

OUR OFFSHORE WIND FUTURE



CLIMATE CHANGE IMPACTS

Long Island, like coastal communities around the globe, is on the front lines of climate change impacts which are extremely harmful to our island way of life. To fight climate change, we must transition away from fossil fuels to renewable energy. This transition is a challenge and there are many questions, however, there are numerous compelling reasons to make this critical transition including sea level rise, local flooding, increased drought, poor air quality, more intense storms, increased intensity of hurricanes and more. **The cost of inaction is clear - from 2010 to 2020 New York experienced 31 extreme weather events costing taxpayers \$100 billion in damages.**

“ I love Long Island and feel a deep responsibility to protect it from the destructive impacts of climate change. The most meaningful thing we can do to reduce greenhouse gas emissions is to close the old power plants and produce our energy with clean renewables. Offshore wind may not be perfect, but it is the cleanest, safest, most reliable large scale energy resource we have available. The time to act is now. Our planet and our island can no longer wait.” — Adrienne Esposito, Executive Director of Citizens Campaign for the Environment.



Here are the troublesome facts:

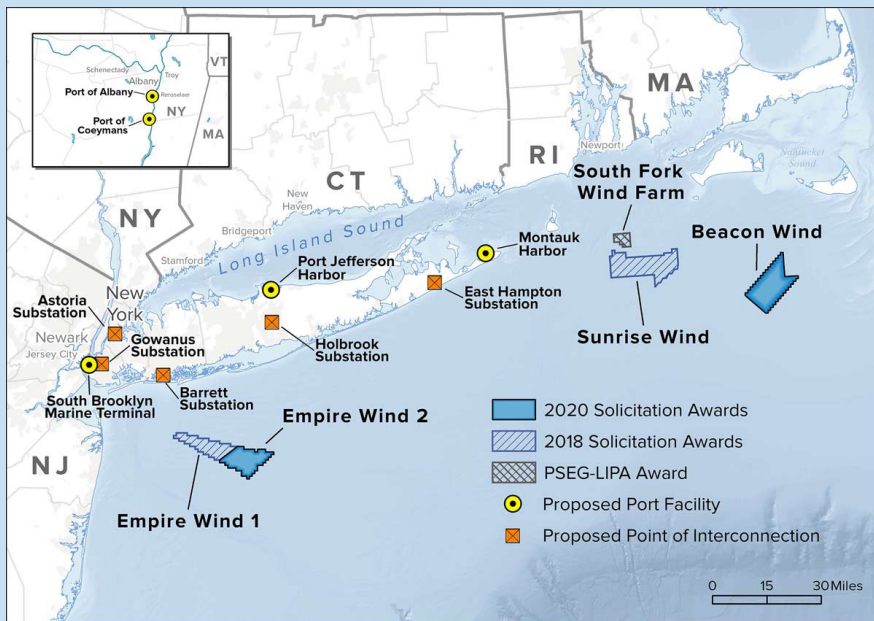
- Sea level has risen significantly more on New York’s coast since 1880 (about 13 inches) than it has globally (8 inches), according to NOAA’s climate summary for the Empire State.
- NOAA predicts that in a worst-case scenario, the average high tide in NYC will be 2 feet higher than the storm surge during Superstorm Sandy. Under this worst-case scenario, we would experience flooding across the south shore, with the barrier islands and most homes south of Merrick Road either flooded or underwater.
- Coastal communities on Long Island are experiencing 3 times more high tide flood days than they were 20 years ago.
- Both Nassau and Suffolk counties experienced a warming trend of 3.3 degrees per 100 years over the time of 1895-2018 according to NOAA.
- Since the 1950s, the northeast has documented a 70% increase in rainfall during heavy precipitation events, the highest in the nation.
- Increase in both extreme weather events like “100-year storms” and even snowstorms, but also increase in summer droughts as temperatures warm.

Here’s some good news. In 2019, New York State passed the strongest climate law in the nation—the Climate Leadership and Community Protection Act (CLCPA). The CLCPA mandates NY achieve 70% renewable energy by 2030 and carbon-free electricity by 2040. Long Island will play a key role in the state’s transition to renewable energy. We cannot succeed in meeting these critical goals without offshore wind—the CLCPA mandates that NY procure 9,000MW of offshore wind by 2035.

