



# **Response to Public Comments on Scope of Work for LIPA's 2022 Integrated Resource Plan**

September 22, 2021

# INTEGRATED RESOURCE PLAN

## In June, LIPA launched the 2022 Integrated Resource Plan (IRP)

- Study Period of 2022-2040
- Assess LIPA's loads, generation resources and transmission assets
- Deliver an Action Plan for meeting future needs
- Key Driver: Climate Leadership and Community Protection Act (CLCPA)

### Zero-Emission Electric Sector Targets



RENEWABLES:  
**70% by 2030**



OFFSHORE WIND:  
**9,000 MW by 2035**  
(Current level: 0 MW)



DISTRIBUTED SOLAR ENERGY:  
**6,000 MW by 2025**  
(Current level: 1,987 MW)



ENERGY EFFICIENCY:  
**185 trillion BTU  
Reduction by 2025**



BATTERY STORAGE:  
**3,000 MW by 2030**  
(Current level: 82.5 MW)

# INTEGRATED RESOURCE PLAN PROCESS

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- The objectives, key challenges, and timeline for the IRP planning study were presented to the Board at its June 23, 2021, meeting
- LIPA held a 30-day public comment period and received eighteen (18) submissions from the public
- Many of the comments received did not specifically reference the IRP Scope of Work (SoW) but were more general in nature and raised topics and issues related to transitioning to a clean energy grid

# MAIN TOPICS DISCUSSED IN PUBLIC COMMENTS ON THE IRP SOW

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- Views on the clean energy goals in the CLCPA
- Concerns about the bill impact of transitioning to clean energy
- Support for clean energy and expediting the transition
- Information on benefits of energy storage and other advanced technologies
- Support for more distributed renewables and customer energy efficiency
- Need for broad and robust public engagement process
- Support engaging with and benefitting disadvantaged & low-income communities
- Support for public ownership of energy assets, including generation
- Requests for additional information

# PUBLIC COMMENTS – COST IMPACT ON CUSTOMER BILLS

**Comment:** Concerned about the impact of the transition to clean energy on their electricity bills

## **LIPA Response:**

- Maintaining affordability of electricity for customers is a key IRP objective
- The IRP will compare different resource options based on their projected cost and performance and select the preferred portfolio of resources (including amounts, types and locations) that best meet reliability, environmental and affordability criteria
- The actual cost to consumers of specific resources and associated rate impacts will be determined at the time that LIPA conducts procurements or takes other actions to fulfill the needs identified in the IRP

# PUBLIC COMMENTS – PUBLIC ENGAGEMENT

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**Comment:** Encourage LIPA to have a broad, robust public engagement process as it develops the IRP

**LIPA Response:**

- LIPA held a 30-day public comment period on its Draft 2022 IRP SoW
- LIPA looks forward to further public engagement and intends to provide additional opportunity for public input later in the IRP process when study results are available
- The public will also have opportunities to engage on local projects that may stem from the IRP during the permitting processes

# PUBLIC COMMENTS – IMPACT ON DISADVANTAGED COMMUNITIES

**Comment:** Encourage engagement with and benefits to disadvantaged and low-income communities

## **LIPA Response:**

- The CLCPA requires that a minimum of 35% of the benefits from investments in transitioning to clean energy and energy efficiency be realized by disadvantaged communities
- The Climate Justice Working Group (CJWG), created by the CLCPA, will identify disadvantaged communities in New York and develop the criteria to assess the impacts of transitioning to a clean energy system
- The CJWG is conducting an extensive public engagement process to develop its guidance on disadvantaged communities
- LIPA intends to incorporate the CJWG's guidance into its IRP process as it becomes available

# PUBLIC COMMENTS – ROLE OF ENERGY STORAGE

**Comment: Critical role of energy storage in transitioning to a 100% clean energy grid and need to consider multiple benefits of storage**

## **LIPA Response:**

- LIPA intends to meet state mandates for the deployment of energy storage resources but will not artificially limit the amount of energy storage that might be cost effectively and reliably deployed
- IRP recommendations regarding potential resource portfolios will balance the multiple considerations (e.g., cost, resiliency, peak load reduction, and transmission and distribution investment deferral) that attend introducing or expanding any resource technology in LIPA's portfolio
- Pending the IRP, LIPA is currently conducting a bulk energy storage procurement and will evaluate the cost and benefits of specific developer proposals



# PUBLIC COMMENTS – ROLE OF OTHER ADVANCED TECHNOLOGIES

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**Comment:** Encourage consideration of a broad range of potential technologies, such as community wind and solar, tidal and wave energy, and additional energy efficiency

## **LIPA Response:**

- The IRP will consider all viable, clean energy technologies, including those suggested in public comments
- Outside experts from the Brattle Group, an independent consulting firm, Stony Brook University and Brookhaven Science Associates will provide guidance on incorporating emerging clean energy technologies in the planning study

# PUBLIC COMMENTS – SOLAR TARGETS

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**Comment:** Request LIPA to review its existing CLCPA-driven solar targets to align with the Solar Roadmap developed by the Nature Conservancy

## **LIPA Response:**

- The opportunity to develop additional solar resources, such as described in the Solar Roadmap, will be considered among the resource options to be evaluated in the IRP
- If the IRP identifies opportunities for LIPA to exceed its share of CLCPA goals to the benefit of our customers, we will certainly reflect that finding in our recommended power supply plan

# PUBLIC COMMENTS – PUBLIC FINANCING

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**Comment:** Encourage use of LIPA's tax-exempt financing for resource additions to reduce costs to customers

**LIPA Response:**

- LIPA recognizes that non-profit and tax-exempt financing, where permissible and available, can reduce the cost of resource investments
- In the course of procuring specific resources to meet the needs determined by the IRP, LIPA will consider ownership and financing options that could benefit customers
- As an example, LIPA's ongoing bulk energy storage RFP will enable LIPA ownership of energy storage projects to reduce cost for customers

# NEXT STEPS

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- IRP process will be a 15-month effort with completion around August 2022
- Additional opportunities for public input will be provided as study results are available
- The IRP will result in an action plan for the period of 2022 to 2030 that will recommend key actions and investments needed to meet state goals, while continuing to meet the electricity needs of LIPA's customers reliably and cost-effectively

## **FOR CONSIDERATION**

September 22, 2021

**TO:** The Board of Trustees

**FROM:** Thomas Falcone

**SUBJECT:** Discussion of the Integrated Resource Plan Public Comments and Consideration of Acknowledgement that the Scope of Work is Consistent with the Board's Objectives

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### **Requested Action**

The Board of Trustees (the “Board”) of the Long Island Power Authority (“LIPA”) is requested to adopt a resolution stating that the scope of work (“SoW”) for the 2022 Integrated Resource Plan (“IRP”), as revised following public comments, reflects the Board’s objectives, as established in the Board Policy on Resource Planning and Clean Energy (the “Policy”) and authorizing LIPA’s Chief Executive Officer (“CEO”) to make any necessary changes to the SoW to meet the Board’s objectives, subject to informing the Board of any material changes. This memorandum also summarizes the public comments received on the IRP SoW.

### **Background**

Utilities use IRPs to identify long-term resource needs and to assess available options for meeting those needs. Notably, IRPs were introduced in the 1970s to integrate the evaluation of the major categories of options in resource planning: demand-side management, generation, and transmission. LIPA’s last IRP was issued in 2017.

In July 2019, New York State enacted one of the most aggressive clean energy and greenhouse gas reduction laws in the country, the Climate Leadership and Community Protection Act (“CLCPA”), which includes, among other goals, a requirement that 70% of electricity consumed in the state by 2030 be produced from renewable energy; the development of 6,000 MW of distributed solar by 2025, 3,000 MW of energy storage by 2030, and 9,000 MW of offshore wind by 2035; and 100% zero-carbon electricity generation by 2040. CLCPA requirements will have a significant impact on the supply and demand of electricity in Long Island and in the rest of New York State.

In June 2021, PSEG Long Island, supported by the Brattle Group, an industry-leading consulting firm, commenced the development of an IRP for LIPA’s service territory. LIPA Staff presented the objectives, key challenges, and timeline for the IRP to the Board at its June 23, 2021 meeting. The 2022 IRP process will be a 15-month effort with completion around August 2022. LIPA and PSEG Long Island staff also plan to collaborate with Stony Brook University and Brookhaven Science Associates, LLC on IRP development, with a focus on identifying emerging, viable, advanced clean energy technologies.

## **Scope of the 2022 IRP**

LIPA's 2022 IRP will seek to examine the impact of CLCPA requirements and other potential electricity market changes during the study period of 2022 through 2040. As described further in the SoW (see, **Exhibit "C"**), the IRP will look at three to four scenarios with a limited number of sensitivities around those scenarios. The IRP will result in an action plan for the period of 2022 to 2030 that will recommend key actions and investments needed to meet state goals while continuing to meet the electricity needs of LIPA customers reliably and cost-effectively.

In particular, the 2022 IRP will consider the following challenges:

- Most of LIPA's contracts with existing fossil-fired plants are set to expire in the next five to ten years and will need to be replaced with clean energy resources by 2040.
- Integration of offshore wind, solar, and energy storage resources will necessitate upgrades to the on-Island transmission grid.
- New York State CLCPA goals and New York Independent System Operator market reforms are changing the rules of the electric business.
- Transitioning Long Island to a zero-emissions reliable power grid by 2040.
- Meeting growth in electric demand from electric vehicles and building electrification.

## **Summary of Public Comments on the Draft 2022 IRP SoW**

In an effort to initiate public engagement in IRP development, LIPA held a 30-day public comment period on the [SoW](#) starting on June 23, 2021. LIPA and PSEG Long Island posted the Draft 2022 IRP SoW on their websites and accepted comments via a web form and email. A list of all the public comments received during the public comments period, along with LIPA's responses, are attached to this memo (see **Exhibit "B"**).

LIPA received 18 submissions from the public. Six out of the 18 comments were submitted by individuals affiliated with organizations in various fields, including environmental, trade, and labor advocacy, as well as in academia and consulting. The balance of the submittals did not indicate any institutional, professional, or political affiliation.

