

Public Comments on 2023 IRP Summary Guide

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Large Flat Roofs – Has LIPA’s 2023 Integrated Resource Plan Missed an Opportunity?

Peter J. Gollon

While LIPA’s 2023 *Integrated Resource Plan* outlines many necessary steps to move toward the State’s goals as stated in the Climate Leadership and Protection Act, that Plan misses an opportunity to effectively utilize additional solar power to meet these goals.

Solar generation is mentioned in the 2024 *Budget’s* Figure 11, (p. 39) reproduced below:

Figure 11: Long Island Clean Energy Projects in Service by the Early 2030s

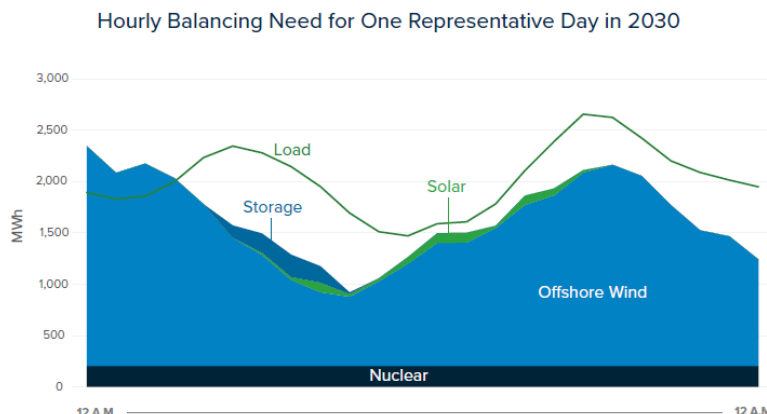
Solar (1,419 MW)	Size (MW _{AC})	In-Service (Est./Act.)
Long Island Solar Farm	32	2011
Eastern Long Island Solar Project	11	2013
Shoreham Solar Commons	25	2018
Riverhead Solar	20	2019
Kings Park Solar 1 and 2	4	2019
Solar Feed-in Tariffs I-III	89	2021-2022
LI Solar Calverton	23	2021
Behind-the-Meter	1,200	2030
Solar Communities (FIT V)	15	2025
Offshore Wind (3,628 MW)	Size (MW _{AC})	In-Service (Est./Act.)
South Fork Wind Farm	130	Early 2024
Sunrise Wind	924	Mid-to-Late 2020s
Empire Wind 2	1,260	Late 2020s
Excelsior Wind	1,314	2030s
Energy Storage (750 MW)	Size (MW _{AC})	In-Service (Est./Act.)
East Hampton & Montauk Storage	10	2018 & 2019
2023 RFP Awards (Pending)	175+	2025
Future Storage Additions	565	2030
TOTAL	5,797 (MW_{AC})	

It shows a grand total of 204 MW AC (circled in red) of large scale solar installed as of the issue date of the report at the end of 2023, and no additional solar farms projected to 2030. It also shows 1,200 MW of behind-the-meter solar, six times the amount of utility scale solar that is anticipated to be installed by 2030.

Based current residential total solar installations and installation rates, the projected total of 1,200 behind-the-meter solar appears to be almost exclusively residential installations with typical sizes of 8 to 9 kW.

Both of these formats have their disadvantages: utility scale solar requires a large amount of acreage (five acres per MW) on an island that has a shortage of open space that is only getting worse with time. Because of the small scale of many thousands of individual installations, behind the meter residential solar is expensive to install. In a net metering situation, it is also and costly to LIPA which forgoes the retail price of residential self-generated energy.

Figure 15 of the IRP (page 44) show the hourly balancing needs for a “representative” day in 2030:



The report explains:

“The gap between the load and the non-dispatchable resources would have to be served by controllable imports, **local fossil generation**, and energy storage. The load curve peaks in the morning and again in the early evening when the daily peak hour tends to occur. The significant dip during the daytime is due to the impact of behind-the-meter solar.” [emphasis added]

The gap so described for a “representative day” averages to about 500 MW, for a daily total of perhaps 10,000 or 12,000 MWh renewable energy shortage. *In principle a good part of this could be supplied by on-island solar plus storage.*

The *Long Island Solar Roadmap*¹ explored the capacity of Long Island (Nassau and Suffolk Counties) to host “mid- to large-scale solar installations with a capacity of 250 kW DC or larger” on non-residential, non-sensitive lands, large flat rooftops, and parking canopies.

The report (Table 4, p. 27) indicates the “estimated potential of low-impact solar installation capacity on Long Island’s flat roofs” in DC MW.²

Table 4. Estimated Potential Low-Impact Solar Installation

County	Rooftop (low density)	Rooftop (high density)
Nassau	909	1,213
Suffolk	1,487	1,982
Total	2,396	3,195

¹ *Long Island Solar Roadmap*, 2021, The Nature Conservancy and Defenders of Nature

² Low density is 6W/ft², high density is 8W/ft².

In principle these many thousands of roofs hosting 2,396 MW could produce a daily average³ of 8,793 MWh; with local storage this would cover most of the 10,000 to 12,000 MWh daily energy gap in the “representative” day shown. This full amount is, however, highly impractical.

What could help fill this gap is a **flat-roof-solar program** with **local storage**, concentrating first on *the large flat roofs of companies that need protection from long power outages*, such as supermarkets that must keep food cold or frozen during outages.

What is a practical implementation rate? If the *minimum* production rate for all sites considered is 250 MW DC, assumed here to be equivalent to 210 kW AC; the *average* must be greater than that. I take the average site to be larger and capable of producing 300 kW AC. Then two flat roof project installed per week will yield an installed capacity of 30 MW AC per year. This is to be compared with the 90 MW from over 10,000 residential systems installed in 2023. Over the six years until 2030, these two roofs per week would reach a total of 180 MW, a major fraction of the 500 MW “representative” daily average shortfall.

The energy generated would be *fed directly into the grid when needed*, and otherwise recharge LIPA-controlled batteries that shift energy from high-production periods to high-demand periods. Under normal conditions, the only involvement of the hosting organization is renting its roof for the mounting of solar panels. However, during anticipated or actual storm blackouts, that stored energy would be reserved for exclusive use by the hosting organization.

This arrangement could simultaneously:

- Reduce the use of fossil fuels to fill the gap between demand and available carbon-free renewables;
- Obtain energy at a cost lower than, or comparable to that purchased from local fossil generation or imported from off-island;⁴
- Continue Long Island employment in the local solar industry;
- Provide steady income via roof rents to hosting organizations;
- Help protect hosting roofs by partially shading them from damaging sunlight and heat;
- Provide protection for supermarkets and other hosts against product spoilage during the next long blackout.

For best results, this program should be run directly by LIPA, which should:

- Offer to rent roofs of suitable hosting sites;
- Directly own the solar arrays and batteries;
- Obtain significant Federal incentives for solar system and battery costs through the Inflation Reduction Act

³ <https://pvwatts.nrel.gov/pvwatts.php>; assuming 15 deg south-facing array tilt, 14% system losses; 1 kW DC producing a total of 3,165 kWh annually.

⁴ <https://www.lazard.com/research-insights/2023-levelized-cost-of-energyplus/>

- Directly maintain, or contract out for array and battery maintenance as needed;
- Control charging and discharge of batteries through either locally generated or grid-supplied energy as appropriate;
- Determine when battery use and solar generation are to be totally dedicated to hosting organization's needs during power outages.

The central administration and control by LIPA will result in optimal use of these assets, and the ownership by LIPA will allow its lower cost of capital to be reflected in the lower cost of energy generation and storage, as compared to ownership by hosting organizations or a third party.

