their carbon footprint**. And with the declining cost of EVs and the development of cold-climate heat pumps, electricity is the clean and cost-effective choice for Long Island. But our customers are only going to choose to do more business with us if they trust that we'll meet their needs.

Over the last several years, we have invested in customer satisfaction and electric grid reliability. Those efforts are being noticed by our customers. Prior to making those investments, LIPA was consistently ranked among the lowest electric utilities in the country for customer satisfaction, as shown in Figure 16. Since 2013, customer satisfaction has increased by more than 176 points or 34 percent.[21] In fact, **PSEG Long Island is the most improved utility in the country over the past five years, and the LIPA Board has set a goal to be among the top 25 percent of utilities in the country by 2022.**

FIGURE 16

J.D. Power Residential Customer Satisfaction for New York State and Large East Utilities

PSEG Long Island has improved customer satisfaction by 176 points or 34 percent since 2013.

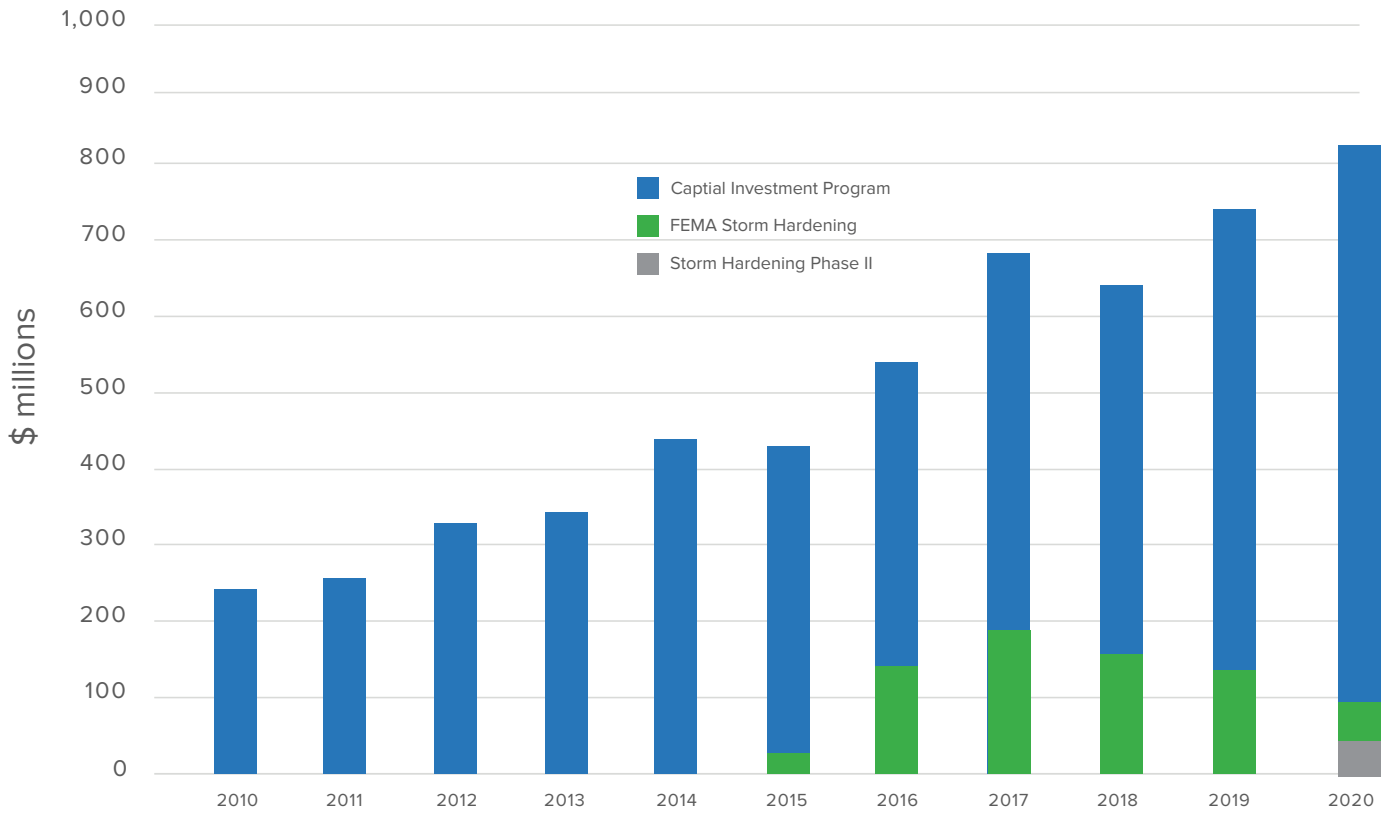


[21] *J.D. Power Residential Customer Satisfaction Study for 2013 and 2019*

The LIPA Board also committed to making the investments necessary to provide reliable service to customers – with a goal to be consistently among the top 25 percent of utilities in the northeast. Starting in 2016, LIPA began a record investment into Long Island's electric infrastructure – over $3.4 billion. In fact, LIPA's annual spending on infrastructure – the capital budget – has more than tripled, reaching $820 million for 2020, up from $249 million a decade ago, as shown in Figure 17.

FIGURE 17

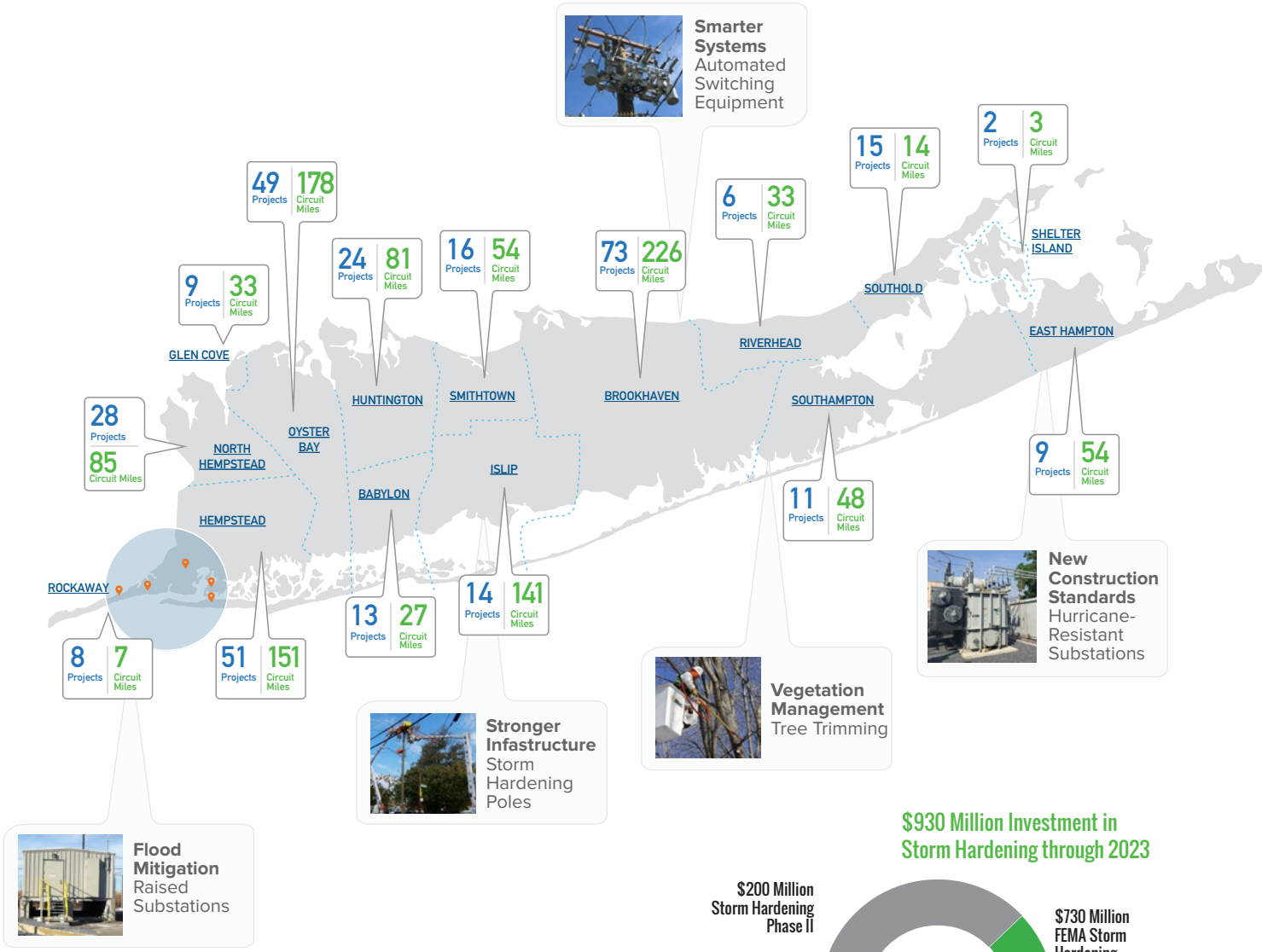
LIPA is Investing Record Levels in Electric Grid Reliability and Resiliency



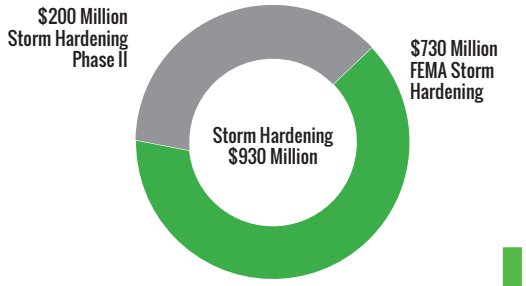
2020 Marks Completion of the $730 Million FEMA Storm Hardening Program after Hurricane Sandy

Funding Secured via Agreement Between Governor Andrew M. Cuomo and the Federal Emergency Management Agency

Keeping the power on in the face of Mother Nature has been the focus of the $730 million FEMA Storm Hardening Program. From new, more storm resistant substations to stronger poles and tree trimming, the FEMA Storm Hardening Program has created a Long Island electric grid better equipped to handle major weather events. **With the completion of the FEMA Storm Hardening Program in 2020, LIPA and PSEG Long Island will begin a new $200 million Storm Hardening Program – Phase II** that will target mainline infrastructure and branch out into neighborhood circuits to further enhance reliability.



$930 Million Investment in Storm Hardening through 2023



LIPA
Long Island Power Authority

How will we continue to put the Customer-First?

- **By continuing to invest in Long Island's electric grid** to maintain high standards for system reliability and resiliency for every customer;
- **By modernizing the customer experience** using technology to pro-actively communicate with customers, provide better service, and offer new tools to manage the energy use of every home and business;
- **By offering customers new electric rate pricing plans** that better meet their lifestyles and needs; and
- **By being a steward of Long Island** that helps attract businesses and supports the vitality of our neighborhoods.

The 2020 Budget continues our investments in customer satisfaction and reliability, as shown in Figure 19.

Long Island's Customer First Goals

Top 25 percent electric utility for customer satisfaction by 2022

Top 25 percent electric utility for reliability

Electric service at the lowest possible cost, including electric rates comparable to or below neighboring New York metropolitan area utilities (see Figure 18)

FIGURE 18

Long Island Electric Rates are Competitive in New York Metro Area

Source: 2018 Average Residential Electric Rates, U.S. Energy Information Agency Form 861-M

* New Jersey utilites are not required to pay T&D taxes

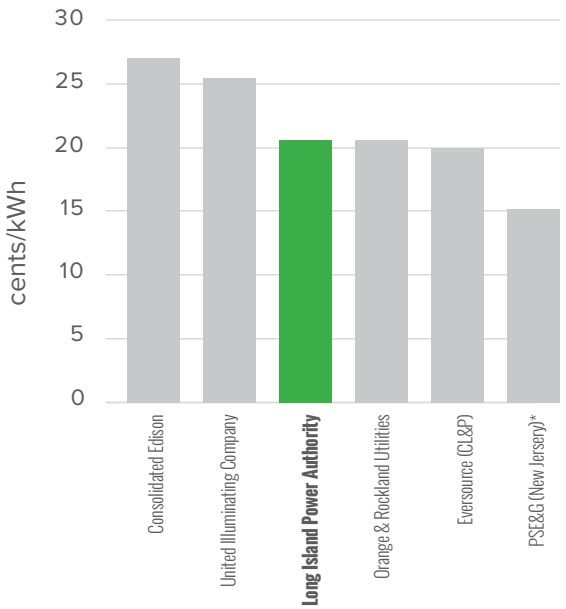


FIGURE 19

Customer Satisfaction

Our Results

- PSEG Long Island has **improved customer satisfaction** in the JD Power Residential Survey by 176 points or 34 percent
- **Most improved utility in the United States** over the past five years

2020 Budget

- **$196 million to Deploy 1.1 million Smart Meters** across Long Island by 2022, transforming the customer experience with **new electric rate pricing plans, improved power quality, new online tools**, **better outage tracking**, and new opportunities to **manage energy use and save money**
- **$43 million of technology improvements**, including a new **mobile app**, new software to deliver a more **personalized customer experience**, new **virtual web chat**, and a new online tool for large businesses

Reliability

Our Results

$3.4 billion Investment in Long Island's Electric Grid is Showing Results for Customers

2016 to 2019 Year-to-Date	
Customers with Power Outages:	↓ 37%
Customers with >4 Outages Per Year:	↓ 75%
Customers with Momentary Interruptions:	↓ 35%
National Utilities Ranking for Reliability:	Top 25%
Diamond-level Reliable Public Power Provider	

2020 Budget

- **$264 million to Enhance Reliability Across Long Island**, including repairing circuits that provide poor reliably and replacing poles and transformers
- **$200 million for Storm Hardening – Phase II**, with the completion of the $730 million FEMA storm hardening program (see page 25) in 2020, the 2020 Budget funds a new initiative to storm harden an additional 240 circuit miles over four years. The hardened circuits are expected to show a 75 percent reduction in the number of outages during storm events
- **$225 million to Power Up New Projects**, including Nassau Hub, Belmont Racetrack, and projects in Hempstead, Smithtown, Massapequa, and on the South Fork

2020 Budget By the Numbers

The 2020 Budget consists of an Operating Budget of $3.76 billion and a Capital Budget of $820 million. The Operating Budget, shown in Figure 20a, funds delivery and power supply costs, energy efficiency and distributed energy programs, taxes, and debt service. The Capital Budget, summarized in Figure 20b, funds long-life infrastructure investments such as transmission, substations, poles and wires, as well as information technology, vehicle fleet, and other assets.