OFFSHORE WIND IN NEW YORK

New York State has released an Offshore Wind Master Plan that identifies several areas for offshore wind development off the coast of Long Island. These areas were chosen based on years of collaboration and investigation with stakeholders on environmental, maritime, economic, and social issues, as well as multiple studies, including wildlife surveys to minimize impact on birds, whales, and other marine species. So far, NY has selected 5 offshore wind projects.





project is close to approval and will generate 924 MW of power for 600,000 homes via a cable connection to the Holbrook Substation in Suffolk County.

Empire Wind 1 will be located approximately 15 miles off Long Beach at its closest point, and 30 miles at its farthest. This project will generate approximately 800 MW of energy, enough to power 500,000 homes. The cable connection will go to South Brooklyn Marine Terminal in Sunset Park adding renewable energy to the NYC grid.

Empire Wind 2 was selected in 2021 and will be located 14 miles off the coast of Jones Beach, adjacent to Empire Wind 1. This project will generate 1,260 MW of energy, enough to power 600,000+ homes in Nassau County. The cable connection will go through Long Beach to a substation in Island Park to provide energy to Nassau County.

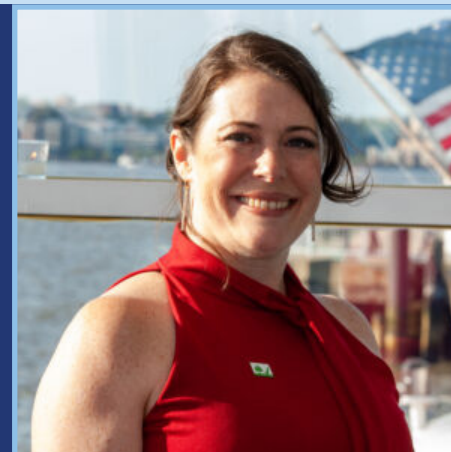
Beacon Wind was selected in 2021. It will provide 1,230 MW of energy for 600,000+ homes in NYC. The turbines will be located 50+ miles off Montauk and the cable will run under the Long Island Sound and connect to a substation in Astoria, Queens. This project is designed to displace dirty fossil fuels in an area known as “Asthma Alley”, where the community has fought to displace fossil fuels with renewables for decades.

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. Energy demand on the south fork has increased requiring a decision to build a new fossil fuel power plant or build the state’s first offshore wind farm. After years of overwhelming public support for wind, LIPA decided to choose the South Fork Wind Farm. The project was approved in 2022 and construction is underway. NY’s first offshore wind farm will be up and running by the end of this year.

Sunrise Wind was selected by New York State in 2019. The turbines will be located near the South Fork Wind Farm, about 35 miles off the coast of Montauk. This

“ Clean air, good jobs, and renewable energy—that is what Long Island needs and that is exactly what offshore wind delivers. At this pivotal moment, when New Yorkers are electrifying buildings and transitioning to zero-emission vehicles to address the climate crisis, offshore wind offers a unique opportunity to reduce our reliance on fossil fuels and deliver family-sustaining union jobs and substantial community investments. While the success of the Southfork, Sunrise, Beacon, and Empire Wind projects – which are already benefiting Long Island’s economy – are critical to reducing air pollution and meeting the state’s clean energy targets, many more opportunities lie ahead, from power generation to supply chains to transmission. So for the sake of our environment and our communities, we must all call on our elected officials to ensure New York State’s offshore wind sector is firing on all cylinders.”

— Julie Tighe, President of the New York League of Conservation Voters



WHERE DO WE GET OUR ENERGY FROM ON LONG ISLAND?

Long Island is mostly powered through oil and natural gas power plants. We have 3 old, legacy fossil fuel power plants, located in Northport, Port Jefferson, and Island Park. Long Island also generates power from a more modern combined cycle power plant in Yaphank, known as Caithness. We also have over 30 additional fossil fuel “peaker plants” which are small fossil fuel power plants built to meet electricity needs during high summer demand. These legacy power plants and peaker plants produce harmful air emissions, including Sulfur Oxide, Carbon Dioxide, and Nitrogen Oxide. Long Island also purchases power from several underwater cable connections that bring power to our Island from upstate NY, NJ, and New England.

