

**Summary of Comments in Response to the SAPA Notice**

Acadia Center (Acadia)

Anbaric Development Partners, LLC (Anbaric)

Audubon New York, Natural Resource Defense Council, National Wildlife Federation, The Nature Conservancy, Wildlife Conservation Society (Audubon et al)

Bay State Wind, LLC (BSW)

Bluerock

Business Council of New York State (Business Council)

City of New York (City)

Climate Jobs NY

Consumer Power Advocates (CPA)

Danish Energy Agency (DEA)

Deepwater Wind LLC (Deepwater)

Direct Energy Services, LLC (Direct Energy)

EDF Renewables Offshore Development, LLC (EDFR)

Equinor Wind, LLC (Equinor)

Fisheries Survival Fund (FSF)

Garden State Seafood (GSS)

Independent Power Producers of New York (IPPNY)

Innogy US Renewables Projects LLC (Innogy)

Institute for Policy Integrity (IPI)

Joint Utilities (JU)

Long Island Commercial Fishing Association (LICFA)

Long Island Federation of Labor, AFL-CIO (LIFL)

Long Island Power Authority (LIPA)

Multiple Intervenors (MI)

National Wildlife Federation (NWF)

Natural Resources Defense Council (NRDC), Sierra Club, National Wildlife Federation, Environmental Advocates of New York, Pace

Energy and Climate Center, New York League of Conservation Voters  
("Clean Energy Advocates"-CEA)

New York Independent System Operator (NYISO)

New York Municipal Power Authority (NYMPA)

New York Offshore Wind Alliance and the American Wind Energy  
Association ("NYOWA-AWEA")

New York Power Authority (NYPA)

New York State Building and Construction Trades Council (NYSBCTC)

Seafreeze Ltd. (Seafreeze)

Shell Energy North America, L.P. and Shell New Energies (Shell)

Siemens Gamesa Renewable Energy, (SGRE)

Sierra Club Members

County of Suffolk, Office of the County Executive (Suffolk)

Sustainability Institute at Molloy College, (Sustainability  
Institute)

Town Dock

U.S. Green Building Council (USGBC-LI)

Utility Workers Union of America, AFL-CIO, Local 102 and  
International Brotherhood of Electrical Workers, New York State

Vineyard Wind, LLC (Vineyard Wind)

Workforce Development Institute (WDI)

**Acadia Center (Acadia)**

Acadia stated that a recent study by the Lawrence Berkeley National Laboratory (LBNL) showed that the market value of offshore wind in New York is among the highest in the nation. Acadia added that it believes that offshore wind is important to help the state meet in its renewable energy goals and Acadia's Energy Vision 2030. Acadia argued that offshore wind has the potential to generate significant economic activity in the state and provide high paying jobs. Acadia stated that it believes that pairing offshore wind generation with storage increases the value of offshore wind by \$3/MWh. Acadia expressed support for the OREC models the Commission chose to consider and believe that long-term contracts reduce financing risk and minimize ratepayer impacts.

**Anbaric Development Partners, LLC (Anbaric)**

Anbaric objected to the omission of Open Access Offshore Transmission (or open transmission access) from the solicitation process. Anbaric interpreted this as a requirement that only direct generator leads would be allowed. Anbaric sought a change in the proposed rule to bifurcate transmission line ownership and development from generation which it claimed would then permit developers of open transmission to respond to Phase 1 and future RFPs. It further opined that there is ambiguity in the Notice by it not specifically prohibiting open transmission access in future RFP responses.

Anbaric stated that use of open transmission access has been implemented in the U.S. and elsewhere in the world with success and that it would support an open, competitive offshore wind industry in the U.S. It supported this by stating that power grids in the U.S. operated by RTOs and ISOs deploy open access transmission which is functionally separated from generation and

these configurations have experienced success in promoting on-shore wind development in Texas, Germany and other locations. By forcing the bundling of generation and transmission which it claimed is the case in the Options Paper, it contradicts policies which support competitive energy procurements.

"New York OceanGrid", is Anbaric's Open Access Offshore Transmission system for use in offshore applications. It is capable of delivering to load zones J and K through use of either AC or DC cables as appropriate. Anbaric filed its application to BOEM in April (2018) for right of way grants and easements to utilize this system which it stated could deliver all 2,400 MWs outlined in the Options paper.

Anbaric concluded by emphasizing its four major points regarding the disallowance of open access transmission configurations; 1) Inhibits state policy makers from obtaining valuable information from the private sector which if utilized could result in lower prices for delivered offshore wind in New York; 2) Could have a negative effect upon the growth of the offshore wind industry in New York and result in constraining competition, particularly by permitting chosen vendors to put up barriers to future competition; 3) Could silo grid planning and the necessary development of offshore wind infrastructure resulting in the downplaying of transmission planning including size, voltage and other important considerations; 4) Result in unnecessary duplicate transmission lines which would raise costs and produce more harmful environmental effects upon wetlands and marine areas.

**Audubon New York, Natural Resource Defense Council, National Wildlife Federation, The Nature Conservancy, Wildlife Conservation Society (Audubon et al)**

Audubon et al commended New York's approach to offshore wind and the Offshore Wind Master Plan. Audubon et al urged the Public Service Commission (PSC) to include environmental requirements as an eligibility threshold in the procurement process based on the Best Management Practice (BMP) that will be developed by the Environmental Technical Working Group. Audubon et al state it supports flexibility with NYSERDA to establish BMPs and mechanisms for implementation. Audubon et al supported including environmental considerations into the bid-scoring process, providing bonus points for avoiding prime areas, and community outreach in the scoring process. Additionally, Audubon et al said the PSC should include economic signals for offshore wind procurement like the large-scale renewable solicitations. Audubon et al suggested adding an incentive to bidders to include additional environmental requirements such as wildlife data collections, monitoring technology, impact mitigation and/or habitat restorations. Audubon et al proposed that NYSERDA score competitive bids as 70% price, 25% economic benefits and 5% project viability but suggested "economic benefits" be broadened to include "environmental and community benefits."

**Bay State Wind, LLC (BSW)**

BSW supported the 2.4 GW by 2030 offshore wind target. BSW supported the Phase 1 goal of at least 800 MW by 2019. BSW recommended the Commission refrain from setting limitations on the amount of capacity that developers can bid towards the Phase 1 goal. In addition, BSW favored the front-loading of capacity in the 2018 solicitation to allow developers to take advantage of the Federal Investment Tax Credit. BSW stated that labor-related issues should be considered in the evaluation of bids, but it does not support establishing a hard-and-fast rule around Project Labor Agreements or prevailing wage. BSW does not support setting

arbitrary requirements related the offshore project's distance from the shore. BSW recommends putting more weight on project viability than the 5% proposed in the SAPA notice and ensuring the procurement process is transparent about how it will score and weight projects against the criteria. BSW stated it supports a procurement process model that best minimalizes developer risk and ratepayer cost.

BSW sees the fully-bundled power purchase agreement (PPA) (Option 4) as the optimal arrangement. BSW stated it believes an appropriately structured Market OREC or Index OREC can offer the same benefits. BSW has serious concerns about the Forward OREC and encourages the PSC to establish a working group to work through the implementation details that can be consequential to the success of this approach. BSW concurs with the Options Papers that the Fixed OREC places significant risk to the developer and will drive up the costs of capital and the overall cost of the program. BSW stated it supports the adoption of the Market OREC because it provides developers with the long-term revenue stability thus enabling financing at a lower cost of capital that can be translated to lower OREC bid prices. BSW had numerous recommendations for the development of an Index approach. BSW stated it is concerned that liquidity issues will arise with Option 4 and could result in the inability to hedge due to lack of market depth. BSW stated it has similar concerns with the Fixed/Index OREC and Capped OREC model as it does with the Forward OREC model. BSW asked the Commission rejected both proposals.