This aspect of LIPA's ownership and financing is discussed further in a filing by Mr. Fred Harrison.⁵

Community solar could be considered as an alternative financial structure, especially as a response to the newly announced DOE Community Solar Challenge to triple the installed capacity of community solar by 2025; that's *next year!*⁶

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⁵ Fred Harrison, Troubling Absence of Explicit Attention to IRA Provisions, Planning and Rate Saving, February 2024

⁶ <https://www.energy.gov/eere/articles/doe-challenges-solar-industry-triple-community-solar-end-2025>

IRP Public Comment Session I, February 12, 2024

Statement submitted by Fred Harrison, 62 Elinore Ave., Merrick 11566

Troubling Absence of Explicit Attention to IRA Provisions, Planning and Rate Saving

Key Fact: LIPA/PSEG rates 4th highest in the nation compared with similarly sized utilities.*

LIPA's "Roadmap To A Clean Energy Future For Long Island And The Rockaways", or "Integrated Resource Plan" (IRP), is filled with lots of good information and is a "can-do" report. I compliment the authors on their work. And as is true of many good reports, it informs as well as raises lots of questions about the choices ahead.

How the Long Island Power Authority (LIPA) implements the goals of the Climate Leadership and Community Protection Act (CLCPA) as well as the priorities identified in the IRP will be of great consequence to ratepayers. Many experts as well as leaders of public power utilities have concluded that a key to a lower cost renewable energy future lies in the Inflation Reduction Act (IRA). In fact, the IRA's incentives were explicitly designed to reduce the cost of rapidly transitioning away from fossil fuels. IRA funding is available for energy storage, transmission, distributed energy resources, and renewable energy infrastructure investments—areas which the IRP has identified as priorities.

The 2023 LIPA IRP says nothing about how to meet climate goals in the most cost-effective manner possible. It does predict that power supply costs will increase 2% per year in real dollars between now and 2030. If one factors in the Federal Reserve Board's inflation estimates, that translates into rate increases of between 4-5% per year, and that is assuming relative stability in fossil gas prices. Ratepayers may face bill increases far into the future if we don't look for alternatives.

In 2021, at the first opportunity for public comment on the IRP, I requested the study look at every nonprofit option for meeting CLCPA goals. I thought it appropriate that an IRP address an issue that ratepayers contend with - the cost of

still is New York's biggest energy producer, supplying low-cost fossil free electricity to ratepayers. That was 60 years ago—the 20th century. We need a Niagara Project for the 21st century. We need a feasibility study of nonprofit publicly owned 21st century renewable energy resources, including offshore wind and utility scale solar. With LIPA's large customer base, NYPA's project management skills, and NYSEERDA's expertise, ratepayers could see enormous benefits.

Private power producers and their supporters will object, just as they sought to block the Niagara Project. But public power - cheap, nonprofit electricity -has not been a partisan or ideological matter. The idea of government ownership of the electrical power supply in New York goes back to 1907 when Republican New York Governor Charles Evans Hughes (later Chief Justice of the United States) declared that the state's undeveloped waterpower "should be preserved and held for the benefit of the people and should not be surrendered to private interests." In 1914, former Republican governor and president Theodore Roosevelt warned against "waterpower barons." In 1931, then- Democratic Governor Franklin D. Roosevelt signed the Power Authority Act designed to "give back to the people the waterpower which is theirs." This led to the Niagara Project, the opening of which was celebrated by President Kennedy, and former presidents Hoover, Truman, and Eisenhower.

Today's ratepayers have similar concerns about huge corporations taking control of the wind and sun for their own gain. Offshore wind corporations are determined to profit handsomely at ratepayer expense. If they can't, they walk away or threaten to walk away from their commitments. In rejecting the recent request for larger offshore wind subsidies, NYS Public Service Commission Chair Rory Christian declared "We signal that ratepayer funds are not an unlimited piggy bank for anyone's disposal." Commissioner John Howard concurred, noting the threat of increased costs as the state shifts to renewable energy. Howard called for moving forward with "eyes wide open and pocketbooks shut."

Not only should the feasibility of publicly owned offshore wind be examined, but the possibility of utility scale publicly owned solar should be studied as well. Other public utilities are already moving in this direction. East Bay Community Energy in California, (now called AVA), a publicly owned community choice energy

Distributed Energy Resources (DER) and continue to promote customer-owned DER including rooftop solar and storage.”(3)

For example, “beneficial electrification” includes heat pumps. The report shows that between 400,000-500,000 LI households could save money with cold air heat pumps. What a trifecta for Long Islanders! Heat pumps smooth out LIPA seasonal demand, reduce costs for ratepayers, and cut greenhouse gas emissions.

What can LIPA do? LIPA can get directly involved in heat pump installation and finance. Currently, most LIPA ratepayers are **excluded** from LIPA sponsored programs designed to encourage the transition to heat pumps because their household income is too high. To qualify for low and moderate income (LMI) benefits, family income must be below 80% of median income. Under this formula, most households in Levittown, Seaford, or Baldwin, for example, do not qualify for LIPA assistance in shifting to renewable heat and/or power. LIPA should be exploring the feasibility of directly helping these ratepayers, sharing the savings made possible by wise energy investments.

For example, a pilot project in South Carolina, called “Help My House,” finances energy efficiency upgrades that “cut participants average electricity use by more than a third. These upgrades included new heat pumps, added insulation, duct and air sealing, and other common-sense measures...Participants did not pay anything upfront for their home improvements. Instead, they repay their utility over time as part of their electricity bill. This process is called ‘on-bill financing.’ And because their energy use was significantly down, participants’ total electric bills typically went down even when including loan payment. “More than a dozen public power utilities in 8 states offer on-bill financing programs to their customers. LIPA should aspire to be known as the public agency that helps people save money.

Even LIPA programs designed to assist low- and moderate-income households have faced financial shortfalls according to PSEG’s recent Energy Efficiency Plan. More needs to be done. For example, in New York City, NYPA, NYSEERDA, and the New York City Housing Authority (NYCHA), as part of the Clean Heat Challenge, are combining forces and resources to purchase 30,000 window heat pump units for NYCHA residents. Certainly, on Long Island, public housing would benefit from a similar program. There are many other initiatives worthy of emulation.

NY to install rooftop solar, with a typical customer seeing a payback in 7.6 years. LIPA continues to explore the potential....” p. 49.

***LIPA/PSEG rates are 4th highest in nation compared with similarly sized utilities. There are almost 3,000 electrical utilities providers in the U.S. If Alaska, Hawaii, and several small, geographically isolated communities are excluded, LIPA/PSEG rates are 7th highest in the nation, and highest of the over 1000 nonprofit municipal or cooperative utilities. From U.S. Energy Administration latest report, Jan. 2024**

Submitted electronically

February 12, 2024

Tracey Edwards, Board Chair
Thomas Falcone, CEO
Long Island Power Authority

RE: Comments on LIPA Integrated Resource Plan

I. Introduction

National Grid Ventures (“NGV”) submits these comments on the Long Island Power Authority’s 2023 Integrated Resource Plan.¹ NGV develops, operates, and invests in energy projects, technologies, and partnerships to accelerate the development of a clean energy future. NGV owns a diverse portfolio of clean energy businesses across the United States and Europe. Specifically, NGV’s businesses include onshore wind, solar power, offshore wind, transmission modernization, and energy storage. NGV owns fossil fuel generation on Long Island and co-owners three Long Island sites with solar or battery storage systems.

NGV applauds the Long Island Power Authority (“LIPA”) for undertaking consideration of the energy needs of Long Island’s customers through 2030 and for producing an Integrated Resource Plan Summary Report (“IRP”) for public review. The vision outlined by LIPA and NGV’s views are fundamentally aligned. LIPA’s vision for its power supply is a clean, reliable, and resilient electric supply at an affordable cost; its strategic objectives include increasing renewable and zero emissions resources in its energy supply, prioritizing investments to balance costs and service quality and deploying modern grid management technology.

¹ LIPA 2023 Integrated Resource Plan Summary Guide (IRP)

NGV currently owns and has under contract to LIPA approximately 3,800 MW of generation and, therefore, has a significant interest in LIPA's plans for the future. The NGV team that operates and maintains the generating units has and will continue to strive to deliver strong performance. Relevant to the IRP, NGV has also studied innovative, zero carbon power generation technologies like clean (green) hydrogen and battery storage in determining how to leverage the company's conventional generation sites on Long Island. National Grid has strong corporate emissions reductions commitments and a responsible business charter² that emphasizes the Company's commitment to enabling a clean energy transition for all. The IRP illustrates a best-case scenario for progress toward New York's climate goals and NGV is committed to supporting New York's efforts. Deliberate and thoughtful actions between now and 2030 will be imperative, however, including the timely development of the expected renewable resources. Like LIPA, NGV has an interest in and a commitment to decreasing emissions from fossil fuel combustion, as noted in the responsible business charter, and to maintaining reliability and affordability for Long Island's residential, commercial, and industrial customers while providing employment opportunities for Long Islanders.

