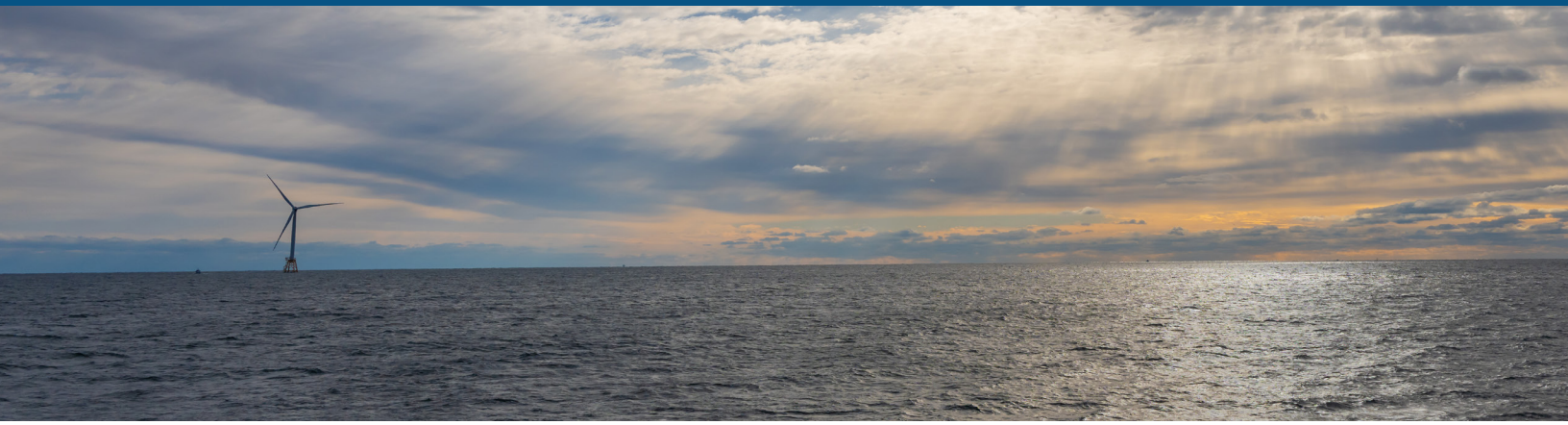
Offshore Wind in New York

The Cost of Offshore Wind



How does New York State evaluate the cost of a renewable energy project?

NYSERDA is charged with responsibly advancing New York's transition to clean sources of electricity, as required by the State's Climate Leadership and Community Protection Act (Climate Act). NYSERDA is authorized by New York's Public Service Commission (PSC) to issue competitive solicitations for renewable energy projects that will provide clean energy to the State's electricity grid. NYSERDA scores proposals based on evaluation criteria prescribed by the PSC, where price is 70% of the evaluation criteria, economic benefits to New York State is 20%, and project viability is 10%.

Give Us Your Best Price

When NYSERDA issues a competitive solicitation, renewable energy developers respond with their best price, called a "Strike Price" which is presented in dollars per megawatt hour ($/MWh). The Strike Price covers all the costs of the project, from start to finish, including operations over the contract term, typically 20–25 years. NYSERDA's contracts do not cover all of the costs of the renewable energy project. Rather, through the contracts, NYSERDA agrees to purchase Offshore Renewable Energy Certificates (ORECs), which represent the positive environmental attributes associated with one megawatt-hour (MWh) of electricity generated from renewable energy sources, rather than traditional energy generators that burn fossil fuels. Burning fossil fuels reduces air quality and contributes to the harmful impacts of climate change. The OREC price is calculated as the difference between what the project is paid through New York's competitive electricity market and the Strike Price. Considering the changing value of energy in the market over time, NYSERDA can only forecast the anticipated cost of the ORECs, which are paid on a monthly basis once renewable energy projects begin delivering clean energy to New York's electric grid. Read on to learn more.

How is Strike Price Measured?

Strike price — or the cost of the renewable energy project — is described as the cost to the developer of delivering an amount of energy every hour (measured in dollars per megawatt hour, or $/MWh) to New York's grid. The costs can be reported as "nominal dollars" or "real dollars", each of which is a useful measure.

- Reported costs in "nominal dollars" are the actual price at the time of announcement, without any adjustment for the changing value of money over the term of the contract.
- Reported costs in "real dollars" are adjusted for inflation over the term of the contract, considering the value of money in a base year, typically set to the time of the announcement (e.g. 2019, 2024). Strike prices presented in real dollars tend to be lower because inflation erodes the value of a dollar.

To better understand the difference between "nominal" and "real" dollars, imagine you've kept $20 in your wallet for 10 years. In the first year, you could buy a movie ticket, popcorn, and soda and still have money left over. Nowadays, $20 may only get you the movie ticket. After 10 years, the nominal value (or face value) is still $20, but the real value is likely lower due to inflation.

Comparing projects by Strike Prices, even after adjusting for inflation, can be problematic as variations in contract terms make it difficult to control for all variables, such as contract tenure and contractual commitments.