Figure 20a

2020 Proposed Operating Budget ($ thousands)

Operating Revenues	3,683,301
Grant & Other Income	77,091
Total Revenues and Income	**3,760,392**
Power Supply Costs	1,624,678
Delivery Costs	752,519
PILOTs, Taxes & Fees	554,829
Interest Payments	377,089
Debt Reduction & OPEB	451,277
Operating Budget	**3,760,392**
Fixed Obligation Coverage	
LIPA Debt Plus Leases	1.35x
LIPA & UDSA Debt Plus Leases	1.24x

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

Figure 20b

2020 Proposed Capital Budget ($ thousands)

Capital Projects	761,698
Storm Hardening	58,665
Capital Budget	**820,363**
Funding from Operating Budget	207,892
FEMA Grant	52,799
Debt Issued to Fund Projects	559,673
Funding Sources	**820,363**
Percent of Capital Projects Funded from Debt	
Including FEMA Projects	68%
Excluding FEMA Projects	73%

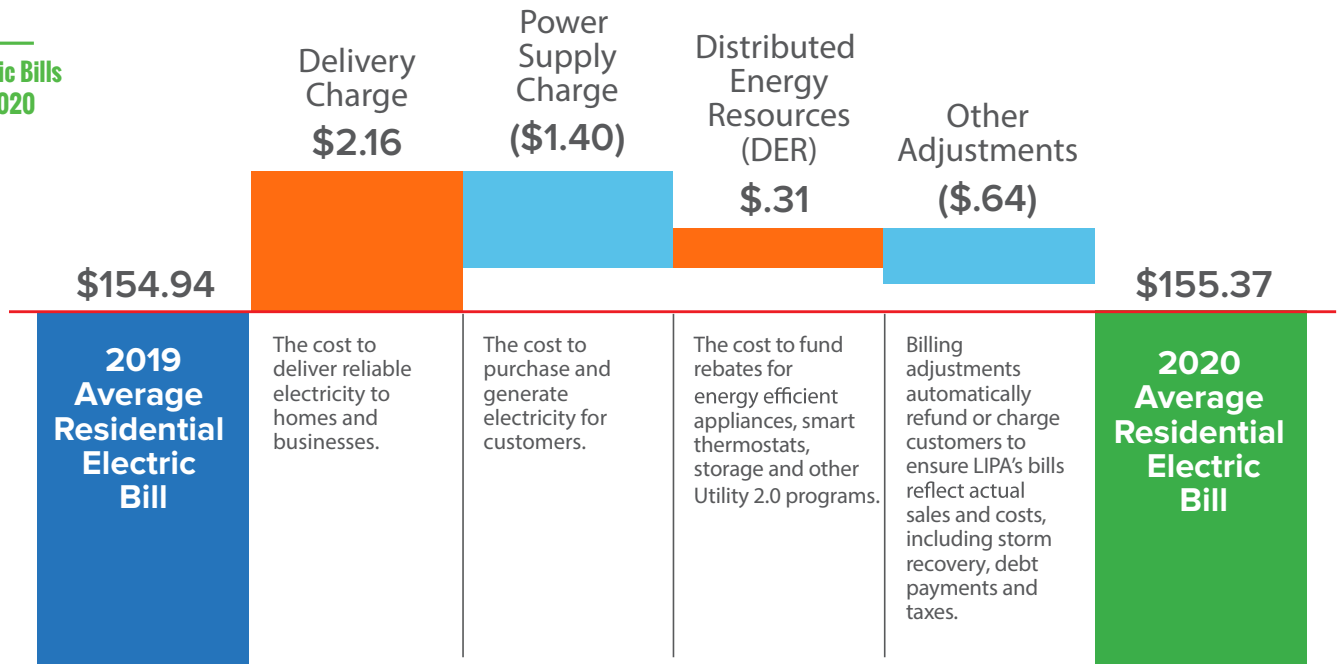
Electric Bills for 2020

The impact of the 2020 Operating and Capital Budget is shown in terms of an average residential customer bill in Figure 21. **Electric bills are forecast to increase by $0.43 per month in 2020 or 0.28 percent from their 2019 budgeted level**.

The electric bill is made up of several components, including Delivery Charges, Power Supply Charges, and the Distributed Energy Resources (DER) Charge. These charges are adjusted each year to reconcile certain costs and sales assumptions from the prior year for such items as sales, storm restoration costs, taxes, debt payments, and interest rates. Figure 21 shows that for the average residential customer, the Delivery Charge will increase by $2.16 per month, while the Power Supply Charge will decline by $1.40 and the DER Charge will increase by $0.31. Reconciliations for sales, storms and other items will decline by $0.64.

FIGURE 21

Residential Customers' Electric Bills to Remain Flat from 2019 to 2020



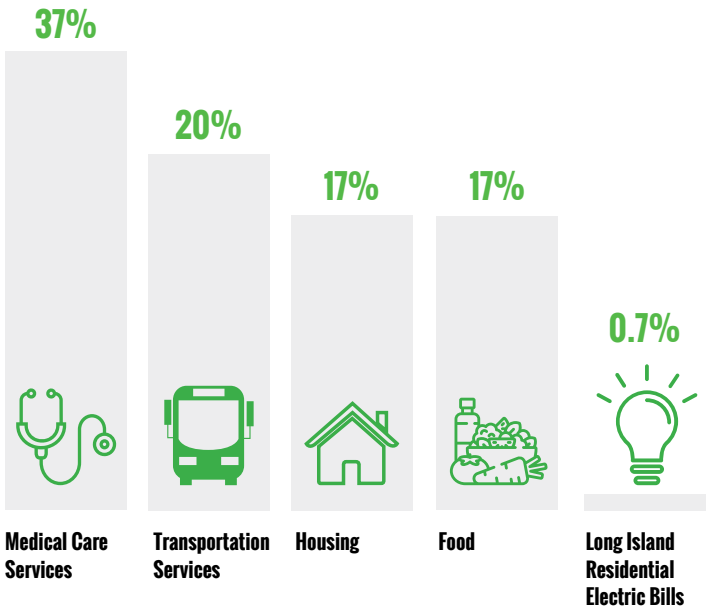
Electric bills for an average residential customer have remained roughly flat for over a decade, increasing a cumulative 0.7% percent since 2008. Electric bill increases remain below the rate of inflation, while other goods and services steadily increase, as shown in Figure 22.

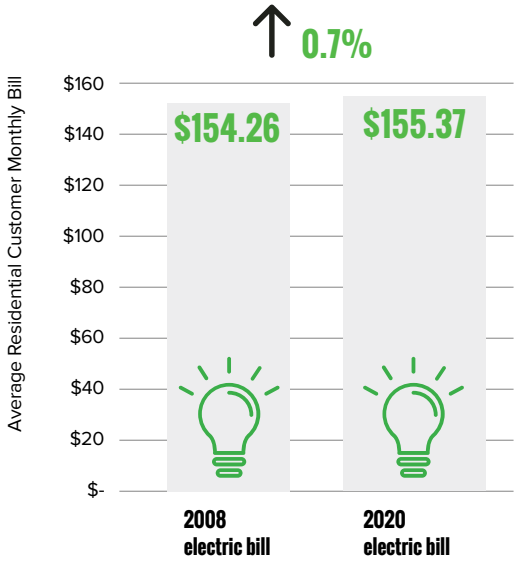
Part of that result is due to moderate fuel and power costs, but it is also a direct result of the $618 million of savings initiatives in Figure 15 (page 21), which have reduced 2020 customer bills by nearly 17 percent or $26 per month.

FIGURE 22

Since 2008, Costs of Goods and Services Rise while Long Island Residential Electric Bills Remain Flat

Source: U.S. Bureau of Labor Statistics





Assisting Our Low and Moderate-Income Customers

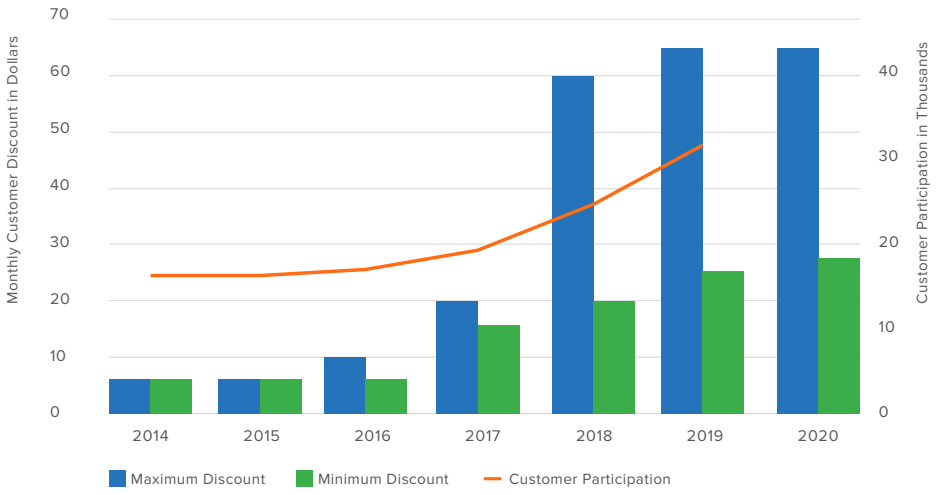
In addition to maintaining overall rate affordability, LIPA and PSEG Long Island are providing more financial assistance to eligible customers. Over the past five years, **discounts for low and moderate-income customers have increased from $5 to between $25 and $65 per month**, as shown in Figure 23. **Customer participation has also more than doubled from 14,500 customers in 2014 to nearly 33,000 today**.

To spur clean energy and help customers save money, starting in 2020, **low and moderate-income customers who install heat pumps will now also be eligible for 50 percent higher rebates**.

Finally, **LIPA and PSEG Long Island are launching the PSEG Long Island Solar Communities program for income-eligible customers** – providing access to affordable clean energy to those in need.

FIGURE 23

LIPA and PSEG Long Island have Increased Low and Moderate Income Customer Discounts and Doubled Program Participation



New! PSEG Long Island Solar Communities Nearly Doubles Long Island's Community Solar Market

LIPA and PSEG Long Island are launching Solar Communities in 2020 — a new program to deliver affordable, clean energy to income-eligible households, who have traditionally been underserved in the solar market.

The new 20-megawatt Solar Communities program will continue LIPA's longstanding support for a cleaner Long Island, while assisting those in need. **The program will nearly double the community solar market on Long Island.**

New PSEG Long Island Solar Communities Program Benefits Low and Moderate Income Customers

26 megawatts	20 megawatts
Community solar applications	Solar Communities (new)

Changes in the 2020 Operating Budget

The 2020 Operating Budget includes Operating Revenues from customers of $3.67 billion, an increase of $145 million from 2019.[22] Changes shown in Figure 24 include:

Debt Payments: Debt payments fund borrowings for critical infrastructure projects to keep the electric grid safe and reliable for customers. Debt payments will increase by $31.8 million from 2019 to 2020.

Cash Contribution to Capital Projects (aka Coverage): Maintaining proper coverage levels allows LIPA to fund critical infrastructure projects with cash, instead of relying upon debt. This reduces cost to customers over time. Cash contributions to capital projects will increase by $20.9 million in 2020.

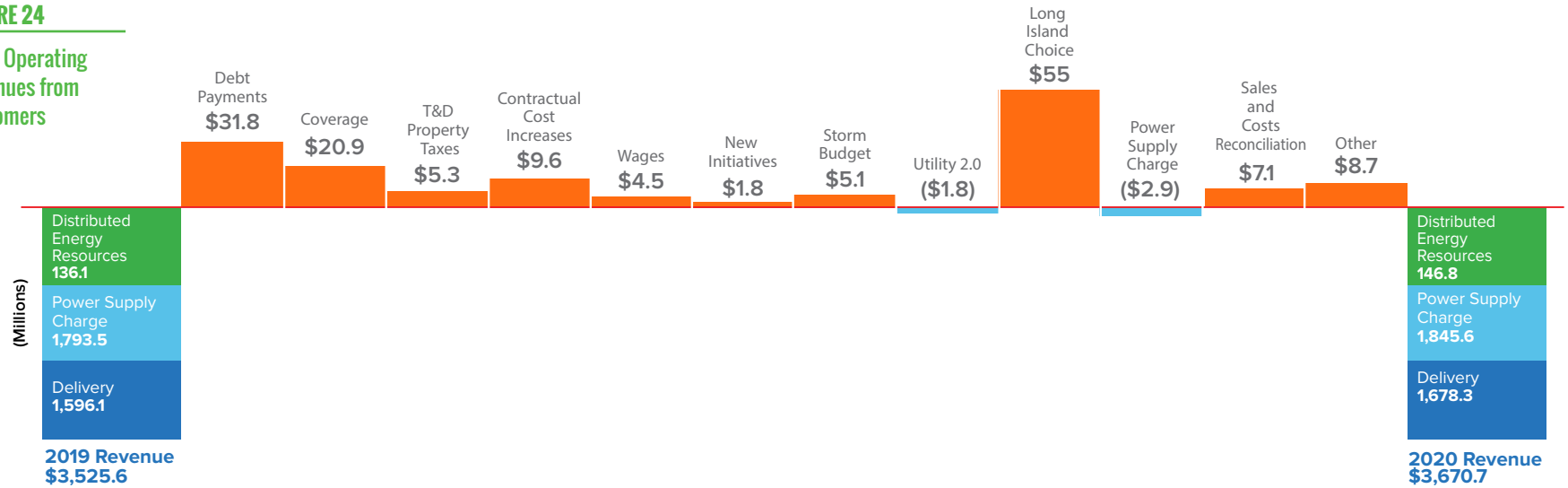
Transmission and Distribution System Property Taxes: LIPA's transmission and distribution system is subject to property taxes from local municipalities. LIPA customers pay the costs of those property taxes. The LIPA Reform Act capped property tax increases on LIPA's transmission and distribution system to 2 percent per year to reduce the burden on customers of past runaway increases. 2020 T&D system property taxes will increase by $5.3 million or 1.9 percent.

Contractual Cost Increases: PSEG Long Island's budget funds the cost to maintain and operate LIPA's transmission and distribution system. The budget increases by $9.6 million or 2.4 percent to reflect increases in non-wage costs, including fringe and non-labor contractual obligations.

Wages: PSEG Long Island's contractual wage increases are forecast to cost $4.5 million in 2020.

FIGURE 24

2020 Operating Revenues from Customers



[22] *2020 Operating Revenues of $3.68 billion include a carryover amount of $12.6 million for Utility 2.0 initiatives from the 2019 budget. This adjustment was already collected from customers in 2019 and will be not reflected in 2020 rates. The figure excludes the carryover amount.*

New Initiatives: New efforts to improve the safety and reliability of the electric grid, such as reducing stray voltage, and implementing New York's climate solutions, amount to a $1.8 million increase.

Storm Budget: Long Island continues to experience more destructive and severe storms. LIPA's storm budget funds the preparation, response, and repairs necessary to keep the lights on after storms. Storm costs are set to increase by $5.1 million.

Utility 2.0: Utility 2.0 program funding will decrease by $1.8 million from 2019 levels due to a $4 million savings in rolling out Smart Meters to homes and businesses.

Power Supply Charge - Long Island Choice: There is an increase of $55 million in the Power Supply budget for the cost to purchase or generate electricity for 3,300 former Long Island Choice customers. In July 2019, New York State ended a County sales tax exemption for such customers, causing the customers to return to LIPA for their power supply.

Power Supply Charge: The Power Supply Charge is the cost to purchase or generate electricity for customers. There is a net reduction of power supply costs of $2.9 million, driven by lower fuel prices off-set by higher taxes and an increase in renewable power costs.

Sales and Cost Reconciliations: The 2020 Budget reflects a reconciliation between certain budget assumptions and actual amounts for the prior year. These adjustments are for items largely outside of the control of LIPA and PSEG Long Island, such as sales, storm costs, interest rates, and taxes. The 2020 adjustment will be $7.1 million above the 2019 level due to a lower sales-related refund to customers.

The LIPA Board's Financial Policy - A Credit Rating Upgrade Hat Trick

In 2015, LIPA's Board of Trustees established fiscal targets for the prudence and sustainability of our financial performance. These include:

- Minimum credit ratings in the "mid-A" category;
- Fixed-obligation coverage on LIPA debt and capital leases of 1.45x[23];
- Long-term borrowing of no more than 64 percent of capital spending; and
- Pre-funding pension and post-retirement benefits at the levels required to achieve full funding, as measured by an actuary.

In 2019, we achieved all the Board's goals, including, notably, credit rating upgrades from each of the three major rating agencies, attaining "mid-A" ratings for the first time in LIPA's history. Five years ago, each of the same agencies had both lower ratings and a negative outlook on our credit, indicating that they thought our next rating change was a downgrade. **The LIPA Board's fiscal policy, together with record investments in customer satisfaction and clean energy, have chartered a different course, with four bond rating upgrades since 2013**, as shown in Figure 25.

The importance of these credit upgrades is that they reduce the cost of providing electric service to LIPA's customer-owners over the long-term. Prudent fiscal management reduces the cost our customers' pay when borrowing to invest in the Long Island electric grid, reduces future debt levels, and enables the lowest sustainable electric rates.

FIGURE 25

LIPA Has Received Four Credit Rating Upgrades Since 2013

These upgrades reflect rating agencies' expectations of continued investment in customer satisfaction and clean energy, while maintaining fiscal prudence

	2013 Ratings (Outlook)	2019 Ratings (Outlook)
Moody's Investors Service	**Baa1 (Negative)**	**A2 (Stable)**
Standard and Poor's	**A- (Negative)**	**A (Stable)**
Fitch Ratings	**A- (Negative)**	**A (Stable)**

The Same But Different -- Changes to LIPA's Financial Policy Due to New Lease Accounting Rules

Accounting is referred to as the "language of business." Like most languages, it can be difficult to master for those who don't speak it regularly (i.e. non-accountants). To those without a need to plumb the depths of the lease accounting rules, feel free to skip this section. For those who remain, there are some changes coming that affect the reported figures in the 2020 Budget.