BSW stated it believes that the long-term PPA is the "gold standard" in procurement options because it would reduce developer risk premiums and would likely minimize ratepayers' costs relative to other alternative options. BSW pointed out that

all the options should be screened for stakeholder acceptability. BSW opposes the maximum upset price as a cost containment measure because the offshore wind market is in its very early stages and suggested that the first solicitation should maintain a wide band of acceptable pricing. BSW stated it strongly supports NYSERDA's recommendation to confine the Phase 1 procurements to projects which provide integrated solutions for offshore generation and transmission because developers have spent time and resources in developing an integrated solution and injecting a separate solicitation for transmission now would cause undue delay in the market development.

**Bluerock Energy (Bluerock)**

Bluerock stated it believes that it would be more efficient and result in less customer confusion if the ORECs were purchased by the investor-owned utilities (IOUs) and municipal systems and costs passed through to all customers. Bluerock suggested the implementation costs would be much lower if NYSERDA bills and collects only from IOUs.

**Business Council of New York State (Business Council)**

The Business Council stated its overall concerns about the OSW program, particularly what it projected as its increased costs to ratepayers, particularly businesses in New York State and the negative effect upon NYPA's Economic Development Power Program and the lack of environmental benefits compared to the current CES program.

The Business Council reiterated its previous concerns about ratepayer impacts from the CES and further explained that the CES does not meet the same objectives as the Clean Energy Fund (CEF). According to the Council the CES does not protect consumers, nor result in grid modernization investment or achieve greenhouse gas reductions as required in the CEF. It cited a

recent European report which demonstrated that increased electricity costs negatively affected exporting efforts. Additionally, the Council stated its belief that the Cost Study undertaken by NYSERDA for the CES did not properly assess gross program costs, determine what the corresponding avoided costs and wholesale energy costs were separately, or take into consideration the potential 1,000 miles of new transmission lines which the NYISO previously stated could be necessary to achieve CES goals.

Lastly, the Business Council stated its opposition to mandatory Project Labor Agreements (PLA) which it stated have shown to increase project costs and referenced a study in which school construction costs were 20% higher because of PLAs. The Business Council also stated that PLAs do not avert strikes and referred to a strike by carpenters subject to a PLA in 2015.

#### **City of New York (City)**

The City support the adoption of offshore wind (OSW) generation resources because it will complement the policy goals set by the City's initiatives, particularly OneNYC plan, issued April 2015. Also, OSW will help achieve the goals of the Clean Energy Standard (CES).

The City is concerned about the costs associated with procuring OSW projects. The City believes that the Commission should not rush into action, and allow for flexible approaches when adopting a procurement option, and maximize opportunities for participation and competition in OSW development, while developing knowledge about the OSW market and the procurement process. The City believes that there should be flexibility to adjust the target downward to balance cost impacts to customers.



The City urges the Commission to learn from its prior experience with long-term contracts, prior to selecting a procurement approach for OSW. The City states that as OSW projects are undertaken in the United States, the capital costs of wind turbines are expected to decline. Therefore, the City believes that there is no need to enhance the benefits that developers will receive via the possible inflated revenue streams associated with long-term fixed price contracts. The City believes that utility-owned generation could be utilized as a bridge until there is a functioning competitive market for OSW development.

The City supports the Commission's adoption of the zero emission credits adjustment mechanism, which reduces the level of support as market prices increase. The City believes that a power purchase agreement structure should allow the OSW developers to obtain financing, and an index/adjustment mechanism to correlate with the level of payment needed to fluctuations in market prices. This structure should avoid a repeat of the NUG contract experience and protect customers from overpaying for the electricity produced by the OSW projects.

The City supports including a cost containment mechanism in the solicitation and procurement process. The City believes that a superior approach would be to limit the winning bidder's cost recovery to its bid price, subject to adjustment for costs that the Commission determines, after the fact, were unforeseeable. The City believes that details associated with pricing mechanism and cost containments mechanism need to be identified, analyzed, and properly evaluated. More analysis is needed, discussed via technical conferences, collaborative meetings, hearings, and other appropriate processes. The City

believes that these issues need more administrative process than a single round of comments.

The City believes that one size fits all minimum distance from shore that a project must be located is too restrictive. The City recommends that developers should be asked in their bid to minimize the visual impact from shore. The Commission should allow flexibility to developers.

As to the ownership of the two primary options of undersea transmission system, (separate ownership of the transmission system from the wind turbines, or allow developers to construct, own, and operate both the wind turbines and the undersea transmission system) the City believes that there has been very little analysis to date of the two approaches. The City states that to maximize efficiencies and reduce costs, it is important for the Commission and NYSERDA to consider certain undersea transmission issues in parallel with Phase 1 of the OSW procurement process.

### **Climate Jobs NY**

Climate Jobs NY stressed the importance of incorporating key labor policies and practices into procurement practices to help New York reach its OSW goals. The key policies stated are: 1) Prevailing Wage Requirements which will help attract necessary skilled labor without driving up costs, encourage local jobs and correspondingly increase state revenue and address the current shortage of skilled labor through reinvestment in apprenticeship training programs; 2) Responsible Development and Contracting Policies (RCPs) which it states are consistent with current NYSERDA practices, provide assurances that contractors and individuals hire/possess technical competence, and assure that chosen developers hire competent

contractors and subcontractors; 3) PLAs are an effective tool to help ensure quality control/risk avoidance, provide access to high quality labor and ensure project delivery through stable delivery and efficient dispute resolution processes; 4) Labor Peace/Neutrality Agreements which require that employers do not coerce or intimidate employees and requires that employees do not participate in labor-related activities on site which could disrupt the working environment. Climate Jobs NY included a list of Case Summaries and pertinent research studies supporting the above policies.

**Consumer Power Advocates (CPA)**

CPA stated that its members will likely face significant additional costs if the proposed offshore wind procurement moves forward. CPA noted it takes no position to the desirability or advisability of any offshore wind procurement mechanism because they believe there are too many open questions to say whether consumers should support this initiative. CPA added it supports the Market OREC approach as it would ensure developers receive their fixed, as-bid payments, regardless of where the market fluctuates. CPA noted its concern with the possible interaction of the OREC procurement and the potential carbon adder. CPA argued one benefit of a carbon price adder is it would decrease or avoid entirely the need for out-of-market subsidies. CPA stated that a carbon-driven energy revenue increase for offshore wind developers will represent a windfall. CPA suggested only a Market OREC approach can ensure that situation does not occur and a Fixed OREC would lock the windfall into place for 25 years. CPA understands that utility parties are likely to support utility-owned generation on the grounds they the lower costs of capital will reduce impact to customers; however, CPA proposed that the shareholders not the ratepayers

must bear the burden of potential cost overruns. CPA stated that the Commission should continue to rely on private power plant development and competitive markets.

**Danish Energy Agency (DEA)**

The DEA provided an history of Danish offshore wind development from 1991-2003. DEA stated that the wind farms have been developed by an imposition from the Danish government or by own initiative. DEA added that private development was development under the government's "Open Door" scheme allowing development anywhere in Danish waters if the project was developed at the developer's own risk and cost. DEA noted the "Open Door" scheme projects were offered the same premium as the onshore wind farm - DKK 0.25/kWh. DEA described the Danish tender model as a one stop shopping scheme; the tender included a license to conduct the pre-investigation, conditions for what to be included in the Environmental Impact Assessment (EIA), a license to construct an offshore wind facility and a license to produce electricity from the wind farm. DEA noted that the winner could withdraw on the basis of the EIA. DEA found that the EIA has been a stopper for one of the farms, so the DEA included the EIA in the tender materials. DEA stated that the second tender was awarded based only on price. DEA added that the framework of the tender is highly responsive of the high price and only one bid was received. DEA stated the next tender included a prior invitation to dialogue, where the industry, potential bidders, consultants and financial institutes were invited to discuss the draft of the tender materials and provide comment. DEA stated the result of this process adjusted the penalties and the timeline allocated to the development of the projects. This tender model has led to positive results for the DEA.