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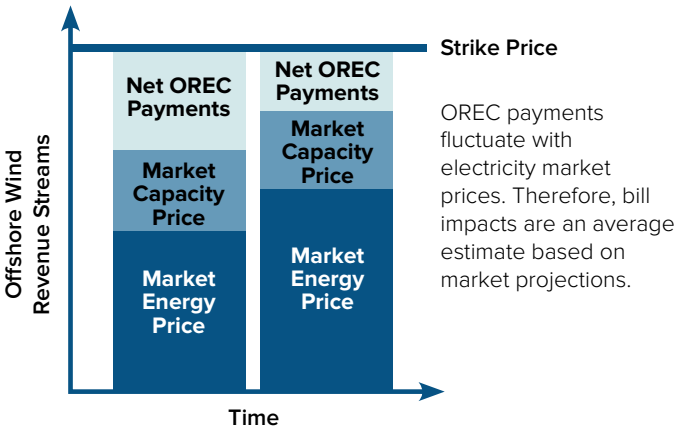
How Are Costs Of a Renewable Energy Project Covered?

New York's electricity grid, along with the wholesale energy and capacity markets, are operated by the New York Independent System Operator (NYISO). Energy and capacity market payments to energy generators are independent of NYSERDA's OREC agreement with the offshore wind project developers. Renewable energy developers recover the costs of their projects through three revenue streams.

1. The Energy Market, which pays generators for the electricity they generate
2. The Capacity Market, which pays generators for the generating capacity they promise to make available
3. Payments from NYSERDA for ORECs

The OREC payment from NYSERDA is the difference between the sum of the energy and capacity payments received and the contracted Strike Price. The Strike Price never changes, but if the energy or capacity prices go up, the OREC payment comes down, and vice versa.

To learn more about NYISO and electricity markets, visit www.nyiso.com/library.



OREC payments fluctuate with electricity market prices. Therefore, bill impacts are an average estimate based on market projections.

How Does New York State Estimate Costs Of Renewable Energy Projects On My Electricity Bill?

NYSERDA makes OREC payments to developers over a 20-year or 25-year term once a project begins delivering clean energy to New York's electric grid. Electric utility companies — such as Con Edison, the Long Island Power Authority, Orange and Rockland Utilities, Central Hudson Gas & Electric, National Grid, and Rochester Gas & Electric — are required to purchase ORECs from NYSERDA at the price paid by NYSERDA, and in proportion to their share of the State's electricity load. In other words, the costs of the OREC payments are passed on to the electricity consumers across the State in proportion to how much electricity they use.

Visit nyserda.ny.gov/offshorewind for more information on offshore wind in New York State.

NYSERDA estimates the average monthly residential bill impact for a renewable energy project to help New Yorkers better understand how a particular Strike Price could be reflected in their monthly bills. This estimate is based on forecasts of reference energy and capacity market prices (which are subject to change) and the Stike Price (which does not change), calculated at a moment in time (e.g. 2019, 2024). As a result, an estimation using the same Strike Price calculated in a different year could yield a different estimated monthly bill impact. Estimates of bill impacts are simply a best effort to help New Yorkers better understand generally what a Strike Price may mean for a typical residential energy bill.

Let's Compare: Offshore Wind Project Prices

In 2019, as a result of New York's first offshore wind solicitation (NY1), NYSERDA awarded OREC contracts to Empire Wind 1 and Sunrise Wind. Subsequently, these same projects were re-awarded new contracts through New York's fourth offshore wind solicitation (NY4). Why and how did the prices change? What about the estimated monthly cost on electricity bills?

First, it should be noted that the project proposals and contractual obligations to NYSERDA are not the same in 2024 as they were in 2019. This affects the cost of the project, but also the value to New York. Key changes include:

- New economic benefit commitments above what was originally contracted, including $32 million committed to community-focused investments in New York's disadvantaged communities and $16.5 million toward wildlife and fisheries monitoring.
- Commitments to purchasing a minimum of $188 million of U.S. iron and steel, supporting U.S. manufacturing and the New York Buy American Act.
- Requirements for Labor Peace Agreements for operations and maintenance services.

In looking at the prices, and combining the two projects for discussion, the weighted average Strike Price (nominal) for Empire Wind 1 and Sunrise Wind in NY1 was $114.58/MWh. The weighted average Strike Price (nominal) for the same projects in NY4 was $150.15/MWh. This shows a 32% increase in all-in project costs.

When looking at electric bill impacts, forecasts of reference energy prices have changed since the NY1 awards. Additionally, the way in which reference capacity price is calculated has also changed. All these factors affect the projected estimate of consumer bill impact from $0.73/month at the time of the NY1 awards, to $2.09/month at the time of the NY4 awards. Even if the nominal Strike Prices from NY1 and NY4 were the same, the consumer impact estimate would change because of the changing value of the independent variables used to calculate $/month electricity bill costs. Because of the dynamic nature of the estimate, residential bill impact estimates over time are not the most effective way to compare costs of offshore wind projects over time. They are simply a general indication of projected bill impacts at that point in time.

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