[23] *LIPA's financial policy targeted fixed obligation coverage of 1.20x, 1.30x, 1.40x and 1.45x for 2016, 2017, 2018 and 2019, respectively. The Board also targeted a minimum of 1.25x fixed obligation coverage on the combination of LIPA debt, Utility Debt Securitization Authority debt, and capitalized leases.*

First, some background. LIPA owns the transmission and distribution ("T&D") system on Long Island and the Rockaways. The $7 billion to buy the electric grid in 1998, as well as the annual capital investments required to maintain it, come largely from two sources – electric rates and debt.[24] Those T&D assets and that debt appear in LIPA's financial statements as assets and liabilities.

To supply electricity to customers, with a few exceptions, LIPA enters into long-term contracts for power plants and regional transmission cables. Each day, LIPA either purchases electricity in the regional electric markets and transports it to the Long Island electric grid or, if less expensive, generates electric in the power plants it has under contract. These power plants and regional transmission cables are not owned by LIPA, but certain accounting rules determine whether contracts should be recorded in LIPA's financial statements as assets and liabilities, similar to the electric grid assets and debt that belong to LIPA. The accountants' rules determine whether these contracts are a "lease," like the lease a customer might have for a car – the right to use another entity's asset for a period in exchange for pre-determined payments.

At the beginning of 2019, LIPA had 5,800 megawatts of power plants and 2,200 megawatts of transmission cables under contract, with $1.7 billion of associated assets and liabilities recorded in its financial statements. **Let us start our discussion with an economic reality – the new accounting rules do not change anything. LIPA has the same contracts for power plants and transmission cables; however, some of the accounting classifications of these contracts are changing, affecting figures in the 2020 Budget.**

The Old and the New for Lease Accounting

Today, LIPA's financial statements show two types of leases –

- Capital leases – whereby the value of the asset and the minimum lease payment liability are both placed on the balance sheet; and
- Operating leases – which are disclosed but not placed on the balance sheet.

This current classification system depends on whether the contract meets specific tests.

The Governmental Accounting Standards Board or GASB has issued new rules for leases effective for 2020.[25] This new standard no longer differentiates between "capital" and "operating" leases and now considers all leases with a term greater than one year to be a financing arrangement, with a corresponding asset and liability on the balance sheet.

There is no change to the actual contracts or the amounts of the payments. The changes under the new accounting rule are only to the way we account for the payments. The net effect of the new rule is to:

- Increase assets and liabilities on LIPA's balance sheet by $1.2 billion, from $1.7 billion in 2019 to $2.8 billion in 2020[26]; and
- Increase reported annual lease payments in 2020 by $160 million (these payments were previously reported as operating costs rather than lease payments).

[24] As a public power utility, LIPA is also sometimes eligible for federal grants; however, these are limited to specific purposes like storm hardening.

[25] GASB Statement No. 87 - Leases

[26] The primary change is LIPA's Power Supply Agreement with National Grid is now capitalized on the balance sheet.

Impact of New Lease Rules on the LIPA Board's Financial Policy

LIPA's Board targets 1.45x coverage of fixed-obligation coverage on debt and *capital* lease payments. Under the new accounting rules, there are no longer *capital* leases.

In 2015, LIPA's 1.45x coverage target was sized to provide adequate cash flow to keep borrowing below the target of 64 percent of capital spending.

To maintain the same level of cash flow, LIPA will modify its financial target from 1.45x coverage of debt and *capital* lease payments to 1.35x coverage of debt and *lease* payments, using the new definition of leases. As shown in Figure 26, this new target produces an identical amount of dollars to cover fixed obligations as the prior lease accounting rules. **The economic reality is that nothing has changed – LIPA has the same power plants and transmission cables under contract and the 1.35x coverage target produces the same cash flow**.

FIGURE 26

LIPA Coverage Under New Lease Accounting Rules (in thousands)

	2020	
	Pre-GASB 87	Post-GASB 87
LIPA Debt Service	$270,128	$270,128
Lease Obligations	261,446	421,481
Total	531,574	691,608
Coverage Target	45%	35%
Cash Generated from Coverage	$239,208	$239,208

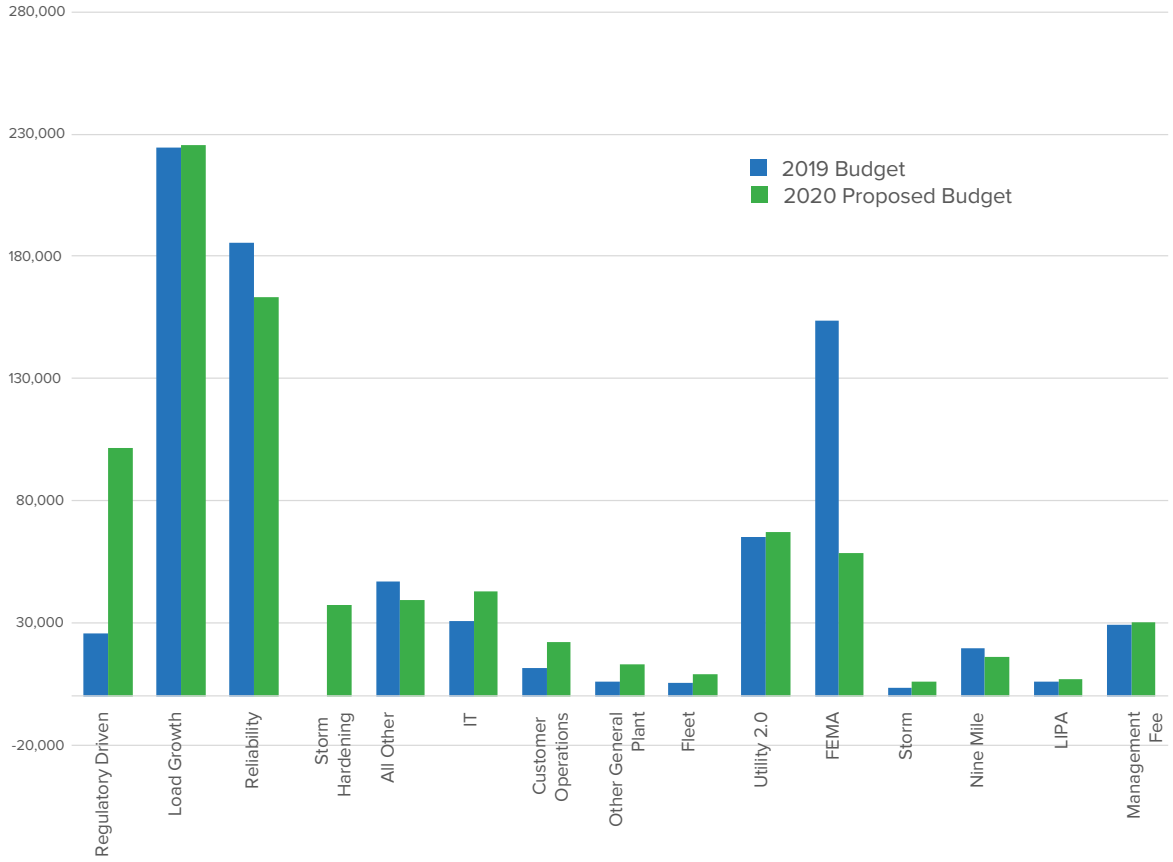
Changes in the 2020 Capital Budget

Figure 27 shows the $820.4 million 2020 Capital Budget as compared to the $811.9 million 2019 budget. **The Capital Budget is increasing by $8.5 million from the prior year.** The most significant change is a **$76 million increase for regulatory driven projects**, primarily the Western Nassau Transmission Project, which is installation of a new 138kV underground cable from East Garden City to Valley Stream. The project is required to meet new national reliability standards.

Additionally, the 2020 Capital Budget includes $58.7 million towards the $730 million FEMA-funded storm hardening program. That program, which began in 2015, will be completed in 2020 with the rebuild of 1,025 miles of distribution circuits, the installation of 894 smart switches to minimize outages on the electric grid, and the elevation of eight substations to prevent flooding under storm conditions. However, the work of building a more resilient grid is not complete and that is why **the 2020 Budget also marks the start of a second phase of storm hardening investment, with $200 million of funding through 2023, including $37 million in 2020**.

FIGURE 27

$820 million 2020 Capital Budget as compared to the 2019 Budget



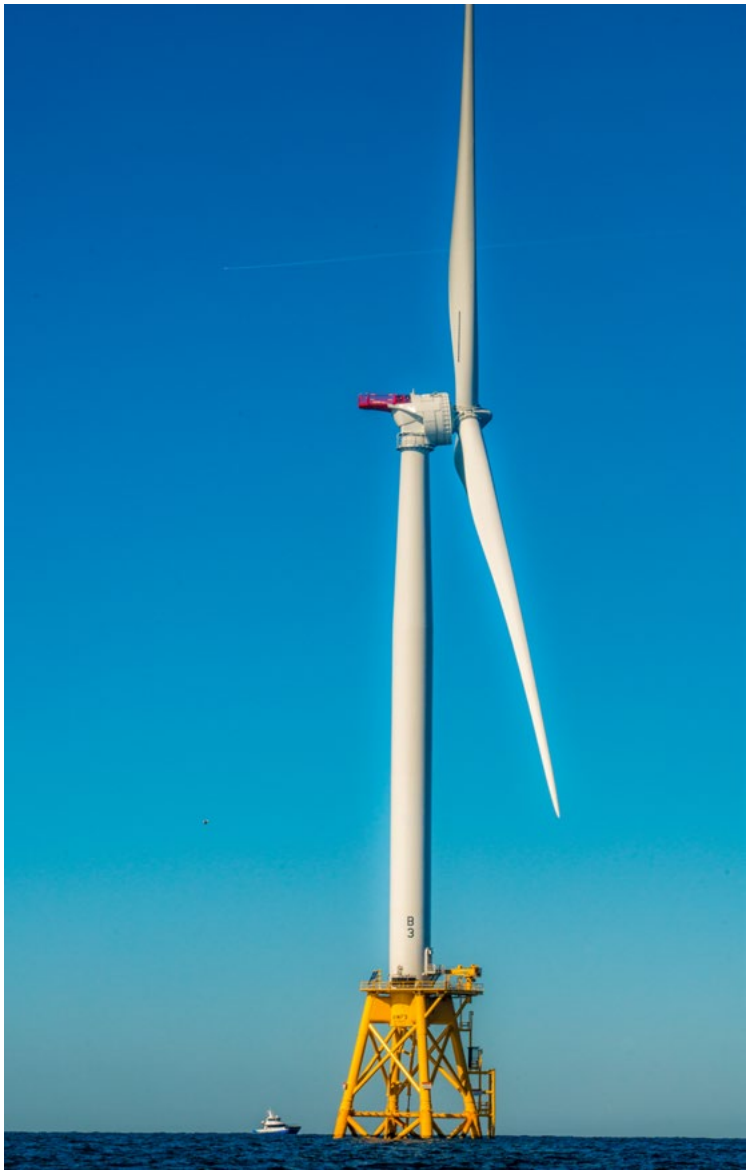
Conclusion

I would like to thank the employees of LIPA and PSEG Long Island for their hard work and dedication over the past twelve months. Every year, we come closer to the Board's vision for a **Clean, Lean and Customer First** utility for our customer-owners on Long Island and the Rockaways.

The 2020 Budget funds our customers' priorities while holding the line on electric bills. While we still have much to do, our results show that we are on the right track.

Thomas Falcone
Chief Executive Officer

November 13, 2019



Long Island Power Authority
2020 Proposed Budget

SECTION II

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

Revenue Requirements

LIPA's annual revenue requirements are budgeted to increase from $3.5 billion in 2019 to $3.7 billion in 2020. Increases in debt service (including fixed obligation coverage), power supply charges, operating costs (due to inflation), and property tax assessments are the primary drivers of the increase. These costs are further detailed on the following pages herein.

LIPA's revenue requirements are calculated in accordance with the practices of 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 obligations, including fiscally sound levels of fixed obligation coverage.

LIPA's methodology for calculating revenue requirements and fixed obligation coverage excludes most non-cash expenses such as depreciation and amortization (the costs of which are generally recovered in revenues through debt service payments) and the voluntary contributions to the Other Post Employment Benefits (OPEBs) Account, which are available to make debt payments, if needed. LIPA's financial policies are further detailed in the description of debt service and fixed obligation coverage requirements.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

Revenue Requirements

Description		2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
Operating and Managed Expenses								
PSEG Long Island Operating and Managed Expenses	(a)	$ 684,115	$ 668,975	$ 687,038	$ 715,523	$ 46,548	$ 715,043	$ (480)
PILOTs - Property-Based Taxes		287,262	292,861	292,666	298,472	5,611	304,442	5,971
PILOTs - Revenue-Based Taxes		35,568	34,321	34,332	35,464	1,143	36,931	1,467
LIPA Operating Expenses		75,203	83,619	82,354	87,956	4,337	89,603	1,647
Total Operating and Managed Expenses		**1,082,149**	**1,079,776**	**1,096,391**	**1,137,415**	**57,639**	**1,146,019**	**8,604**
Cash Adjustments								
Other Interest Costs		24,239	19,022	22,348	26,658	7,636	26,687	29
Suffolk Property Tax Settlement (Principal)		(24,713)	(24,041)	(22,391)	(26,630)	(2,589)	(29,100)	(2,470)
Visual Benefits Assessment (Principal)		(497)	(414)	(478)	(568)	(154)	(594)	(26)
PSEG Long Island OPEB Expenses		(48,100)	(43,955)	(43,943)	(50,421)	(6,466)	(50,667)	(246)
Total Cash Adjustments		**(49,070)**	**(49,388)**	**(44,465)**	**(50,961)**	**(1,573)**	**(53,674)**	**(2,714)**
Other Income								
Other Income and Deductions		56,839	44,242	69,777	48,386	4,145	46,471	(1,916)
Grant Income		41,542	28,850	28,866	28,704	(146)	28,447	(257)
Total Other Income		**98,381**	**73,092**	**98,644**	**77,091**	**3,999**	**74,918**	**(2,173)**
Debt Service								
UDSA Debt Service		324,728	327,140	327,140	319,030	(8,110)	367,388	48,358
LIPA Debt Service		197,678	216,803	210,265	270,128	53,325	284,776	14,648
Coverage		233,570	218,305	229,877	239,208	20,903	240,135	927
Total Debt Service		**755,976**	**762,248**	**767,282**	**828,366**	**66,117**	**892,299**	**63,933**
Power Supply Charge		1,885,600	1,793,456	1,807,566	1,845,571	52,115	1,815,711	(29,861)
Total Revenue Requirements	(a)	**$ 3,576,274**	**$ 3,513,001**	**$ 3,528,130**	**$ 3,683,301**	**$ 170,300**	**$ 3,725,437**	**$ 42,136**

Note: (a) PSEG Long Island 2019 Approved Operating Expenses have been reduced by $12.6 million due to the carry over of Operations & Maintenance (O&M) funding for the Utility 2.0 program to 2020. Corresponding revenue was reduced in 2019 by recording a Regulatory Liability.

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

Statement of Revenues and Expenses

LIPA's projection of Revenues and Expenses uses the accrual basis of accounting, which results in net income of $9.9 million in 2020 and $40.0 million in 2021. Further information on the components of Revenues and Expenses are included on supplemental pages herein.

