



# Transitioning to Renewable Energy

CITIZENS  
CAMPAIGN

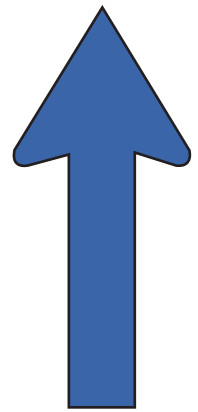


# THE GROWTH OF OFFSHORE WIND POWER

## Transition

Long Island is on the front lines of climate change. Rising sea levels, extreme weather events, ocean acidification, and the loss of fisheries poses a real and immediate threat to our environment, coastal communities, local economy, and quality of life. Increased renewable energy production, along with efficiency measures, helps to speed our island's transition away from fossil fuels. As Long Island moves forward with renewable energy projects, offshore wind will play an integral role in meeting the state's goals of 70% renewable energy by 2030 and 100% carbon-free electrical generation by 2040. We cannot achieve our renewable energy goals without offshore wind, which is why the state has mandated 9,000 MW (megawatts) of offshore wind by 2035. Some of the strongest and most consistent winds in the country are off of our coasts, and a series of offshore wind farms are slated to make New York a national leader in offshore wind over the coming decade.

**Renewable Energy**



**Fossil Fuel**

## Growth

The world's first offshore wind farm began operating in Denmark in 1991, and over the last three decades, offshore wind development has grown throughout Europe and Asia. Countries including Belgium, China, Denmark, Finland, Germany, Ireland, Italy, Japan, the Netherlands, Norway, Sweden, and the United Kingdom have embraced offshore wind power, but there is still room for growth. As of 2019, European offshore wind farms generate nearly 205,000 MW of renewable energy,<sup>1</sup> or approximately 14% of the EU's power. The world's largest offshore wind farm, being constructed 75 miles off of England's Yorkshire Coast, will power over one million homes.<sup>2</sup>

Globally, we have offshore wind potential to meet the world's energy needs 18 times over and support a trillion dollar wind industry.<sup>3</sup> Improvements in offshore wind technology continue to allow wind farms to be located further offshore, support larger turbines, and create more energy output. However, here in the US, our first and only offshore wind farm is the Block Island Wind Farm. This small offshore wind farm was built in 2016 and consists of 5 turbines that generate enough power to supply all of Block Island with their electricity. While many states utilize land-based wind farms—including over 1,100 land-based wind turbines in New York State that generate enough power for 500,000 homes—<sup>4,5</sup> our nation's offshore wind potential remains largely untapped.

# LONG ISLAND'S TRANSITION FROM FOSSIL FUELS TO OFFSHORE WIND

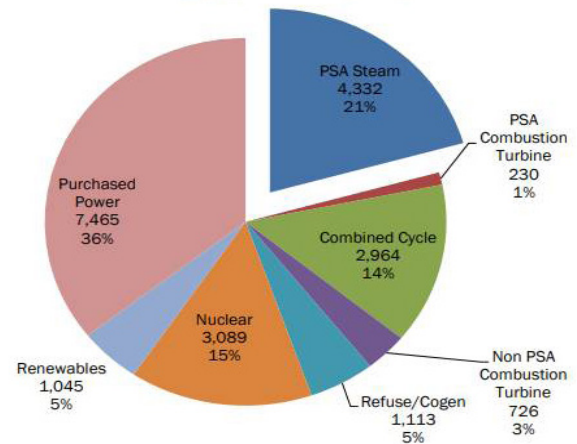
## Long Island Energy

Long Island has three legacy fossil fuel power plants, located in Northport, Port Jefferson, and Island Park, which provide 40% of the island's generation capacity for electricity. According to the Public Service Enterprise Group (PSEG)/Long Island Power Authority (LIPA) 2017 Integrated Resources Management Report, increases in renewable energy and energy efficiency have greatly reduced the need for these plants and their use has declined. Currently, the E.F. Barrett plant runs 44% of the time, while the Northport plant and Port Jefferson plant run only 18% and 11% of the time, respectively.<sup>6</sup> While these plants were built with the potential to provide 40% of Long Island's energy, they are now only providing 22% due to increases in our clean energy mix and decreased demand.<sup>7</sup> PSEG found that replacing these antiquated plants with renewables would be the more cost-effective solution.