**Deepwater Wind LLC (Deepwater)**

Deepwater Wind LLC ("Deepwater") highlighted the importance of taking advantage of the Investment Tax Credit (ITC) and the Tax Equity Financing that is directly related to it. Currently, that credit is set at 18% for projects that begin construction in 2018. It decreases to 12% for projects begun in 2019. Importantly, it states how the IRS's Safe Harbor Rule pertaining to establishing the official commencement date requires that 5% of the qualifying cost of the total project equipment must be purchased by the end of the year in which the ITC is sought. Therefore, Deepwater encourages the Commission and NYSERDA to establish a construction agreement by August of 2019. Unless changed, the ITC is scheduled to be eliminated after 2019.

Deepwater emphasized certainty in the procurement schedule. It encouraged regularly-scheduled solicitations to assist in the development of the local supply chain and lower costs and pointed to recent studies in which OSW pipeline commitments of 2,000 MWs or more resulted in cost reductions of approximately 50%. Deepwater continued by stating that a known schedule of procurements would enhance New York's capability to create jobs and help establish supply chains. Deepwater recommends performing solicitations in 400 MW increments. Even though the above economies of scale of large procurements would not be realized, the learning curve associated with the supply chain and OSW technology would be greatly enhanced, through the iterative procurement schedule and the time frames involved in them. In support of this view, Deepwater included a report by the Brattle Group which explains the important supply chain effects of smaller, iterative procurements including that turbine suppliers may not be as encouraged to invest in local manufacturing for one large procurement as they would if more procurements are to follow in the near future.

**Direct Energy Services, LLC (Direct Energy)**

Direct Energy suggested the program would move more efficiently if the procurement is handled directly between NYSERDA and the electric distribution company (EDC) through a non-bypassable charge. Direct Energy added that if the OREC requirement continues to pertain to all LSEs, Direct Energy recommends the Fixed OREC option to ensure price stability for customers. Direct Energy stressed that if the OREC requirement becomes effective in the near future, existing ESCO fixed rate contracts should be grandfathered. Direct Energy noted that the previous ZEC program caused customer confusion and dissatisfaction as many rates were increased mid-term. Direct Energy stated that LSEs need to be able to trade ORECs since load changes to new customer movement and flexibility is needed.

**EDF Renewables Offshore Development, LLC (EDFR)**

EDFR stated it supports the adoption of contracting structures that provide price certainty for energy and RECs, and to a lesser extent, capacity. EDFR added that the all-in contract will drive down total project cost and reduce impact to ratepayers. EDFR argued that adding any uncertainty to any portion of the contract by splitting the ORECs from power may lower the cost of the OREC, but not the total project cost and therefore may increase cost to ratepayers. EDFR suggested looking at the Massachusetts, New Jersey or Maryland programs as good models where LSEs take a more active role to remove credit risk. EDFR advised that offshore wind is inherently more financially risky and hurdle rates will naturally increase to accommodate risk and the addition of merchant risk or basis risk will serve only to further increase the sponsor hurdle rate. EDFR added that tax equity may be employed to efficiently use ITC benefits, which should drive down the required offtake/REC price relative to a

carryover structure. EDFR stated that pre-cash is also a component of the return. EDFR suggested that the additional risk to the sponsor must be included in the evaluation of the discount rate for PPA/REC and eliminating the price risk via a fixed price REC and a fixed price PPA would reduce the overall riskiness of the structure, enabling a lower cost of financing and lower return requirement for the sponsor. EDFR stated it favors a bundled PPA, split PPA or Market OREC.

EDFR noted it generally supports offshore wind transmission systems and any future transmission systems should be publicly bid and provide clear savings to offshore projects.

**Equinor Wind, LLC (Equinor)**

Equinor supports NYSERDA's effort to conduct a solicitation in 2018 and 2019. Equinor stated that the Market OREC is the best option for the Phase 1 procurement process as it is the most like bundled PPA in terms of commercial risk profile and represents the next lowest cost and best solution. The next option would be the Index OREC. Equinor commented that there are several potential options to calculate the reference price. Equinor stated that the Forward OREC, FIXED/Index OREC and Capped OREC suffer serious flaws.

Equinor urged the Commission to not include a minimum distance from shore for projects bidding to supply ORECs because there are sufficient safeguards in places that offshore wind is developed so it does not have material visual impact on land. Equinor added that because the visual impact of the project will have a substantial influence on overall project support and viability, developers have every incentive to design their projects to minimize visual impact, even without a minimum distance requirement. Equinor argued that adopting a minimum

standard has the potential to reduce liquidity of the markets for ORECS and increase the overall costs of meeting renewable energy goals.

Equinor stressed they support the Commission's proposal to pursue the "developer-owned" model for transmission. Equinor added that bifurcating the ownership of the offshore wind projects and the T&I facilities is likely to be highly inefficient, increase uncertainty, and drive up project costs. Equinor offered two suggestions to keep costs low as possible during the competitive procurement process: allow developers to place larger bids and ensure developers can make the best possible use of the ITC. Equinor added that it would be challenging for developers to make investment decisions to qualify for the ITC in 2019 without a contract for ORECS, a PPA or other offtake agreement.

Equinor stated it supports the Commission's proposal to consider both price and non-price factors when evaluating competitive offers for ORECs. Equinor added it supports increasing the weight assigned to economic benefits from 30% to 35%. However, Equinor indicated it does not support including project labor agreements because it's a "one-size-fits-all" approach. Equinor stressed that it does not support NYSERDA including project-specific environmental effects when evaluating bids to supply ORECs.

#### **Fisheries Survival Fund (FSF)**

FSF represents many the full-time limited access permit holders in the Atlantic scallop fishery. FSF commented that both the existing lease area and significant portions of the areas under consideration are located on important scallop fishing grounds, as such, they object to the leasing of submerged lands



on the Outer Continental Shelf (OCS) that overlap lucrative scallop beds, as scallop fishing and OSW facilities are incompatible uses of the OCS. FSF advised the effects from any wind energy facilities will limit scallop catch levels, displace fishing effort, and lead to changes in bycatch.

FSF urges the Commission to implement procurement policies to ensure the region's fisheries are protected, including: 1. mitigating impacts to fisheries through: research and implement fishery mitigation issues, utilize modern turbine design and placement, and require adaptive buildouts and impact monitoring; 2. ensure wind energy facilities are compatible with navigational safety; and 3. coordinate with affected fisheries' interests, including: fishing industry representatives, regional fishery management councils, and regionally affected states.

FSF asserted that the construction and operation of wind energy arrays present navigational hazards, increase sedimentation, introduce harmful sound frequencies, pose risks of cable migration, cause heat and electromagnetic changes, alter the ecosystem composition, and create hazardous safety conditions, among other impacts. Among the most critical problems that lead to incompatibility are the risks posed by cables, scour, and the spacing of turbines. Adult scallops cannot survive in areas without firm sand, gravel, or coble substrate and low levels of inorganic suspended particulates. Trying to prevent migration of the cables will require rock armor, which will impact the substrate conditions.

FSF asserted the operation of wind energy facilities in fishing areas will lead to the inability to obtain marine insurance or to file insurance claims due to the unacceptably high navigational and safety risks such facilities create.

**Garden State Seafood (GSS)**

GSS stressed the need for the Commission to require cumulative and biological impact assessments, as well as incorporation of applicable mitigation and compensation measures, to commercial fisheries as a requirement of offshore wind energy.

**Independent Power Producers of New York (IPPNY)**

IPPNY states that until a carbon adder is implemented, offshore wind energy facilities should be required to compete directly with other qualifying renewable facilities as part of the Tier 1 REC solicitation. IPPNY states that the OREC proposal is a departure from the Commission's long-standing policy that qualifying renewable facilities compete against each other on a fair and non-discriminatory basis. IPPNY added that the Commission should continue to utilize the fixed-price REC structure and be sure to avoid a double payment to an offshore wind project should a carbon adder be implemented. IPPNY stated the Commission should reject the Market OREC, bundled PPA and split PPA. IPPNY opposed any role for utility-owned generation (UOG). IPPNY stated that they believe the most effective way to reduce carbon emissions in the energy industry would be to implement a carbon adder.