Many of the comments received were general in nature and raised topics and issues related to transitioning to a clean energy grid. The issues and topics raised in the public comments included:

- Concerns about the cost impact on customers' electric bills. In this regard, some commenters urged that the IRP should consider direct LIPA ownership of generating resources.
- The need for LIPA to have a broad and robust public engagement process as it develops its plans to transition to a clean energy grid.
- Consideration of the impact on disadvantaged communities.
- The critical role of energy storage in transitioning to a 100% clean energy grid.
- Consideration of a broad range of potential technologies, including distributed renewables and increasing planned solar targets; and the need for more investment in energy efficiency.
- Support for renewable energy considering the climate crisis, with consideration of climate adaptation and resiliency; and reliability.

Seven out of the 18 public comments were in the form of an inquiry, requesting information on various topics, including the amount of energy storage required to transition to a clean energy system on Long Island; an estimate of customer electric bills in 2030; the difference in electric output between a solar and a wind power plant of the same MW size; the nation's potential long-term power needs from the increasing usage of electric cars; and the impact on construction jobs.

One commenter expressed disapproval of LIPA's plan to transition to a 100% clean energy system and stated that both sources of energy, clean and fossil fuels, should be used.

### **LIPA Staff's Response to Public Comments on the Draft 2022 IRP SoW**

The below summarizes LIPA Staff's response on the main topics and issues raised in the public comments on the Draft 2022 IRP SoW. **Exhibit "C"** shows a redline version of the SoW that was posted for public comments, with revisions that have been added to address comments received.

#### **Cost Impact**

The focus of the IRP is to develop a cost-effective plan to meet New York State's clean energy objectives in the most economical fashion possible while maintaining high reliability, environmental, and safety standards. The IRP will consider various options, such as contracting for flexible resources and battery storage, participating in projects solicited by NYSERDA (e.g., for offshore wind), and increasing energy efficiency programs. The IRP seeks to optimize the different options.

Maintaining the affordability of electricity for customers is a key objective of the IRP. The IRP will compare different resource options based on their projected cost and select the preferred portfolio of resources (including amounts, types, and locations) that meet reliability and environmental criteria at the lowest projected overall cost. It should be noted that the actual cost to consumers of specific resources and associated rate impacts will be determined at the time that LIPA conducts procurements or takes other actions to fulfill the needs identified in the IRP.

#### **Public Engagement**

The recently-concluded public comment period on the IRP SoW is not the only opportunity for stakeholder involvement. LIPA looks forward to broad public engagement, including Public Comment Hearings later in the process, which will provide additional opportunities for the public to provide input. Moreover, the selection and siting of individual energy projects that may be driven by the IRP would be subject to additional public engagement, providing further opportunities for the public to provide input prior to the development of a project. Lastly, LIPA is in discussions with Stony Brook University and Brookhaven Science Associates, LLC to obtain critical input about the technologies that could be available for future development.

#### **Impact on Disadvantaged Communities**

The Climate Leadership and Community Protection Act (CLCPA) requires that a minimum of 35% of the benefits from investments in transitioning to clean energy and energy efficiency

programs be realized by disadvantaged communities. The Climate Justice Working Group (CJWG), which was created by the CLCPA, has been tasked with identifying disadvantaged communities in New York and developing the criteria to assess the impacts of transitioning to a clean energy system. The CJWG is conducting an extensive public engagement process to develop its guidance on disadvantaged communities. LIPA intends to incorporate the CJWG's guidance into its IRP process as it becomes available.

### **The Critical Role of Energy Storage in Transitioning to a 100% Clean Energy Grid**

Energy storage can perform multiple roles in assisting LIPA to meet the state's renewable energy goals, both in the short-term and long-term. LIPA intends to meet state mandates for the deployment of energy storage resources but will not artificially limit the amount of energy storage that might be cost effectively and reliably deployed. IRP recommendations regarding potential resource portfolios will carefully consider and balance the multiple considerations (e.g., cost, resiliency, peak load reduction, and transmission and distribution investment deferral) that attend introducing or expanding any resource technology in LIPA's portfolio. Public comments regarding renaming some of the proposed IRP scenarios to better represent the role of energy storage in a 100% clean energy system have been reflected in the SoW.

### **Consideration of the Role of Other Energy Technologies**

The IRP will consider all viable, clean energy technologies. The Brattle Group, an independent consulting firm, has been hired to examine and provide guidance on which clean technologies will most likely contribute to Long Island's future energy mix. In addition, LIPA and PSEG LI are discussing with Stony Brook University and Brookhaven Science Associates, LLC their potential participation in the development of LIPA's 2022 IRP with a focus on identifying emerging, viable, advanced clean energy technologies. LIPA also will consider all viable demand-side resources, including the impact of additional investments in energy efficiency programs.

### **Review of LIPA's Solar Goals Given Findings of the Solar Roadmap Developed by the Nature Conservancy**

While the CLCPA sets mandatory minimums for implementation of clean energy resources such as solar, LIPA will evaluate opportunities to exceed such minimums, both as part of the IRP study and in any storage and other procurements that may result from the IRP, if doing so would benefit our customers and contribute to meeting our planning objectives.

### **Reliability and Climate Adaption and Resilience**

As mentioned in the SoW, maintaining system reliability is a key objective of the IRP. The concept of grid "resiliency" in response to climate adaption is part of this IRP objective and will be considered when developing LIPA's 2022 IRP. Separately, LIPA is also evaluating ongoing transmission and distribution system resilience and storm hardening investments.



## **Conclusion**

LIPA Staff reviewed the public comments and reflected them in the SoW, as reasonably as possible. Certain focal areas of the comments, e.g., cost and consideration of advanced technologies, were consistent and aligned with IRP objectives. LIPA Staff intends to ensure that these considerations remain paramount during IRP development.

## **Attachment**

**Exhibit “A”** Resolution

**Exhibit “B”** Public Comments on the Draft 2022 IRP SoW and LIPA’s Responses

**Exhibit “C”** Draft 2022 IRP Scope of Work – Revised for Public Comments

**RESOLUTION ACKNOWLEDGING THAT THE SCOPE OF WORK FOR THE 2022 IRP IS CONSISTENT WITH THE BOARD’S OBJECTIVES**

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**WHEREAS**, LIPA launched the 2022 Integrated Resource Plan (“IRP”) with a presentation by LIPA Staff to the Board at its June 23, 2021 meeting, describing the objectives, key challenges and timeline for the IRP; and

**WHEREAS**, LIPA Staff has developed a well-conceived scope of work (“SoW”) for the 2022 IRP that takes into account multiple key objectives including, among others, LIPA’s responsibility to comply with the Climate Leadership and Community Protection Act (“CLCPA”) while maintaining the affordability of electricity for its customers; and

**WHEREAS**, public stakeholders have had an opportunity to submit written comments on the SoW, which have been reviewed by staff and will be taken into account during IRP development.

**NOW, THEREFORE, BE IT RESOLVED**, that the SoW for the 2022 IRP reflects the Board’s objectives established in the Board Policy on Resource Planning and Clean Energy, and the Chief Executive Officer is authorized to take such action as to amend the SoW to meet the Board’s objectives, subject to informing the Board of any material changes.

Dated: September 22, 2021

**Exhibit "B"****LIPA's 2022 IRP: Public Comments Log**

No	Org	Public Comment	LIPA/PSEG LI Response
1		This is ridiculous not thoroughly researched as I have spoken to many environmental scientists & as per most of them this is not a crisis just a fear tactic motivated by politics. This is something that can not be rushed. Both sources should be used.	In July 2019, New York State passed the Climate Leadership and Community Protection Act (CLCPA) that, among other targets, establishes the goal of 70% state-wide renewable energy production by 2030 and 100% zero-emission electricity by 2040. LIPA's integrated resource plan (IRP) is required to comply with the CLCPA targets.
2		Please provide information about the "increasing amounts of battery storage" required for conversion to alt-energy on Long Island--where and by when? Tks	It is anticipated that energy storage, and specifically battery storage, will play a critical role in Long Island's future energy mix. The Climate Leadership and Community Protection Act (CLCPA) set a state-wide energy storage goal of 3000 MW by 2030, with LIPA's share expected to be approximately 375 MW. LIPA is currently evaluating responses to a recent Request for Proposal (RFP) for up to 200 MW of energy storage. Developers are allowed to propose storage projects located anywhere on Long Island.
3		hello lipower.... a fascinating article [referring to a Newsday article]. I want clean water and air. If my current electric bill is 176 dollars a month (balanced billing), lets assume my usage remains the same, what would my monthly bill be in 2030? That is an important piece of information left out of the article. Can I afford renewables, I know without subsidies, which only benefit people who have extra money. Solar is unaffordable for me. Please respond, I need to know.	Maintaining affordability of electricity for customers is a key objective of LIPA's Integrated Resource Plan (IRP). Consequently, the IRP will compare the cost of different resource options, which will vary over time and by location. However, the actual cost of specific resources will be evaluated at the time that LIPA conducts procurements to fulfill the needs identified in the IRP.
4		newsday states that one megawatt of offshore WIND can power 320 homes but the same one megawatt of SOLAR can only power 125 homes. please explain. why is that?	There is a difference between the maximum potential electric output of a generator (i.e., the capacity, commonly expressed as megawatts or MWs) and the generator's actual output during different hours. Wind and solar generate different amounts of electricity during a given period of time (e.g., a year) due to the availability of wind or sunlight, both which are highly variable and are therefore not consistently available. On average, though, a wind facility of the same size as a solar facility (e.g., 1 MW) generates greater amounts of MWs over a given timeframe and, therefore, can power more homes.
5		I just wanted to send a message to tell you how much I appreciate the fact that LIPA is moving forward with renewable energy for Long Island's power needs. We're approaching a tipping point in regards to our climate. Further use of fossil fuels will only make things worse. We have solar panels and geothermal heat pumps at our residence and absolutely love it. An electric vehicle is next. It's great to read that you are really thinking ahead and planning for future energy demand. It's a very smart thing that you're doing. Thank you.	Support for our efforts is greatly appreciated. Meeting the future energy needs of Long Island in a reliable, affordable, and environmental manner is a key priority for us.
6		[Commenter requests contact information for LIPA officials.]	Information was provided.