Long Island also generates power from a combined cycle power plant in Yaphank, known as Caithness, as well as over 30 additional fossil fuel "peaker plants".<sup>8</sup> Peaker plants are smaller fossil fuel power plants that were originally built to meet electricity needs during high demand, such as summer time. Long Island also purchases power from five underwater cable connections, which provide energy from upstate New York, New Jersey, New England.<sup>9</sup>

**Long Island needs to transition away from these fossil fuel power plants to renewable energy and there is a plan underway.** In 2019, Governor Cuomo signed the Climate Leadership and Community Protection Act into law, mandating the state to achieve 70% renewable energy by 2030, carbon-free electricity by 2040, and 9,000 MW of offshore wind by 2035. This is the most ambitious climate policy in the country and ensures that Long Island not only plays a major role in combating climate change locally, but will also create green jobs and stabilize our energy grid by moving away from antiquated fossil fueled power plants and towards offshore wind.

2016 Energy by Resource (GWh)



\*PSA=Power Supply agreement with National Grid

# OFFSHORE WIND FARMS

New York State has released an Offshore Wind Master Plan that identifies several areas for offshore wind development off the coast of Long Island.<sup>11</sup> These areas were chosen based on years of collaboration with stakeholders on environmental, maritime, economic, and social issues, as well as 20 studies, including wildlife surveys to minimize impact on birds, whales, and other marine species. For each wind farm that will be developed off of Long Island, they must win a bid from NYS and conduct rigorous environmental review, including multiple opportunities for public comment, before a project begins construction.

- **South Fork Wind Farm**

New York's first offshore wind farm will be located 35 miles off the coast of Montauk and power 70,000 homes on the south fork of Long Island with renewable energy. This project was originally going to consist of 15 turbines generating 90 MW of power, but significant technological progress since the original project submission in 2015 will allow these turbines to provide an additional 40 MW of power to Long Islanders.<sup>12</sup>

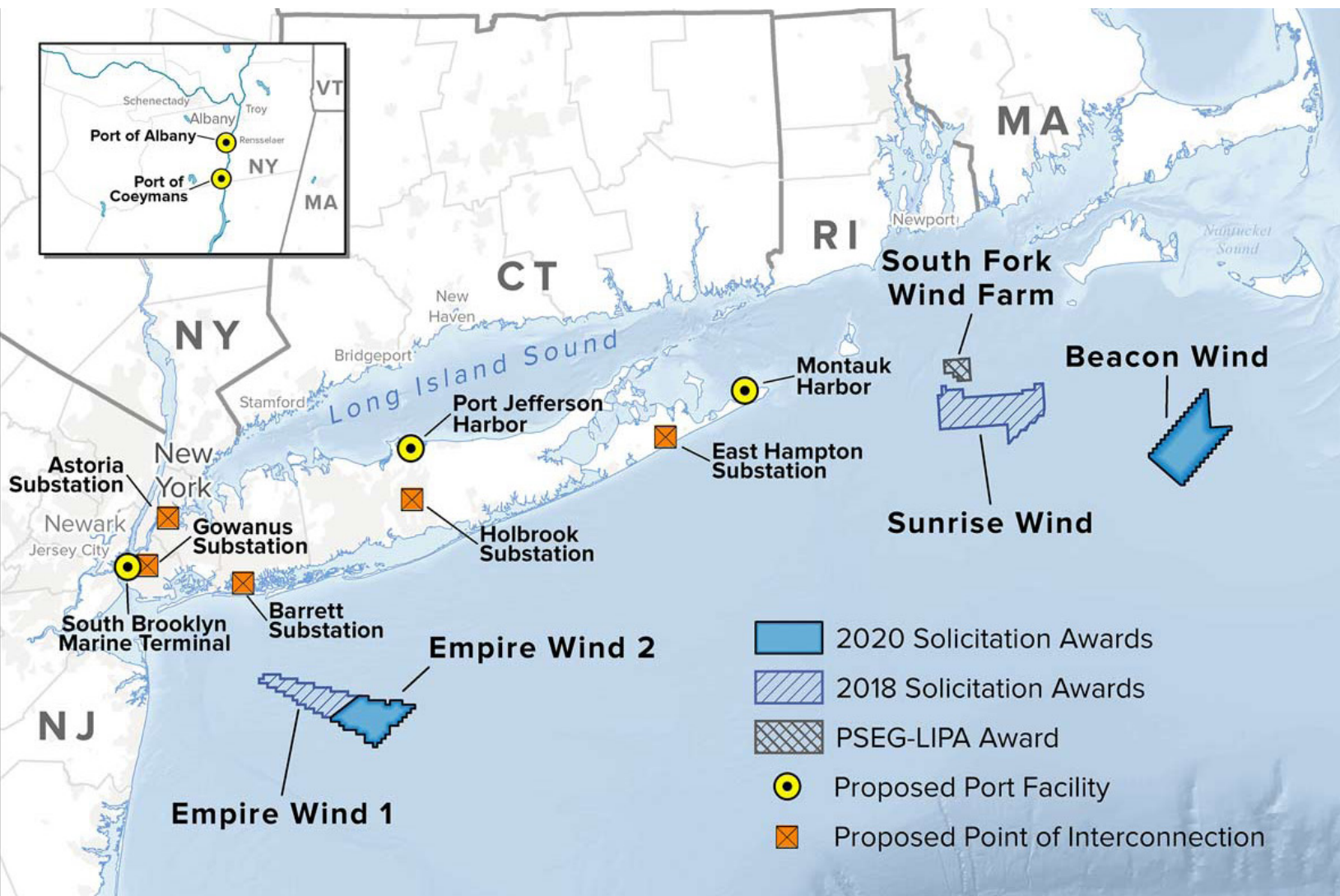
Unlike the rest of Long Island, where energy demand is decreasing, energy demand on the south fork has increased. Long Island had to make the decision to build a new fossil fuel power plant or build the state's first offshore wind farm, coupled with battery storage. After years of overwhelming public support for wind, LIPA decided to choose the South Fork Wind Farm. This project has been approved by the US Bureau of Energy Management and New York State and broke ground in 2022. Construction is currently underway and the project is expected to be completed and delivering energy to Long Island homes in 2023.