The factors contributing to the projection of modest net income in 2020 include certain non-cash items, such as: amortization of certain non-cash regulatory assets to expense; non-cash OPEBs for PSEG Long Island (Section II Page 31); other deferred expenses (Section II Page 13); and a change in depreciation rates (Section II Page 13), and an increase in depreciation associated with the early retirement of conventional meters by Smart Meters.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

Statements of Revenues and Expenses
(Thousands of Dollars)

Description		2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
Revenues	(a)	**$ 3,576,274**	**$ 3,513,000**	**$ 3,528,130**	**$ 3,683,301**	**$ 170,300**	**$ 3,725,437**	**$ 42,136**
Power Supply Charge		1,885,600	1,793,456	1,807,566	1,845,571	52,115	1,815,711	(29,861)
Revenue Net of Power Supply Charge		**1,690,674**	**1,719,544**	**1,720,564**	**1,837,730**	**118,185**	**1,909,726**	**71,997**
PSEG Long Island Operating and Managed Expenses								
PSEG Long Island Operating Expenses	(a)	524,571	537,934	536,510	570,830	32,896	567,153	(3,677)
PSEG Long Island OPEB Expense		48,100	43,955	43,943	50,421	6,466	50,667	246
PSEG Long Island Managed Expenses		111,445	87,086	106,585	94,272	7,186	97,223	2,951
Utility Depreciation		188,879	201,340	200,568	260,288	58,949	284,976	24,688
Accelerated Depreciation of Conventional Meters		-	24,778	24,779	24,778	-	24,778	-
PILOTs - Revenue-Based Taxes		35,568	34,321	34,332	35,464	1,143	36,931	1,467
PILOTs - Property-Based Taxes		287,262	292,861	292,666	298,472	5,611	304,442	5,971
LIPA Operating Expenses		75,203	83,619	82,354	87,956	4,337	89,603	1,647
LIPA Depreciation and Amortization		142,981	137,701	137,702	137,701	-	138,708	1,007
Interest Expense		352,383	358,693	364,636	364,461	5,767	374,152	9,691
Total Expenses		**1,766,392**	**1,802,288**	**1,824,075**	**1,924,644**	**122,355**	**1,968,634**	**43,990**
Other Income and Deductions		**56,839**	**44,242**	**69,777**	**57,617**	**13,376**	**55,769**	**(1,848)**
Grant Income		**41,542**	**34,078**	**34,770**	**39,156**	**5,078**	**43,112**	**3,956**
Excess of Revenues Over Expenses	(a)	**$ 22,663**	**$ (4,424)**	**$ 1,036**	**$ 9,859**	**$ 14,284**	**$ 39,973**	**$ 30,114**

Note: (a) PSEG Long Island 2019 Approved Operating Expenses have been reduced by $12.6 million due to the carry over of O&M funding for the Utility 2.0 program to 2020. Corresponding revenue was reduced in 2019 by recording a Regulatory Liability.

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

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 street lighting. In accordance with LIPA's Tariff for Electric Service (the Tariff), LIPA's Delivery Charge recovers the costs associated with maintaining and improving the transmission and distribution system and serving customers. LIPA recovers costs associated with purchasing and producing electric energy (fuel and purchased power) through the Power Supply Charge. LIPA also 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 0.8% decline in sales through 2021, reflecting less favorable economic conditions, as well as, the impact of PSEG Long Island's energy efficiency programs, voluntary efficiency measures taken by customers, rooftop solar, and improvements to standards and codes. Any surplus/shortfall in delivery revenue due to sales being higher/lower than budgeted will be returned/recovered through the Revenue Decoupling Mechanism (RDM). The sales forecast assumes normal weather conditions over the period.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

Sales and Revenues

Description		2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
Sales of Electricity (MWh)								
Residential Sales		9,538,865	8,888,795	9,042,505	8,664,796	(223,999)	8,438,797	(225,999)
Commercial Sales		9,515,232	9,463,652	9,249,112	9,491,211	27,559	9,610,575	119,364
Other Sales to Public Authorities/Street Lighting		556,139	537,992	475,730	533,826	(4,165)	533,502	(324)
Total Sales of Electricity (MWh)		**19,610,235**	**18,890,438**	**18,767,347**	**18,689,834**	**(200,605)**	**18,582,874**	**(106,959)**
Revenues by Sector (Thousands of Dollars)								
Residential		$ 2,000,116	$ 1,863,586	$ 1,880,013	$ 1,871,253	$ 7,667	$ 1,893,036	$ 21,784
Commercial	(a)	1,487,582	1,517,399	1,529,012	1,742,681	225,282	1,783,489	40,808
Other Public Authorities/Street Lighting		68,342	65,881	55,764	66,919	1,038	66,043	(876)
ESCO Revenue	(a)	95,881	95,691	62,228	12,503	(83,188)	11,600	(903)
Other Regulatory Amortizations and Deferrals	(b)	(101,384)	(58,280)	(26,525)	(39,167)	19,113	(59,266)	(20,099)
Miscellaneous Revenues		25,737	28,724	27,637	29,111	387	30,534	1,423
Total Revenues		**$ 3,576,274**	**$ 3,513,000**	**$ 3,528,130**	**$ 3,683,301**	**$ 170,301**	**$ 3,725,437**	**$ 42,136**
Revenues by Component (Thousands of Dollars)								
Delivery Charge (RDM Target)		$ 1,206,294	$ 1,305,096	$ 1,308,625	$ 1,382,014	$ 76,918	$ 1,459,433	$ 77,419
Power Supply Charge		1,891,653	1,793,456	1,776,188	1,845,571	52,115	1,815,711	(29,861)
T&D Property Tax	(c)	287,262	292,861	292,666	298,472	5,611	304,442	5,971
Energy Efficiency and Distributed Energy (DER)		58,517	63,617	63,060	69,720	6,103	67,758	(1,962)
New York State Assessment		9,860	9,453	9,820	10,318	865	10,628	310
Suffolk Property Tax Settlement		48,273	46,233	44,583	47,336	1,103	48,197	861
Visual Benefits Assessment (VBA)		1,015	909	968	1,029	121	1,023	(6)
Revenue Related PILOTS		35,568	34,321	34,332	35,464	1,143	36,931	1,467
RDM Collection/(Refund)		84,612	(32,873)	(33,063)	(17,829)	15,044	-	17,829
DSA Collection/(Refund)		28,867	31,380	31,737	23,426	(7,954)	10,046	(13,380)
T&D Property Tax Collection/(Refund)	(c)	-	(1,897)	(1,897)	(2,166)	(269)	-	2,166
Other Regulatory Amortizations and Deferrals	(b)	(101,384)	(58,280)	(26,525)	(39,167)	19,113	(59,266)	(20,099)
Miscellaneous Revenues		25,737	28,724	27,637	29,111	387	30,534	1,423
Total Revenues		**$ 3,576,274**	**$ 3,513,000**	**$ 3,528,130**	**$ 3,683,301**	**$ 170,300**	**$ 3,725,437**	**$ 42,136**

Note: (a) The $83.2 million decrease in ESCO revenue and a corresponding increase in Commercial Sales is related to the elimination of the New York state sales tax exemption that occurred in July 2019. As a result, many ESCOs left the market transferring these accounts back to LIPA as commercial retail customers.

(b) The 2019 Approved Operating Expenses have been reduced by $12.6 million due to a carry over of funding for the Utility 2.0 program to 2020.

(c) T&D Property Tax is a component of Delivery Charge.

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

Power Supply Cost

Power Supply Costs are budgeted at $1.85 billion for 2020, an increase of $52.1 million as compared to the approved Budget for 2019. The main driver of the increase is (i) the shift of Long Island Choice (LIC) customers back to LIPA as their energy supplier, totaling approximately $55.0 million[1], and (ii) property taxes. The increase is also driven by the addition of new renewable projects and projected purchases of Renewable Energy Credits (RECs).

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

In addition to the costs for gas and oil consumed in the generation of electricity, power supply costs include the cost of emission allowances, generating unit and transmission cable capacity, costs charged by the New York, New England and PJM independent system operators (ISO), electric power wheeling, Zero Emission Credits, services received under the power supply and fuel management agreements, fuel hedging program costs, economy energy purchases, energy and RECs from renewable resource as well as LIPA's 18% share of the Nine Mile Point 2 nuclear generating station, the National Grid Power Supply Agreement (PSA), and certain PILOTs.

Table 1: 2020 vs. 2019 Change in Costs

Description	Net Change	Cause
Capacity	($2.0M)	Lower capacity market purchases and variable O&M payments, as well as projected reductions in South Fork demand response costs; partially offset by Power Supply Agreement projected 401K match contribution.
Purchased Power	$24.1M	Lower purchase power prices offset by higher NYISO ancillary and transmission charges as well as increase in total energy produced by Resource Recovery units. Increase in costs due to shift of majority of LIC customers to LIPA.
Commodity (gas & oil)	$1.9M	Lower projected gas and oil prices net of financial settlements from hedging. Increase in costs due to shift of LIC customers to LIPA.
Renewables	$9.1M	Expected installation of additional renewable projects and projected REC purchases.
Other	$7.5M	Higher RGGI allowance prices and increase in Y-49 cable charges.
Pass Through Property Taxes	$11.5M	Projected increase in PSA taxes.
Total	**$52.1M**	

[1] Note, a change in the state law eliminated the exemption from local sales taxes for commercial LIC customers in July 2019. This increase in total Power Supply Costs has a negligible impact on the Power Supply Charge since LIPA's overall retail energy sales also increase.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

Power Supply Charge
(Thousands of Dollars)

Description	2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
Capacity							
Capacity Charges	$ 391,261	$ 395,312	$ 393,426	$ 390,271	$ (5,041)	$ 391,688	$ 1,417
National Grid (PSA)	240,569	253,561	254,802	256,604	3,042	260,663	4,060
Total Capacity	**631,830**	**648,873**	**648,227**	**646,875**	**(1,998)**	**652,351**	**5,476**
Purchased Power							
Purchased Power	385,335	361,293	348,697	385,368	24,075	403,369	18,001
Total Purchased Power	**385,335**	**361,293**	**348,697**	**385,368**	**24,075**	**403,369**	**18,001**
Commodity							
Natural Gas	291,620	211,166	248,859	226,645	15,479	206,129	(20,516)
Fuel Oil	68,212	39,572	41,753	25,990	(13,582)	26,334	344
Total Commodity	**359,832**	**250,738**	**290,612**	**252,635**	**1,897**	**232,463**	**(20,172)**
Renewables							
Renewable Power	119,479	138,453	137,058	147,598	9,144	112,521	(35,077)
Total Renewables	**119,479**	**138,453**	**137,058**	**147,598**	**9,144**	**112,521**	**(35,077)**
Other							
Transmission	39,457	37,245	40,122	40,491	3,246	40,535	44
Nine Mile Nuclear Fuel	41,911	45,006	42,607	45,619	613	45,823	204
Regional Greenhouse Gas Initiative (RGGI)	20,869	18,348	20,149	21,401	3,053	20,926	(475)
Zero Emissions Credits	42,827	50,014	41,240	51,398	1,384	54,921	3,522
Fuel and Power Supply Management Services	19,421	19,724	20,262	20,085	361	20,453	369
Other	14,677	14,393	1,045	13,210	(1,183)	7,217	(5,993)
Total Other	**179,163**	**184,729**	**165,426**	**192,203**	**7,474**	**189,875**	**(2,329)**
Pass Through Property Taxes							
National Grid (PSA)	196,218	198,653	204,208	210,032	11,379	214,055	4,024
Fast Track Units	9,394	6,725	9,303	6,843	117	6,938	95
Nine Mile	4,347	3,992	4,035	4,018	26	4,139	121
Total Pass Through Property Taxes	**209,960**	**209,370**	**217,546**	**220,893**	**11,523**	**225,132**	**4,240**
Total Power Supply Charge	**$ 1,885,600**	**$ 1,793,456**	**$ 1,807,566**	**$ 1,845,571**	**$ 52,115**	**$ 1,815,711**	**$ (29,861)**

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

Operating Expenses

Total Operating Expenses are budgeted at $803.5 million in 2020 and projected at $804.6 million in 2021.

Operating Expenses are comprised of costs associated with operating and maintaining LIPA's Transmission and Distribution system and consists of three major expense categories:

(i) PSEG Long Island Operating Expenses (expenses which PSEG Long Island must remain within 102% of budget to earn incentive compensation);

(ii) PSEG Long Island Managed Expenses (expenses which PSEG Long Island manages but are substantially outside of its control); and

(iii) LIPA's Operating 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 Programs. The budget for the Energy Efficiency Programs incentivizes energy efficiency as well as beneficial electrification (e.g. electric vehicles and heat pumps), among other things. PSEG Long Island Operating Expenses for 2020 and 2021 include additional costs related to the Utility 2.0 Plan. These costs are associated with projects aimed at integrating Smart Meters and Distributed Energy Resources (DER) into LIPA's electric grid.

PSEG Long Island Managed Expenses include costs related to New York State assessments, uncollectible accounts, and storm preparation and restoration. The budget for storm preparation and restoration costs is increasing to $60.0 million for 2020 and $62.1 million for 2021. The budget phases in a historical five-year average level of spending on storm restoration.

LIPA Operating Expenses includes the PSEG Long Island management fee and costs related to LIPA staff and outside professional services, as detailed on Section II Page 33.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

Operating Expenses
(Thousands of Dollars)

Description		2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
PSEG Long Island Operating Expenses	(a)	**$ 572,671**	**$ 581,889**	**$ 580,453**	**$ 621,251**	**$ 39,362**	**$ 617,820**	**$ (3,431)**
PSEG Long Island Managed Expenses								
Uncollectible Accounts		16,206	19,867	18,047	20,835	968	21,105	270
Storm Restoration		90,463	54,854	76,380	60,000	5,146	62,143	2,143
NYS Assessment		9,860	9,453	9,820	10,318	865	10,628	310
Accretion of Asset Retirement Obligation		134	2,750	2,130	2,927	177	3,155	228
Miscellaneous		(5,219)	162	208	192	30	192	-
Total PSEG Long Island Managed Expenses		**111,445**	**87,086**	**106,585**	**94,272**	**7,186**	**97,223**	**2,951**
Total PSEG Long Island Operating and Managed Expenses		**684,115**	**668,975**	**687,038**	**715,523**	**46,548**	**715,043**	**(480)**
LIPA Operating Expenses								
Management Fee (including incentive)		74,102	75,584	75,276	76,781	1,198	78,317	1,536
Capitalized Management Fee		(25,806)	(28,926)	(29,696)	(30,290)	(1,364)	(30,895)	(606)
LIPA Operating Costs		26,908	36,961	36,774	41,464	4,503	42,182	717
LIPA Operating Expenses		**75,203**	**83,619**	**82,354**	**87,956**	**4,337**	**89,603**	**1,647**
Total PSEG Long Island & LIPA Operating Expenses		**$ 759,319**	**$ 752,594**	**$ 769,393**	**$ 803,479**	**$ 50,885**	**$ 804,646**	**$ 1,167**

Note: (a) PSEG Long Island 2019 Approved Operating Expenses have been reduced by $12.6 million due to a carry over of O&M funding for the Utility 2.0 program.

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

Depreciation and Amortization Expenses

Depreciation and Amortization Expenses are budgeted at $422.8 million in 2020 and projected at $448.5 million in 2021.

PSEG Long Island Managed Utility Depreciation consists of depreciation of transmission and distribution plant, information technology, and FEMA storm hardening assets.

The budgeted depreciation for 2020 and projected for 2021 reflects increases of approximately $58.9 million and $24.7 million, respectively, resulting from an updated depreciation analysis plus higher depreciable asset base. An additional annual depreciation expense of approximately $24.8 million will continue through 2022 due to the replacement of conventional meters with Smart Meters.

LIPA Depreciation and Amortization consists primarily of the amortization of the Acquisition Adjustment at $111.4 million annually. The Acquisition Adjustment is an intangible asset resulting from the merger with the Long Island Lighting Company in 1998. Also included is the amortization of certain regulatory assets related to pension and OPEB expenses for the former National Grid and current PSEG Long Island employees that directly serve LIPA's customers. These retirement benefit expenses are a contractual obligation of LIPA and are being amortized to align the expenses to coincide with the term of employment of the workforce contracted by LIPA under the Amended and Restated Operations Services Agreement. See LIPA's audited financial statements for more information.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

Depreciation and Amortization Expenses
(Thousands of Dollars)

Description	2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
PSEG Long Island Managed Utility Depreciation	$ 185,455	$ 195,531	$ 194,008	$ 248,675	$ 53,144	$ 268,681	$ 20,006
Accelerated Depreciation of Conventional Meters	-	24,778	24,779	24,778	-	24,778	-
Depreciation Expense Related to FEMA Capital Projects	3,424	5,809	6,560	11,613	5,804	16,295	4,682
Total PSEG Long Island Managed Utility Depreciation	**188,879**	**226,118**	**225,346**	**285,066**	**58,949**	**309,754**	**24,688**
LIPA Depreciation and Amortization							
Amortization of Acquisition Adjustment	111,374	111,375	111,375	111,375	-	111,375	-
Amortization of OPEB & Pension Deferrals	31,014	25,015	25,015	25,015	-	25,015	-
Depreciation - LIPA	593	1,312	1,312	1,312	-	2,318	1,007
Total LIPA Depreciation and Amortization	**142,981**	**137,701**	**137,702**	**137,701**	**-**	**138,708**	**1,007**
Total Depreciation and Amortization Expenses	**$ 331,860**	**$ 363,819**	**$ 363,048**	**$ 422,768**	**$ 58,949**	**$ 448,462**	**$ 25,695**

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

Taxes, Payments-in-Lieu of Taxes and Assessments

Payments-In-Lieu of Taxes (PILOTs) and Assessments are budgeted at $678.3 million in 2020 and projected at $692.1 million in 2021.