No	Org	Public Comment	LIPA/PSEG LI Response
7	LI Food and Water Watch	<p>The following comments on the IRP are from Fred Harrison [contact information redacted]. Please acknowledge receipt of this communication. Thank you . Fred Harrison</p> <p>The IRP scope of study should be expanded to include a fifth “scenario” which would provide for a fully nonprofit energy plan for Long Island. It is incontestable that high energy costs sap economic growth and have contributed to Long Island’s high cost of living.</p> <p>LIPA’s Power Supply Agreements make up between 40 and 50 percent of ratepayer electric bills. The current private sector model of power supply imposes costs which are avoidable and unaffordable. According to industry reports, a 9-10 percent return is expected from investments in wind and solar. The IRP should set out a path for LIPA to bring those projects “in house”, allowing for reduced power costs to ratepayers. This should include a study of all nonprofit power supply options, including partnering with NYPA. The proposed IRP scope of study currently proposes to “Identify the supply-side resource options necessary to meet the short and long-term resource needs under a variety of scenarios.” This work should include nonprofit options.</p> <p>The Scope of Work objective #5, “Minimize rate impact to the extent practical,” is unsatisfactory. Reducing the cost of electric power should inform the objectives of the study. With affordable-nonprofit electric power, Long Islanders are more likely to decarbonize, switching to electric heat, hot water, and transportation.</p> <p>Additionally, the IRP proposes that the “‘Accelerated Decarbonization LIPA Scenario’ (will) examine the potential impact of LIPA increasing investments in efficiency and/or electrification programs.” This should include LIPA playing a central role in moving toward publicly financed residential and commercial solar.</p>	<p>LIPA recognizes that non-profit and tax-exempt financing, where permissible and available, can reduce the cost of supporting resource investments. However, such benefits can accrue to many, if not all resource options. Consequently, the IRP’s comparison of resource options is likely to be more dependent on technology costs. In the course of procuring specific resources to meet the needs determined by the IRP, LIPA will consider ownership and financing options that could benefit customers. As an example, LIPA’s bulk energy storage RFP will enable LIPA ownership of energy storage projects.</p>

No	Org	Public Comment	LIPA/PSEG LI Response
8		<p>I was referred to you by Mr. Rick Shansky, to whom I had addressed questions about the nation's potential long-term power needs that may be derived from the increasing usage of electric cars as alternatives to gasoline- or diesel-driven vehicles. I am following up on his reply.</p> <p>As I pointed out to Mr. Shansky, I see something of a parallel to the period following World War II, when the development of new, electricity-powered devices (home appliances, TV, stereo systems, etc.) coincided with the availability of wealth that had been accumulated during the war years when the country's industrial capacity was devoted primarily to the war effort and the available supply of many consumer products was limited. Currently, the COVID pandemic that curtailed consumer spending coincided with a comparable build-up of financial assets, and the new technology of battery-driven transportation seems likely to spur a transition to that mode of transportation.</p> <p>I would appreciate any information you have, or to which you can point me, about the likely long-term increase in the nation's demand for electric power from the substitution over time of battery-driven vehicles for internal combustion engines. For example, have there been estimates of the amount of power required for each average passenger car to be recharged? Is there an assumption about how much power each electric passenger vehicle-- and perhaps the average electric commercial vehicle-- will require annually? To the extent vehicles will be used for longer-distance travel, what is likely to be the need for charging stations along travel routes, and/or in connection with hotels and other stopping points? Is that likely to require significant capital expenditures in establishing a network of such charging stations in order to serve the traveling public?</p> <p>Please understand that I'm not seeking privileged information that could be considered confidential and proprietary for LIPA. I'm hoping that you might be aware of one or more studies that may be available to the general public that could help me understand the potential impact on the electric utility industry of the advent of electric cars. Of course, I'd also be happy to discuss the issue with any LIPA representatives who might be able and willing to share some knowledge with me.</p>	<p>LIPA's Integrated Resource Plan (IRP) will include electric vehicle projections for Long Island and will evaluate their impact on system load. Similar projections for the nation are available from the US Department of Energy at the following website: <a href="https://www.energy.gov/eere/vehicles/us-drive">https://www.energy.gov/eere/vehicles/us-drive</a>. Here is a link to a 2019 report presenting EV market penetration scenarios and projected incremental energy generation to support EVs: <a href="https://www.energy.gov/eere/vehicles/downloads/summary-report-evs-scale-and-us-electric-power-system-2019">https://www.energy.gov/eere/vehicles/downloads/summary-report-evs-scale-and-us-electric-power-system-2019</a></p>

No	Org	Public Comment	LIPA/PSEG LI Response
9		<p>Thanks, Team, for your response. However, could you clarify for me what the "comment period" is? Having spent a lengthy career in the investment industry, I'm familiar with the regulatory constraints that bar publicly held companies from releasing information that could give some investors an advantage over others, but I wasn't aware that LIPA was subject to such constraints. Is your "comment period" related to a quarterly, or perhaps semi-annual, report of operations? Or perhaps a release of other financial information that could be significant for bond holders?</p> <p>Otherwise, perhaps you could tell me when to expect the end of the comment period, and how I could expect to obtain the information I'm seeking?</p> <p>Permit me to repeat the nature of my request: I am not seeking answers to questions that are unique to LIPA or that might give me insight into any publicly traded securities. Perhaps, though, you are aware of publicly available information; for example, if a bank, or brokerage firm, or an electric utility industry association has prepared a study about the subject, and if that subject might be available to the general public, I'd appreciate hearing about it and, if possible, seeing a copy. Or your team members, or possibly someone known to your members, might have seen a study, or memo, indicating how much power must be provided by a source of electricity to recharge an automotive battery that's down to, say, 25% or, say, 10% of its capacity? I'd appreciate any information along those lines that your Team might be able to provide.</p> <p>Thanks for your consideration and your assistance. With kind regards, Robert I. Adler</p>	Please refer to prior response.
10		<p>What will this switchover do to the construction people, especially the steamfitter, plumber, and electrician. Will there be any work for the steamfitter in these renewable energy sources?</p>	The impact of New York's Climate Leadership and Community Protection Act (CLCPA) on jobs in communities across the State, including on Long Island is being addressed by the State's Climate Action Council. More information can be found online at: <a href="https://climate.ny.gov">climate.ny.gov</a> .
11	Clearview Consultants, LLC	<p>While Energy Storage, Geothermal, Ground-mount Solar and Offshore Wind have emerged as the LIPA's/PSEGLI's most popular/dominant among NYSPSC's longer list of approved Clean Energy Technologies, please don't overlook the following Clean Energy resources: Small-scale land-based Wind supported by Towns like Brookhaven and Hempstead with demonstration units already existing on Town-owned properties; The huge untapped MW capacity and energy potential of NYSPC-approved Tidal &amp; Wave Energy technologies available along LIPA's Service Territory 300-mile coastline, where..."every day, year in and year out, a constant pulse of untapped/unutilized predictable tidal power, identified and assessed in LIPA's 2007 Long Island Tidal and Wave Energy Study: An Assessment of the Resource by Natural Currents energy Services, LLC - issue, exists; Nitrogen-fueled Fuel Cells; and The huge untapped MW available through one (1) of NY's/LI's best kept secrets...the enormous amounts (Tons/Day) of pre-consumer packaged (outdated) food waste being disposed...which, given both the uninterruptable/sustainable supply of outdated disposed pre-consumer packaged food waste and NYSPSC's approved state-of-the-art Anaerobic Digester-based Clean Energy Technology.</p>	The IRP will consider all viable, clean energy technologies. An external consulting firm has been hired to examine and provide guidance on which clean technologies can contribute to Long Island's future energy mix. In addition, we are discussing with Stony Brook University and Brookhaven Science Associates, LLC their potential participation in the development of LIPA's 2022 IRP with a focus on identifying emerging, viable, advanced clean energy technologies.

No	Org	Public Comment	LIPA/PSEG LI Response
12		<p>The scope of the 2022 Integrated Resource Plan (IRP) is to “study the supply-side, demand-side, and transmission resources needed for LIPA to continue to provide reliable, environmentally compliant, and cost-effective electric service to customers on Long Island and the Rockaways.” This plan will of course address LIPA’s role in meeting the mandate of the CLCPA that 70% of the electricity consumed in the state must be produced using renewable sources of energy, as well as meeting other mandates and reliability requirements.</p> <p>In addressing these needs PSEG and LIPA’s planning will necessarily address many conflicting and yet totally legitimate desires by different segments of our population for “more clean energy”, “open space preservation”, “faster transition to renewables”, “stopping loss of real estate tax payments from fossil fuel generating plants”, and “electricity price containment.” To successfully manage these and other concerns, you must be seen by the people presenting them as actually listening to them, understanding their concerns, and at least attempting to accommodate those concerns to the extent possible in light of others’ concerns and the overall needs of the electrical system and its transformation. People with concerns simply want to be heard by those they trust to actually listen to those concerns and to process them. They will often accept defeat if they think they have been treated fairly by those they trust.</p> <p>This process works best when there is trust between all the parties involved. Unfortunately, after the dreadful performance of PSEG Long Island under LIPA’s supervision during Hurricane Isaias, there is about as much trust in these organizations by the general public as there was available electricity during the storm.</p> <p>Such trust is not built by press releases from management. Nor is it built by allowing three minutes of testimony at hearings or before Board votes on resolutions whose fate has already been decided. Nor is it built on receiving public testimony on proposed rate changes, budgets, Utility 2.0 filings, etc., when all the details have already “been baked into the cake.”</p> <p>[cont'd next page]</p>	<p>LIPA looks forward to broad public engagement as it develops the IRP. As an example, we are in discussions with Stony Brook University and Brookhaven Science Associates, LLC to obtain critical input about the technologies that will be considered in the IRP. LIPA will consider other options for public engagement, including the formats suggested in the comment.</p>