II. NGV Supports New York's Climate Goals

New York's Climate Leadership and Community Protection Act ("Climate Act")³ establishes State-wide emissions reductions goals and requires that the state's electricity be 70 percent from renewables by 2030 and zero-emissions by 2040. The Climate Act also prioritizes disadvantaged communities and requires development of a Scoping Plan to guide the state's approach to meeting the targets. National Grid supports New York's climate goals and has its

² <https://www.nationalgrid.com/document/150371/download>

³ Climate Leadership and Community Protection Act passed in July 2019 (<https://climate.ny.gov/>)

own corporate climate commitments.⁴ Our corporate climate transition plan aims for zero emissions by 2050 without using offsets. National Grid has commitments to reduce its scope one and two greenhouse gas (“GHG”) emissions 60 percent by 2030 and to reduce scope three GHG emissions 37.5 percent by 2034 (from 2018/19 baselines) using the Greenhouse Gas Protocol for climate disclosure data. The Company also is committed to transitioning vehicles to electric and zero carbon alternatives, reducing SF6 emissions, reducing our energy consumption and reducing our annual air emissions by at least 50 percent by 2025/26, from a 2019/20 baseline, and offsetting any remaining emissions responsibly. Responsibly reducing the emissions from our Long Island generation fleet is a necessary component of meeting our own corporate sustainability goals as well as contributing to New York’s climate goals.

NGV has a portfolio of assets that supports New York’s energy needs to advance the energy transition. NGV has clean energy assets in addition to the fossil fuel generation units that are currently needed to meet Long Island’s energy needs. NGV’s clean energy portfolio includes a 22.9 MW solar facility and two 40 MWh battery energy storage facilities on Long Island (both part of a joint venture with NextEra), as well as the Community Offshore Wind joint venture with RWE.⁵ NGV also is a partner in the Propel NY Energy transmission project, mentioned in the IRP, which is essential to bringing offshore wind power to New York; a substation for the project will be built at NGV’s E.F. Barrett site. NGV’s partnership in Propel NY Energy is via NY Transco, a New York-based owner and developer of transmission, which also has completed the NY Energy Solution project. These new transmission lines will support increased delivery of renewables and help New York meet its emission reduction goals. NGV is also working to

⁴ <https://www.nationalgrid.com/responsibility>

⁵ <https://communityoffshorewind.com/>

enable other projects that support New York's climate goals, including through potential interconnection of individual offshore wind projects into the E.F. Barrett site, leasing land at our East Hampton site for the South Fork offshore wind project, and exploring how to support offshore wind energy operation and maintenance. NGV will continue to support New York and LIPA's clean energy transition through exploring all reliable and cost-effective alternatives to fossil fuel combustion, including additional energy storage and the development of hydrogen fuel options.

NGV applauds and supports LIPA's ongoing commitments to supporting New York's climate goals through investments in solar, offshore wind and energy storage technologies as well as in supporting affordability through energy efficiency.⁶ In addition to its own investments in clean energy resources, NGV also is collaborating with state and local stakeholders to advance the clean energy transition. For example, NGV is working with NYSERDA and local municipalities (in East Hampton and Southampton) on Just Transition Site Reuse Planning.⁷ The Climate Act's emphasis on ensuring a just transition and prioritizing disadvantaged communities will necessitate long-term planning and close cooperation among all stakeholders as sites are repurposed from fossil fuel combustion. NGV currently employs 520 people at the generation units under contract to LIPA. These are well-paying jobs providing essential utility services to LIPA and robust contributions to local economies that are not easily replaced. NGV looks forward to continuing to operate the fleet of steam and gas turbine units, and collaborating with NYSERDA and municipalities to ensure support for our talented workforce as local communities navigate the energy transition. NGV employees are active in local Long Island communities and

⁶ IRP, p.13

⁷ [Just Transition Site Reuse Planning Program - NYSERDA](#)

contribute to supporting local economies, and NGV property tax payments are also important to local communities.

III. Recognizing Hurdles to Decarbonization

a. Renewable Generation Project Timeline Uncertainty

The IRP correctly identifies some important challenges to achieving the longer-term goal of 100 percent zero-emissions electricity by 2040, especially with increased electric load from heating and transportation electrification. According to the summary, the IRP scenarios included an accelerated clean energy transition and found major challenges given the lack of technological readiness, limited supplies, and higher costs.⁸ In fact, even the base case modeled in the IRP rests on successful procurements and construction of offshore wind, transmission, and battery energy storage projects whose timelines may very well face delays given recent project cancellations due to supply chain constraints and unexpected price increases. LIPA projects that by the early 2030s (notably not by 2030) there will be 3,628 MW of offshore wind, 1,419 MW of solar and 750 MW of battery energy storage, almost all of it yet to come.⁹ LIPA notes that the order and timing of steam turbine retirements will depend on new resources being connected to the grid and that most impacts from heating and transportation electrification will not manifest until after 2030. However, LIPA predicts being able to retire up to 800 MW of fossil generation by 2030 based on the forecasted new renewables noted above. Without access to the IRP modeling assumptions, it remains unclear how the expected energy delivery and capacity contributions of these resources were calculated and what level of reasonable room for contingencies was included. The data underlying the IRP findings would be helpful for full transparency and to

⁸ IRP, p.26

⁹ IRP, p.32

support stakeholder engagement. With or without this data, NGV remains committed to supporting LIPA's capacity and energy needs through the energy transition.

b. Reliability and Retirement Date Uncertainty

The NYISO and the New York State Public Service Commission ("Commission") have recognized the challenges in decarbonizing New York's power grid in Zones J and K. In addition to declaring a public policy need for more transmission capacity, the Commission has an active proceeding to address the need for and development of emission free resources (specifically needed are dispatchable emission free resources or "DEFRs") to support achievement of the Climate Act's zero emissions goal.¹⁰ New York's Climate Act does not specify that the electric system must be all renewable by 2040 but that the system be zero emissions. Dispatchable emission free resources will be necessary, and units needed to maintain adequate capacity for peak loads and contingencies must remain until adequate DEFRs are in place. Reliability is paramount and must be assured prior to retirement of all fossil fuel generation, even if that generation is only used occasionally and under exceptional load and weather conditions. As LIPA notes on page 32 of the IRP, fossil fuel units needed for system reliability will run less often and overall emissions will decline steeply (well before reaching zero emissions in 2040). The Commission instituting Order for DEFR notes, "[s]everal studies indicate that renewable energy resources may not be capable of meeting the full range of electric system reliability needs that will arise as fossil generation is replaced."¹¹ The New York Independent System Operator ("NYISO") also has recognized the challenges in moving to a zero emissions scenario with only

¹⁰ Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard, Case 15-E-0302

¹¹ Case 15-E-0303, Order Initiating Process Regarding Zero Emissions Target, May 18, 2023, p.2.

existing renewable technologies: “With increased renewable intermittent generation for achievement of the CLCPA¹² goal of 70 percent renewable energy by 2030, at least 17,000 MW of exiting fossil fuel must be retained to continue to reliably serve forecasted demand. Beyond 2030, DEFRs will be needed to balance intermittent supply with demand.”¹³

Integrated Resource Planning provides a chance to thoroughly evaluate possible scenarios and their costs and benefits to choose the path providing the most reliable and affordable system mix while meeting climate goals. LIPA has noted the commitment by the State and by LIPA itself to the continued procurement of renewable energy. NGV’s generation currently supplies 50 percent or more of LIPA’s energy in peak periods and provides 65 percent of LIPA’s annual capacity requirements. The 2023 IRP extends to 2030 and includes estimates of the renewables expected to be online by 2030 and the retirements LIPA expects will be possible within that timeframe. As LIPA notes, “the industry will need to develop new solutions and technology to balance electric supply and demand on an hourly, daily, and seasonal basis to fully replace dispatchable fossil units.”¹⁴ Retirement of generation must be carefully planned and follow set procedures with notification and review by the NYISO and regulators. LIPA and its partners, NGV included, will carefully monitor progress on renewable deployment and the development and deployment of dispatchable emissions free resources to ensure a reliable and affordable system post 2030.