Revenue-based PILOTs are calculated using 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.

Additionally, LIPA incurs property-based taxes associated with the generating assets. These costs, as with all power supply costs, are reconciled to actual costs. National Grid Power Supply Agreement (PSA) related taxes are budgeted at $210.0 million in 2020 and projected at $214.1 million in 2021. In 2018, LIPA concluded a property tax settlement with the Village of Port Jefferson and the Town of Brookhaven. LIPA continues to challenge other property tax assessments on the PSA generation assets, which are significantly over-assessed.

As LIPA owns 18% of the Nine Mile Point 2 nuclear power plant, it is also responsible for paying a share of the property taxes. LIPA's share of these taxes are budgeted at approximately $4.0 million in 2020 and 2021.

The property-based PILOTs related to the Fast Track Units are budgeted at $6.8 million in 2020.

The New York State Department of Public Service (DPS) Administrative Assessment recovers costs related to DPS' oversight of LIPA and PSEG Long Island's operations. This cost is $10.3 million in 2020.

LIPA collects sales taxes on behalf of local municipalities. Those taxes are estimated at $112.9 million in 2020 and $114.8 million in 2021.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

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

Description		2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
PILOTs - Revenue-Based Taxes		**$ 35,568**	**$ 34,321**	**$ 34,332**	**$ 35,464**	**$ 1,143**	**$ 36,931**	**$ 1,467**
PILOTs - Property-Based Taxes		**287,262**	**292,861**	**292,666**	**298,472**	**5,611**	**304,442**	**5,971**
Property Taxes in Power Supply Charge								
National Grid (PSA) Property Taxes		196,218	198,653	204,208	210,032	11,379	214,055	4,024
Fast Track Units		9,394	6,725	9,303	6,843	117	6,938	95
Nine Mile PILOTs		4,347	3,992	4,035	4,018	26	4,139	121
Total Property Taxes in Power Supply Charge		**209,960**	**209,370**	**217,546**	**220,893**	**11,523**	**225,132**	**4,240**
Other Taxes and Assessments								
NYS Department of Public Service		9,860	9,453	9,820	10,318	865	10,628	310
NYS Office of Real Property Services		167	162	192	192	30	192	-
Total Other Taxes and Assessments		**10,028**	**9,615**	**10,012**	**10,510**	**895**	**10,820**	**310**
Total Taxes and Assessments Before Sales Taxes		**542,818**	**546,167**	**554,556**	**565,339**	**19,172**	**577,326**	**11,987**
Sales Taxes	(a)	**102,315**	**104,946**	**104,817**	**112,918**	**7,972**	**114,811**	**1,893**
Total PILOTs, Sales, State and Local Taxes and Assessments		**$ 645,133**	**$ 651,113**	**$ 659,373**	**$ 678,257**	**$ 27,144**	**$ 692,137**	**$ 13,880**

Note: (a) Sales tax revenue is collected by LIPA in accordance with local municipal law. Sales taxes are recorded as liabilities by LIPA as they are collected on behalf of and transferred to local government jurisdictions.

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

Other Income and Deductions

Other Income and Deductions are budgeted at $57.6 million for 2020 and projected at $55.8 million for 2021. The increased budget is based on higher forecasted account balances and slightly higher interest rates.

Other Income and Deductions consists of income and interest generated from LIPA's short-term investments, including the Rate Stabilization Fund and the Construction Fund, earnings on the Nine Mile Point 2 nuclear decommissioning trust fund, earnings on the unrestricted OPEB Account, carrying charges accrued on deferred balances related to the Suffolk Property Tax Settlement, and miscellaneous sources of revenues and expenses, such as income from certain customer-requested work not included in electric rates.

Projected interest rates on short-term investments are updated to prevailing interest rates annually as part of the budget process and differences between projected and actual interest rates are reconciled annually through the Delivery Service Adjustment.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

Other Income and Deductions
(Thousands of Dollars)

Description	2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
Short-Term Investment Income	$ 10,973	$ 5,970	$ 19,689	$ 16,636	$ 10,666	$ 16,358	$ (278)
Interest Income from:							
Suffolk Property Tax Settlement	23,560	22,192	22,192	20,706	(1,486)	19,097	(1,609)
Visual Benefits Assessment	518	495	490	462	(33)	429	(32)
OPEB Account	6,520	4,182	6,346	5,847	1,665	5,940	93
PSEG Long Island Funding Accounts	1,537	1,461	2,672	2,664	1,203	2,691	27
Miscellaneous Income and Deductions - LIPA	2,988	2,843	219	201	(2,643)	201	-
Miscellaneous Income and Deductions - PSEG Long Island	2,673	2,099	3,319	1,872	(227)	1,755	(116)
Subtotal Other Income and Deductions	**$ 48,770**	**$ 39,242**	**$ 54,927**	**$ 48,386**	**$ 9,145**	**$ 46,471**	**$ (1,916)**
Nuclear Decommissioning Trust Fund	8,069	5,000	14,850	9,231	4,231	9,298	67
Total Other Income and Deductions	**$ 56,839**	**$ 44,242**	**$ 69,777**	**$ 57,617**	**$ 13,376**	**$ 55,769**	**$ (1,848)**

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

Grant Income

In 2020, Grant Income consists primarily of (i) a grant of $25.0 million from NYSERDA from Regional Greenhouse Gas Initiative (RGGI) funds to support PSEG Long Island's energy efficiency programs and (ii) subsidy payments totaling $3.7 million from the United States Treasury equal to approximately 33% of the interest on LIPA's debt issued as Build America Bonds.

LIPA pays for RGGI allowances as part of its Power Supply Charge. This RGGI grant represents the return of a portion of those funds to support energy efficiency programs on Long Island.

In February 2014, LIPA signed a Letter of Undertaking with FEMA that provides for $730.0 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 at $10.5 million in 2020 and $14.7 million in 2021.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

Grant Income
(Thousands of Dollars)

Description	2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
Build America Bonds Subsidy - U.S. Treasury	$ 3,861	$ 3,850	$ 3,866	$ 3,704	$ (146)	$ 3,447	$ (257)
Efficiency & DER - RGGI Funding	34,600	25,000	25,000	25,000	-	25,000	-
Subtotal Grant Income	**38,461**	**28,850**	**28,866**	**28,704**	**(146)**	**28,447**	**(257)**
Amortization of Deferred FEMA Grant	**3,081**	**5,228**	**5,904**	**10,452**	**5,224**	**14,665**	**4,214**
Total Grant Income	**$ 41,542**	**$ 34,078**	**$ 34,770**	**$ 39,156**	**$ 5,078**	**$ 43,112**	**$ 3,956**

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

Interest Expense

Interest expense is budgeted at $364.5 million in 2020 and projected at $374.2 million in 2021. The budget is based on forecasted levels of outstanding debt, associated fees, and the amortization of previously deferred debt-related charges and credits. Actual interest rates on variable debt are updated to prevailing interest rates each year as part of the annual budget process and differences between projected and actual interest rates are reconciled annually through the Delivery Service Adjustment ensuring customers pay only actual costs.

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

Amortization of premiums are budgeted to increase by $3.7 million in 2020 as compared to 2019 due to new debt issuance.

LIPA no longer capitalizes interest expense due to a change in accounting requirements related to GASB Statement No. 89.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

Interest Expense
(Thousands of Dollars)

Description		2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
Accrued Interest Expense on Debt Securities		$ 361,283	$ 372,666	$ 376,038	$ 377,089	$ 4,424	$ 388,409	$ 11,320
Amortization of Premium		(58,970)	(60,857)	(61,189)	(64,590)	(3,733)	(64,302)	288
Interest Expense on Debt Securities (Accrued)		**302,312**	**311,809**	**314,849**	**312,499**	**690**	**324,107**	**11,607**
Other Interest Expense								
Amortization of Deferred Debt Issue Costs		3,319	5,291	5,301	6,967	1,675	6,288	(679)
Amortization of Deferred Defeasance Costs		32,285	29,304	28,872	25,194	(4,110)	22,572	(2,622)
Other Interest Amortizations		(6,612)	(6,733)	(6,733)	(6,857)	(124)	(5,501)	1,356
Capital Lease Interest		845	-	-	-	-	-	-
Other Interest Amortizations (Accrued)		**29,838**	**27,862**	**27,439**	**25,304**	**(2,559)**	**23,359**	**(1,945)**
Interest Rate Swap Payments		14,270	10,388	14,077	18,143	7,754	18,227	84
Letter of Credit and Remarketing Fees		6,452	6,827	6,421	6,793	(34)	6,739	(54)
Interest on Customer Security Deposits		409	392	540	488	96	487	(1)
Bond Administration Costs and Bank Fees		4,977	1,415	1,309	1,235	(181)	1,235	-
Other Interest Costs (Cash)		**26,107**	**19,022**	**22,348**	**26,658**	**7,636**	**26,687**	**29**
Subtotal - Interest Expense		**358,257**	**358,693**	**364,636**	**364,461**	**5,767**	**374,152**	**9,691**
Less: Capitalized Interest	(a)	**5,874**	-	-	-	-	-	-
Total Interest Expense		**$ 352,383**	**$ 358,693**	**$ 364,636**	**$ 364,461**	**$ 5,767**	**$ 374,152**	**$ 9,691**

Note: (a) Due to a new accounting standard Capitalized Interest is eliminated effective in 2019.

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

Debt Service Requirements

Debt service consists of principal and interest payments due to bondholders. Debt service payments are reported separately for UDSA debt and LIPA debt. LIPA refinanced debt through the UDSA, resulting in a net present value savings of $492.0 million to customers.

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

In 2016, the LIPA's Board adopted its financial policy, 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 LIPA's operating expenses in each year plus its debt service requirements (including fixed obligation coverage).

(ii) **Mid-A Ratings Target Over Five Years.** In 2015, LIPA had credit ratings of Baa1 (stable outlook), A- (negative outlook), and A- (negative outlook) (Moody's, S&P, and Fitch, respectively), the lowest ratings of any large public power utility by several credit categories. The adoption of the Public Power Model and the Board's financial metrics (discussed below) combined with the utility's rate adjustment mechanisms, predictable cash flow, investments in operational and system improvements and positive customer service metrics have resulted in multiple rating upgrades. In September 2019, LIPA was upgraded by all three credit rating agencies – Moody's, S&P, and Fitch. LIPA's bond rating is A2 (stable), A (stable) and A (stable) (Moody's, S&P, and Fitch, respectively) achieving its 5-year ratings target. LIPA now has the highest credit ratings in its history.

Long Island Power Authority and Subsidiaries
Approved and 2020 Projected Operating and Capital Budgets

(iii) **Reduce Borrowings to No More than 64% of Capital Spending.** LIPA's "debt ratio" (defined as the percentage of debt in LIPA'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 LIPA, whereas LIPA's 2020 budgeted debt ratio is 91.0% (Section II Page 39).

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, LIPA adopted a target to reduce borrowings in each year to no more than 64% of capital spending, with the balance funded by cash flow. This level is typical for large public power utilities and an industry best practice.

(iv) **Increasing Fixed Obligation Coverage Targets.** To achieve LIPA's goals of improved credit ratings and reduced borrowings, LIPA established increasing fixed obligation coverage targets. Given LIPA's two types of debt – LIPA revenue bonds and UDSA securitization debt – LIPA adopted coverage ratios with and without UDSA bonds.

The Fixed Obligation Coverage Ratio in 2020 has been revised to reflect the impact of a new Governmental Accounting Standards Board (GASB) rule effective January 2020 called Statement No. 87 Leases. This new standard revised the definition of a long-term lease. As a result, the value of long-term lease payments increased by $160 million, from $261 million in 2019 to $421 million in 2020. Since long-term leases are a component in the Fixed Obligation Coverage Ratio, to ensure that the updated value of long-term leases results in the same level of cash flow, the coverage ratio will be reduced from 1.45x to 1.35x starting in 2020.

Minimum Fixed Obligation Coverage Ratios

Fixed Obligations	2018	2019	2020*	2021*
LIPA Debt + Long-Term Leases	1.40x	1.45x	1.35x	1.35x
LIPA Debt + UDSA Debt + Long-Term Leases	1.25x	1.25x	1.20x	1.20x

* Reflects the implementation of GASB 87.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

Debt Service Requirements
(Thousands of Dollars)

Description		2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
UDSA Debt Service								
UDSA Debt Service		$ 324,728	$ 327,140	$ 327,140	$ 319,030	$ (8,110)	$ 367,388	$ 48,358
Board Policy Target Coverage Ratio on UDSA Debt Service		1.00 x	1.00 x	1.00 x	1.00 x		1.00 x	
UDSA Debt Service Plus Coverage		324,728	327,140	327,140	319,030	(8,110)	367,388	48,358
LIPA Debt Service								
LIPA Debt Service on Fixed Rate Debt		169,036	182,793	182,793	238,923	56,130	245,405	6,483
LIPA Debt Service on Variable Rate Debt		28,642	34,010	27,472	31,205	(2,805)	39,371	8,166
Total LIPA Debt Service		197,678	216,803	210,265	270,128	53,325	284,776	14,648
Board Policy Target Coverage Ratio on LIPA Debt Service	(a)	1.40 x	1.45 x	1.45 x	1.35 x		1.35 x	
LIPA Debt Service Plus Coverage		276,749	314,616	305,128	363,557	48,941	384,447	20,890
Long-term Obligations								
LIPA Long Term Obligations	(a)	281,081	267,076	267,076	421,481	154,405	401,324	(20,157)
Board Policy Target Coverage Ratio on Long-term Obligations	(a)	0.40 x	0.45 x	0.45 x	0.35 x		0.35 x	
LIPA Long-term Obligations Coverage		112,432	120,494	120,493	145,778	25,285	140,463	(5,315)
Revenue Net of Requirements								
Adjustment to Coverage Due to Revenue Net of Requirements			-	14,521	-	-	-	-
Total Debt Service and Coverage		$ 713,910	$ 762,250	$ 767,282	$ 828,366	$ 66,116	$ 892,299	$ 63,933
Total Projected Debt Service and Coverage								
Total Projected Debt Service		522,406	543,943	537,405	589,158	45,215	652,164	63,006
Total Coverage		233,570	218,305	229,877	239,208	20,903	240,135	927
Projected Coverage Ratio on LIPA Obligations	(a)	1.49 x	1.45 x	1.48 x	1.35 x		1.35 x	
Projected Coverage on LIPA & UDSA Obligations		1.29 x	1.27 x	1.29 x	1.24 x		1.23 x	

Note: (a) Coverage ratio for 2020 reflects implementation of GASB Statement No. 87 for leases. A 1.35x coverage ratio in 2020 provides the same cash flow as 1.45x coverage ratio would have generated had GASB No. 87 not been adopted. A higher stated level of Long-Term Obligations requires a lower coverage ratio to generate the same cash flow.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

(This page intentionally left blank)

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

Capital Expenditures

Capital Expenditures are budgeted at $820.4 million in 2020 and are projected at $702.1 million in 2021. The 2020 Capital Budget includes a deferral of certain 2019 Capital projects into 2020 and beyond, as shown in Section II Page 47.

Transmission and Distribution projects are evaluated using a Value and Risk Evaluation protocol to determine the prioritization of projects that have the highest value for system and company performance. The projects being pursued will improve system reliability and resiliency and include a new Storm Hardening Distribution Circuit Program and the continuation of the Multiple Customer Outage Program to address customers with poor reliability.

In February 2014, LIPA signed a Letter of Undertaking with FEMA that provides for a $730.0 million storm hardening initiative. As part of this program, FEMA will contribute 90% of the cost to this project. Construction is scheduled to complete at the end of the first quarter.

Information Technology projects include improvements and upgrades to systems that support Transmission and Distribution, Customer Services and IT infrastructure. Capital expenditures for Customer Services are primarily comprised of costs associated with residential and commercial meter replacement.