IPPNY stated that NYSERDA's implication that environmental benefits would be lost if New York does not jumpstart the deployment of offshore wind is speculation. IPPNY disagreed with NYSERDA's analysis that offshore wind generation has seen dramatic cost reductions in Europe and is comparable with on land wind generation.

IPPNY emphasized its support for the Fixed OREC model and opposition to the Market OREC, bundled PPA and split PPA models. IPPNY added it opposes the contract for differences (CFD) model. Further, IPPNY stated it opposes the bundled PPA contracts

because they can make suppliers participating in these programs indifferent to market prices that may signal the need to reduce output or curtail service to ensure the reliability of the electric system.

**Innogy US Renewables Projects LLC (Innogy)**

Innogy supported an early competitive procurement, asserting it will create momentum that will help New York meet its 2,400 MW target. Innogy suggested that by restricting the initial procurement to 400 MW, New York will get a near term project while ensuring that the bulk of the 2,400 MW procurement is obtained at the lowest possible process. Innogy stated that presently there is only one site lease that can cost effectively compete in a power solicitation, resulting in no real competition, and leading to New York not receiving the best price in the first solicitation.

Innogy supported maintaining a minimum distance of 20 miles from shore, the 70/25/5 bid scoring system, the role of NYSERDA as the clearing house for ORECs and as procurement manager, and not planning coordinated transmission in the Phase 1 procurement.

Innogy stated that there are pros and cons of each of the seven purchase mechanisms, but favored the Market OREC suggesting it creates the most predictable revenue stream. Innogy asserted the Forward OREC could be structured to work favorably if one-year forward prices are used for energy and capacity. Innogy does not favor the Fixed OREC or Capped OREC.

**Institute for Policy Integrity (IPI)**

IPI commented that the Social Cost of Carbon (SCC) is the best available estimate of the external cost of greenhouse-gas emissions, and supported continued use of it in OSW Policy.

IPI suggested before selecting procurement options, that the Commission should not condition payment on participation in the wholesale markets, so that it would not run afoul of *Hughes v. Talen Energy Marketing, LLC*, 136 S. Ct. 1288, 1299(2016). Additionally, IPI supported the "hedges" identified in the options paper as a way to keep costs to consumers down and to pay for the benefits of offshore wind at prices that are no higher than necessary to obtain these benefits.

### **Joint Utilities (JU)**

JU commented in support of NYS clean energy goals and view 2,400 MW of OSW generation facilities as a resource with the potential to meaningfully contribute to the State's 50x30 goal. JU argued utility ownership should be adopted by the Commission because it is the lowest cost and most viable solution for acquiring OSW generation, constructing related transmission assets, and interconnecting these resources to the grid. JU asserted unlike third-party ownership, the residual value of OSW resources will benefit utility customers for the entire functional life of the facility. JU also argued that utility-backed PPAs should not be adopted, as this approach raises costs and increases risks for customers. JU asserted that developers of renewable projects have indicated that they do not prefer regulated or non-regulated project purchasers and that experience in other states has shown the utility ownership model does not inhibit the market. The development of new renewable resources has flourished under a utility ownership model in many states: Arizona, California, Colorado, Iowa, Minnesota, New Jersey, North Carolina, Oregon, Washington, and Wisconsin.

JU asserted that work to align procurements with BOEM lease auctions to increase the competitiveness of OSW procurements, and a determination of the best way to estimate and

reduce the likely costs associated with land-based system improvements to the transmission and distribution system required to interconnect offshore wind projects, should begin immediately.

JU questioned whether its reasonable regulatory policy for utility customers to pay as much as 25% premium to potentially create jobs in a specific geographic location. JU asserted viability should be increase to 25% weighting and economic benefits decreased to 5% weighting.

JU commented that the Fixed/Index OREC model most appropriately limits both the cost and risks to customers while still providing the needed certainty to lower the ultimate price of ORECs.

JU agreed that OREC compliance obligations should be established for all LSEs, along the same lines as existing CES obligations. JU suggested using the ZEC model for the earliest stage as it eliminates the possibility of triggering an ACP for compliance shortages, at no fault of the compliance entity. Further, to improve utility planning activities and transparency, NYSERDA should provide a forecast of expected prices and compliance percentages for the following three years.

JU suggested the T&I costs associated with OSW should be recovered from all customers in a mechanism analogous to the OREC structure, which would be facilitated by a bundled bid or by separate, concurrent solicitations for T&I and OSW generation. JU recommended a proportionate utility share of ownership with rate base-type treatment for recovery through a NYSERDA billing/collection mechanism.

**Long Island Commercial Fishing Association (LICFA)**

LICFA commented that building OSW generation facilities in the waters south and east of Long Island would lead to job and

economic losses within the state, both for commercial fishermen, and for the shoreside businesses that support them, which is against the CES value to maintain present jobs. LICFA asserted historic, traditional fishing grounds should be removed from the areas under consideration for WEAs before any leases are to take place.

LICFA requested to include additional analysis of siting standards, this included 11 items LICFA would like to be completed by NYSERDA and DPS, before any further decisions are made. These items included, but were not limited to, socio-economic impact assessments, analysis of fishing grounds and fisheries, biological analysis of all fisheries within the New York Bight, plans and monitoring requirements, mitigation and compensation plans, distance requirements from fishing grounds, and analysis of tidal flows. The specific details of each item are included with LICFAs full comments.

**Long Island Federation of Labor, AFL-CIO (LIFL)**

LIFL stated that the 800 MW procurement objectives for 2018 and 2019 will jumpstart the offshore wind industry in New York and a steady procurement schedule is a positive signal to the offshore wind industry. LIFL added it supports responsible contracting language and project labor agreements in all RFP's and offshore wind contracts. LIFL endorsed the research and analysis conducted by Climate Jobs New York. LIFL argued that investment in offshore wind generation should also include investments in Long Island's education infrastructure such as community college and universities. LIFL stated that NYSERDA should consider significant investments on Long Island' ports to meet the needs of the wind industry. LIFL added NYSERDA should consider partnering with the Suffolk County Economic Development Corporation to upgrade the ports.

**Long Island Power Authority (LIPA)**

LIPA supported the efforts to facilitate OSW to further the 50 by 30 renewable energy goals. LIPA asserted it has already entered a PPA with Deepwater Wind to purchase 90 MW of OSW, when the project becomes operational as early as 2022.

LIPA commented that the Market OREC is preferable among the proposed contract structures and that it supported the Commission's recognition that the non-jurisdictional state authorities should have flexibility in determining how they will support implementing the state OSW goals. LIPA agreed that solicitations for OSW resources need to be a coordinated in a collaborative effort. LIPA asserted that a Bundled PPA could be an alternative to the Market OREC, though it would place an additional financial burden on the utility off-taker. Utilities should have the option to enter into Bundled PPAs should market opportunities present a viable alternative.

LIPA generally agreed with Commission's proposal to require all LSEs to obtain a proportional share of ORECs based on the LSEs pro rata load share in NYS to fulfill the LSEs compliance obligations. LIPA believes that all costs of OSW development should be socialized and born by LSEs statewide.

LIPA supported the proposal to allow the import of OSW resources into the NY Control Area from adjacent ISO/RTO control areas. LIPA asserted the evaluation criteria for OSW resources need to be more rigorous and that more information on the methodology used to determine the weights for the competitive bid process should be made available. LIPA believes the 5% for project viability is too low, where time is of the essence and failed projects could jeopardize achieving the 2030 goal. LIPA suggested NYSERDA make viability a threshold criterion.

Additionally, LIPA suggested the inclusion of other criteria: cost of required transmission reinforcements; system impacts; development and schedule risk; site control; ability to permit project; ability to meet proposed in-service date; financial qualifications; management experience; development experience; community impacts; community acceptance; and environmental impacts.