No	Org	Public Comment	LIPA/PSEG LI Response
12		<p>I thus request that the next Utility 2.0 plan go beyond the traditional technical areas like efficiency programs and grid transformation to include the transformation of the relationship between PSEG and LIPA and the community they serve. The necessary trust must be built on a continued two-way open dialogue between a broad range of public interests and the people who manage the utility that serves those communities. This can be best achieved by forming a Community Advisory Council that engages with top LIPA management and the LIPA Board. Here are two models for such a council:</p> <p>The Brookhaven National Laboratory Community Advisory Council (CAC) "...represents a diverse range of interests and values of individuals and groups who are interested in or affected by the actions of the Laboratory.</p> <p>"The CAC consists of representatives from 26 local business, civic, education, environment, employee, government, and health organizations. The CAC sets its own agenda, brings forth issues important to the community, and works to provide consensus recommendations to Laboratory management. Meetings are held on the second Thursday of each month, ..."CAC meetings are open to the public and interested community members are encouraged to attend. An opportunity for public comment is offered at each meeting. New members are welcome." <a href="https://www.bnl.gov/stakeholder/CAC.php">https://www.bnl.gov/stakeholder/CAC.php</a></p> <p>Seattle City Light Review Panel: "The Panel is comprised of nine members drawn from among City Light's customers, to review and assess City Light's strategic plan and provide an opinion on the merits of the plan and future revisions to it to the Mayor and the City Council, and other roles as laid out by Seattle City Ordinance ..."</p>	See prior response.
12		<p>"The nine panel members come from City Light's customer groups, as well as areas of utility business expertise. Panel member roles are Economist, Financial Analyst, Non-Profit Energy Efficiency Advocate, Residential Customer, Commercial Customer, Industrial Customer, Low Income Customer, At-Large Customer, Suburban Franchise Customer." <a href="https://www.seattle.gov/city-light-review-panel">https://www.seattle.gov/city-light-review-panel</a></p> <p>In fact, I strongly urge PSEG to use a process such as this during the preparation of the Draft IRP since it will allow the Plan's authors to better understand the conflicting and totally legitimate desires by different segments of our population as described above, and attempt to reconcile them before a Draft Plan is officially presented to the public and the DPS for on-the-record formal hearings.</p> <p>Thank you for your consideration.</p>	See prior response.



No	Org	Public Comment	LIPA/PSEG LI Response
13	Association for a Better Long Island	<p>Dear Mr. Falcone: July 21, 2021</p> <p>The Association for a Better Long Island (ABLI), the region's leading economic development advocate, whose combined membership is LIPA's largest ratepayer, writes to urge the Long Island Power Authority ("LIPA") to strongly consider the cost to ratepayers of all transmission investments and/or projects for electric power supply when developing the 2022 Integrated Resource Plan ("IRP").</p> <p>ABLI makes this request while commending LIPA's effort to achieve a carbon-free grid by 2040 and its shift to renewable energy. We recognize that the IRP will develop an action plan for LIPA to comply with NYS's Climate Leadership and Community Protection Act. Within that context, however, it is imperative that the cost to the ratepayer be given strong consideration when evaluating new major investments and/or projects to meet this NYS directive.</p> <p>Long Islanders continue to suffer from supporting costly energy initiatives. have been paying down the \$6 billion Shoreham atomic energy plant for decades and it remains one of the key reasons the cost of power on the Island is among the highest in the nation. We cannot endure another substantial cost burden if we expect our region to remain economically competitive with other regions of the country.</p> <p>Accordingly, the Association for a Better Long Island respectfully requests that LIPA strongly considers the additional cost to ratepayers of all transmission investments and/or projects for electric power supply when developing the IRP.</p> <p>ratepayers</p>	<p>Maintaining affordability of electricity for customers is a key objective of LIPA's Integrated Resource Plan (IRP). Consequently, the IRP will compare the cost of different resource options, which will vary over time and by location. However, the actual cost of specific resources will be evaluated at the time that LIPA conducts procurements to fulfill the needs identified in the IRP.</p>

No	Org	Public Comment	LIPA/PSEG LI Response
14	Brooklyn College/ CUNY	<p>As a long time resident of Nassau County, it is my view that the importance of this IRP for LIPA and the people of Long Island (and NY state) cannot be overstated. Across the country utilities are struggling to adapt to the intensifying challenges of climate change as they transition from fossil fuels to renewables. Indeed, the pursuit of an 80% renewable load and enhanced resilience requires the targeted integration of a variety of expert knowledges together, extensive coordination with regulatory bodies, and meaningful engagement with economic actors, ratepayers, local governments, and the broader public. There is nothing in these materials about an engagement plan. This must be corrected ASAP. Indeed, this IRP requires multiple engagement plans. The function of such plans is to gain the necessary knowledge needed to make these new programs and processes work not just affordably and reliably but justly and fairly as the CLCPA goals mandate. Other utilities have done this, most recently the Los Angeles Department of Water and Power (LADWP) with their LA 100 plan. In particular this IRP needs robust and individualized engagement plans for each of the following</p> <ul style="list-style-type: none"> <li>1/ Supporting and meeting CLCPA goals</li> <li>2/ Integrating substantial amounts of renewable energy resources</li> <li>3/ Identifying the impacts of beneficial electrification</li> <li>4/ Identifying benefits to disadvantaged communities</li> </ul> <p>1/ and 4/ CLCPA goals mandate transition to renewables which take into account benefits to disadvantaged communities. How is LIPA/PSEG approaching this? What existing knowledge bases are being consulted? What knowledge is missing? Who are the partners? What kind of processes can enhance trust and collaboration? Is LIPA/PSEG aware of best practices like participatory action research and participatory budgeting? Has it looked at the Youth Ambassadors program that the Austin, Texas power authority has been running? Has it looked at the LA 100 plan and the two year engagement process that was done? What is the plan for sustained engagement as the demands of the transition intensify along with climate events, but also along with the adding of wind off the coast and in the NY bight?</p> <p>[cont'd next page]</p>	<p>LIPA is working with multiple stakeholders, including the New York Independent System Operator (NYISO) and New York State's Energy Research &amp; Development Authority (NYSERDA), on developing plans to meet the Climate Leadership and Community Protection Act (CLCPA) targets. In addition, an external consulting firm with significant expertise in developing IRPs has been hired. We also plan to collaborate with Stony Brook University and Brookhaven Science Associates, LLC to identify emerging, viable, advanced clean energy technologies to ensure that we bring state-of-the-art thinking on current research and development activities to the IRP development process. LIPA will consider other options for public engagement, including the formats suggested in the comment.</p> <p>With regards to the impact on disadvantaged communities, the Climate Justice Working Group (CJWG), created by the Climate Leadership and Community Protection Act, has been tasked with identifying disadvantaged communities in NYS and developing the criteria to assess the impacts of transitioning to a clean energy system. The CJWG is conducting an extensive public engagement process to develop its guidance on disadvantaged communities. LIPA intends to incorporate the CJWG's guidance into its IRP process as it becomes available.</p>

No	Org	Public Comment	LIPA/PSEG LI Response
14	Brooklyn College/ CUNY	<p>[Even from the self interest perspective, LIPA-PSEG should support more engagement in order for the public to support the siting of new infrastructure. Engagement is essential for building trust and cooperation, especially given the current situation of so much distrust. Seeking to add new infrastructure without trust enhancing engagement will make it inordinately time-consuming at best and at worst incredibly contentious and slow if not impossible.]</p> <p>2/ LIPA/PSEG must give a full report on its understanding of the Solar Roadmap done by the Nature Conservancy and others. This report shows that there is 15 GW of possibility on already developed land, from parking lots to large buildings. This could dramatically impact on LIPA/PSEG's goals for solar, and also, for how much storage would be needed to balance and integrate the solar. The strong track record of community solar across the country also creates an opportunity for PSEG/LIPA to support community solar both for renewables goals as well as "benefiting disadvantaged communities" goals. It could also lessen the need for additional transmission infrastructure. But also would require more demand response support infrastructure which would require more customer trust which requires more sustained engagement (see above).</p> <p>3/ In the report, there is mention of the possibility of a "new customer program". This should definitely include multiple stakeholders and researchers, and be sure to include disadvantaged communities, as well as enhance resilience. And it should be clear on the benefits of electrification re: affordability and resilience for ratepayers as well as in terms of benefits to communities from reduced pollution from electrification of busses for example.</p> <p>Sincerely,  Dr. Michael Menser; <a href="http://www.michaelmenser.info">http://www.michaelmenser.info</a>  Associate Professor, Philosophy, Urban Sustainability Studies, Caribbean Studies;  Doctoral Faculty, Earth and Environmental Science, Environmental Psychology; CUNY GC  Member, Board of Directors; Participatory Budgeting Project  Associate Director of Public Engagement, Science and Resilience Institute at Jamaica Bay (<a href="http://www.srijb.org">www.srijb.org</a>)</p>	<p>LIPA looks forward to broad public engagement as it develops the IRP. As an example, we are in discussions with Stony Brook University and Brookhaven Science Associates, LLC to obtain critical input about the technologies that will be considered in the IRP. LIPA will consider other options for public engagement, including the formats suggested in the comment. The opportunity to develop additional solar resources, such as described in the Solar Roadmap, will be considered among the resource options to be evaluated in the IRP.</p>

No	Org	Public Comment	LIPA/PSEG LI Response
15	Long Island Progressive Coalition	<p>The 2022 Integrated Resource Plan will take public buy-in and input just for the siting of the new infrastructure alone. Public comments are not public engagement and we've seen recently that even public comments do not strongly impact LIPA's thinking. LIPA needs a real plan for community engagement that is currently missing. In the recent past PSEG has had to pull up utility poles because they did not properly engage local villages and towns, so their ability to properly site new grid upgrades and substations in a timely manner is suspect. Climate justice is core to the Climate Leadership and Community Protection Act and that means involving communities in the decisions that are going to impact them. Additionally, LIPA's contribution to CLCPA goals in the Integrated Resource Plan are way too low given the findings of the Long Island Solar Roadmap, which demonstrates our region has the potential for 19.5 GW of solar on already developed sites. We can and should be doing more while creating the same kind of collaborative partnerships that led to the formation of the Solar Roadmap. This plan seems to also be missing a key area of focus for our climate vulnerable region: adaptation, resilience, and grid reliability. We need to underground our power lines to start and ensure our system is prepared for the extreme weather events to come. This too will require deep investments in multi-stakeholder partnerships that are currently not in place. Given that confidence in LIPA is low right now and trust in PSEG even lower, we urge that you meaningfully involve and empower community organizations to shape this process through robust engagement.</p>	<p>The opportunity to develop additional solar resources, such as described in the Solar Roadmap, will be considered among the resource options to be evaluated in the IRP.</p>