Capital expenditures for 2020 and 2021 include additional costs related to the Utility 2.0 Plan. These costs are associated with projects aimed at smart meters and integrating Distributed Energy Resources (DER) into LIPA's electric grid.

The percent of Capital funded from debt will be above LIPA's target of 64% in 2020 and 2021. This is due to the timing of two unusually large projects: Western Nassau Transmission $174.5 million and Smart Meters $242.4 million. Excluding these projects, the percentage would be 60% in 2020 and 65% in 2021.

Nine Mile Point 2 Capital Expenditures relates to LIPA's share of capital expenses for the NMP2 nuclear generating station of which LIPA owns an undivided 18% interest.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

Capital Expenditures
(Thousands of Dollars)

Description		2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
Transmission and Distribution								
Regulatory Driven		$ 7,421	$ 25,489	$ 34,850	$ 101,435	$ 75,946	$ 32,998	$ (68,437)
Load Growth		131,330	262,030	192,327	225,520	(36,510)	210,505	(15,015)
Reliability		184,418	190,518	184,515	163,186	(27,332)	212,563	49,377
Storm Hardening		-	-	1,599	37,000	37,000	50,000	13,000
Economic, Salvage, Tools, Equipment & Other		33,358	48,866	51,591	39,464	(9,402)	23,522	(15,942)
Total Transmission and Distribution Projects		**356,526**	**526,902**	**464,883**	**566,605**	**39,703**	**529,588**	**(37,018)**
Other PSEG Long Island Capital Expenditures								
Information Technology		40,439	35,236	37,848	42,883	7,647	36,073	(6,810)
Customer Operations		29,299	11,394	19,054	22,181	10,787	17,282	(4,899)
Other General Plant		2,811	8,944	6,639	13,027	4,083	5,773	(7,254)
Fleet		10,098	5,495	7,445	8,875	3,380	9,719	844
Utility 2.0 (Includes carry over)	(a)	-	65,085	63,484	67,208	2,123	55,722	(11,486)
Budget Amendment to carry over projects		-	(52,307)	-	-	52,307	-	-
Total PSEG Long Island Excluding FEMA		**439,174**	**600,749**	**599,353**	**720,779**	**120,030**	**654,156**	**(66,623)**
FEMA Storm Hardening		151,384	153,609	117,077	58,665	(94,944)	6,308	(52,357)
Storm Capitalization		-	3,501	4,952	5,934	2,433	6,146	212
Total PSEG Long Island Capital		**590,558**	**757,859**	**721,382**	**785,378**	**27,518**	**666,609**	**(118,768)**
Nine Mile Point 2		17,956	19,461	23,025	15,760	(3,700)	20,012	4,251
LIPA - Other		344	5,700	2,000	6,650	950	2,500	(4,150)
Capital OPEB Adjustment	(b)	-	-	-	(17,715)	(17,715)	(17,869)	(154)
Allowance For Funds Used During Construction		5,874	-	-	-	-	-	-
Capitalized Management Fee		25,806	28,926	29,696	30,290	1,364	30,895	606
Total Capital Expenditures	(c)	**$ 640,538**	**$ 811,946**	**$ 776,103**	**$ 820,363**	**$ 8,417**	**$ 702,147**	**$ (118,215)**
Funding for Capital Expenditures								
FEMA Contribution (90% of Project Costs)	(d)		$ 138,248	$ 105,369	$ 52,798	$ (85,450)	$ 5,677	$ (47,122)
Coverage from Operating Revenue								
Total Coverage			$ 218,305	$ 229,877	$ 239,208	$ 20,903	$ 240,135	$ 927
Less Amount Projected for O&M OPEB Funding	(e)		(27,509)	(29,336)	(31,316)	(3,808)	(33,716)	(2,400)
Funding Required from New Debt			482,901	470,193	559,673	76,772	490,052	(69,621)
Total Funding for Capital Expenditures			**$ 811,946**	**$ 776,103**	**$ 820,363**	**$ 8,417**	**$ 702,147**	**$ (118,215)**

Note: (a) The Approved 2019 U2.0 budget of $69.7 million has been reduced to reflect the (1) $9.1 million U2.0 budget amendment carry over to 2020 partially offset by (2) $4.5 million acceleration of Utility 2.0 Smart Meters. See reconciliation table on the next page.

(b) Non Cash cost of Other Post Employment Benefits (OPEB) included in capital expenses above.

(c) The Approved 2019 Capital budget of $868.8 million has been reduced to reflect (1) $52.3 million budget amendment carry over to 2020 and (2) $9.1 million U2.0 budget amendment carry over to 2020 partially offset by (3) $4.5 million accelerated implementation of the Smart Meters.

(d) Amounts not yet reimbursed by FEMA; pending completion of individual projects.

(e) Projected 2020 OPEB funding is $45.2 million, of which $13.9 million is capital and $31.3 million is O&M.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

Capital Expenditures
(Thousands of Dollars)

Description	2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
Percent of Capital Funded from Debt:							
LIPA Target		**64%**	**64%**	**64%**		**64%**	
Projected Including FEMA spending and reimbursement		**59%**	**61%**	**68%**		**70%**	
Projected Excluding FEMA spending and reimbursement		**71%**	**70%**	**73%**		**70%**	
Reconciliation of Utility 2.0							
Utility 2.0 Approved 2018 Filing		$ 71,961		$ 54,158			
Utility 2.0 Smart Meters Acceleration 2019 to 2018		(2,300)		-			
Utility 2.0 Smart Meters Acceleration 2022 to 2019		4,539		-			
Utility 2.0 Smart Meters Carry over 2019 to 2020		(9,115)		9,115			
Utility 2.0 2018 Filing		65,085		63,273			
Utility 2.0 2019 Filing		-		3,936			
Total Utility 2.0		**$ 65,085**		**$ 67,208**			

Major Projects

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

Description	Justification	In Service Date	Cash Flow ($millions)				
			Project To Date Expenditures through 12/31/19	2020	2021	2022 and Beyond	Total Project Cost
Western Nassau Transmission (EGC- Valley Stream (N-1-1): Install new 138kV underground cable	New NERC reliability standard	2020	$ 42.5	$ 101.1	$ 30.9	$ -	$ 174.5
Belmont Substation: Construct new 33/13kV substation & distribution circuits	Load growth in Belmont Park	2020	$ 20.0	$ 12.8	$ 5.7	$ -	$ 38.5
Two Way Radio System Replacement: Replace existing conventional radio system with new territory-wide radio system	Current system is a mix of legacy radio console, mobiles and portable radios with age of equipment ranging from 10 to 35 years old; vendors no longer support	2020	$ 36.0	$ 8.8	$ -	$ -	$ 44.8
Hempstead: Upgrade Existing Substation from 23/4 kV to 69/13 kV	Load growth in the Town of Hempstead	2020	$ 32.7	$ 4.0	$ -	$ -	$ 36.7
Kings Highway: Construct new substation with 3 transformers and 8 new distribution feeders	Load growth in the towns of Smithtown, Hauppauge and Islip	2020	$ 44.0	$ 11.1	$ -	$ -	$ 55.1
Navy Rd: Construct new 23/13 kV substation	Load growth in Montauk	2022	$ 9.5	$ 13.0	$ 5.1	$ -	$ 33.4
Riverhead - Canal: Install new 138 kV underground cable	Load growth in the South Fork	2021	$ 4.5	$ 58.6	$ 31.6	$ -	$ 94.7
Ruland Rd - Plainview: Install new Underground 69kV transmission line	Load growth to support the Country Pointe Development and the new Round Swamp Substation	2022	$ 5.1	$ 0.5	$ 39.2	$ 13.7	$ 58.4
Utility 2.0 Smart Meters: Replace existing meters with Smart Meters.	Improve operations, especially with regard to minimizing the impact of outages, and to gain valuable insight into system conditions and customer needs.	2022	$ 59.2	$ 47.8	$ 48.7	$ 40.5	$ 196.3
Fire Island Pines: Install new 23 kV circuit to Ocean Beach	Increase reliability to Fire Island	2023	$ 1.5	$ 0.5	$ 9.4	$ 39.8	$ 51.1
Lindbergh (formerly Nassau Hub): Construct new substation with 2 transformers and 6 new distribution feeders.	Load growth for the Nassau Coliseum re-development which includes new: retail stores, restaurants, movie theaters and Police Academy	2022	$ 40.7	$ 9.5	$ 0.6	$ 12.5	$ 63.3
Bridgehampton - Buell: Install a new 69kV underground cable	Load growth in the South Fork	2023	$ 0.9	$ 2.9	$ 0.2	$ 42.9	$ 46.9
Massapequa: Establish new 69/13kV substation	Load growth in the town of Massapequa	2023	$ 2.6	$ 1.4	$ 3.7	$ 22.1	$ 29.8
Transmission Operations Control Room Facility Replacement: Replace the existing Transmission Operations control room	Construct a new Transmission Control room to meet future expansion of the LIPA T&D system as well as continue to maintain a high level of system reliability	2024	$ 0.2	$ 0.5	$ 3.2	$ 74.3	$ 78.2
Syosett to Shore Road: Install new 138 kV transmission circuit	Support the deliverability of future supply resources interconnected to the LIPA system	2026	$ -	$ 0.3	$ 2.1	$ 265.6	$ 268.0

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

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 Distributed Energy Programs. Total operating expenses are budgeted at $621.3 million for 2020 and projected at $617.8 million for 2021.

The PSEG Long Island 2020 operating budget, excluding the Utility 2.0 Program, is increasing by $15.9 million driven by an expected inflationary increase of $18.4 million which was offset by productivity savings of ($4.3M) resulting in a net increase of $14.1 million. In conjunction with this, an increase of $1.8 million related to new initiatives for the Stray Voltage Testing Pilot Program $0.5 million, Work Management Consultant Review associated with the NorthStar Management Audit recommendations to improve the work management process $1.0 million, and the Interconnection Working Group to facilitate implementation of New York's Clean Energy Standard $0.3 million.

The approved operating expenses for 2019 have been decreased by $12.6 million for 2020 carryover projects related to Utility 2.0.

Operating expenses for 2020 of $621.3 million may shift between various lines of business during the year.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

PSEG Long Island Operating Expenses
(Thousands of Dollars)

Description		2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
PSEG Long Island Operating Expenses (including Pension & OPEB)								
Transmission & Distribution		$ 192,522	$ 177,615	$ 188,681	$ 188,280	$ 10,665	$ 196,611	$ 8,331
Customer Services		127,921	126,620	126,659	130,497	3,878	128,983	(1,514)
Business Services		158,696	170,975	164,864	172,317	1,342	178,996	6,679
Power Markets		10,422	14,156	12,741	14,156	-	14,752	595
Energy Efficiency & DER		79,986	88,794	84,091	88,800	6	91,020	2,220
Utility 2.0 Costs		3,123	19,237	6,296	21,427	2,190	18,910	(2,517)
Utility 2.0 Savings		-	(2,878)	(2,878)	(6,858)	(3,980)	(11,452)	(4,595)
Budget Amendment to carry over projects (Utility 2.0)	(a)	-	(12,630)	-	12,630	25,260	-	(12,630)
Total PSEG Long Island Operating Expenses		**572,671**	**581,889**	**580,453**	**621,251**	**39,362**	**617,820**	**(3,431)**
Total Non Cash OPEB Expense	(b)	48,100	43,955	43,943	50,421	6,466	50,667	246

Note: (a) The Utility 2.0 carry over amount is $12.6 million.
(b) Non Cash cost of Other Post Employment Benefits (OPEB) included in operating expenses above.

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

LIPA Operating Expenses

LIPA Operating Expenses are budgeted at $88.0 million in 2020 and projected at $89.6 million in 2021. The 2020 plan represents an increase of $4.3 million as compared with the Approved Budget for 2019. The increase is largely driven by higher pension contributions, additional IT related costs in support of a new Enterprise Resource Planning system and cybersecurity initiatives.

LIPA Operating Expenses include the PSEG Long Island management fee and costs related to LIPA staff and outside professional services.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

LIPA Operating Expenses
(Thousands of Dollars)

Description		2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
LIPA Operating Expenses								
PSEG Long Island Management Fee		$ 74,102	$ 75,584	$ 75,276	$ 76,781	$ 1,198	$ 78,317	$ 1,536
Capitalized Management Fee		(25,806)	(28,926)	(29,696)	(30,290)	(1,364)	(30,895)	(606)
Total Operating Management Fee		**48,295**	**46,658**	**45,580**	**46,492**	**(166)**	**47,422**	**930**
LIPA Operating Expenses								
Employee Salaries & Benefits Expenses	(a)	8,979	11,125	10,574	12,804	1,679	12,862	57
Insurance		1,694	2,904	2,824	2,990	86	3,090	100
Office Rent		1,800	1,886	1,837	1,937	51	1,985	48
Other		974	1,243	1,118	1,519	276	1,557	38
Total Labor, General and Administrative		**13,446**	**17,158**	**16,352**	**19,251**	**2,093**	**19,494**	**243**
Engineering		348	1,000	763	1,000	-	950	(50)
Legal		6,492	7,845	8,216	8,140	295	8,344	204
Financial Services and Cash Management		1,786	3,565	2,886	3,565	-	3,654	89
Accounting Services		1,853	2,815	2,783	2,785	(30)	2,853	68
Information Technology		1,306	2,759	2,936	4,460	1,700	4,571	111
Risk Management		363	335	312	340	5	348	9
Grant Administration		188	200	230	200	-	200	-
Outside Services		1,124	1,284	2,293	1,724	440	1,767	43
Total Professional Services		**13,462**	**19,803**	**20,422**	**22,213**	**2,410**	**22,688**	**474**
Total LIPA Operating Expenses		**$ 75,203**	**$ 83,619**	**$ 82,354**	**$ 87,956**	**$ 4,337**	**$ 89,603**	**$ 1,647**

Note: (a) Salary and benefit increase of $2.1 million in the 2019 budget as compared to the 2018 actual is due to unfilled positions in 2018 as well as an adjustment to a credit LIPA receives from the New York State Retirement Systems. Approximately $1.2 million of the increase in Salary and Benefits Expenses from 2019 to 2020 is attributable to a lower New York State Retirement System credit and OPEB Adjustment.

Utility Debt Securitization Authority
(A Component Unit of the Long Island Power Authority)
2020 Proposed and 2021 Projected Operating Budget

Utility Debt Securitization Authority

The LIPA Reform Act created the Utility Debt Securitization Authority (UDSA) to issue restructuring bonds in an aggregate amount not to exceed $4.5 billion to refinance a portion of LIPA's debt at a lower cost. The issuance of Restructuring Bonds allowed LIPA to retire a portion of its outstanding indebtedness and provide savings to the Authority's utility customers on a net present value basis.

LIPA's Board adopted Financing Order No. 1 on October 3, 2013, Financing Orders No. 2, No. 3 and No. 4 on June 26, 2015 and Financing Order No. 5 on September 29, 2017, each authorizing the UDSA to issue Restructuring Bonds. Each financing order authorized Restructuring Bonds secured by a separate restructuring charge created pursuant to that financing order. A total of $4.5 billion of UDSA Restructuring Bonds have been issued, with no statutory capacity remaining.

The operations of the UDSA are presented as a proprietary fund following the accrual basis of accounting in order to recognize the flow of economic resources. Revenue which is based on the UDSA's Restructuring Charge is set at an amount sufficient to recover the debt service payments and other cash operating expenses that the UDSA incurs in any given year.