IV. Prioritizing Net Zero Options

¹² Climate Leadership and Community Protection Act passed in July 2019.

¹³ NYISO 2022 Reliability Needs Assessment (RNA), Nov. 15, 2022, p. 12; see also 2021-2040 NYISO System & Resource Outlook, P.9 (where both demand forecast scenarios are only met with the usage of DEFRs) and Paul J. Hibbard, et al., Climate Change Impact Phase II, An Assessment of Climate Change Impacts on Power System Reliability in New York State, Final Study.”

¹⁴ IRP, p.20

As a company dedicated to finding creative solutions to the challenges posed by the energy transition, NGV believes it is both necessary and prudent for New York and LIPA to consider all new technologies that facilitate the transition to affordable and reliable clean power. Offshore wind will make up a substantial portion of renewable supply in Zones J & K, and at times when offshore wind output falls due to weather or reliability events, energy storage or other resources will need to fill the gaps.¹⁵ In particular, NGV believes long-duration battery energy storage systems and clean hydrogen will have an important role to play in the clean energy transition on Long Island to meet reliability requirements. The Department of Energy rightly concluded that, “as the power grid is decarbonized, long-duration energy storage technologies will become essential...The use of hydrogen in fuel cells or low-NOx turbines is a leading option to enable multi-day storage and, dispatchable power generation to the grid.”¹⁶ In order to ensure an orderly and successful transition to a net zero future, investments into research and development as well as strategic blueprints for the incubation and scaling of new technologies backed by robust supply chains and policy frameworks is necessary. Unfortunately, today, developers have no reason to invest in these activities, since there are no market mechanisms nor significant research funding that would make it profitable to develop a DEFR in New York. New York and LIPA would benefit from policies and funding sources that support the development of DEFRs today, so that DEFR capacity can begin operating in advance of 2040, ensuring Long Island and the State can deliver zero emission and reliable electricity.

Accelerating development of these technologies and ensuring viable paths to adoption is essential for affordability and reliability, given costs fall as technologies scale. The IRP should

¹⁵ [2021-2040 NYISO System & Resource Outlook](#)

¹⁶ U.S. National Clean Hydrogen Strategy and Roadmap, P.29 (June 2023)

consider including more recognition of the still outstanding work needed to create viable pathways to the Climate Act's goals of 100 percent zero-emission electricity by 2040 and net zero emissions statewide by 2050. The proceeding on DEFRs is in-process and many of the necessary technologies remain in development (as well as needing to overcome hurdles to project development mentioned above). Any decisions on resource mix taken prior to 2030 must be taken with full awareness of how much progress has been made in facilitating the clean energy transition. NGV will continue to support Long Island's electric reliability needs as needed. Decommissioned units cannot always be easily brought back online.

V. Conclusion

In summary, NGV thanks LIPA for an IRP that confirms its commitment to and trajectory toward meeting New York's climate goals while acknowledging significant hurdles remain. NGV is likewise committed to reducing emissions while maintaining reliability as well as its ongoing commitments to the Long Islanders at our many generation sites. NGV believes it will be essential to add energy storage, clean hydrogen and other technologies alongside solar and offshore wind to ensure a smooth clean energy transition. NGV looks forward to continuing to support the nation leading efforts undertaken by New York State to accelerate this energy future.

Respectfully submitted,

Will Hazelip
President
NGV US Northeast



LIPA 2023 Integrated Resource Plan

The Long Island Progressive Coalition (LIPC) is a grassroots community-based organization founded in 1979. We have a long history of building NY's clean energy future, as in 2011/2012 when we passed and implemented Green Jobs Green New York legislation and on-bill financing to provide low-to-moderate income homeowners with energy efficiency services - saving residents thousands of dollars, creating local jobs, and mitigating climate change in the process. More recently, alongside the statewide climate justice coalition NY Renews, we were instrumental in the multi-year campaign to pass the Climate Leadership and Community Protection Act which has completely transformed NY's energy landscape, evident in it underpinning the 2023 LIPA IRP. Over the past few years we have been a leading member of the Reimagine LIPA campaign, which has helped develop the recently introduced LIPA Public Power Act to end the private management of the Long Island Power Authority by PSEG in favor of a publicly managed utility.

We would first like to thank the Long Island Power Authority for its statewide leadership in the renewable energy transition, despite the limitations imposed by the current management structure. We are excited about the opportunity to better meet the mandates of the Climate Leadership and Community Protection Act with a fully public LIPA. We would also like to communicate appreciation for the accessible documents and videos to explain the IRP to the public.

Our comments are informed by our commitment to a just transition to a 100% renewable energy economy for the region, the belief that sustained community engagement is necessary to achieve that, and that LIPA has the potential to do more to ensure a more equitable future. They are also informed by our understanding that the third-party-provider model has been a failure and that those failures are reflected in many aspects of the PSEG-led process to develop this IRP.

Community Engagement

It is concerning that only a small handful of experts and consultants were solicited to contribute to this process: The Brattle Group, M. J. Beck Consulting, Brookhaven Science Associates, and Stony Brook University. No other stakeholders were seemingly involved despite the vast implications of this energy transition for Disadvantaged Communities, towns and villages, non-profits, community organizations, utility workers, low-income ratepayers, Indigenous Nations, and more. While reference was made to the priority of integrating and serving the needs of Disadvantaged Communities, we are left wondering how that can actually happen without meaningful, consistent, and sustained engagement with these communities, especially in vital planning processes such as the IRP. It is for this reason that LIPC developed the proposal for the Community Stakeholder Board included in the LIPA Public Power Act. These sweeping changes to our energy system, with



implications for safety, affordability, reliability, and comfort cannot be made without dedicated involvement of communities most impacted by the system.

This lack of prioritization and appreciation for multi-stakeholder engagement is reflected throughout the sections on the future of solar in the LIPA service area. With some exception, it does not integrate any of the recommendations of the Long Island Solar Roadmap¹, a multi-year process which involved dozens of relevant stakeholders, experts, and developers. The Roadmap identifies low-impact sites for commercial and utility-scale solar arrays, demonstrating that Long Island has enough low-impact sites (large rooftops, parking lots, and previously disturbed lands) for locating nearly 19,500 megawatts of solar without impacting forests, wetlands, and other ecologically important areas. That's enough solar energy capacity to power 4.8 million homes per year. This untapped potential could make invaluable contributions to meeting and exceeding LIPA's contributions to CLCPA mandates, as well as provide excess energy to the grid.

Finally, in order for Time of Day rates to be implemented effectively, for more demand response programs to come into practice, for more resilience planning to take place, and for more utility programs to be utilized, more ratepayer and community engagement needs to happen. This reality is absent from the IRP. There is no recognition of the need for this to be a vital part of meeting the stated goals of the IRP.

Outside the confines of the IRP, it is becoming more and more evident that proactive, transparent, and ongoing community engagement is necessary for this energy transition. Offshore wind and battery storage projects are facing sophisticated disinformation campaigns by fossil fuel interests which are resulting in project delays, cancellations, and moratoriums. LIPA could play an important role in combating disinformation by building trusted relationships in communities, serving as a counterforce to the efforts that seek to undermine our progress.

Building Public Renewables & the IRA

The IRP states that LIPA plans to meet the state's clean energy goals at the lowest possible cost for its customers by using all the tools available to derive the best outcomes but does not seriously explore its ability to build its own renewables, especially utilizing benefits under the Inflation Reduction Act. There is a reference to LIPA developing its own projects in relation to repurposing existing sites for fossil fuel generation for renewable energy but the implications are not clear.