LIPA argued the need for additional studies on interconnection, transmission, and flexible resources; stating additional questions and risks exist regarding cost recovery mechanisms for items such as necessary transmission improvements and required flexible resources needed to complement OSW. LIPA suggests that the technical feasibility study NYISO conducted was limited in scope and does not fully consider the electric system impacts of OSW and the resulting impact on transmission system costs in Zones J and K.

LIPA asserted that identification of potential transmission constraints on the bulk and non-bulk systems that may warrant the future identification of a Public Policy Requirement, considering current and projected resources, should be performed during Phase I and factored into the selection process. LIPA suggested the Commission and NYISO should determine what transmission and generation investments will be needed to reliably integrate 2,400 MW of intermittent wind generation into the electric system. System upgrade costs should be allocated on a statewide basis, not only to transmitting utilities in Zones J and K.

#### **Multiple Intervenors (MI)**

MI is concerned about the potential cost impacts of mandated, customer-funded subsidies of OSW development. MI



states that customers are overburdened and urges the Commission to not force customers to subsidize OSW development. MI states that projected costs of OSW subsidies are not the same as the potential costs, and that long-term projections of future energy costs are always wrong. Further, MI encouraged the Commission not to review the costs of the OSW proposal in a silo, and suggested that the projected and potential costs of OSW subsidies must be analyzed thoroughly, with the costs of all other policy initiatives that customers already are required to fund.

MI renewed its concern about the long-term financial commitments of REV and CES, and the economic impacts imposed on customers. MI believes that New York's energy prices will become non-competitive, resulting in reductions in economic activity, employment and capital investments in the State, particularly in the manufacturing sector and energy-intensive enterprises. MI expressed its concern that the OSW cost impact analyses in the Options Paper were misleading. MI stated that the costs of the OSW program were provided as a net present value of incremental performance based incentive payments over time, in excess of the projected value of Tier 1 RECs. As a result, it may be unclear to the Commission and other entities that, under the various proposals advanced, the potential cost of OSW generation to customers may be several multiples of existing wholesale energy prices.

MI further noted that the cost analysis was misleading because NYSEDA defines electricity bill impacts as "program costs in 2025, the first year of Phase 1 deployment, in real dollars, divided by the most recent reported (2016) total statewide electricity bill spend." MI believes that these impact measures are flawed. MI requested that NYSEDA publish an appendix to the Options Paper that provides all the assumptions

and figures that it used in calculating the cost impacts and analyses for all phases on the proposed OSW procurement process. MI believes that the full costs of OSW should include land-based T&I infrastructure cost analyses. MI requested that the Commission direct NYSERDA to revise the Options Paper to include the projected costs of necessary land-based T&I infrastructure for OSW generation.

MI recommends that the Commission should not establish a separate CES tier for OSW generation. MI stated that New York should not race to develop OSW, given the nascent nature of the OSW market and the expectation of gradually falling costs.

MI stated that NYSERDA's recommendation to utilize a 25-year contract duration for OSW projects should be rejected. MI states that locking into a long-term price now, when the costs of OSW generation are very high due to the nascent state of the industry, and fixing that financial commitment for an entire generation of customers, makes little economic sense. MI stated that all development structures, including utility owned generation, should be considered on an equal footing pending the evaluation of proposals.

MI believes, initially, project viability should not be accorded a separate score, and economic benefits should not be evaluated separately. All viable proposals should be evaluated entirely on cost. MI recommended that the Commission should refrain from requiring developers to commit to using labor agreements or complying with non-binding wage-related requirements.

Since OSW generation units would be located downstate, upstate regions and businesses will not experience any of the economic benefits that would result from OSW development. As a

result, MI believes that cost associated with development of OSW projects should not be borne by upstate customers. A separate phase of this proceeding should be initiated to address cost allocation and cost recovery issues. Also, this phase should consider how economic development customers, such as NYPA hydropower customers, should be exempted.

**National Wildlife Federation (NWF)**

NWF encourages the Commission to establish a long-term offshore wind project with a yearly solicitation schedule and to require all proposals include Best Management Practices, to ensure a thoughtful and holistic policy is established.

**Natural Resources Defense Council (NRDC), Sierra Club, National Wildlife Federation, Environmental Advocates of New York, Pace Energy and Climate Center, New York League of Conservation Voters (Clean Energy Advocates or CEA)**

CEA stated its support for offshore wind development but that it must be undertaken in an environmentally-responsible manner to protect the long-term health of ocean and marine ecosystems.

CEA analyzed customer cost and savings in the seven options presented and stated that NYSERDA's analysis indicates that the Fixed REC option is the most expensive and that the non-Fixed REC options are less expensive than the Fixed option. It went on to state that the Index OREC option is sound legally, provides customer savings and should be the chosen option. It further expounded by explaining that if the Commission ultimately chooses the Fixed, Index, Forward or Capped OREC it should decrease the adjustment period associated with these options.

According to CEA, all seven options are legal and do not run afoul of FERC jurisdiction under the Federal Power Act. By compensating winning bidders for the environmental attributes

of wind generation (and not on any market activities), there is no issue with FERC jurisdiction. CEA explained that environmental benefits of the options including decrease of carbon and other pollutants such as NO<sub>x</sub> and SO<sub>2</sub> into the atmosphere. In contrast, CEA stated that an incentive by the Maryland PUC to a new gas plant contradicted FERC authority because it ignored a required FERC wholesale interstate rate. The CEA-preferred option of Index OREC steers clear of an FERC jurisdiction/issues by not being tied to a generator's actual revenues but instead to production of environmentally-benign electricity.

Regarding the seven options detailed in the Notice, CEA stated that OREC revenues earned will not affect any capacity market offer revenues that wind developers may separately earn and these offshore wind contributions to the capacity markets should not be negatively affected. Furthermore, according to CEA, it will not be necessary for NYISO to mitigate/reduce payments to developers because of NYISO's "Part B" buyer-side mitigation rules. This is because it is unlikely that developer offers will be determined to be "economic" and "non-manipulative" under the Part B rules mentioned above. In addition to these factors, according to CEA, wind projects under consideration here will qualify for a blanket exemption from the buyer-side mitigation test in the first place due to a recent FERC ruling which directed the NYISO to preclude intermittent resources like wind from the buyer-side mitigation rules. The crux of this preclusion is that the use of wind generation to manipulate capacity prices downward is highly unlikely. CEA completed this line of reasoning by explaining how a proposed PJM rule ("MOPR-Ex") would mitigate payments to offshore wind projects because it deemed them discriminatory due to the underlying wind program structure which makes distinctions between new and existing programs. According

to CEA, making these distinctions is acceptable under the Federal Power Act and that PJM's rule misinterprets the FPA.

Regarding the criteria used to score/rate projects as listed in the Notice, CEA stated there are no environmental criteria referenced and that it takes "strong exception" to the overall criteria for this reason. CEA states that the Commission should include environmental criteria to support the scientific research that NYSERDFA and DEC have undertaken which have led to creation of Best Management Practices (BMP) for offshore development. It states that having BMPs in place during the review phase of the projects will hasten the permitting process and reduce future legal conflicts. CEA indicated its support for the relative weights of the three existing criteria (70% -price, 25% - economic benefits and 5% - project viability) and suggest that environmental considerations be included in the economic benefits criteria.

Regarding other criteria, CEA stated that the criteria should also include a requirement for prevailing wages as is required under the Clean Energy Standard, and that bidders should participate in Project Labor Agreements (PLAs), labor peace and neutrality agreements for manufacturing, O&M work and joint labor-management training programs. Also, there should be community benefit agreements which would include hiring locally and using local sources of supply. Lastly, CEA states that shared transmission facilities should not be required due to the potential of delaying the process of offshore wind development.

CEA stated the importance of creating regularly-scheduled solicitations which provide certainty to developers and supported coastal employment efforts. It pointed to the ancillary benefits of market certainty underway in Massachusetts (and other

states) which is investing in a marine terminal in New Bedford to support the planned offshore wind projects.