The UDSA is considered a blended component unit of the Authority. The results of operations are consolidated with the Authority for financial reporting purposes.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

Utility Debt Securitization Authority
(Thousands of Dollars)

Description	2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
Revenues	**$ 339,072**	**$ 332,694**	**$ 331,848**	**$ 320,482**	**$ (12,213)**	**$ 369,132**	**$ 48,650**
Operating Expenses							
Uncollectible Accounts	**2,722**	**2,029**	**1,419**	**1,850**	**(180)**	**2,127**	**277**
General and Administrative Expense							
Ongoing Servicer Fee	2,250	2,250	2,250	2,250	-	2,250	-
Administration Fees	500	500	500	500	-	500	-
Bond Administration Fees	285	300	367	360	60	360	-
Directors and Officers Insurance	267	325	245	339	14	353	14
Accounting, Legal & Misc. Fees	192	150	154	205	55	205	-
Total General and Administrative Expense	**3,495**	**3,525**	**3,516**	**3,654**	**129**	**3,668**	**14**
Amortization of Restructuring Property	**173,696**	**174,401**	**173,574**	**170,316**	**(4,085)**	**221,742**	**51,426**
Interest Expense	200,495	196,248	196,248	192,041	(4,207)	187,643	(4,398)
Amortization of Premium	(46,136)	(44,779)	(44,779)	(45,706)	(927)	(45,119)	587
Amortization of Deferred Debt Issue Costs	2,518	2,361	2,274	2,175	(187)	2,035	(140)
Total Interest Expense	**156,876**	**153,831**	**153,744**	**148,510**	**(5,321)**	**144,558**	**(3,951)**
Reserve Fund Earnings	**2,952**	**1,164**	**3,884**	**4,011**	**2,846**	**4,011**	**-**
Excess of Revenues Over Expenses	**$ 5,235**	**$ 73**	**$ 3,480**	**$ 164**	**$ 91**	**$ 1,047**	**$ 883**

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

Projected Borrowing Requirements and Bank Facilities

LIPA expects to generate funds from operations of $207.9 million and $206.4 million in 2020 and 2021, respectively. The balance of capital expenditures are funded from the issuance of debt. In total, LIPA will fund $820.4 million of infrastructure investments in 2020 with new debt issuances of $562.5 million or approximately 68% debt financing and 32% grant and pay-as-you-go funding.

The percent of capital funded from debt will be above LIPA's target of 64% in 2020 and in 2021. This is due to the timing of two large projects: Western Nassau Transmission $174.5 million and Smart Meters $242.4 million. Excluding these projects, the percentage would be 60% in 2020 and 65% in 2021.

LIPA will continue to monitor its debt financing as a share of capital expenditures and adjust its financial policy, if warranted.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

Projected Borrowing Requirements and Bank Facilities
(Thousands of Dollars)

Description		2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year
Total Capital Expenditures	(a)	**$ 640,538**	**$ 811,946**	**$ 776,103**	**$ 820,363**	**$ 8,417**	**$ 702,147**	**$ (118,215)**
FEMA Contribution		(136,246)	(138,248)	(105,369)	(52,798)	85,450	(5,677)	47,122
Deduct Allowance for AFUDC	(b)	(5,874)	-	-	-	-	-	-
Net Capital Expenditures		**498,418**	**673,698**	**670,734**	**767,564**	**93,866**	**696,470**	**(71,094)**
Net Coverage Funding of Capital Expenditures		(233,570)	(190,797)	(200,541)	(207,891)	(17,095)	(206,418)	1,473
Projected Borrowing Requirements		**264,848**	**482,901**	**470,193**	**559,673**	**76,772**	**490,052**	**(69,621)**
Projected Cost of Issuance on Borrowing Requirements		**1,532**	**2,415**	**2,351**	**2,798**	**384**	**2,450**	**(348)**
Projected Borrowing Requirements with Cost of Issuance	(c)	**266,380**	**485,316**	**472,544**	**562,471**	**77,155**	**492,502**	**(69,969)**
Series 2014C - Floating Rate Notes		150,000	-	-	-	-	-	-
Series 2015C - Floating Rate Notes		149,000	-	-	-	-	-	-
Series 2015A&B - Floating Rate Notes		-	-	-	200,000	200,000	-	(200,000)
Series 2016A - Floating Rate Notes		-	-	-	-	-	175,000	175,000
General Revenue Notes, Series 2015		-	100,000	-	100,000	-	300,000	200,000
Revolving Credit Agreement		-	350,000	200,000	-	(350,000)	-	-
Bonds Subject to Mandatory Refinancing & Bank Facilities		**$ 299,000**	**$ 450,000**	**$ 200,000**	**$ 300,000**	**$ (150,000)**	**$ 475,000**	**$ 175,000**

Note: (a) This reflects a Budget Amendment to carry over specific projects in the amount of $52.3 million from 2019 to 2020.
(b) Due to a new accounting standard Allowance For Funds Used During Construction (AFUDC) was eliminated effective 2019.
(c) Excludes premium, if generated would reduce borrowing.

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

Capital Structure

The Capital Structure shows the ratio of debt and net position. LIPA expects to fund its capital investments utilizing a combination of grants, short and long-term debt financing and pay-as-you-go funding from revenue through 2021.

After funding $2.9 billion in infrastructure investments from 2018 through 2021, total projected debt outstanding for LIPA and UDSA will rise approximately $1.1 billion.

Lease Obligations increase by $1.155 billion, from $1.660 billion in 2019 to $2.815 billion in 2020. Lease Obligations reflect the net present value of lease contracts that are considered financing under the Governmental Accounting Standards Board (GASB). The Lease Obligation in 2020 has been revised to reflect a new GASB rule effective January 2020 called Statement No. 87 Leases, which revised the definition of a lease obligation. As a result, lease contracts that had previously not been capitalized will be reclassified as Long-term Lease Obligations starting 2020. For example, under the prior GASB rule, the contract with National Grid for the operation of on-island power generation did not meet the lease capitalization criteria.

Combined debt and capital lease balances across the period increase from $9.7 billion at the end of 2018 to $11.5 billion at the end of 2020. This is primarily due to GASB 87, as described above.

LIPA's Debt to Capital Ratio remains essentially flat at 90.7% in 2018 to 91.1% in 2020. The Debt to Asset Ratio declines from 101.4% in 2018 to 98.3% in 2020. Both ratios are expected to continue to decline over time.

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

Capital Structure
(Thousands of Dollars)

Description		2018 Actual	2019 Approved	2019 Projected	2020 Proposed	2020 Change from Prior Year	2021 Projected	2021 Change from Prior Year	
UDSA Current Debt									
UDSA Long Term Debt Outstanding		$ 4,139,593	$ 4,008,832	$ 4,008,832	$ 3,882,775	$ (126,057)	$ 3,703,356	$ (179,419)	
LIPA Current Debt									
LIPA Long Term Debt Outstanding		3,167,465	3,557,872	3,573,159	3,979,143	421,271	4,444,250	465,108	
LIPA Short Term Debt Outstanding	(a)	234,500	334,500	334,500	305,900	(28,600)	321,600	15,700	
Total LIPA Debt Outstanding		**3,401,965**	**3,892,372**	**3,907,659**	**4,285,043**	**392,671**	**4,765,850**	**480,808**	
LIPA Long Term Debt To Be Issued	(b)	430,000	485,316	472,544	562,471	77,155	492,502	(69,969)	
Projected UDSA Debt		4,139,593	4,008,832	4,008,832	3,882,775	(126,057)	3,703,356	(179,419)	
Projected LIPA Debt		3,831,965	4,377,688	4,380,203	4,847,514	469,826	5,258,353	410,839	
Total Projected Debt		**7,971,558**	**8,386,520**	**8,389,035**	**8,730,289**	**343,769**	**8,961,709**	**231,420**	
Lease Obligations	(c)	1,702,801	1,660,829	1,660,829	2,815,001	1,154,172	2,480,397	(334,604)	
Total Debt and Lease Obligations		**9,674,359**	**10,047,348**	**10,049,864**	**11,545,290**	**1,497,941**	**11,442,106**	**(103,184)**	A
Excess of Revenues Over Expenses		**22,663**	**(4,424)**	**1,036**	**9,859**	**14,283**	**39,973**	**30,114**	
Net Position Before Deferred Grants		494,850	469,885	495,886	505,745	35,860	545,719	39,973	
Deferred Grants	(d)	498,322	648,095	491,958	634,999	(13,097)	618,783	(16,216)	
Net Position		**$ 993,172**	**$ 1,117,980**	**$ 987,844**	**$ 1,140,744**	**$ 22,763**	**$ 1,164,501**	**$ 23,758**	B
Debt to Capital Ratio	(e)	**90.7%**	**90.0%**	**91.1%**	**91.0%**	**1.0%**	**90.8%**	**-0.2%**	C=A/(A+B)
Debt to Asset Ratio	(e)	**101.4%**	**98.2%**	**98.7%**	**97.2%**	**-1.0%**	**95.9%**	**-1.3%**	

Note: (a) LIPA may need to use additional short-term debt in 2020 in anticipation of FEMA reimbursement for Storm Hardening projects.
(b) Long-term debt to be issued reflects projected borrowing requirements to fund Capital Expenditures excluding carry over proceeds from the prior year and bond premium.
(c) The 2020 Long-term Lease Obligation amounts and the associated Coverage calculation reflect GASB No. 87 (Leases) implementation effective Jan 2020. GASB 87 revised the definition of a lease obligation. As a result, lease contracts that had previously not been capitalized will be reclassified as Long-term Lease Obligations starting 2020.
(d) Deferred Grants are funds received from FEMA for a $730.0 million storm hardening program. LIPA has deferred recognition of the grant income to align the grant receipts with the associated depreciation expense of the asset funded through this grant.
(e) Note: 2019 Debt to Asset Ratio has been restated. 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.

2020 Proposed and 2021 Projected Capital Expenditures
(Thousands of Dollars)

	Location	Investment Description	In Service Date	Total Project Cost (a)	Project To Date Expenditures through 12/31/19 (b)	Proposed 2020	Projected 2021
Transmission & Distribution							
Regulatory Driven Projects							
	East Garden City	Install new circuit to Valley Stream (N-1-1)	Dec-20	174,536	42,458	101,135	30,943
	Syosset	Install new circuit to Shore road to support future supply resources	May-26	268,000	-	300	2,055
Total Regulatory Driven Projects				**$ 442,536**	**$ 42,458**	**$ 101,435**	**$ 32,998**
Load Growth Projects							
	Sterling	Install new distribution circuit	Dec-19	5,069	3,756	1,313	-
	Riverhead	Install new 13kV circuit	Dec-19	970	799	172	-
	Malverne	Reconfigure distribution circuits to Valley Stream	Dec-19	2,856	2,142	714	-
	MacArthur	Install 27 MVAR capacitor bank	Dec-19	2,884	2,406	478	-
	Flowerfield	Upgrade 69/13 kV substation & distribution circuit	Jun-20	19,205	4,893	14,311 *	-
	Ronkonkoma	Replace Bank #1 switchgear	Jun-20	3,104	1,037	2,067	-
	Massapequa	Reconductor 13kV circuit	Jun-20	3,585	2,675	910	-
	Belmont	Construct new 33/13kV substation	Oct-20	38,534	19,996	12,817	5,721
	Hempstead	Convert substation to 69/13 kV	Oct-20	36,680	32,680	4,000 *	-
	Rockaway Beach	Convert substation from 4kV to 13kV	Dec-20	4,205	-	2,617	1,588
	Kings Highway	Construct new 138/13 kV substation	Dec-20	55,116	43,992	11,124	-
	Far Rockaway	Upgrade 14 MVA transformers to 33 MVA transformers	Dec-20	7,632	511	2,669	4,452
	North Hills	Reconductor of 13kV distribution circuit	Jun-21	1,818	123	650	1,045
	Roslyn	Install new 138/13 kV transformer and switchgear	Jun-21	19,699	4,138	6,390	9,171
	Ronkonkoma	Install new 138/69 kV transformer and switchgear	Jun-21	17,764	203	6,928	10,633
	Wildwood	Upgrade 69 kV circuit to Riverhead to 138 kV	Jun-21	11,180	955	3,212	7,014
	Riverhead	Install new 138 kV circuit to Canal	Jun-21	94,727	4,485	58,633 *	31,609
	South Fork	Upgrade transmission lines from 23 kV to 33 kV	Jun-21	1,119	66	175	540
	Southampton	Install new 13kV distribution circuit	Jun-21	5,708	-	2,045	3,663
	Far Rockaway	Install two new distribution circuits	Dec-21	7,736	-	4,116	3,620
	Ocean Beach	Install new 4kV circuit	Jun-22	7,420	200	400	2,000
	Sayville	Replace 2 existing 14MVA transformers with 33 MVA transformers	Jun-22	12,850	-	500	1,075
	Round Swamp	Construct new 69/13kV substation	Jun-22	20,486	4,236	445 *	7,018
	Brightwaters	Install new transformer and switchgear	Jun-22	30,000	-	-	1,366
	Ruland Road	Install new 69 kV circuit to Plainview	Jun-22	58,420	5,055	500 *	39,169
	Culloden Point	Upgrade substation from 23 kV to 33 kV	Jun-22	6,941	224	1,675 *	2,141
	Lindbergh	Construct new 69/13kV substation	Jun-22	63,273	40,679	9,540	600
	East Hampton	Upgrade substation from 23 kV to 33 kV	Jun-22	5,074	144	1,490 *	476
	Buell	Upgrade substation from 23 kV to 33 kV	Jun-22	11,625	147	1,710 *	1,630
	Amagansett	Upgrade substation from 23 kV to 33 kV	Jun-22	17,090	1,608	8,915 *	2,110
	New South Road	Expand 69/13kV substation & distribution circuits	Jun-22	17,903	4,128	2,701 *	5,873
	Navy Road	Construct new 23/13 kV substation (Montauk substation replacement)	Dec-22	33,377	9,538	13,042	5,112
	Bridgehampton	Install new 69kv circuit to Buell	Jun-23	46,863	899	2,876 *	222
	Peconic	Upgrade existing distribution transformers	Jun-23	7,500	-	350	3,275
	Hero	Upgrade substation from 23 kV to 33 kV	Jun-23	694	46	90	77
	Massapequa	Construct new 69/13kV substation	Jun-23	29,786	2,564	1,435	3,651
	Hither Hills	Upgrade substation from 23 kV to 33 kV	Jun-23	15,279	120	500 *	2,500
	Berry Street	Reconductor 69kV line	Jun-24	12,930	-	250	678
	Various	Distribution facilities to serve new business		-	34,308	33,762	40,476
	Various	Residential underground development to serve new business		-	11,000	10,000	12,000
Total Load Growth Projects				**$ 737,101**	**$ 239,752**	**$ 225,520**	**$ 210,505**

*Includes carry over from 2019. See Carry Over table for details
(a) Project to date expenditures includes projects that began prior to 2019