● **Sunrise Wind and Empire Wind**

In 2019, New York State awarded bids to two offshore farms that will provide a combined 1,700 MW of wind power to Long Island and New York City. These projects are due to be completed by 2024.<sup>13</sup> The Sunrise Wind Farm will be located off the south shore of Long Island. This project is due to begin construction in 2022 and will generate 924 MW of power for 600,000 homes.<sup>14</sup> The Empire Wind Farm will be located approximately 20 miles off the coast of the Rockaways and generate approximately 800 MW of energy,<sup>15</sup> which will also power 500,000 homes.

These wind farms will need to undergo rigorous environmental reviews and address public comments, for both the siting of the turbines and related cables and infrastructure needed to bring the electricity to communities. However, these two wind farms will make Long Island national offshore wind leaders and create a local green economy, creating 1,600 jobs and generating \$3.2 billion in revenue for New Yorkers.<sup>16</sup>





# NEXT STEPS

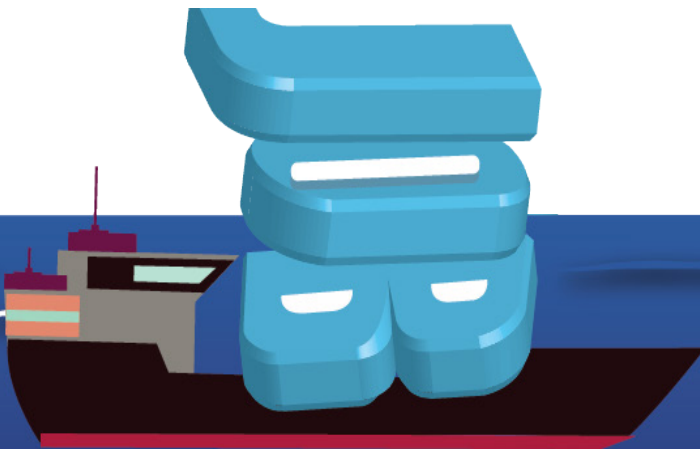
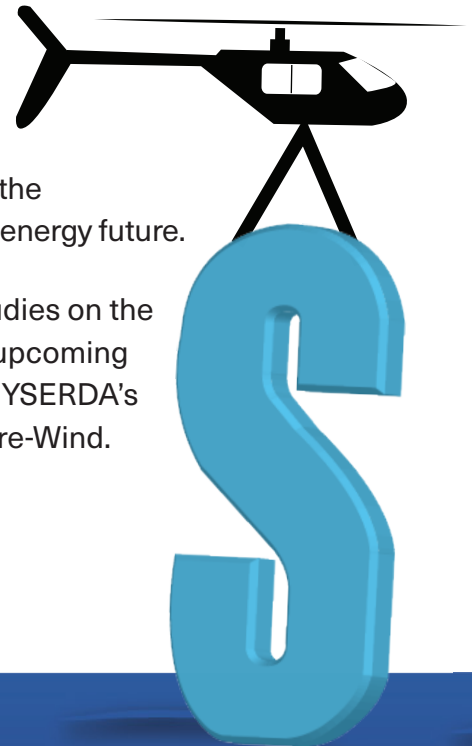
- **Beacon Wind and Empire Wind 2**