EMISSIONS PRODUCED BY LI 3 BASE LOAD POWER PLANTS IN ONE YEAR

| FACILITY NAME | YEAR | SO2 (TONS) | CO2 (TONS) | NOX (TONS) |
|------------------------------|------|------------|------------|------------|
| E F BARRETT | 2022 | 47 | 922,545 | 1,070 |
| NORTHPORT | 2022 | 991 | 1,954,644 | 994 |
| PORT JEFFERSON ENERGY CENTER | 2022 | 254 | 308,661 | 161 |

POWER PLANTS HURT MARINE LIFE

The 3 antiquated power plants (EF Barrett, Northport, and Port Jefferson) destroy billions of fish each year by withdrawing water for their “once-through” cooling systems. Fish killed are primarily in the form of eggs, larvae, and young hatched fish. This happens through **entrainment** and **impingement**. Entrainment takes place when small organisms, such as eggs and larvae, are sucked into a power plant’s cooling system along with the massive withdrawal of cooling waters from a water body. Impingement occurs when larger fish and other aquatic organisms are trapped against the screens that filter debris from the intake structures.

EF Barrett power plant is responsible for killing almost 1 billion fish, fish larvae, and fish eggs per year through their operations. This includes 30 million winter flounder—a favorite fish by our recreational fisherman. In fact, EF Barret power plant alone accounts for 40% of the winter flounder destroyed by all of NY’s antiquated gas and oil power plants.



WHALE TALES & WHALE FACTS

In 2017 the National Ocean and Atmospheric Administration (NOAA) declared an “unusual whale mortality event” for whales. This designation was based on data that showed a steep increase in deceased whales in 2016 and 2017 washing up on America’s shores. There is misinformation about a potential connection between offshore wind development and the increase in dead whales on the east coast. *This misconception is not based on scientific facts.* Facts are important, so let’s review.

When NOAA declared an unusual whale mortality event in 2017 there was no offshore wind project approved in NY or NJ and it was long before offshore wind survey work was conducted. A second misconception is that offshore wind survey work requires the same exploratory equipment as natural gas and oil companies. *This is simply not true.* Oil and gas exploration requires seismic air guns that penetrate deep into the sea floor. Seismic air guns create one of the loudest man-made sounds in the ocean which damages marine life including whales. The sound can travel several miles through the ocean at 220-250 decibels. Blasts are repeated as often as every 10 seconds for days and weeks.

Offshore wind surveying uses sound waves known as High Resolution Geophysical (HRG). These surveys use higher frequencies than those used in seismic air guns and image smaller structures with a high level of detail. **Additionally, most of the equipment for these surveys cannot be heard by humpback whales.** According to the Bureau of Ocean and Energy Management “physical attributes

of HRG sources—such as beamwidth, exposure duration, and frequency – make them significantly unlikely to result in harm of marine mammals.”

Scientists are working to understand the cause of increased whale strandings. It is critical that we let facts and science guide our path to protect whales. The two most common species impacted are Minke Whales and Humpback whales. When whales die, they undergo what is called a necropsy to determine the cause of death. These procedures are challenging when dealing with a 25-ton marine mammal, many of which are in various stages of decomposition. Scientists tell us that Minke Whales are showing signs of infection around the heart area, and 40% of Humpback whales are showing clear signs of ship strikes. Another cause of death is entanglement with commercial fishing gear which weighs down whales, decreases their mobility resulting in a diminished ability to feed.

Many scientists believe that whales are here in greater numbers due to changing water temperatures and an increase in bait fish off our shores. The bait fish are a beloved food source for whales, but this food source may be leading whales into shipping lanes making them vulnerable to ship strikes. Also, according to the Port Authority there had been a 35% increase in ships from 2019 into New York Harbor, adding another serious threat to whales.

We don’t yet know all the reasons for the increase in whale deaths. We do know that ship strikes are a main culprit, but we need more data and more information. Over 20 environmental groups have called on Congress to allocate \$20 million to spur research to find the answers sooner rather than later. We are hopeful that Congress will respond to save the whales. We also know that we can’t wait to fight climate change. There is no scientific evidence that offshore wind survey work is linked to whale strandings. We need to protect whales and continue to invest in clean renewable offshore wind energy. We are America — We can do both.