In August 2022, the Inflation Reduction Act passed, allowing public power utilities to benefit from direct pay tax credits. Subsequently, a Fitch presentation to the LIPA Board noted that the IRA opened new opportunities for public power systems to lower costs to ratepayers through direct ownership of renewable power projects, an issue that has been raised in public comment at LIPA

¹ <https://solarroadmap.org/>

LONG ISLAND PROGRESSIVE COALITION

Established in 1979, the Long Island Progressive Coalition (LIPC) fights for structural change at the local, state, and national levels to attain racial justice, build community wealth, and realize a just transition to a 100% renewable energy future.



Board meetings but seemingly ignored. By contrast, in Minnesota, utilities are required to maximize the benefits of the federal IRA in their IRPs. Michigan's largest utility, DTE Energy, in its recent IRP, projected \$500 million in savings after incorporating IRA tax benefits. DTE used compare and contrast graphics to illustrate the impact of IRA tax credits on wind, solar, and battery storage project costs. There are utilities around the country already figuring out how to leverage the IRA to the benefit of ratepayers. Notably, LIPA does not appear to be seeking IRA ratepayer benefits. Such explicit plans seems to be absent from LIPA's IRP, which should be clarified.

The first two initiatives identified by the IRP have to do with power supply - the 50% portion of customer bills which has been primarily responsible for recent rate increases. Initiative 1 calls for LIPA to "Participate in large-scale statewide clean energy procurements...using LIPA's low cost of capital where there are likely to be savings or localized opportunities." Initiative 2 reads: "Procure additional energy storage to reach up to 750MW on LI in cooperation with NYSEDA and through selective LIPA procurements." The IRP makes no mention of IRA-related rate-reduction opportunities being integrated into these key initiatives.

The viability of publicly owned renewable energy infrastructure by LIPA, from offshore wind to mid-sized solar to thermal energy networks to battery storage, must be thoroughly examined if the utility is taking seriously its stated goal to meet CLCPA mandates at the lowest possible cost by using every tool at its disposal. When it comes to offshore wind, especially with the cancellation of recent projects like Empire Wind 2, LIPA could, at the least, look at co-ownership opportunities, perhaps even with New York Power Authority. When it comes to solar, we can look to the Long Island Solar Roadmap again for prime opportunities for LIPA to step in, especially as it makes targeted facility upgrades to expand hosting capacity where the utility projects significant growth in DER penetration. East Bay Community Energy in California, (now AVA), a publicly owned community choice energy company serving 1.7 million customers, is exploring using the new tax incentive to participate in mid-sized solar projects at commercial and industrial sites. The Sacramento Municipal Utility District (SMUD) is taking advantage of the IRA for its Country Acres project planned for 344 MW of solar and 172 MW of battery storage. We should be seeing more of these types of ideas explored in the IRP. Relatedly, LIPA should look into installing and owning thermal energy networks. In addition to making geothermal heat pumps more affordable for ratepayers, the minimal fee for access to the network could provide another revenue stream for LIPA. LIPA is already required to pilot 2 thermal energy network projects. One was being explored with National Grid but was dropped for unclear reasons. LIPA could move forward on its own.

False Solutions

LIPA must proceed cautiously and thoughtfully over the 3 to 6 GW of DEFRs projected in our future energy mix. To all extent possible, the future of our electric grid must not contain false solutions to the climate crisis like biofuels, "renewable" natural gas, biomass, waste incineration, and "green"



hydrogen. It must focus on renewable zero-emission technologies that have been proven to work, like solar and wind, coupled with battery storage, and an exploration of tidal and wave power.

Hydrogen for electricity generation is not a zero emissions technology regardless of how the hydrogen is produced. Hydrogen combustion produces NO_x emissions, a tremendously problematic local public health issue and is against Section 7(3) of the CLCPA. Hydrogen is also an indirect GHG and leaks even more than methane². This is of grave importance on Long Island where the New York Power Authority conducted a hydrogen demonstration project at the Brentwood Plant, located near several environmental justice communities.³ And where the Town of Hempstead has a partnership with National Grid to blend hydrogen into the existing distribution system to heat homes and fuel municipal vehicles, which poses a major safety and health risk given how untested hydrogen combustion is, and the wear and tear on pipes which are not equipped to handle hydrogen distribution.

Natural gas and electric utilities across the United States are increasingly pursuing pilot projects to blend hydrogen with natural gas for various end-uses, including as a heating fuel in buildings or for power generation. However research shows these projects would increase consumer costs, exacerbate air pollution, and cause safety risks while minimally reducing greenhouse gases. By comparison, electrification is a proven, low-cost alternative that poses no safety or health risks and can rapidly cut building emissions.⁴

The results of the NYPA hydrogen demonstration project with General Electric verify this.⁵ It confirmed that combusting hydrogen in gas plants harms overburdened communities. The demonstration achieved only marginal reductions in CO₂ while increasing NO_x emissions and consuming more water - a bad outcome for people and the planet. NO_x levels increased by up to 24% as the fraction of hydrogen increased. To keep NO_x air emissions within permitted limits, the plant had to significantly increase water consumption, a troubling red flag as Long Island continues to experience severe drought conditions.⁶ Blending hydrogen with fracked gas yielded no more than marginal reductions in greenhouse gas emissions with carbon emissions were reduced by only 14% at a 35% hydrogen mix, which is doubly concerning considering that hydrogen is itself an indirect greenhouse gas. Green hydrogen is scarce, expensive, and impractical as a fuel source. It is telling that for this study, NYPA trucked in hydrogen from Quebec to Long Island.

² [Global environmental impacts of the hydrogen economy](#)

³ ■ 2021.10.11 Letter to DEC NYPA re Brentwood H2 Combustion (1).pdf

⁴ [Energy Innovation Hydrogen Research](#)

⁵ [Executive Summary: Hydrogen Cofiring Demonstration at New York Power Authority's Brentwood Site](#)

⁶ <https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?NY>



Beyond admitting that the demonstration increased NOx emissions and water consumption while only marginally reducing CO2 emissions, the executive summary from the project identified multiple other problems with combusting hydrogen in gas plants:

- It could increase capital and operation and maintenance costs
- It could require exceptions to air permit requirements; for the Brentwood demonstration, GE said that getting a permit exception was a “critical” step. Any project that can’t proceed without a permit exception presents an unacceptable risk to neighboring communities
- It is not quick and easy to switch a gas plant’s fuel from fossil gas to hydrogen: designing GE’s demonstration took a lot of time and a “large number of teams,” and maintaining a stable balance of hydrogen and natural gas was “a challenge” that required “significant manual intervention” and “constant monitoring and adjustment.”
- It is not easy to maintain NOx levels below regulatory permit limits: SCR and CO catalyst systems were able to control stack NOx in steady-state conditions, but required manual adjustments which, if not an option at other gas plants, would further increase capital and O&M costs. Supply and storage issues render hydrogen impractical – constant manual adjustments needed to make the system work would “not be practical for normal plant operation.”

NYPA’s own response to the demonstration confirms that there is no place in our clean energy future for hydrogen-fueled gas plants: NYPA has chosen to pursue storage opportunities at its peaker plants instead of hydrogen combustion, which is the clear right choice. We must ensure that not only other peaker plants in NY and elsewhere make that same choice but that all fossil fuel plants too, which is why it is concerning to envision a future, as stated in IRP, where Caithness would convert to hydrogen.

Whether Caithness and similar gas plants actually turn to hydrogen for fuel depends on a lot of factors, starting with whether the Public Service Commission approves hydrogen as a zero-emissions technology in its current proceeding, which is about the definition under CLCPA for the purpose of the zero-emissions electricity sector by 2040. In addition, even if PSC says green hydrogen is zero emissions under the CLCPA, Caithness would have to essentially convert its entire turbine and perhaps rebuild entirely to be able to run on hydrogen. So cost would also be a factor, as well as whether renewables come online quickly enough to power the state and basically make it not cost-effective for gas plants to re-equip to run on these alternative fuels. When we think about the future of Caithness we should also be thinking about a full transition to a renewable energy site.