In 2021, New York State announced the selection of two additional offshore wind farms – Beacon Wind and Empire Wind 2 – which will generate enough energy to power 1.3 million homes in New York City and Long Island. Empire Wind 2 will be located adjacent to Empire Wind 1 and will generate 1,260 mw of energy, enough to power 600,000+ homes in Nassau County. Beacon Wind will be built over 50 miles off the coast of Montauk and generate 1,230 mw of power, which will be brought into Astoria, Queens via a cable connection under Long Island Sound. This project will power 600,000+ homes.

These two additional wind farms will bring New York almost halfway to reaching the goal of 9,000 MW goal by 2035 and create a local hub of green jobs tied to the burgeoning offshore wind industry. New York State predicts that reaching our offshore wind goals will create 10,000 local jobs in manufacturing, installation, and operations.<sup>17</sup>

There will be multiple environmental reviews and opportunity for public comment related to the South Fork, Sunrise, Empire, Empire 2, and Beacon Wind farms, in addition to the projects that will be awarded this year and any future projects. Public support for offshore wind is critical to the state's success in meeting climate goals and to Long Island's renewable energy future.

If you would like to learn more about these offshore wind farms, find studies on the environmental impact of offshore wind development, or find out about upcoming opportunities for public input, that information has been compiled on NYSERDA's website at <https://www.nyserdera.ny.gov/All-Programs/Programs/Offshore-Wind>.



# WIND WORKS LONG ISLAND

Wind Works Long Island is a coalition of environmental, labor, faith-based and community groups. We are a growing force behind educating the Long Island community on the benefits of renewable energy, particularly offshore wind. This coalition formed in 2020 to support responsibly sited offshore wind farms off the coast of Long Island and foster public engagement in the ongoing environmental and technical review processes for these critical projects. Wind Works Long Island believes that public understanding of offshore wind and support for individual wind farms is critical to meeting New York's climate change goals and transition our island away from fossil fuels. While some of our core coalition members have been at the forefront of the fight for offshore wind on Long Island for over a decade, many of our key members have mobilized in response to the current need for offshore wind projects that hold the promise of finally bringing clean, renewable wind energy to our communities.

**Please visit our website for more information.**

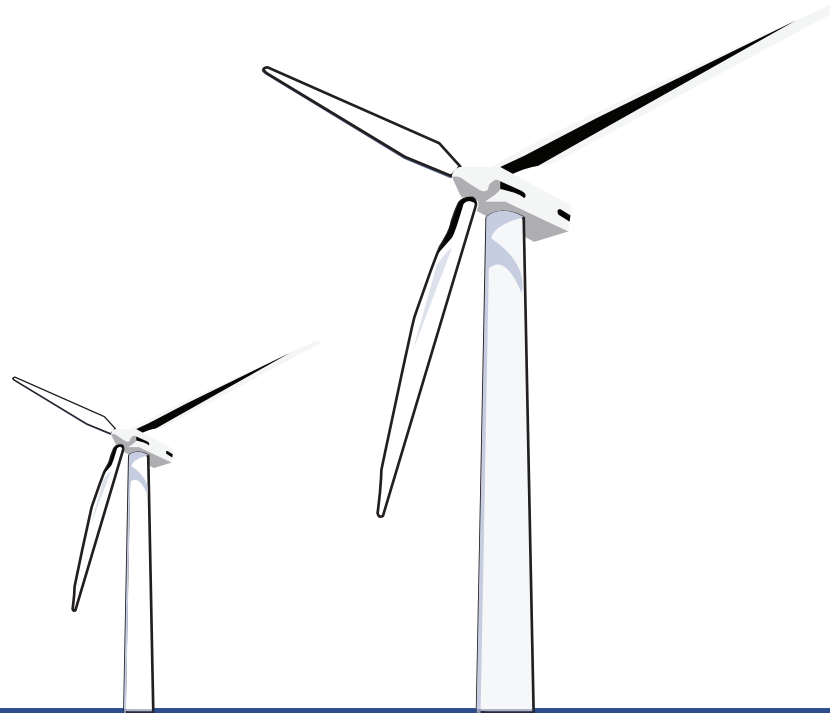
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