No	Org	Public Comment	LIPA/PSEG LI Response
16		<p>All of the goals for this plan would be a whole lot easier to achieve with a municipally owned power grid - get rid of PSEG completely, and with it their shareholders pulling profits out of the system to make rich people richer. All these changes are going to cost money, and when you have to ask, "Who's going to pay for this?", the answer is usually "you."</p> <p>We already have some of the most expensive electricity in the country on Long Island, and when there's a bunch of rich people looking for their cut in the middle, the People lose.</p> <p>With all the changes involved, there needs to be a whole lot more public engagement in this plan to build trust among stakeholder groups, like economic actors, ratepayers, local governments, and the broader public.</p> <p>After their abysmal response to Isaias, and reports from Newsday that they have not replaced or improved the computer system to coordinate future disaster response that was the center of me relying on my landlord's generator for almost 2 weeks, I know exactly 0 people who would trust PSEG to watch their pet rock. They've proven that their top priority is making shareholder wallets fatter, regardless of the harm to citizens and other businesses, and we have no time to waste arguing with them about that when we have so many other urgent priorities as you've laid out.</p> <p>Climate change is constantly increasing the odds of a hurricane hitting us at category 3 or worse, and of bigger winter storms. Our public agencies are not prepared for what is to come.</p> <p>How these improvements will make the overall system more resilient needs to be a major consideration, along with safety as many sources of power more geographically distributed, can mean shorter paths of distribution and less reliance on long distance transmission lines that can be disrupted, but may also increase the challenges of de-energizing an area for safe utility work.</p> <p>It's also not enough to just change the sources of energy; we must also systematically use less energy in the first place. Kilowatt hours not used at all today reduce carbon emissions today, everything else is slow by comparison. Only by doing both at once can we hope to lower emissions fast enough to avoid the worst that the climate crisis will bring. Encouraging conservation by financial incentives alone makes for injustice though - expensive air conditioning means the rich will just use it as another way to flaunt how wealthy they are, that they can afford to keep 5 houses like an icebox all summer, while the people who pump their gas and serve their meals sweat, get sick, and die because they need to choose between AC or food or rent.</p>	<p>LIPA looks forward to broad public engagement as it develops the IRP. Maintaining system reliability is a key objective of the IRP. The concept of grid resiliency in the face of climate change is part of this IRP objective and will be considered when developing 2022 IRP. LIPA's 2022 IRP will consider all viable demand-side resources, including the impact of additional investments in energy efficiency programs on Long Island, which would reduce the total electric load forecast (i.e., expected energy use). With regard to equity, the Climate Leadership and Community Protection Act (CLCPA) requires that a minimum of 35% of the benefits from investments in transitioning to clean energy and energy efficiency programs be realized by disadvantaged communities. The Climate Justice Working Group (CJWG), which was created by the CLCPA, has been tasked with identifying disadvantaged communities in NYS and developing the criteria to assess the impacts of transitioning to a clean energy system. The CJWG is conducting an extensive public engagement process to develop its guidance on disadvantaged communities. LIPA intends to incorporate the CJWG's guidance into its IRP process as it becomes available.</p>

No	Org	Public Comment	LIPA/PSEG LI Response
16		<p>Treating all people equally isn't the same as equitably - we must impose most of the burden of using less energy on those who already waste the most of it. White-collar jobs are easiest to make remote, while those who are already stretched too thin to ask them for more sacrifices work the jobs that need to be in person, yet many aren't paid enough to live close to where they work so they can spend less energy commuting. While this is beyond the scope of stringing power lines and placing solar panels, public information campaigns to create social pressure is the sort of outside-the-box thinking we need. Think of the public pressure campaigns from World War II, "Don't you know there's a war on?", shame the rich for their excesses.</p> <p>Make the price per kWh proportional to the assessed value of each home, use the increase in net worth of executives and major shareholders/owners last year for a business. Some people have disabilities that make what are luxuries to some into basic necessities - it's important to take those situations into account as well. I'm not saying this is easy - the easier solutions might have been enough if we started this process 40 years ago, now is the time for Google's "Work fast and break things" model. Just make sure the breaking is progressive - hurt the top 10% the worst, protect the bottom 50%.</p>	<p>See prior response.</p>

No	Org	Public Comment	LIPA/PSEG LI Response
17	NY-BEST	<p>Response was 10 pages. Refer to attachment.</p> <p>Extensive comments on the role of energy storage in the IRP, including:</p> <ul style="list-style-type: none"> <li>- Existing goal of 375-400 MW of energy storage on LI is not sufficient to meet the 70x30 and 100x40 goals.</li> <li>- Consideration should be given not only to the 2022-2030 timeframe, but also to the 2040 time horizon.</li> <li>- Energy storage should be used to replace fossil-fueled peaking power plants. Per NY-BEST study, 2,300 MW of fossil fuel peaking units on LI can be replaced with energy storage.</li> <li>- LIPA should consult with industry experts and NYSERDA on the cost assumptions used in the IRP.</li> <li>- Incorporate the role of energy storage as a T&amp;D asset</li> <li>- Consider different resource and load growth scenarios</li> <li>- Consider the value of "optionality" to reduce the risk of sub-optimal economic outcome</li> <li>- Modeling of energy storage should not be limited to four hours as energy storage can be designed with any desired duration.</li> <li>- Consider multiple EV growth scenarios and local effects from concentrated adoption in particular areas.</li> <li>- Consider emerging vehicle-to-grid technology in the modeling.</li> <li>- Would new PSAs with clean dispatchable assets such as energy storage be beneficial? Consider expanding its approach to energy storage to incorporate long-term PSAs and third-party ownership.</li> <li>- Rename task "Transmission projects necessary to support achievement of objectives" to "Energy delivery projects to support achievement of objectives."</li> <li>- Rename task "Potential fuel security issues" to "Potential energy security issues" reflecting the fact that we expect most "fueled" assets to be phased out.</li> <li>- Modify the "Accelerated Transmission Investment Scenario" to be the "Accelerated Transmission and Energy Storage Investment Scenario."</li> </ul>	<p>LIPA appreciates NY-BEST's comments on the role that energy storage can play in developing LIPA's Integrated Resource Plan (IRP). It is important to note that while LIPA intends to meet state mandates for deployment of energy storage resources, it will not artificially limit the amount of energy storage that might be cost effectively and reliably deployed. IRP recommendations regarding potential resource portfolios will carefully consider and balance the multiple considerations, such as those mentioned in your letter (e.g., cost, resiliency, peak load reduction, and transmission and distribution investment deferral), that attend introducing or expanding any resource technology in LIPA's portfolio. Further, LIPA will consider the results and conclusions of external studies in developing the IRP.</p>
18		<p>Regarding Wind,Solar, &amp; Battery backup.</p> <p>I feel there is a place for this type of energy within a power grid. Unfortunately, Wind &amp; Solar are less reliable than conventional power sources. New York City, Westchester, &amp; parts of Long Island have many underground cables which become a giant capacitor in off peak load periods. Present day methods to control the voltage require large power generators to absorb Mvar's in the off peak &amp; the reverse during peak load periods. The many generators that are normally on line in NYC &amp; LI affect the entire state. I strongly suggest the you discuss this issue of Voltage &amp; Frequency control with both the public utilities &amp; the NYISO. The general stability &amp; reliability of the power grid &amp; providing low cost energy to the consumer is of the utmost importance.</p> <p>Thomas Leo Retired Con Ed System Operator</p>	<p>Regarding resource intermittency and reliability considerations, PSEG LI's transmission, distribution, and operations' engineers, along with an external consulting firm that has been hired to provide additional analytical support, will be carefully examining the impact of integrating an increasing amount of intermittent energy resources into Long Island's electric grid. While Long Island's and NY State's energy resource mix may look substantially different in the future, it will nevertheless meet all reliability standards and requirements.</p>



# New York Battery and Energy Storage Technology Consortium, Inc.

VIA ELECTRONIC FILING

July 23, 2021

IRP Team  
Long Island Power Authority  
333 Earle Ovington Blvd.  
Uniondale, New York 11553

## **Re: 2022 IRP Draft Scope**

To Whom It May Concern:

The New York Battery and Energy Storage Technology Consortium ("NY-BEST") is pleased to submit these comments for your consideration on the 2022 IRP Draft Scope published by Long Island Power Authority (LIPA) on June 23, 2021.

## **INTRODUCTION**

The New York Battery and Energy Storage Technology Consortium ("NY-BEST") is a not-for-profit industry trade association with a mission to catalyze and grow the energy storage industry and establish New York State as a global leader in energy storage. Our 175 member organizations include: technology developers ranging in size from global energy storage companies to start-ups, manufacturers, project developers, project integrators, engineering firms, law firms, leading research institutions and universities, and numerous companies involved in the electricity and transportation sectors.<sup>1</sup>

NY-BEST and our members have been actively engaged in the State's Reforming the Energy Vision (REV) initiative, the State's Energy Storage Roadmap and implementation of the State's Climate Leadership and Community Protection Act<sup>2</sup> and its nation-leading goals. NY-BEST serves on the Climate Action Council's Power Generation Advisory Panel which is primarily responsible for making recommendations for achieving the CLCPA's goals for the State's electric grid.

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<sup>1</sup> NY-BEST comments reflect the position of the organization as a whole and do not necessarily represent the position of our individual members. Our membership has diverse interests and NY-BEST seeks to represent the broad interests of the energy storage industry.

<sup>2</sup> New York State Climate Leadership and Community Protection Act, Chapter 106 of the Laws of 2019  
<https://www.nysenate.gov/legislation/bills/2019/s6599>





# New York Battery and Energy Storage Technology Consortium, Inc.

## GENERAL COMMENTS OF THE 2022 IRP DRAFT SCOPE

### **1. Energy Storage is essential to achieving a high renewable and zero emission grid and its deployment should be expanded and accelerated –not artificially capped.**

While NY-BEST is pleased that the 2022 IRP Draft Scope recognizes energy storage as a resource that will be needed in the future to support the State's mandated climate and clean energy goals, NY-BEST has several concerns with LIPA's general approach to energy storage, especially during the action plan years of 2022-2030.

The IRP Draft Scope and supporting documents appear to continue to place an artificial limit on the amount of energy storage to be deployed on Long Island by 2030 at approximately 375-400 MW. This number is derived by LIPA from the Statewide energy storage deployment goal of 3 GW energy storage by 2030. LIPA derived its storage target by taking Long Island's share of the statewide peak load (12.5%) and applying it to the State's 2030 storage goal. It in no way represents an optimum amount of energy storage to support Long Island's electric grid system or meet the climate and clean energy goals.