**New York Independent System Operator (NYISO)**

NYISO's comments provided an historical perspective of New York's competitive markets and how it has worked to support the Commission's programs such as the Renewable Portfolio Standard and other state programs including the Regional Greenhouse Gas Initiative which has helped New York reduce its CO2 emissions by 52% since 1999. The NYISO further explained that it supported activities including an assessment of large scale wind technology undertaken with NYSERDA and how the system of collecting real-time meteorological data led to the NYISO being the first grid operator to fully incorporate wind resources into its economic dispatch system in 2009. It pointed to its success by stating that New York's wind generators produced 4,219 GWhs in 2017 and that the competitive wholesale markets will continue to accrue benefits to New York State electric customers including reduced emissions and fuel savings.

The NYISO is currently considering embedding the cost of carbon into the wholesale market structure. The NYISO described the success of wholesale markets and discussed the significance of RECs in general as an effective incentive structure to incorporate renewable resources into competitive markets and that creation of ORECs will follow this trend. Specifically, it stated that the Fixed OREC option is the best approach in financing offshore wind (provided that carbon has not yet been embedded in LBMP/wholesale market) and that it required developers to gauge market signals and to assume the risk associated with the OREC. It contrasts the Fixed OREC with the Indexed OREC which the NYISO does not favor because it shifts risk to consumers. An alternative "carbon-indexed" OREC was

offered by the NYISO which it stated has the advantage of limiting the indexed reference price to the CO2 adder component of the LBMP, reducing risk of overpayments should the social cost of carbon be incorporated into wholesale prices.

**New York Municipal Power Authority (NYMPA)**

NYMPA believes its members should be exempt from additional OREC requirements. NYMPA suggested the Commission should meet the 50 by 30 target through least-cost resources, and continue to protect ratepayers. They argued that offshore wind is more expensive, and is currently unable to compete with land-based renewable resources on a level playing field.

**New York Offshore Wind Alliance and the American Wind Energy Association (NYOWA-AWEA)**

NYOWA-AWEA filed joint comments (including "An Economic Impact Analysis" by the Brattle Group), and stated that their legal analysis determined that all options included in the Options Paper and Notice are legally viable and if the Commission chooses the low-cost options of the Market OREC or Indexed OREC, significant environmental and economic benefits will accrue.

Regarding the overall procurement goal of 2,400 MWs and the critical elements necessary to achieve it, NYOWA-AWEA stressed that each LSE in New York, LIPA and NYPA should all contribute to it and stated the importance of holding solicitations in 2018 and 2019. NYOWA-AWEA recommends that the Commission provide flexibility in the bid quantities. NYOWA-AWEA commented on the eligibility and scoring criteria by reaffirming the requirements that: OSW facilities must deliver their electricity into the New York Control Area for consumption by New York consumers; Require developers to secure a federal lease from BOEM and prove project viability; Provide financial and environmental benefits to local

communities which are being served including inclusion of Best Management Practices; and Incorporate PLAs and joint labor-management training programs as key in supporting labor and supply chain development.

Regarding cost containment priorities, NYOWA-AWEA stressed the use of a maximum upset price based on other states' bidding processes/historical data with the option included of not selecting any bids. NYOWA-AWEA also warns against using other states' procurement prices as a guide without considering the procurement option used.

The legal jurisdictional and constitutional issues were addressed by NYOWA-AWEA to evaluate the risk that any of the procurement options would be determined to be preempted under the Supremacy Clause of the U.S. Constitution. It referred to the State's broad authority over utilities to make three pertinent points. First, that New York State can legally create REC-only markets that perform transactions independently of the wholesale energy markets - and in doing so it does not impinge upon FERC's jurisdiction of the wholesale energy markets. Secondly, the Commission has legal authority to pursue public health and environmental goals and third, the courts have generally ruled that the states have not acted preemptively while exercising their police powers. The Federal Power Act mandates that FERC has jurisdiction over the transmission of electric energy in interstate commerce but not over generation facilities that produce electric energy.

The economic analysis performed by the Brattle Group concludes the following: 1) Customer costs will likely decrease under the low-cost procurement option that is favored by NYOWA-AWEA due to reduction in wholesale energy prices, particularly in



the downstate/NYC metropolitan and Long Island areas; 2) The lower models will result in lower customer costs which are highly dependent upon which procurement option is chosen; 3) The OSW program will reduce the level of pollutants compared to the CES and the value of this avoided pollution is projected at \$908 million; 4) Economic benefits are projected at \$5.27 billion with greater local share and \$3.3 billion with the lesser local share; 5) Job creation would reach between 1,200 to 6,200 direct jobs and 11,300 to 13,200 indirect/induced jobs at peak employment year of 2030. It concludes that selection of one of the low-cost procurement options - either the Market OREC or Index OREC - will result in the greatest overall economic benefits.

NYOWA-AWEA's preferred options from the Options Paper is the Index OREC and it explained how the comparative price (to the Strike price) is an historical index - or composite which would result in less uncertainty. NYOWA-AWEA recommended that this historical price be based on the hourly average of the Day Ahead LBMP. NYOWA-AWEA concluded its comments by supporting the typical configuration for large new wind developments in the U.S. with the developer taking ownership of and being responsible for the T&I infrastructure with project-specific radials included.

#### **New York Power Authority (NYPA)**

NYPA describes how it has both transmission system and financing expertise and could assist in planning and developing the necessary transmission infrastructure to help New York in reaching its OSW goals. NYPA agreed that the Options Paper reference to a Transmission and Interconnection (T&I) system supporting a single OSW generation initially is appropriate. However, further on in the process other T&I models should be considered.

NYPA cautioned the Commission that allocation of OSW target costs to NYPA economic development load buses could have a detrimental effect upon its job creation efforts. NYPA uses the example of CES obligation to point out that its customers will meet their renewable energy targets but that additional OSW costs may be difficult to incur and could jeopardize the economic development programs it oversees and lead to employers taking jobs out of state. NYPA further explained that it cannot unilaterally pass on OSW (and other) costs put forth by the Commission because it would be in contravention to the Public Authorities Law. It suggested that with these limitations in place, its course of action would be to encourage its customers to voluntarily commit to achieving CES goals, some of whom it points out, already do. In support of these voluntary efforts, it concluded by referring to its own one million MW solicitation for clean energy in attempting to assist the state in meeting its CES goals.

**New York State Building and Construction Trades Council (NYSBCTC)**

NYSBCTC stated that procuring OSW energy in 2018 and 2019 will jumpstart New York's OSW market and help attract the industry supply chain. NYSBCTC commented it supported the inclusion of prevailing wage standards and PLA requirements. NYSBCTC suggested that PLAs should be required in solicitations, and if not, strongly encouraged they should be factored into the scoring process. Commenting that a heavily weighted category should be included that awards points based upon: organized labor supports the bidder proposal; bidder sets forth plans to ensure the project is built quickly and at the lowest possible price without sacrificing quality; and bidder sets forth detailed plans for assuring labor harmony during all phases of construction,

reconstruction, renovation, development, and operation of the facility.

Seafreeze Ltd. (Seafreeze)

Seafreeze recommends that NYSERDA require cumulative economic and biological impact assessments, as well as incorporation of applicable mitigation and compensation measures, to commercial fisheries as a requirement of any procurement of offshore wind energy. NYSERDA will need to assess the loss of commercial fishing area due to operational constraints, existing fisheries regulations, exclusion zones and consequential loss of revenue; the loss of wild caught fisheries products through the supply chain; the loss of commercial fishing gear on turbine and cable infrastructure; navigational conflicts and increased operating costs created by offshore wind facilities; turbine interference with marine radar used by commercial fishing vessels; the loss and destruction of habitat to commercially important species and the resulting biological and economic impacts to commercial fisheries. Compensation to all affected commercial fishing vessels, jobs and businesses resulting from these impacts must be a requirement of any offshore energy procurement, according to Seafreeze. Also, comprehensive pre-construction baseline studies must be required and conducted over scientifically acceptable time series necessary for fisheries assessments, in order to assess potential future and ongoing impacts.