2020 Proposed and 2021 Projected Capital Expenditures
(Thousands of Dollars)

	Location	Investment Description	In Service Date	Total Project Cost (a)	Project To Date Expenditures through 12/31/19 (b)	Proposed 2020	Projected 2021
Reliability Projects							
	Various	Radio remote monitoring & configuration	Mar-20	455	145	310	-
	Fire Island Pines	Replace metal clad switchgear	Jun-20	1,716	245	1,471	-
	Various	Telecom alarm monitoring system	Dec-20	310	-	310 *	-
	Hicksville	Purchase two mobile units	Dec-20	3,250	147	150 *	2,953
	Various	Telecom communication cabinets upgrade	Dec-20	465	-	465 *	-
	Fire Island Pines	Install new 13 kV circuit to Davis Park	Dec-20	6,968	2,355	4,613	-
	Fire Island	New circuit	Jun-21	8,642	250	250	8,142
	Various	Vacuum truck digging and excavation	Dec-21	2,068	1,848	220	-
	West Hempstead	Replace two 56 MVA banks and 4 line ups of switchgear	Dec-22	11,550	-	-	329
	East Garden City	Switchgear replacement	Dec-22	14,200	-	250	5,600
	Northport	Replace radiators for banks 1 to 4	Dec-22	4,143	851	851	851
	Fire Island Pines	Install new 23 kV circuit to Ocean Beach	Jun-23	51,135	1,500	500 *	9,350
	Various	Substation rack replacements		-	-	100	1,500
	Various	Distribution circuit improvement program (CIP)		-	18,400	10,400	19,000
	Various	Distribution breaker replacements		-	1,245	748	748
	Various	Underground distribution cable upgrades		-	13,000	12,200	15,000
	Various	Distribution protection and controls upgrades		-	486	706	-
	Various	Mechanical relay replacements		-	1,171	1,245	-
	Various	Pipe type cable low pressure trip		-	1,519	1,366	1,366
	Various	Pipe type cable terminal pressure monitoring upgrade program		-	1,446	460	520
	Various	Protection lease line upgrade		-	1,400	1,541	1,600
	Various	Replacement of aging and non-functional Joslyn type ASUs		-	4,242	1,675	-
	Various	Remote terminal unit replacement/upgrades		-	1,434	1,760	2,260
	Various	Substation battery replacements		-	532	482	482
	Various	Transmission protection and controls upgrades		-	1,045	1,100	2,340
	Various	Substation control power transformer replacements		-	178	224	262
	Various	Transfer trip/SCADA communication network upgrades		-	-	200	-
	Various	Transformer major component replacements		-	504	720	1,750
	Various	Transformer monitoring		-	959	-	950
	Various	Transmission breaker replacements		-	4,207	1,100	2,500
	Various	Transmission cables cathodic replacements		-	281	374	374
	Various	Update substation distribution breaker racking system		-	1,000	1,050	870
	Various	Substation lightning & grounding upgrades		-	298	350	790
	Various	Upgrade supervisory controllers for Capacitor Banks		-	491	1,213	3,300
	Various	Transformer load tap changer replacements		-	486	410	-
	Various	Cap and pin insulator replacements		-	283	500	500
	Various	Transmission pipe type cable pump house upgrade/replacement		-	860	860	860
	Various	Upgrade corrosion protection system for pipe type cable		-	2,000	2,166	2,734
	Various	Telecom distribution automation repeater upgrades		-	-	325	325
	Various	Accidents		-	11,692	9,696	10,317
	Various	Distribution system improvements - services, branch lines & customer requests		-	30,712	24,454	29,566
	Various	Distribution pole reinforcement		-	4,125	4,000	4,125
	Various	Distribution pole replacements		-	12,867	13,194	14,903
	Various	Substation equipment failures		-	8,800	7,425	10,000
	Various	Distribution transformers - add/replace		-	18,941	17,128	18,911
	Various	Distribution multiple customer outages (MCO)		-	8,419	6,795	8,463
	Various	Public works		-	7,622	7,992	9,293
	Various	Transmission pole replacements		-	1,058	1,866	1,960
	Various	Residential underground cables		-	7,747	6,400	10,904
	Various	System spares		-	8,030	9,769	4,053
	Various	Transmission system failures		-	1,396	1,702	2,310
	Various	Two Way Radio new fleet equipment		-	-	100	150
	Various	Two Way Radio communications equipment infrastructure		-	-	-	200
	Various	Repeater infrastructure replacement/upgrades		-	-	-	150
Total Reliability Projects				**$ 104,901**	**$ 186,219**	**$ 163,186**	**$ 212,563**
Storm Hardening Projects							
	Various	Storm hardening distribution circuits		-	1,599	37,000	50,000
Total Reliability Projects				**$ -**	**$ 1,599**	**$ 37,000**	**$ 50,000**

*Includes carry over from 2019. See Carry Over table for details
(a) Project to date expenditures includes projects that began prior to 2019
(b) Expenditures to date are based on actual spend as of Aug 2019 plus forecasted spend from Sep to Dec 2019

LIPA
Long Island Power Authority

2020 Proposed and 2021 Projected Capital Expenditures
(Thousands of Dollars)

	Location	Investment Description	In Service Date	Total Project Cost (a)	Project To Date Expenditures through 12/31/19 (b)	Proposed 2020	Projected 2021
Tools, Equipment, Other, Economic, Salvage							
	Various	Two way radio system upgrade	Mar-20	44,849	36,047	8,802 *	-
	Hicksville	Electrical shop building - door replacement	Jun-20	813	63	750	-
	East Hampton	Underground transmission in Village	Jun-20	6,734	1,003	5,731	-
	Eastport	Overhead to underground conversion to Sunrise Highway	Jun-20	16,500	3,110	13,390	-
	Hicksville	Transmission operations control room facility replacement	Dec-24	78,175	150	500	3,200
	TBD	Training center		-	-	100	1,500
	Various	LIRR program upgrade		-	1,633	1,000	1,000
	Various	Substation distribution circuit relay upgrade		-	542	500	425
	Various	Substation security upgrade		-	2,790	500	9,950
	Various	Long Island Railroad right of way transmission pole replacement program (Phase IV)		-	-	2,409	-
	Various	Eye wash station additions		-	-	100	-
	Various	Capital tools		-	2,999	1,200	3,200
	Various	Transfer distribution facilities to new telephone poles		-	5,913	5,142	4,947
	Various	Salvage		-	(537)	(835)	(700)
	Hicksville	Transmission control room - map board MUX		-	175	175	-
Total Tools, Equipment, Other, Economic, Salvage				**$ 147,071**	**$ 53,889**	**$ 39,464**	**$ 23,522**
Grand Total Transmission & Distribution				**$ 1,431,609**	**$ 523,917**	**$ 566,605**	**$ 529,588**

*Includes carry over from 2019. See Carry Over table for details
(a) Project to date expenditures includes projects that began prior to 2019

2020 Proposed and 2021 Projected Capital Expenditures
(Thousands of Dollars)

Information Technology Projects by Business Unit	Investment Description	In Service Date	Total Project Cost (a)	Project To Date Expenditures through 12/31/19 (b)	Proposed 2020	Projected 2021
Transmission & Distribution						
	DSCADA	2019	7,483	7,333	150 *	-
	EMS upgrade	2019	6,373	6,023	350 *	-
	CGI CAD upgrade	2020	20,324	17,332	2,992	-
	Control room recorder upgrade	2021	1,600	-	600	1,000
	ADMS continous improvement (OMS-DMS)	2023	18,400	-	1,000	1,300
	DRSS	2020	200	-	200 *	-
	CYME interfaces and connectivity	2020	700	350	350	-
	Projects & Construction capital management tool	2021	3,500	-	-	500
	Transformer monitoring and data collection in T&D - transformers	2020	3,120	2,638	482	-
	Asset health system enhacements (IBM Platform)	Program	-	-	549	500
	Materials & Logistics SAP enhancements	2020	557	327	230	-
	Mobile timesheets	2021	5,300	-	3,300	2,000
	GIS field smart designer	2021	7,800	-	-	3,000
	GIS upgrade	2023	6,350	-	3,000	2,500
	Work management continuous improvement (SAP, CAD, SF)	Program	-	-	2,600	2,000
	Geospatial system improvements	Program	-	-	-	500
	Storm damage assessment & repair mobile app	2019	2,108	1,858	250 *	-
	T&D mobile app continuous improvement	Program	-	-	800	1,000
	Drone vegetation management and LIRR inspections	Program	-	-	-	500
	T&D virtual/augmented reality robotic process automation	Program	-	-	-	500
	Robotics	Program	-	-	250	1,700
Total Transmission & Distribution			**$ 83,815**	**$ 35,861**	**$ 17,103**	**$ 17,000**
Customer Service						
	CRM modernization - Salesforce product backlog	Program	-	-	5,350 *	2,000
	Call Center as a Solution (CaaS) product backlog	Program	-	-	3,750	1,000
	Robotic Process Automation product backlog	Program	-	-	250	250
	CAS product backlog	Program	-	-	650	1,000
	AMI system product backlog	Program	-	-	1,500	2,000
	Rate change product backlog	Program	-	-	750	1,000
	Payment processing backlog	Program	-	-	1,900	2,000
	Mobile app product backlog	Program	-	-	500	500
	Voice Assistant product backlog	Program	-	-	500	500
	myAccount product backlog	Program	-	-	1,400	1,498
	Kubra enhancement product backlog	Program	-	-	750	600
Total Customer Service			**$ -**	**$ -**	**$ 17,300**	**$ 12,348**
Information Technology						
	Network F5 load balancers life cycle program	Program	-	-	1,000	-
	Network (LAN/WAN) infrastructure life cycle program updates	Program	-	-	580	2,225
	Active Directory Windows 2008 upgrade	2020	600		600 *	-
	AWS Storage	2020	800	-	800 *	-
	Network access control security	2020	-		500	-
	Cybersecurity continous improvement	Program	-	-	500	1,000
	Middleware upgrade/replacement	2020	3,500	781	2,000	-
	Mulesoft platform continuous improvement	Program	-	-	-	1,000
	Energy Efficiency program analytics	Program	-	-	750	500
	Customer usage patterns analytics	Program	-	-	500	500
	Grid optimization analytics	Program	-	-	1,250	1,500
Total Information Technology			**$ 4,900**	**$ 781**	**$ 8,480**	**$ 6,725**
Grand Total Information Technology Projects			**$ 88,715**	**$ 36,642**	**$ 42,883**	**$ 36,073**

*Includes carry over from 2019. See Carry Over table for details
(a) Project to date expenditures includes projects that began prior to 2019
(b) Expenditures to date are based on actual spend as of Aug 2019 plus forecasted spend from Sep to Dec 2019

2020 Approved and 2021 Projected Capital Expenditures
(Thousands of Dollars)

Utility 2.0	Investment Description	Total Project Cost (a)	Project To Date Expenditures through 12/31/19 (b)	Proposed 2020	Projected 2021
2018 Utility 2.0 Filing					
Empowering Customers					
	Core AMI: Operational	196,286	50,061	47,788	48,735
	Core AMI: PMO + Change Management	8,000	2,000	2,000	2,000
	Enabled AMI: Revenue Protection	1,050	1,050	-	-
	Enabled AMI: Customer Experience	9,300	3,300	3,000 *	1,500
	Enabled AMI: Outage Management	1,015	950	65 *	-
	Enabled AMI: Rate Modernization	16,000	9,500	6,500 *	-
	Enabled AMI: Analytics	7,600	4,100	1,500 *	1,000
	Accelerated Meters to 2018	-	4,619	-	-
	Accelerated Meters to 2019	-	4,539	-	-
	Carryover	(9,115)	(9,115)	-	-
Total Empowering Customers		**$ 230,136**	**$ 71,004**	**$ 60,853**	**$ 53,235**
Evolving to the DSP					
	SGIP Interconnection	2,270	-	2,270	-
	Locational Value Study	1,150	1,000	150 *	-
	Grid Storage	4,914	-	-	2,457
Total Evolving to the DSP		8,334	**$ 1,000**	**$ 2,420**	**$ 2,457**
Total 2018 Utility 2.0 Filing Projects	**$ -**	**$ 238,469**	**$ 72,004**	**$ 63,273**	**$ 55,692**
2019 Utility 2.0 Filing					
New Initatives					
	Next Gen Insights Pilot	706	-	706	-
	Energy Concierge Pilot	1,589	-	1,559	30
	Electric School Bus V2G Pilot	84	-	84	-
	Hosting Capacity Maps	1,587	-	1,587	-
Total New Initiatives		**$ 3,966**	**$ -**	**$ 3,936**	**$ 30**
Total 2019 Utility 2.0 Filing Projects	**$ -**	**$ 3,966**	**$ -**	**$ 3,936**	**$ 30**
Total Utility 2.0 Projects		**$ 242,435**	**$ 72,004**	**$ 67,208**	**$ 55,722**

*Includes carry over from 2019. See Carry Over table for details.

2020 Approved and 2021 Projected Capital Expenditures
(Thousands of Dollars)

Business Units	Investment Description	In Service Date	Total Project Cost (a)	Project To Date Expenditures through 12/31/19 (b)	Proposed 2020	Projected 2021
Customer Service						
	Purchase Electric Meters	Blanket	-	4,665	6,966	7,027
	Install/Remove Meters	Blanket	-	6,643	3,793	3,933
	Tools/Equipment	Program	-	397	500	500
	Dusk to Dawn		18,100	3,855	5,422	5,822
	Jones Beach Nature Center		9,000	3,494	5,500	-
Total Customer Service Projects			**$ 27,100**	**$ 19,054**	**$ 22,181**	**$ 17,282**
Facilities						
	Facilities Services	Program	-	4,570	7,837 *	4,228
	Hicksville Vehicle Canopy		5,000	-	5,000	-
	Shoreham Facility Upgrades			2,467	190	1,545
Total Facilities Projects			**$ 5,000**	**$ 7,037**	**$ 13,027**	**$ 5,773**
Fleet						
	Fleet	Program	-	7,445	8,875	9,719
Total Fleet Projects	**Total Fleet Projects**		**$ -**	**$ 7,445**	**$ 8,875**	**$ 9,719**
Grand Total PSEG Long Island Projects with Carryover					**$ 720,779**	**$ 654,156**
FEMA Storm Hardening					**$ 58,665**	**$ 6,308**
Storm Capitalization					**$ 5,934**	**$ 6,146**
PSEG Long Island and FEMA Related					**$ 785,378**	**$ 666,609**

*Includes carry over from 2019. See Carry Over table for details
(a) Project to date expenditures includes projects that began prior to 2019
(b) Expenditures to date are based on actual spend as of Aug 2019 plus forecasted spend from Sep to Dec 2019

2019 Carry Over Costs into 2020
(Thousands of Dollars)

	Location	Investment Description	2020 Carry Over Amounts
Transmission & Distribution			
Load Growth Projects			
	Amagansett	Upgrade substation from 23 kV to 33 kV	4,279
	Buell	Upgrade substation from 23 kV to 33 kV	1,414
	Culloden Point	Upgrade substation from 23 kV to 33 kV	1,233
	East Hampton	Upgrade substation from 23 kV to 33 kV	950
	Hither Hills	Upgrade substation from 23 kV to 33 kV	1,771
	Ruland Road	Install new 69 kV circuit to Plainview	14,128
	Round Swamp	Establish new 69/13kV substation	4,667
	Riverhead	Install new 138 kV circuit to Canal	1,007
	Bridgehampton	Install new 69kv circuit to Buell	2,304
	New South Road	Expand 69/13kV substation & distribution cables	895
	Flowerfield	Upgrade 69/13 kV substation & distribution feeder	3,095
	Hempstead	Convert station to 69/13 kV	1,835
Total Load Growth Projects			**$ 37,578**
Reliability Projects			
	Hicksville	Purchase two mobile units	2,231
	Fire Island Pines	Install new 23 kV circuit to Ocean Beach	1,908
	Various	Telecom communication cabinets upgrade	465
	Various	Telecom alarm monitoring system	200
Total Reliability Projects			**$ 4,804**
Other Projects			
	Various	Two way radio system upgrade	1,921
Total Other Projects			**$ 1,921**
Total Transmission & Distribution			**$ 44,303**
Information Technology			
IT-Transmission & Distribution			
		DSCADA	150
		EMS upgrade	350
		DRSS	200
		Storm damage assessment & repair mobile app	250
Total IT-Transmission & Distribution			**$ 950**
IT-Customer Service			
		CRM modernization - Salesforce product backlog	2,350
Total IT-Customer Service			**$ 2,350**
IT-Information Technology			
		Active Directory Windows 2008 upgrade	600
		AWS Storage	800
Total IT-Information Technology			**$ 1,400**
Total Information Technology			**$ 4,700**

2019 Carry Over Costs into 2020
(Thousands of Dollars)

	Location	Investment Description	2020 Carry Over Amounts
Business Services			
Facilities			
	Hicksville	Space Renovation	2,215
	Brentwood	Customer Office Relocation and Development	480
	Riverhead	Customer Office Relocation and Development	430
	Roslyn	Customer Office Redevelopment	179
Total Business Services			**$ 3,304**
Subtotal before Utility 2.0			**$ 52,307**
Utility 2.0			
Empowering Customers			
		Enabled AMI: Customer Experience	1,500
		Enabled AMI: Outage Management	65
		Enabled AMI: Rate Modernization	6,500
		Enabled AMI: Analytics	900
Total Empowering Customers			**$ 8,965**
Evolving to the DSP			
		Locational Value Study	150
Total Evolving the DSP			**$ 150**
Total Utility 2.0			**$ 9,115**
Total Project Carry Over			**$ 61,422**

Long Island Power Authority
2020 Proposed and 2021 Projected Budgets

(This page intentionally left blank)

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

LIPA's Relationship with New York State Government

LIPA is a component unit of New York State. LIPA 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 system of the Long Island Lighting Company as a wholly owned subsidiary of the Authority. LIPA 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 LIPA in providing electric service to its customers, LIPA entered into operating agreements to provide operating personnel and a significant portion of the power supply resources necessary to provide electric service.

Under LIPA's business model, essentially all costs of operating and maintaining the Authority's T&D system incurred by PSEG Long Island, the LIPA's Service Provider, are passed through to and paid for by LIPA.

Long Island Power Authority
2020 Proposed and 2021 Projected Operating and Capital Budgets

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 its 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.

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 solicit 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, 2019 through December 31, 2021 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 18, 2019

www.lipower.org