Importantly, the statewide 3 GW by 2030 energy storage goal was established as a minimum amount of storage to support the State's former 50 percent renewable energy by 2030 goal. It does not reflect an analysis of the optimum amount of energy storage needed to enable the more recently established statewide goal of 70 percent renewable energy by 2030, nor is it correlated to the zero-emission electric grid by 2040 goal.

The Power Grid Study<sup>3</sup> commissioned by the State and released in January 2021, examined the system needs to meet the 2040 zero-emission grid goal. Among other important findings, the Study found that the State will need more than 15 GW statewide of 4-hour duration energy storage by 2040 –of which 7,300 MW will need to be located in New York City and Long Island-- and a similar amount of longer duration energy storage is needed to achieve a zero-emission grid. For 2030, however, the study unfortunately used the formerly created 3 GW target as a fixed input and thus did not optimize the amount of storage based on the higher renewable goal of 70 percent.

We urge LIPA in the IRP to take a holistic approach to determine the appropriate levels of energy storage needed on the Long Island system by 2030 and 2040, rather than fixing a

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<sup>3</sup> Initial Power Grid Study, January 19, 2021, prepared by DPS and NYSERDA staff, Brattle and Pterra  
<https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={E41D6A17-1EA5-47D3-90E8-A4E981705FE3}>



# New York Battery and Energy Storage Technology Consortium, Inc.

hard number of 400 MW of energy storage to be deployed on Long Island by 2030 into the IRP.

The Draft Scope states, “The IRP will need to recommend the optimal amount of operating and installed reserves (to be provided by clean, flexible resources, such as storage) that Long Island will need to integrate all of this offshore wind.” NY-BEST urges LIPA to recognize in the IRP scope that although multiple solutions may be available in the 2022-2030 timeframe, it is important to consider and plan for subsequent needs on the horizon in 2040. For instance, evaluating energy storage to replace fossil-fueled generation in the near term should also include consideration of additional co-benefits energy storage can provide to the grid, such as how the energy storage can also support higher levels of renewables in the 2030-2040 timeframe.

NY-BEST recommends that the IRP scope not limit the amount of storage to be deployed by 2030 and incorporate an approach that fully leverages energy storage and the many benefits it can cost-effectively provide in the near and long term, including:

- Firming renewable energy
- Reducing curtailment and spillage of renewable energy
- Avoiding costly distribution and transmission upgrades
- Reducing reliance on fossil fueled peaker plants
- Adding grid resilience
- Load pocket relief and load management
- Reducing summer and winter energy usage peaks

In this way, the IRP will facilitate cost-effective solutions that enable Long Island to meet its climate and clean energy goals.

NY-BEST also urges LIPA to consider the economic advantages that energy storage can provide to Long Island’s grid system and ratepayers. Investment in energy storage further enhances the value of renewable energy investment – by reducing curtailment and maximizing renewable generation -- thereby making ratepayer dollars go farther. Energy storage, as a multi-function asset, is able to participate in multiple markets and provide a variety of grid services, leveraging ratepayer dollars effectively.

**2. The IRP should examine accelerating the phase-out of fossil-fuel generation and using energy storage to cost effectively replace fossil-fueled generation on Long Island**



## New York Battery and Energy Storage Technology Consortium, Inc.

In October 2020, NY-BEST, in conjunction with Strategen, released a Study<sup>4</sup> examining the role of energy storage in replacing fossil-fueled “peaking” generation on Long Island. The Study found that more than 2,300 MW of fossil fueled “peaking” power plants on Long Island can be cost-effectively replaced with energy storage over the next decade, saving Long Island customers more than \$390 million over the next ten years and significantly reducing harmful air pollutants.

The Study examined the operations of Long Island’s aging fleet of fossil-fueled “peaker” plants, those power plants that operate primarily only during high demand or “peak” times. The analysis showed that it is technically feasible and cost-effective to replace more than 2,300 MW of Long Island’s 4,300 MW fossil-fueled peaker plants with energy storage over the next decade. It also found that approximately half of the peaker plants, around 1,100 MW, could be retired and replaced with energy storage by 2023. The remaining 1,200 MW could be replaced by 2030, in conjunction with New York State’s plans to increase solar energy, energy efficiency measures, and offshore wind resources.

Given that the majority of the peaking units and fossil generators are located in or near disadvantaged communities, NY-BEST strongly urges that the phase-down of these units be accelerated to reduce the negative environmental impacts these units continue to impose on these communities.

We urge LIPA and the IRP team to review the NY-BEST/Strategen study and consider it in the development of the IRP scope. Further, we recommend that LIPA and the IRP team consult with industry experts and NYSERDA on the cost assumptions used in the IRP for energy storage. As the Department of Public Service and NYSERDA noted in their Annual State of Energy Storage Report,<sup>5</sup> the cost of battery energy storage, in particular, is coming down rapidly and these cost reductions should be considered when evaluating energy storage solutions over the duration of the IRP. NYSERDA works regularly with the energy storage industry through the Market Accelerator Bridge Incentive Program and can provide LIPA with timely real world cost estimates.

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<sup>4</sup> Long Island Fossil Peaker Replacement Study, October, 2020, NY-BEST and Strategen  
[https://cdn.ymaws.com/ny-best.org/resource/resmgr/reports/ny-best\\_lipa\\_peaker\\_replacem.pdf](https://cdn.ymaws.com/ny-best.org/resource/resmgr/reports/ny-best_lipa_peaker_replacem.pdf)

<sup>5</sup> Annual State of Storage Report, NYS DPS and NYSERDA, April 1, 2021,  
<https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={AFCF8BDC-F0A5-4DA5-AB40-EB26C0D7F123}>



# New York Battery and Energy Storage Technology Consortium, Inc.

### 3. When assessing transmission needs, the IRP should incorporate the role for energy storage technologies to serve as a distribution and transmission asset and/or to augment transmission assets

NY-BEST fully supports and recognizes the need for local transmission and distribution system upgrades and investments to facilitate the integration of renewable energy and the path to a zero-emission electric grid. However, we urge LIPA and the IRP team to recognize the value of **proven cost-effective** new technology alternatives to traditional T&D solutions.

#### Energy Storage as a Transmission Asset

In many cases, grid-scale energy storage is a cost-effective alternative to traditional infrastructure investments, capable of being deployed to optimally meet the needs of the grid and enhance the utilization of existing infrastructure. This includes:

- *Greater renewable energy utilization (i.e., to reduce curtailments and increase renewable power delivery to LIPA customers)*
  - Energy store can be deployed as a transmission or distribution asset, mimicking the operation of conventional infrastructure to increase system headroom and energy deliverability for renewable energy, resulting in less curtailment and increased renewables delivery. Transmission planning for increased renewable energy generally looks at relieving congestion and allowing energy to be transported. As renewable energy becomes a greater portion of our energy production, there will be times of over-generation when simply relieving transport constraints will still not allow the energy to be utilized. Energy storage assets can both relieve congestion and ensure that energy produced at times of over-generation is utilized. NY-BEST recommends that “Transmission” be broadened to “Energy Delivery” in the IRP study.
- *Streamlined renewable energy project deployments to deliver benefits more quickly*
  - Energy storage is capable of being deployed months to years faster than traditional grid infrastructure, matching the rapid deployment speed of renewable energy projects. That deployment speed can increase capacity for renewable energy on the T&D system more quickly, leading to increased savings for LIPA customers.
- *System expandability to interconnect renewable generation and value of optionality*
  - Grid-scale energy storage is a modular, low-impact solution with limited footprint compared to conventional T&D poles and wires. Energy storage resources can be scaled to meet growing renewable generation demand and expand with the grid as needed, as opposed to



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the often “lumpy” and large-scale up-front investment needed to expand conventional transmission and distribution infrastructure. The ability to incrementally expand the system allows planners to address multiple growth scenarios efficiently with lower risk of under-utilized or insufficient investment resulting from large, long time horizon projects. NY-BEST recommends that the IRP study consider the value of optionality in evaluating multiple load and renewable energy deployment scenarios.

- *Improved system flexibility to manage intermittent resources*
  - Energy storage is proven to provide increased flexibility to the grid through grid services.
- *Firmness of renewable generation projects that would be facilitated by the proposed local transmission and distribution investments*
  - Grid-scale energy storage’s modular deployment capability ensures investments match known requirements rather than projected future scenarios. Energy storage limits the need for “firmness of renewable generation projects” as it can be deployed in small increments as specific renewable project developments become more certain. Conventional T&D infrastructure requires long-term projections of generation, increasing uncertainty and the odds of underutilized infrastructure.

## IRP Scope Considerations

In evaluating Long Island’s transmission needs, the IRP must avoid focusing too narrowly on just “unbottling” renewable energy. The IRP should broaden the goal of maximizing renewable energy utilization from just exporting energy from constrained pockets to actual utilization. Traditional transmission analysis often incorrectly assumes that simply exporting renewable energy from a constrained pocket during times of renewable overgeneration results in maximum generation utilization.

Further, the IRP should consider different scenarios with respect to resource and load growth location. Given the immobility, high capital cost, and long implementation timeframe of transmission projects, LIPA should incorporate scenario planning and consideration of the value of “optionality” to reduce the risk of sub-optimal economic outcomes. As discussed above, energy storage projects can support efficient deployment of resources by providing more optionality (e.g., delaying conventional infrastructure requirements until the demand/generation is better understood and known or by scaling up in modular increments



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as demand/generation scales) and by deferring lump sum investments in traditional T&D projects

NY-BEST recommends that LIPA incorporate a greater consideration of alternatives to traditional transmission including the deferral and augmentation of traditional transmission with other technologies. This approach would result in a greater emphasis on maximizing overall grid benefits and reducing costs to ratepayers.

In its examination of intertie cables, NY-BEST urges LIPA to fully consider energy storage to reduce the current reliance on intertie cables injecting off-Island energy. Given NYISO's Zone K locational capacity factor of 102%+, seeking ways to generate and utilize as much on-Island generation as possible will reduce the costs to ratepayers paying for unused capacity.

In addition, LT&D investments can further increase hosting capacity of distributed energy resources beyond simply allowing more energy to be exported from a region. NY-BEST recommends that LIPA consider innovative solutions, such as combining local grid control and energy storage to stabilize voltage and reduce back-feeding, in their analysis and decision-making going forward.