Biomethane—methane captured from landfills and other waste streams or potentially gasified from waste materials or energy crops—is being proposed as a clean, “decarbonizing” substitute for



burning fossil gas for electricity, heating, transportation, and industrial processes. This “renewable natural gas,” like fossil gas, is nearly pure methane; if produced and distributed into the existing gas network, it will add to methane leakage and related serious warming effects, as well as local environmental health harms. The promotion of renewable gas is also arguably—indeed self-identified as—a strategic bid to buffer the fossil gas industry from policy and market changes that threaten its very existence. Further, such an effort raises serious concerns about the expansion of carbon-intensive land-uses to grow feedstocks necessary to “green” the fossil gas system, as existing feedstock capacity is only sufficient to replace between 6 and 13 percent of current gas demand (according to the industry’s own analysis).

Given all this, we urge LIPA not to rely on RNG or hydrogen or other supposedly clean fuels because a) we don’t know if they will count for CLCPA purposes and costs to repurpose plants could be useless investments; b) they are not clean as they continue to release co-pollutants; and c) there isn’t enough RNG or available green hydrogen (to be produced from renewables) while burning it in a combustion plant would be hugely inefficient - we could use that renewable energy to just power our grid instead. We would rather research go into nascent technologies like wave and tidal turbines, which are also dispatchable, albeit not baseload, and there is an unlimited supply around Long Island.

LIPA’s use of nuclear energy must also be revisited. The future of nuclear power in NYS must grapple with the content of “Nuclear Reactors Are Not Green”, a Red Paper by the Onondaga Nation, the Haudenosaunee Environmental Task Force, and the American Indian Law Alliance.⁷ The paper was written so that the voice of Indigenous Peoples can be heard, in order to document the vast harms from the nuclear power industry and so that the process of healing from these harms can begin. The list of past and ongoing treaty violations is long and troublesome and the deaths of, and devastating human health damage to, Indigenous Peoples are merely collateral damage to corporations and US governments. Prolonging the use of aging nuclear reactors, without a viable plan for the handling of spent fuel rods, at the expense of electric ratepayers is not an acceptable “solution”. The billions of dollars that have been designated for nuclear bailouts would be better spent on promoting truly green alternative energy generation, electric car promotion and infrastructure, and high-speed rail projects. The Red Paper brings light to the dangers of the three aging nuclear power reactors in Scriba, New York (where the FitzPatrick plant is) and the direct harm that would result to the Onondaga people, and Nation lands and waters, from the continued operations of these aging nuclear reactors and from any accidental release of radiation, or worse; how these three aging nuclear reactors in Scriba are interfering with the stewardship responsibilities of Nation leaders to protect the natural world for future generations; and the dangers to the Onondaga Nation, its waters and its people from the current transport of

⁷ [Nuclear Reactors Are Not “Green” - Red Paper by Onondaga Nation, HETF and AILA](#)



nuclear wastes down Interstate Route 81, directly through the Nation's currently recognized territory. This legacy of impact must be the guide to discussions around the fate of nuclear power.

Equitable Programs & Future Planning

The IRP included no evaluation of other rate designs aside from TOD, nor the impacts of the delays in implementing TOD on IRP forecasts. As stated by LIPA in a recent quarterly report on PSEG metrics: "Project management deficiencies [by PSEG] persist, particularly in IT-related projects, several of which have experienced significant delays in 2023." This has led to schedule and budget overruns. The report goes on to say that PSEG needs "much more sophisticated project management, better control and oversight of vendors, better cost management and better quality control." This dynamic speaks to the ongoing issues LIPA will face with the current third-party-provider model, undermining key elements of our energy transition.

Canceled wind projects are not accounted for in the IRP, which is likely a result of unfortunate, misaligned timing, but speaks to the need for proactive contingency planning.

An important missing piece in realizing our energy transition, which is beginning to be explored through Statewide legislation, is the need for a GAP Fund for agencies and utilities to address pre-weatherization needs to ensure ratepayers can undergo energy efficiency upgrades. Remediation of mold, asbestos, and lead are not factored into clean energy incentives when we need to be taking a whole-house approach.

We also see nothing about burying distribution lines that are prone to falling during storms. The avoided cost of frequent repairs, paired with the lost revenue because customers cannot use electricity, must be factored in.

LIPA does not seem to be doing enough to support customers' transition to heat pumps. PSEG just lowered the rebates and changed how they are calculated.

Finally, the implications of changes to tax and PILOT payments at Barrett, Northport, and Port Jefferson from fossil fuel retirement needs to be thoughtfully communicated to these localities so they have enough time to seek counsel and plan accordingly depending on potential scenarios.

Conclusion

We thank you for your commitment to the renewable energy transition. We share our perspective as dedicated stakeholders in ensuring an equitable energy future for our region.

Sincerely,

A handwritten signature in dark ink, appearing to read "Ryan Madden", located below the "Sincerely," text.

Climate & Energy Campaigns Director

LI Power Plans Mark Sertoff science/technology educator E. Northport 2/13/24

LIPA's plunge into wind and solar power replacing reliable, cost-effective, clean fossil generation is the path to energy disaster.

Through decades of solid engineering and execution, LI has developed the most reliable and economical above ground power distribution system in NYS.

The defective initiative to wind and solar generation will leave LI with seriously unreliable and costly power.

Wind and solar work about 20% of the nameplate capacity. They need battery backup which is very expensive, requires rare earths mined in unfriendly countries with child labor creating environmental pollution in refining, only lasts a few hours when a week may be required, and explode and burn in unquenchable fires emitting toxic fumes.

Europe and especially Germany, the former industrial powerhouse of Europe, tried wind and solar with massive problems in reliability and cost is reopening fossil generation plants.

Wind turbines in the marine environment have drastically shorter lives and kill land and sea birds. Solar panels are negligibly recyclable and also require rare earths sourced from unfriendly foreign countries via child labor and create copious pollution in fabrication while being barely recyclable. There are mountains of scrapped wind turbine blades now that can't be recycled.

Marine wind turbines in construction and operation have caused the deaths of many whales along the East Coast. Machine gun sonar, pile driving and sub sonic rotor vibrations injure and disorient sea mammals leading to beaching and ship collisions.

Solar panels have such low energy density that habitats are destroyed to install solar when conventional generation would make many times more reliable power in a fraction of the land area at lower per-watt cost.

Furthermore, no wind or solar generation would be viable without government taxpayer subsidies. That says it all. It's a defective business and energy plan. If it were a real upgrade, the market would support it without subsidies.

Finally, there is no climate crisis. This "crisis" is based on defective UN climate computer models. Thousands of scientists around the world concur. We experience cyclical weather in decadal, century, and millennial cycles.

A very worthwhile upgrade for more reliable clean energy is to repower existing fossil power stations with state-of-the-art combined cycle designs. The late Dr. Matt Cordero of the Center for Management Analysis at CW Post wrote a study of repowering, coming to the conclusion that the output can be nearly tripled with a 90% reduction in emissions with almost 100% cost-effective reliability. If LIPA wants to spend billions on clean energy, repowering is the solution.

Good morning. My name is Billi Roberti, and I am a homeowner in Huntington Station, with solar, geothermal, an EV, and a heat pump clothes dryer. No surprise, I am a renewable energy and energy efficiency consultant; my company is Green Choices Consulting. Thank you for this opportunity to speak. I also have some questions included in my comments.

First off, I agree with what Ryan Madden said.

Overall, the IRP Summary is good and can-do. What it lacks is a vision of the future. Isn't that important when planning for it?

In terms of strategic objectives:

- Reliability and Resiliency: Top 10% reliability among peer utilities. Is this a comparison to publicly owned utilities? Or to investor-owned utilities?
- Customer Experience: Deliver top 25% customer satisfaction in J.D. Power studies. Is this a comparison to publicly owned utilities? Or to investor-owned utilities?
- Clean Energy: Encourage beneficial electrification of transportation and buildings (i.e., electric vehicles and *cold climate heat pumps*) Does this include geothermal heat pumps, the most efficient and peak-reducing kind?
- Information Technology and Cybersecurity: Deploy modern grid management technology and data analytics benchmarked to the top 25% of utilities. Is this a comparison to publicly owned utilities? Or to investor-owned utilities?