**Shell Energy North America, L.P. and Shell New Energies (Shell)**

Shell recommended adoption of the Forward OREC option to calculate payments to OSW projects participating in this program. The Forward OREC option will provide the right incentives to maximize the value of participation in power markets while providing sufficient assurances of cost recovery to

be able to secure acceptable financing terms. Shell notes that this approach will require contractual terms to be carefully tailored to limit the developer's exposure to changed market structures during the term of the agreement. Also, agreement on the indices that will be used to calculate the forward price projection will be needed. Shell recommends that a trading point with high liquidity should be used because it can provide a reliable hedging point. Asserting this approach will allow developers to manage some of the forward price risk during the two-year tranche periods and it will help them to manage imbalances associated with potential operational issues. In terms of future adjustments to the indices, it will also be necessary to include provisions that address market disruptions or changes in pricing points in OREC agreements. In addition, it is important to identify the offshore location in advance to allow the developer to bound its interconnection other potential grid-related costs.

Shell agreed a 25-year contract term for these projects is required and urged the Commission to establish a defined solicitation schedule with milestones. Additionally, the differences in the lead-time and risk for OSW projects should lead the Commission to structure the contracts to address considerations such as milestones, security, performance standards and guarantees, rights and consents. Contracts should also be flexible to allow developers to submit proposals to own the generating facilities alone or in combination with transmission and interconnection infrastructure. Also, transmission-related risks should be allocated appropriately. The designation of zone or location for the price will be a key consideration and must reflect the delivery point for the energy and capacity in the NYISO-administered markets. Shell urged the

Commission to maintain its proscription against utility participation in the generation market.

**Siemens Gamesa Renewable Energy, (SGRE)**

SGRE states that the Commission should allow NYSERDA to issue a solicitation that allows bidders to offer up to 800 MW in 2018. This will contribute to a regional market volume that is necessary to support supply chain localization, which will help drive down costs for future procurements. Also, it will maximize the value for New York ratepayers by reducing the overall levelized cost of energy. Additionally, SGRE stated that the first phase of OSW projects will be eligible for Federal Investment Tax credit (ITC), thus larger initial procurement will allow more projects to qualify for an ITC and result in lower costs.

SGRE recommended that a mandatory statutory setback from shore not be established and that the Commission should create a process that allows developers to work together with local stakeholders in establishing a balance between cost effective development and from-shore visibility concerns. Finally, SGRE recommended that preference being awarded to projects that are able to achieve commercial operation as soon as possible. SGRE also noted that to produce cost reductions in the US OSW industry will require a steady volume of projects.

**Sierra Club Members**

Sierra Club Members stated that a responsible contracting policy should include: 1. BMPs for offshore wind development to create a national model for state leadership in advancing environmentally responsible offshore wind development; 2. prevailing wage and PLA requirements to all large scale renewable energy projects; and 3. local community outreach plans and participation in community benefit agreements with

investments in local hiring, sourcing from the local supply chain, ports, and staging areas should be highly valued and considered in the overall contract scoring evaluation process.

**County of Suffolk, Office of the County Executive (Suffolk)**

Suffolk asserted the county is uniquely positioned to leverage its natural resources for the benefit of working families and future generations to capitalize on the impending investment of OSW developers in new generating capacity. Suffolk argued NYSERDA's commitment to OSW should include investments in Long Island's (LI) education infrastructure (colleges and universities), and world-class research facilities. Citing its proximity to the OSW industry as providing potential to become the center for training, particularly in disciplines not available in NY. NYSERDA should consider significant investments in LI ports to provide the greatest advantage for a growing industry to expand in an area that is the epicenter of ocean winds. Suffolk asserts LI has the infrastructure for skills training for OSW construction already in place. Suffolk urged NYSERDA to encourage developers to seek opportunities to engage with Suffolk County, Towns, and Villages of the feasibility of a new port infrastructure and to consider an allowance for projects that make investments in the County's port facilities in its pricing structure for OSW

**Sustainability Institute at Molloy College (Sustainability Institute)**

Sustainability Institute strongly supports the 2,400 MW goal but expressed concern about the cost to ratepayers for the energy generated by offshore wind, including the cost of transmission of electricity from the wind farms to the grid. Sustainability Institute noted that the Commission's proposed

approach to require each developer to build its own transmission infrastructure from each site to an interconnection point on land, could allow early offshore transmission infrastructure developer to control onshore interconnection points that could later favor themselves or one generator over another.

Sustainability Institute urged the Commission to change the proposed program to invite competitive bids from both wind energy developers and transmission developers. This could be done within the proposed approach by separating the transmission and generation components, starting in the first round of Phase 1, and inviting developers to bid on either or both components.

According to Sustainability Institute, competition between generation and transmission developers serves multiple related goals: 1) It allows low-cost alternatives to be identified; 2) It allow the most environmentally responsible projects to be identified; and 3) It encourages efficiency through specialization: generator developers do what they do best, build wind projects, and transmission developers do what they do best connect those projects to the on-shore grid.

### **Town Dock**

Town Dock's comments relate to the impact OSW may have in the fishing community. Town Dock proposed that any energy contract should include a written agreement which would allow the fishing industry to be involved in every step of the development process. They suggest that a fishery working group, made up of actual fishermen from New York State, as well as fishermen from boarding states, should be formed. Town Dock suggested that peer reviewed studies should be conducted, before, during and after construction. The costs of the studies should be paid by the developer.

Town Dock supports the creation of a mitigation fund. If fishermen are no longer able to fish in the area, they should be compensated. Town Dock believes that those who depend on these waters should be heard and have a seat at the table.

**U.S. Green Building Council (USGBC)**

USGBC-LI is strongly in support of the 50 by 30 goal, however, they do not support limiting competition by excluding the participation of independent transmission developers. USGBC suggested the bidding be separated into transmission and generation components, and allow developers to bid on either or both components. The bids should be at a scale to realize goals rather than favor any single proposed wind farm and to leverage the ability to capture economies of scale. They assert the change in the bid process would encourage the development of a range of options. Wind developers could still submit bids for both generation and transmission elements and make their strongest case for the right to build the entire project, thus placing them at no disadvantage.

USGBC-LI commented that with these changes, collector stations that are placed at the edges of the offshore wind farms could concentrate the electricity from up to six 400 MW wind farms and bring it to shore via only 2 or 3 transmission cables buried in the seabed, and cited to minimize impacts on the marine environment and ocean-based commercial activities. The reduced number of cables and interconnection infrastructure would reduce overall costs, as compared with each wind developer running their own direct generator lead to shore.

**Utility Workers Union of America, AFL-CIO, Local 102 and  
International Brotherhood of Electrical Workers, New York State  
Utility Labor Council (Union Group)**



The Union Group supports the Commission's goal of 2,400 MWS of OSW generation by 2030 and the adoption the of eligibility requirements that include project labor agreements and prevailing wage requirements. The Union Group supports a requirement that in the solicitation, jobs in OSW should favor New York based employment and recommended that all foundation technologies, including concrete gravity bases be evaluated and scored by NYSERDA.

The Union Group recommended that the Commission adopt Responsible Contracting Policies (RCPs), which assure technical qualifications, past track records and business integrity. The Union Group stressed the importance of requiring that OSW developers hire competent contractors and subcontractors.

While the Union Group took no position on a procurement options or annual OREC purchases by LSEs, it did recommend that the competitive bid scoring be revised to: 60% price, 30% economic benefits, and 10% project viability.

**Vineyard Wind, LLC (Vineyard Wind)**

Vineyard Wind states the importance of holding early procurements in 2018 and 2019. It stated that joint procurements by NYSERDA, NYPA and LIPA are necessary to provide for larger contracts, economies of scale, decreased procurement complexity and decreased overall costs for all participants. Vineyard Wind further explained that reducing options within the solicitation such as OREC structures, project size, and pricing options will decrease complexity and reduce costs. It also posited that procurement and project sizes should be set at a scale to facilitate both a rational build-out of the local material content chain and development plans for the New York Port.