## **SPECIFIC COMMENTS ON THE DRAFT IRP SCOPE TASKS**

In this section, we provide comments on the specific key task outlined in the Draft IRP Scope.

Task 1) Identify the supply-side resource options necessary to meet the short and long-term resource needs under a variety of scenarios

- When incorporating energy storage into electrical system models, it is important to consider the duration of the storage discharge. Frequently models are created that include 4-hour duration energy storage assets and fossil fuel peaking assets. By limiting the energy storage asset duration to four hours, the results tend to skew toward higher need for peaker plants. Incorporating a portfolio of different duration energy storage assets will better optimize the results. NY-BEST recommends that the IRP Scope and modeling should include different durations of energy storage, not just four-hour energy storage. Because energy storage systems can be designed with any desired duration, ideally the modeling will determine the optimal durations needed by the system. However, as a starting point the models could consider a set of products such as 4, 8, 12, 36, and >100 hour duration energy storage systems.





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Task 2) Develop load forecasts for various scenarios and identify potential demand-side resource options consistent with CLCPA mandates and goals.

The impact of electrification of transportation will be a significant factor in developing load forecasts. NY-BEST encourages LIPA to consider multiple grow scenarios and local effects from concentrated adoption in particular areas. Vehicle charging behavior, with the potential to time shift portions of charging load to times of higher renewable generation or lower peak load, should be considered. Further, emerging vehicle-to-grid technology should also be considered in the modeling.

Task 3) Disadvantaged community impacts

- NY-BEST recommends that both the direct replacement of peaker plants by energy storage and the reduction in run time of the plants resulting from distributed clean energy and storage projects across the network be considered in the IRP. Both approaches will reduce negative environmental impacts on disadvantaged communities.

Task 4) Disposition (e.g., extension, expiration) and timing thereof of existing contracts for fossil- fueled generation (i.e., PSA units and non-PSA units) and for certain transmission contracts. The key questions to be addressed in the IRP are: i) Can some PSA unit blocks be 'ramped down' for economic reasons prior to the 2028 expiration of the PSA without violating resource adequacy and reliability requirements, and what is the optimal sequencing of the ramp downs? ii) Which PSA and non-PSA units are needed for reliability? iii) Identify the need for firm capacity purchases from neighboring regions.

- NY-BEST recommends adding a question: Would new PSAs with clean dispatchable assets such as energy storage be beneficial? We also urge LIPA to consider expanding its approach to energy storage to incorporate long-term PSAs and third-party ownership.

Task 5) Transmission projects necessary to support achievement of objectives

The IRP will identify transmission investments needed for reliability for all scenarios and sensitivities. Related questions to be evaluated in the IRP include: (1) Are there load pockets that may benefit from non-wires alternatives (local generating units, batteries)? Where and how much? (2) Will Long Island need additional intertie capacity for import/export, apart



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from the additional capability already being sought to meet the Public Service Commission's 2020 Public Policy need? Should LIPA extend its cable contracts with NYPA and Neptune?

- NY-BEST suggests changing the title of this task to "Energy delivery projects to support achievement of objectives." See our comments above related to transmission and energy delivery.

### Task 9) Potential fuel security issues

- It is not clear from the Draft Scope document whether this task evaluates all the energy sources or just those that are "fueled." If the latter, NY-BEST suggests broadening this evaluation and changing the title to "Potential energy security issues" reflecting the fact that we expect most "fueled" assets to be phased out.

### Task 10) Resiliency Considerations

The IRP will have a discussion of system resiliency for each scenario and sensitivity in terms of both resource supply and transmission.

- NY-BEST recommends that local resiliency and reliability be considered in the IRP.

### Task 11) Feasibility and Challenges

As noted earlier, the cost of energy storage has been declining significantly and is projected to continue to do so. It is critical that the study utilizes appropriate cost projections for the technologies being evaluated.

### IRP Scenarios

NY-BEST recommends modifying the "Accelerated Transmission Investment Scenario" to be the "Accelerated Transmission and Energy Storage Investment Scenario." As we have discussed in our comments above, the inclusion of more energy storage combined with transmission is likely a more effective means of advancing the retirement of fossil-fueled generation than transmission investments alone. The modified scenario would consider an acceleration of both transmission and energy storage investment. The NY-BEST/Strategen peaker study provides guidance on the level of energy storage deployment to be considered in the scenario.





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## Conclusion

NY-BEST appreciates the opportunity to provide these comments on the 2022 IRP Draft Scope. We encourage LIPA to incorporate these comments into the Final Scope and IRP implementation. NY-BEST welcomes the opportunity to continue working with staff at LIPA and PSEG-LI to provide additional information on energy storage technologies and how we can unlock its many environmental, energy, and economic benefits on behalf of Long Island's electric grid and ratepayers.

If you have any questions about these comments or need additional information, please contact us at 518-694-8474 or by email at [info@ny-best.org](mailto:info@ny-best.org)

Thank you.

Respectfully Submitted,

Dr. William Acker  
Executive Director

## Integrated Resource Plan ~~2022 IRP~~ Scope of Work

The 2022 Integrated Resource Plan (IRP) will study the supply-side, demand-side, and transmission resources needed for LIPA to continue to provide reliable, environmentally compliant, and cost-effective electric service to customers on Long Island and the Rockaways. The 2022 IRP will build on previous work and identify the actions needed to continue the path towards meeting New York State's nation-leading clean energy goals established in the Climate Leadership and Community Protection Act (CLCPA). The development of the IRP is expected to extend from June 2021 to final report issuance in the third quarter of 2022. The 2022 IRP will be developed by PSEG Long Island, as an agent of and acting on behalf of LIPA. PSEG Long Island will be assisted by a team of consultants, along with the intended use of subject matter experts from Stony Brook University and Brookhaven Science Associates, who will focus on identifying the attributes, economics, timeline and feasibility associated with the commercial deployment of emerging technologies. This scope of work document provides background information and outlines the IRP's study period, objectives, tasks, and proposed scenarios.

Separately, PSEG Long Island is initiating a climate vulnerability study that will run parallel to the IRP effort. The climate vulnerability study will focus on climate change impacts on system loads and facility ratings, as well as T&D system resiliency. As applicable and available, these results will be incorporated as inputs to the IRP.

### I. Background

The CLCPA includes, among other mandates, a requirement that 70 percent of electricity consumed in the state by 2030 be produced with renewable energy (i.e., the 70 x 30 mandate), the development of 3,000 MW of energy storage by 2030 and 9,000 MW of offshore wind by 2035; and 100 percent zero-carbon electricity production by 2040 (i.e., the 100 x 40 mandate).

While meeting New York State's clean energy mandates poses challenges to all energy service providers, LIPA is in a unique position as a publicly owned and vertically integrated utility whose service territory is literally an island. To meet the NYISO's capacity requirements, LIPA has, over time, entered into a series of long-term power supply contracts with a variety of generators that are physically located on Long Island. LIPA also purchases capacity in the Rest of State (ROS) market and has in place several transmission agreements, including two firm transmission capacity purchase agreements, that enable import of economy energy and/or capacity from neighboring Regional Transmission Organizations (RTO). Many of these contracts, both capacity and transmission agreements, expire within the next ten years<sup>1</sup>.

LIPA has approximately 5,500 MW of capacity under contract excluding its 18% ownership of Nine Mile Point 2, of which 3,700 MW is comprised of local fossil-fueled steam and combustion turbine units under long-term contract with National Grid, i.e., the Power Supply Agreement (PSA). The PSA steam units total

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<sup>1</sup> Please see the [Annual Disclosure Report](#) of the Long Island Power Authority (Fiscal year 2020), System Description starting on page 26.

about 2,300 MW (nameplate) and are, on average, over 50 years old. The balance of the PSA units (i.e., simple cycle combustion turbines) average close to 50 years in age. While well maintained, it is an old and thermally inefficient fossil fleet. The PSA contract is due to expire in April 2028. The remainder of capacity under contract to LIPA (i.e., units with Power Purchase Agreements (PPAs)) totals approximately 1,900 MW and includes combined cycle and simple cycle units on Long Island, as well as a 685 MW contract for capacity from Marcus Hook, a power plant located in Pennsylvania. Expiration of the various PPAs will occur over an extended period, but the bulk of the capacity under contract will also expire by 2028, with the Marcus Hook contract expiring in 2030.

In addition to capacity contracts, LIPA also has a number of firm transmission capacity agreements with other parties. These include:

- **The Y-49 Cable:** The East Garden City to Sprain Brook interconnection, installed in 1991, is owned by NYPA. Most of the capacity of the Y-49 Cable is used by LIPA under the terms of a contract with NYPA. The contract expires in November 2022.
- **The Cross-Sound Cable (CSC):** A high voltage direct current (HVDC) cable from Shoreham, NY to New Haven, CT that is dedicated to LIPA's use under a firm transmission capacity purchase agreement for 330 megawatts of transmission capacity that enables LIPA to purchase power from New England. The CSC Agreement expires in 2032.
- **The Neptune Cable:** A firm transmission capacity purchase agreement that provides LIPA the ability to purchase power from PJM via an undersea HVDC transmission cable capable of carrying 660 megawatts of electricity. The cable became operational in July 2007; the contract expires in June 2027.

Fundamentally, an IRP matches supply (generation) to demand (electric load). On the generation side, LIPA is facing a transition from its current near total dependence on fossil-fuel fired generation to a resource mix increasingly dominated by offshore wind, with a portion of the existing fossil fleet transitioning to a role of providing back-up generation when the wind resource is not available. Already, two projects selected in NYSERDA's Offshore Wind Renewable Energy Credit (OREC) procurements are planning to feed into Long Island, the Sunrise Offshore Wind Project (880 MW, 2024) and the Equinor Empire Wind 2 Project (1,260 MW, 2026), with more expected to result from NYSERDA's future procurements. The IRP will need to recommend the optimal amount of operating and installed reserves (to be provided by clean, flexible resources, such as storage) that Long Island will need to integrate all of this offshore wind.

On the load side, LIPA has aggressive energy efficiency (EE) and other demand-side management (DSM) programs and, like many utilities, is experiencing reduced (or negative) growth in annual energy sales and peak load. However, this is expected to change with the implementation of CLCPA mandates and increasing electrification from transportation and heating loads.