In terms of key findings:

- By 2030, the addition of solar and offshore wind resources will cause LIPA's carbon footprint to decline by over 70% from 2010 levels. How will this be affected by delays in current OSW projects?
- As offshore wind and battery storage resources come online, LIPA will be able to retire up to 800 MW of existing Long Island power plants by 2030. How will delays in current OSW projects affect these figures and dates?
- LIPA's transition to TOD rates in 2024 and 2025. The dates should now be 2025 and 2026 since this rollout is now scheduled to start in 2025 due to PSEG IT problems. How will this delay your demand reduction goals?
- What is the public outreach plan for TOD rates? Hopefully it has already started for people opening new accounts since they will be automatically put on these rates. They need to know to shift as much electricity use as possible out of the 3-7pm peak time.
- Outreach should be starting soon for everyone else. Existing customers will need to know to shift electricity use out of the peak. So far there have been 2 bill inserts about TOD rates since 2022. Outreach via bill inserts is largely ineffective. More publicity via television, radio and social media needs to be done and done early, often, and inclusively.
- Two-way transmission is a really good upgrade to our grid.

Decarbonizing the grid

- The IRP still includes Empire Wind 2, which has been canceled. How confident are you that it will be rebid? If it is rebid by Equinor, how confident are you that they will do a much better job and public outreach so that opposition in Long Beach and Island Park is quelled?
- What will happen to the tax and PILOT payments at Barrett, Northport, and Port Jefferson if some or all of the plants are retired? The explanation is unclear. Will they end when the plants are

decommissioned?

- VDER killed solar for commercial properties, which are vastly untapped solar potential. Since they can often produce more electricity than they need so community solar is a good way to create a new revenue stream for the owners. What are you doing to modify VDER in order to encourage more commercial properties to install community solar?
- Regarding battery storage, since the fire in the South Fork, municipalities have instituted battery storage bans. My Town has. This slows progress. What public outreach is LIPA doing to allay these fire fears?
- Dispatchable Emission-Free Resources (“DEFERs”) and Storage. I think time will tell that RNG, H₂, and carbon capture will not work as well as many think and will have very limited use. What is the net energy loss from the electrolysis to create hydrogen gas and then to convert it back into electricity? I’d rather research go into nascent technologies like wave and tidal turbines; they provide baseload and there is an unlimited free supply of this untapped energy around Long Island.

What is lacking is how LIPA’s revenues will increase with these changes.

- Cheap, nonprofit electricity would be great. There is no mention of the Inflation Reduction Act (IRA) or how it can provide funding for energy storage, transmission, distributed energy resources, and renewable energy infrastructure investments—areas which the IRP has identified as priorities. The IRA provides public power utilities with direct pay tax credits for installing these assets.
- There is also no forward-thinking on LIPA owning or part-owning any renewable energy resources, such as utility-scale offshore wind and solar. The Long Island Solar Roadmap tells us where those solar opportunities are. With so much water surrounding the island, LIPA should conduct some feasibility studies on owning up-and-coming technologies to take advantage of tidal and wave energy generation. These two are continuously generating resources so they have no gaps in production, unlike wind and solar, and can be curtailed if needed. They are being developed in Europe.
- Both ASHPs and GHPs increase electric consumption—and LIPA revenue—when demand is low in the winter. LIPA is not doing enough to support customers’ transition to them. PSEG just changed how the rebates are calculated and lowered the cash incentive.
- I counted 5 bill inserts since 2022 promoting ASHPs without any mention of more efficient GHPs. Why is PSEG public outreach geared to promoting the second-best heating and cooling system and NONE to promoting the best?
- The tables comparing the cost of buying a new CAC vs ASHP does not even include a GHP! And the costs don’t show the reductions from federal and state tax credits. My clients have been amazed that geothermal ends up *costing less* to install than air source when all the rebates and tax credits are factored in. Their lower maintenance and operating costs are another plus.
- It is in LIPA’s best interest to drive the adoption of geothermal heat pumps because they lower summer peak, add to winter consumption, and yet slow the growth of winter peak compared to ASHPs.
- It would be good if LIPA looked into installing and owning utility thermal energy networks (UTENs). What is happening with the Public Service Commission mandated LIPA UTEN pilot?

In addition to making geothermal heat pumps more affordable for ratepayers, the minimal fee for access to this network would provide another revenue stream for LIPA. It could be a great investment.

- Also, I see no mention of the increased kW sales—which means higher revenue to LIPA—from customers switching from fossil fuel heating to heat pumps and from cars with internal combustion engines to EVs. This *income potential* is completely ignored. The focus has been on ensuring enough *capacity*.
- Also overlooked is that as winter consumption grows the grid efficiency improves, and this can

offset the projected rate increases to pay for all the grid upgrades. Better all year round usage lowers the per kilowatt cost to LIPA because it uses more of its capacity regularly.

Other comments:

- I see nothing about burying distribution lines that are prone to falling during storms. Although expensive, the *avoided* cost of frequent repairs, paired with the lost revenue because customers cannot use electricity, must be factored in.
- I believe the fixed monthly charge (basic service) should cover the full amount of billing and fixed costs to provide electric service, since solar customers still rely on the grid. Some of these fixed costs are hidden in rates that are volumetric, meaning the more you use, the more you pay, even if that use is during low consumption times. Being tied to the grid is like insurance. Why should those who are not net-zero electricity subsidize those who are? Infrastructure and other charges buried elsewhere and moved into the fixed charge would reduce these other costs and there would be no net change to those who are not net-zero.
- I disagree with the assessment that lifetime ownership costs of EVs are on par with internal combustion engine vehicles. My experience is that EVs are substantially lower. The battery is expected to last at least 10 years; most original owners keep their cars for only 5 years. Plus, EV batteries are going down in cost over time.
- I am glad LIPA is studying vehicle-to-everything (i.e., the electric grid and building). The car battery could provide enough electricity to modestly power a home for days during a system power outage.

Thank you again and please consider adding some of my ideas to the IRP.

"When we try to pick out anything by itself we find it hitched to everything else in the Universe."

Follow Your Passion,

Billii Roberti (she/her)

Founder, President & CEO, [GreenChoicesConsulting.com](https://www.GreenChoicesConsulting.com)

FB: [@GreenChoicesConsulting](https://www.facebook.com/GreenChoicesConsulting)

LinkedIn: [Green-Choices-Consulting](https://www.linkedin.com/company/green-choices-consulting)



New York Battery and Energy Storage Technology Consortium, Inc.

VIA ELECTRONIC FILING

February 23, 2024

Mr. Thomas Falcone
President and CEO
Long Island Power Authority
Long Island Power Authority
333 Earle Ovington Blvd.
Uniondale, New York 11553

Re: LIPA IRP

Dear Mr. Falcone:

The New York Battery and Energy Storage Technology Consortium ("NY-BEST") is writing to express our support and provide comments on the Long Island Power Authority's Integrated Resource Plan (IRP). NY-BEST commends LIPA, PSEG-Long Island and the planning team for its efforts in preparing a comprehensive IRP and for actively seeking public input on this important plan.

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 180 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.¹

¹ 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.

General Comments

LIPA's IRP studies the need for generation, transmission and demand side resources to provide clean, reliable and affordable electricity to Long Island and the Rockaways. As noted by LIPA, "the 2023 IRP aims to provide an action plan through 2030 to meet interim milestones established in the Climate Act, while framing resource decisions that will need to be made later to achieve 100% zero-emission electricity by 2040. Transitioning to an entirely carbon-free grid involves adding new clean energy sources, investing in transmission, and retiring older, fossil-fueled power plants."²

NY-BEST applauds this approach and encourages LIPA to begin as soon as possible to move the plan forward into measurable, time bound and action-oriented steps to achieve the goals set forth in the IRP. NY-BEST supports the action plan outlined by the 2023 IRP to support implementation of the State's Climate Leadership and Community Protection act, including:

- Integrating into the grid substantial new renewable generation and energy storage, including 750 MW of energy storage by 2030.
- Investing significantly in the transmission grid serving Long Island and the Rockaways.
- Phasing out fossil-fueled generation – including phase-out of 800 MW of existing power plants on Long Island by 2030
- Using clean electricity to decarbonize heating and transportation, with support for disadvantaged communities and low and moderate-income customers.