“The offshore wind industry is responsible for creating 250,000 jobs up and down the Eastern Seaboard, and we have already captured more than \$4 billion of economic activity throughout Long Island and the balance of the Empire State. This once in a generation economic opportunity represents new chances for our youth to select good local union careers in the Building and Construction Trades. This workforce will include high-earning middle class skilled trades such as ironworkers, electricians, dock builders, operating engineers, and many more. Offshore wind as an industry has created new pathways to our apprenticeships while bolstering existing programs like Opportunities Long Island to new levels of success. Unlike the shrinking workforce of many other urban communities, our local Building Trades Council has grown from 60,000 to 65,000 members over the past five years and in no small part due to the labor demand of the offshore wind industry. We are on an upward trend to grow even more!”

— Matthew Aracich, President of the Building and Construction Trades Council of Nassau and Suffolk Counties, an organization comprised of 36 local affiliates of 15 national and international unions representing 65,000 skilled tradeswomen and tradesmen on Long Island.



“We are happy to witness the influx of offshore wind projects that will power more than 2 million homes across New York and Long Island, creating good, clean jobs and a better, safer environment for our region. The benefits of this new technology will be felt for generations as we move toward systems that are safe, sustainable and responsible, while generating billions of new dollars.”

Marc Herbst | Executive Director of the Long Island Contractors' Association.



“At Surfrider we haven’t forgotten how Superstorm Sandy was made worse by climate change, devastating Long Island and NYC. We need to stop burning oil and gas, which will fuel more Sandys, and move toward low carbon energy sources like responsibly developed offshore wind power projects.”

Matt Gove | Mid-Atlantic Policy Manager | [Surfrider Foundation](#)



WIND ENERGY FACTS

Wind Power Works!

Wind power is an abundant and inexhaustible energy resource that provides electricity without burning fossil fuels or causing air pollution. Using wind power to replace fossil fuels means less smog, less acid rain, and fewer greenhouse gas emissions resulting in reduced health impacts, reduced air pollution and less environmental impacts and less damage to our natural world.

Wind power is not new.

In fact, wind is the largest source of renewable power in the United States, which helps reduce our reliance on fossil fuels. In 2022, land-based wind power generated 40,083 MW in the United States which is enough power for approximately 28 million homes! This equates to 10.2% of the total electricity generated in the US. Researchers estimate that land-based wind energy in the United States has already reduced carbon dioxide, nitrogen oxide and sulfur dioxide emissions by millions of metric tons.



“We wish the trajectory of climate change wasn’t towards the end of viably living on Long island, so adopting offshore wind to mitigate that outcome is the choice we must make: we need it, we need it soon, and we need it done right. We are pushing hard for all three.” — George Povall, Executive Director, All Our Energy.

YOU DO NOT HAVE TO FEAR EMFS FROM THE CABLE CONNECTION

Electromagnetic fields (EMFs) are present in offshore wind cables, but are also present in many existing telecommunication and energy cables as well as in many of our household appliances.

The offshore wind cables are generally buried 3-6 feet underground and encased in 6-12 inches of cement. The cable itself is 8-12 inches in diameter and emits a 60 hz magnetic field at the source. By burying the cable and encasing it in thick concrete, further reduces the EMFs to a level that is not only far below health standards but is, in fact, negligible.

The existing Neptune Cable for example, which carries fossil fuels through Jones Beach and across communities in Nassau County, is one of several very large energy cables that have been on Long Island for decades. The US Bureau of Ocean Energy Management finds that “common household items, including television sets, hair dryers, and electric drills, can emit magnetic fields similar to or higher in intensity than those emitted by undersea project power cables” including offshore wind cables.

Offshore Wind Costs are Stable. Offshore wind prices are locked in for 20 -25 years, acting as a hedge against volatile fossil fuel prices. As the cost of oil and natural gas wildly fluctuate based on geopolitical circumstances and the whims of OPEC, wind power will add stability to our electric rate base.

The Lifecycle of an Offshore Wind Farm. Wind turbines typically have a 25-30 year lifespan. Responsibilities for decommissioning wind turbines are addressed before the wind farm is built. Typically, the developer will post a bond for the cost of decommissioning; the developer will remove the structures and return the area to its previous condition. However, since the wind resource remains most developers prefer to “repower” rather than decommission wind farms. In repowering, old turbines at the end of their lifespan are replaced with new ones in the same locations. If they are decommissioned, there are new pilot projects and discussions at the state level of how to recycle the raw materials in the wind turbines to further reduce waste.



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