LIPA's 2022 Integrated Resource Plan will help create a path forward for LIPA to comply with New York State's clean energy and decarbonization goals, address the aforementioned challenges, and continue to serve its customers in a reliable and cost-effective manner.

## II. Scope of Work

The scope of work of the study includes assessment of all areas (e.g., the contracts, market structure, policy initiatives) that will and/or may influence the development of an Integrated Resource Plan that best positions LIPA to continue to provide reliable, environmentally responsible, and cost-effective electric service to its customers.

### a. Overview

The study will develop 3 - 4 Alternative Scenarios. The study will result in an action plan for the 2022 – 2030 period, including supply- and demand-side resource additions, generation unit ramp downs pursuant to the Power Supply Agreement (PSA) with National Grid, major transmission upgrades needed for reliability and clean energy import/export, and potential extensions of expiring power supply and transmission service agreements.

PSEG Long Island will perform the following steps for each of the Scenarios:

1. Establish assumptions to be used in the analysis including: load forecast, which includes projections of behind-the-meter energy resources and the electrification of heating and transportation; NYISO system-level load; the NYISO resource mix; committed resource additions such as offshore wind; and other resource targets in the CLCPA; and
2. Determine incremental LIPA resource needs by: comparing LIPA's load and resource forecast against key IRP constraints (including resource adequacy requirements, CES and CLCPA targets); identifying gaps for meeting the constraints; identifying cost-saving opportunities under existing arrangements (e.g., PSA unit ramp down, termination of certain imports); and proposing resource solutions.

### b. Study Period

The study period will be from 2022 – 2040, which encompasses two key CLCPA milestones - the mandates that at least 70 percent of the electricity consumed in NYS in 2030 will be from renewable resources (i.e., 70 x 30), and that electricity production in NYS will be entirely emissions-free by 2040 (i.e., 100 x 40). While the study period extends to 2040, the 'actionable' period of 2022 - 2030, or the period during which key decisions need to be made (e.g., which contracts to extend, what transmission projects and/or carbon free resources might provide load pocket relief and allow certain fossil units to retire) is the focus of the IRP.

### c. Objectives

IRP objectives, along with a brief description of considerations associated with each objective, include the following:

#### 1) Support and meet CLCPA goals/mandates

All IRP scenarios must meet or exceed current CLCPA goals. LIPA intends to participate in all CLCPA related programs (e.g., purchase of renewable energy credits (RECs), ORECs) and meet specific targets (e.g., Battery Energy Storage Systems (BESS) requirements). It should be

emphasized that, while the CLCPA sets mandatory minimums for implementation of certain clean technologies, LIPA will evaluate opportunities to exceed such minimums, both as part of the IRP study and in any BESS and other procurements that may result from the IRP, if doing so would benefit our customers and contribute to meeting our planning objectives.

**2) Develop projections and identify the impacts of beneficial electrification**

Identify the additional electric load associated with the beneficial electrification of other sectors (such as heating and transportation) on Long Island.

**3) Determine short and long-term resource needs**

Identify resource needs to meet CLCPA requirements, including flexible generation and carbon-free technologies.

**4) Maintain system reliability**

All IRP scenarios will be required to meet, or exceed, existing and projected reliability standards and capacity requirements. Moreover, resiliency attributes associated with the various IRP scenario portfolios will need to be considered.

**5) Minimize rate impact to the extent practical**

The IRP will rank the scenarios by cost and customer rate impact for meeting the CLCPA goals. The IRP will compare different resource options based on their projected cost and performance and select the preferred portfolio of resources (including amounts, types and locations) that best meet reliability, environmental and affordability criteria.

**6) Benefit disadvantaged communities**

The CLCPA requires that benefits from clean energy investments be realized by disadvantaged communities. Hence, it will be important to identify the impact of IRP-driven decisions on disadvantaged communities. The definition of disadvantaged communities, though, has not been finalized yet by the Climate Justice Working Group. Nevertheless, NYSERDA's interim definition of disadvantaged communities will be used unless and until an official definition is provided.

**d. Tasks**

The following outlines the key tasks that will be performed as part of the IRP study.

**1) Identify the supply-side resource options necessary to meet the short and long-term resource needs under a variety of scenarios**

Identify supply resource portfolio(s) necessary to meet short and long-term needs and CLCPA requirements that are cost effective and meet reliability standards. This includes total supply resources (MW) and timing of additions; off-island imports; bulk energy storage systems; distributed energy resources, such as community-based wind and solar;

the type, amount (MW) and timing of flexible resources sufficient to meet the needs of OSW; and other intermittent resources as well as other CLCPA-compliant resource options and emerging technologies that may be identified in the course of developing the IRP.

**2) Develop load forecasts for various scenarios and identify potential demand-side resource options consistent with CLCPA mandates and goals**

**3) Disadvantaged community impacts**

Develop and apply a qualitative approach to determine the impact of IRP-driven decisions on disadvantaged communities. In addition to environmental impacts (e.g., reduction in greenhouse gases (GHGs) and criteria pollutants), this analysis will identify other benefits for disadvantaged communities associated with clean energy resources and/or reduced fossil generation consistent with CLCPA requirements.

**4) Disposition (e.g., extension, expiration) and timing thereof of existing contracts for fossil-fueled generation (i.e., PSA units and non-PSA units) and for certain transmission contracts.**

The key questions to be addressed in the IRP are:

- i) Can some PSA unit blocks be ‘ramped down’ for economic reasons prior to the 2028 expiration of the PSA without violating resource adequacy and reliability requirements, and what is the optimal sequencing of the ramp downs?
- ii) Which PSA and non-PSA units are needed for reliability?
- iii) Identify the need for firm capacity purchases from neighboring regions.

Assume that existing contracts will expire at the end of their term and make assessment as to whether any are needed to be extended for reliability or economic reasons. Reduce, and by 2040 eliminate, dependence of fossil fuel generation. Assume the generator unit retires if a contract is not extended.

**5) Transmission projects necessary to support achievement of objectives**

The IRP will identify transmission investments needed for reliability for all scenarios and sensitivities. Related questions to be evaluated in the IRP include:

- (1) Are there load pockets that may benefit from non-wires alternatives (local generating units, batteries)? Where and how much?
- (2) Will Long Island need additional intertie capacity for import/export, apart from the additional capability already being sought to meet the Public Service Commission’s 2020 Public Policy need? Should LIPA extend its cable contracts with NYPACross Sound Cable and Neptune?

**6) Reliability impacts (IRM/LCR) of suggested plan(s)**

The IRP will identify the impact on NYCA's Installed Reserve Margin (IRM) and Zone K for each scenario and sensitivity.

~~**7) Rate impacts**~~**7) Cost to Consumers**

Analyses will identify ~~costs in terms of total~~ the relative incremental cost of each resource portfolio ~~cost and average system rate (\$/kWh)~~ for each scenario and sensitivity, ~~and will rank the scenarios from least.~~ However, it should be noted that the actual cost to most expensive—consumers of specific resources and associated rate impacts will be determined at the time that LIPA conducts procurements or takes other actions to fulfill the needs identified in the IRP.

**8) Environmental impacts**

Analysis will identify greenhouse gas and criteria pollutant emissions reductions for each scenario and sensitivity.

**9) Potential ~~fuel~~energy security issues**

Each scenario will be assessed as to its energy diversity and reliance on sources with exposure to supply interruption.

**10) Resiliency Considerations**

The IRP will have a discussion of system resiliency for each scenario and sensitivity in terms of both resource supply and transmission.

**11) Feasibility and Challenges**

An overall qualitative assessment of each scenario in terms of its feasibility (i.e., likelihood of being achieved) from an economic, time, complexity, and control perspective. The assessment will also cover what is needed to achieve the scenarios (i.e., potential market changes, development, and type of flexible generation).

**12) Develop an action plan through 2030**

The action plan will reflect the necessary steps that LIPA should undertake to best position itself to serve its customers reliably, environmentally responsibly, and economically in both the short and long-term. It will clearly identify the key actions and investments that LIPA should undertake in order to achieve the IRP objectives.

**e. IRP Scenarios**

~~Final scenario(s) development will be~~ This section describes a preliminary set of scenarios subject to additional further review and refinement with the IRP consultant. Additional scenarios may be

~~developed based on stakeholder input. Nevertheless, as shown in the list and table below, the IRP~~  
~~comments.~~The IRP will look at 3-4 scenarios with a limited number of ~~sensitivessensitivities~~ around  
those scenarios. Additional scenarios may be developed, as necessary.

- The “Baseline Scenario” will be developed assuming the contract expiration(s) and retirement(s) of some of the existing fossil-fueled generation and allowing for other units to remain online because of reliability or economics.
- ~~The “Accelerated Transmission Investment Scenario”~~One more aAlternative scenarios will examine ~~the impact of meeting existing CLCPA goals with~~ accelerated transmission and/or storage investments, allowing for advancing the retirement of fossil-fueled generation.
- ~~The “Accelerated Decarbonization LIPA Scenario”~~Additional alternative scenarios will examine the potential impact of LIPA increasing investments in efficiency and/or demand response, as well as accelerating electrification programs.
- ~~The “Accelerated Emissions Free Generation LIPA Scenario” will consider the impacts of LIPA accelerating the expiration of its fossil fueled generation contracts to achieve emissions-free generation prior to 2040.~~ Several sensitivity cases will be developed around the main scenarios.

### Proposed Scenarios

Major Drivers/Variables	Baseline	Accelerated Transmission Invest.	Accelerated Decarbon. (LIPA)	Accelerated Emission Free Gen. (LIPA)
<i>Load Growth</i>	NYISO Forecast	NYISO Forecast	Increased (LIPA)	NYISO Forecast
<i>Market Structure</i>	No change	No change	No change	No change
<i>Contracts (Generation &amp; Trans.)</i>	Expire/Partial Extension*	Advanced Retirements	Expire/Partial Extension*	Advanced Retirements
<i>Transmission Expansion Plan</i>	Current Plan	Increased	Current Plan	Current Plan
<i>LIPA Decarbonization Investment</i>	Current Plan	Current Plan	Increased	Current Plan

Notes: 1) CLCPA mandates are achieved or advanced in all scenarios. 2) Scenarios are subject to sensitivities analyses of certain key drives.

\* Extension for reliability requirements.