NY-BEST supports the 10 identified key initiatives that LIPA needs to undertake through 2030³ and notes that energy storage will play a critical role in implementing these initiatives.

Role for Energy Storage in the IRP

NY-BEST is pleased to see that energy storage is identified throughout the IRP as an essential technology for meeting the State's and Long Island's grid decarbonization goals while continuing to ensure the reliability of the system.

Energy storage provides the electric grid numerous benefits including:

- Firming and integrating 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

² IRP Summary Guide, p.17

³ See page 22 of IRP Summary document

The IRP references the Climate Action Council's Scoping Plan including the projected need for more than 15.5 GW of energy storage statewide by 2040. By moving forward today to deploy increased amounts of energy storage on Long Island's electric grid, LIPA will be able to take advantage of the savings offered by the Federal Investment Tax Credit (ITC) that is available through 2032. We encourage LIPA to pursue energy storage deployment efforts to put Long Island on track to meet the State's long term climate goals.

Bulk Energy Storage Procurement

In the IRP, LIPA has identified the need to procure 750 MW of energy storage by 2030. Although we believe the storage goal should be higher on Long Island and should be based on a wholistic system study that prepares Long Island for the future and leverages the ITC, we are supportive of moving the process forward now to deploy 750 MW of energy storage on Long Island by 2030. The LIPA bulk storage RFP --issued in 2021 (not 2023 as cited in the IRP) -- unfortunately is still pending three years later. To achieve the energy storage deployments necessary to firm and support Long Island's grid, the procurement process must be streamlined and accelerated.

The IRP states that LIPA plans to cooperate with NYSERDA procurements and, in addition, will hold selective LIPA procurements for energy storage. NY-BEST strongly supports LIPA's participation in the NYSERDA bulk storage procurement program, along with additional selective procurements. Under the proposed NYSERDA program, LIPA may purchase --on a voluntary basis --up to its pro rata share of the storage credits obtained by NYSERDA, based on its share of the statewide load. LIPA serves about 12-13% of the state's load and has been a participant in the statewide cost-sharing arrangement for large-scale wind and solar. NY-BEST strongly supports LIPA continuing this approach for bulk energy storage.

Further, with respect to future select LIPA procurements, we encourage LIPA to improve the procurement process by incorporating lessons learned from the current on-going bulk procurement, establishing clear timelines for decisions, and reducing costs to bidders.

Retail Storage Program

NY-BEST encourages LIPA to specifically incorporate a Retail Energy Storage Incentive Program and consider establishing other programs to support distributed storage in its IRP. The State's first Energy Storage Roadmap, approved in 2018, included incentive funding from NYSERDA for a "retail energy storage program" to fund distributed energy storage projects (both front of the meter and behind the meter) less than 5 MW. The program included a limited amount of funding (from RGGI funds) for energy storage projects on Long Island. Several projects are still under development and interest in Long Island among distributed storage developers remains high.

Energy storage sited on the distribution system provides unique value to ratepayers and the grid, and we encourage LIPA to ensure it does not lose out on realizing these benefits. Even when

omitting societal benefits of energy storage installation, neighboring states have found that the benefits of distributed storage deployment far outweigh the ratepayer costs.⁴ Distributed energy storage localizes the benefits that storage can provide. In the future, as grid signals evolve and become more sophisticated, distributed storage also has the potential to deliver deeper grid benefits by reducing load on peak loaded circuits and/or absorbing excess renewable energy generation on circuits with high renewable penetration. Distributed storage can be deployed quickly and can offer near term benefits to reduce load, reduce reliance on peaker plants and provide long awaited benefits to disadvantaged communities impacted by these fossil-fueled plants.

We encourage LIPA to realize the benefits of distributed storage deployment today (and prepare for a future with even deeper benefits) by establishing a Retail Energy Storage Incentive Program. The State's newest proposed Energy Storage Roadmap envisions a continued incentive program for retail energy storage projects. However, the funding for such a program on Long Island has not been identified. NY-BEST encourages LIPA to work with NYSERDA to identify potential funding mechanisms to support a retail storage program on Long Island. We further urge LIPA to consider developing a community storage program (similar to the Statewide Solar for All program) and tariff/rate mechanisms that help monetize the grid benefits and services provided by storage. NY-BEST would be pleased to discuss these ideas further with LIAP staff.

Storage As a Transmission Asset

The IRP calls for significant investment in LIPA's transmission and distribution system. 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 to recognize the value of proven cost-effective technology alternatives to traditional T&D solutions. NY-BEST encourages LIPA to recognize that in some circumstances, energy storage offers a cost-effective alternative for traditional T&D solutions.

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:

- *Improved system flexibility and resilience to manage intermittent resources.*
 - Energy storage is proven to provide increased flexibility to the grid through grid services such as frequency and voltage support.

⁴ See, for instance: Massachusetts Department of Energy Resources (2024). *Charging Forward Study*, Figure 2-27 (p. 75).

This figure shows \$70 per kilowatt-year in net benefits even with incentives. Available at:

<https://www.mass.gov/doc/charging-forward-energy-storage-in-a-net-zero-commonwealth/download>.

See also, Customized Energy Solutions and Sustainable Energy Advantage (2023). *Front of the Meter Energy Storage Projects in Connecticut FINAL Gap Analysis Benefit Cost Analysis* (p. 26). This report shows benefits to CT ratepayers are at least 1.4x higher than ratepayer costs even with significant incentives. Available at:

[https://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/761a507593c51aca85258a940069376a/\\$FILE/55183970.pdf/Attachment%204_CES_Dx%20FTM%20Energy%20Storage%20Projects%20in%20CT,%20BCA%2012122023.pdf](https://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/761a507593c51aca85258a940069376a/$FILE/55183970.pdf/Attachment%204_CES_Dx%20FTM%20Energy%20Storage%20Projects%20in%20CT,%20BCA%2012122023.pdf)

- Energy storage with grid-firming technology is proven to improve system resilience from providing fault-current support and inertia. The need for these services is expected to increase with growing renewable penetration.
- *Greater renewable energy utilization (i.e., to reduce curtailments and increase renewable power delivery to LIPA customers)*
 - Energy storage 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.
- *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.*
 - 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 the often “lumpy” and large-scale up-front investment needed to expand conventional transmission and distribution infrastructure.
- *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.

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

Siting and Permitting

Given the importance of energy storage to achieving the goals of the IRP and the State’s climate goals, NY-BEST encourages LIPA to work with the energy storage industry to help educate and inform local officials and the public about the facts of energy storage. Despite the industry’s best efforts to inform and communicate the benefits and safety of battery energy storage,

misinformation about energy storage remains prevalent and, as a result, some local communities on Long Island have adopted local moratoria prohibiting battery energy storage. Importantly, the State's inter-agency working group on battery fire safety has been working diligently to address safety concerns and recently issued its comprehensive recommendations for ensuring safe deployment of battery storage in New York State. LIPA's involvement in implementing the recommendations and communicating with local leaders and stakeholders will be extremely valuable to ensuring communities are informed of the benefits of storage and the measures being taken to ensure public health and safety. NY-BEST would welcome the opportunity to work with LIPA on these efforts.

CONCLUSION

NY-BEST appreciates the opportunity to provide our support and recommendations on behalf of the energy storage industry for LIPA's proposed IRP. We support LIPA's efforts to modernize its grid and implement an IRP action plan that puts Long Island on course to decarbonize its grid by 2040. We appreciate LIPA's recognition that energy storage will play a pivotal role in its plans, and we have provided specific recommendations outlining additional ways energy storage can provide a cost-effective path to decarbonization. We look forward to working with LIPA to safely deploy energy storage on Long Island. If you have any questions about our recommendations, please contact us at info@ny-best.org or by phone at 518-694-8474.

Thank you for your consideration.

Sincerely,



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