The necessity of long term certainty of future procurements is important according to Vineyard Wind. Their preference is for Fixed ORECs because they lead to more efficient financing which ultimately reduces customer costs. Vineyard Wind uses the aforementioned PPA in Massachusetts which is a fixed-price off-take contract for up to 20 years (with a utility.)

Pertaining to transmission, Vineyard Wind is in favor of NYERDA's recommendation that project offers include a generator lead line into New York or use adjacent control areas to do so. It cautions against requiring shared transmission lines due to the significant lead time involved in constructing them and the potential of incurring stranded costs.

It generally supports the eligibility requirements in the Notice which will permit more participation in the solicitation because developers in nearby states with BOEM leases can participate. However, it believes that the criteria should give more weight to project viability than the current 5%, it recommends at least 50%.

#### **Workforce Development Institute (WDI)**

WDI stated that the Commission should include contractual provisions that ensure high-quality local jobs and creation of local supply chains, and should create a schedule of procurements that are consistent year to year and go beyond 2030. WDI stated that benefits and protections should be included in all projects. This includes: Workforce Impact Statement to determine the overall impact upon jobs that OSW projects would PLAs; Community benefits including community outreach plans, local community hiring standards, local supply requirements and requirements for use of Minority and Women Owned Business Enterprises in projects; Environmental Protections including BMPs

which would help in the state in becoming a national model for other states; Transparency and Accountability including the requirement that winning bidders provide key metrics such as the number of jobs created and the local content used in each project - these data help foster confidence that the projects are achieving what they estimated.

TWO BIDS REQUIREMENT

A hybrid procurement approach is adopted. NYSERDA will prepare a solicitation that requires two separate bids from each participating bidder. One bid will be for a Fixed OREC price. The other bid will be for an adjustable OREC based on a bid Strike Price (using the Index OREC procurement method). The bidder must be prepared to commit to either a fixed price or an adjustable price regime if accepted, as determined by NYSERDA. The two raw bid prices will be weighted using a formula to be clearly articulated in the solicitation, and the 70% price component of the bid will be scored based on the combined weighted value of both bids.

ILLUSTRATIVE EXAMPLE

For the sake of this example, it is assumed that the weighting formula articulated in the solicitation will be that the Fixed OREC Price is weighted at 1/3 and the Index OREC Strike Price is weighted at 2/3. The results would of course be different if a different weighting is chosen.

<b><u>Original Bids</u></b>	<b><u>Bidder A</u></b>	<b><u>Bidder B</u></b>	<b><u>Bidder C</u></b>	<b><u>Bidder D</u></b>
Fixed OREC Price Bid/MWh	\$39.00	\$27.00	\$25.00	\$25.00
Index OREC Strike Price Bid/MWh	\$60.00	\$52.00	\$52.00	\$54.00
<b><u>Weighted Values</u></b>				
Fixed @ 1/3	\$13.00	\$9.00	\$8.33	\$8.33
Index @ 2/3	\$40.00	\$34.67	\$34.67	\$36.00
<b>Combined Total:</b>	\$53.00	\$43.67	\$43.00	\$44.33
<b>Price Component Rank:</b>	4th	2nd	1st	3rd
<b>Points (70 Maximum):</b>	53.72	68.91	70.00	67.83

In the example, Bidder C has bid the lowest overall weighted bid prices and therefore would be scored the maximum 70 points available in the 70% price component of the bidding process. As shown, the other three bidders would be awarded lower points in proportion to the amounts their overall weighted bid prices exceeded those of the lowest bidder.

After the price scores (points) are calculated, they would then be combined with the scores calculated for economic development (20%) and project viability (10%) to determine each bidder's overall ranking in the solicitation. NYSERDA would then choose to award contracts on the basis and in the order of this combined overall ranking. Once NYSERDA has determined to award a contract to a bidder, NYSERDA will then decide whether to award the contract based on the Fixed OREC Price that was bid or the Index OREC Strike Price that was bid. NYSERDA's decision will be based upon NYSERDA's projection of the different relative costs of the fixed and adjustable ORECs over the life of the contract compared to NYSERDA's projection of the different relative price risks of the fixed and adjustable ORECs over the life of the contract. If NYSERDA awards a contract using the Index OREC method, the contract will specify conditions that may trigger a reversion to the Fixed OREC method and Fixed OREC price that was bid.

INDEX OREC PROCUREMENT METHODOLOGY

If NYSERDA awards a contract based on the Index OREC Strike Price that was bid, the contract price to be paid to the generator will vary over time during the term of the contract pursuant to the Index OREC procurement methodology described below. The contract price to be paid to the generator will vary monthly over time during the term of the contract. Each monthly period of the contract will have its own contract price (the Monthly OREC Price) for that month, calculated for the monthly period using reference energy and capacity prices. The Index OREC Strike Price bid by the generator will be the starting point for determining the monthly contract prices. Each Monthly OREC Price will be calculated during a settlement period following the month by a formula that in general concept is as follows:

$$\begin{array}{rcccl} \text{Index} & & \text{Reference Energy Price} & & \text{Monthly} \\ \text{OREC} & \text{—} & \text{and} & \text{=} & \text{OREC} \\ \text{Strike} & & \text{\$/MWh Equivalent} & & \text{Price} \\ \text{Price} & & \text{Reference Capacity Price} & & \end{array}$$

The Reference Energy Price shall be a time-weighted average hourly NYISO day-ahead market price index for the delivery month and a load-weighted average of NYISO Zone J (New York City) and Zone K (Long Island) prices.

The Reference Capacity Price shall be a MWh equivalent price based on the zonal load-weighted average NYISO spot market UCAP (Unforced Capacity) prices of the included zones for the delivery month. The Reference Capacity Price shall be a load-weighted average of NYISO Zone G, H, I, J, and K monthly spot market UCAP prices.

## State Environmental Quality Review Act

## FINDINGS STATEMENT

July 12, 2018

Pursuant to Article 8 (State Environmental Quality Review Act (SEQRA)) of the Environmental Conservation Law and 6 New York Codes, Rules and Regulations (NYCRR) Part 617, the New York State Public Service Commission (Commission), as Lead Agency, makes the following findings.

**Name of Action:** In the Matter of Offshore Wind Energy (18-E-0071): Order Establishing an Offshore Wind Energy Standard and Framework for Phase 1 Procurement

**SEQRA Classification:** Unlisted Action

**Location:** New York State/Offshore Waters

**Date Final Generic Environmental Impact Statement (GEIS) Filed:** June 14, 2018

**Final GEIS Available at:** <http://www.dps.state.ny>

**I. PURPOSE AND DESCRIPTION OF THE ACTION**

In the attached order, the Commission adopts a goal to procure 2,400 MW of offshore wind energy capacity by 2030, and in furtherance of that goal, approves the design and directs implementation of a new Offshore-wind Energy Standard (OES).

In August 2016, the Public Service Commission (Commission) issued an Order Adopting a Clean Energy Standard (CES or CES Order). In the CES Order, the Commission recognized the development of offshore wind generation as one of numerous avenues required to achieve the State's renewable energy goals. The Commission requested the New York State Energy Research and Development Authority (NYSERDA) to identify the appropriate mechanisms and best solutions the Commission and State may wish to consider in developing an offshore wind program and maximizing the potential for offshore wind in New York.

On January 29, 2018, NYSERDA filed a report titled "Offshore Wind Policy Options" (Options Paper). The Options Paper is a component of New York State's Offshore Wind Master Plan (Master Plan), developed after two years of research, analysis, and outreach by NYSERDA, to inform a path for meeting a goal of 2,400 MW of offshore wind energy generation by 2030.

The Options Paper proposes procurement in phases, beginning with two initial annual offshore wind procurement rounds of at least 400 MW each in 2018 and 2019. The Options Paper includes various procurement program design features intended to broadly apply to the development of multiple projects, over time, in different locations that will result in the installation of 2.4 GW of offshore wind generation capacity by 2030 with the ability to deliver electricity to be consumed by New Yorkers.

The procurement contemplated by the Action is meant to encourage the development of new offshore wind energy projects in the Atlantic Ocean. However, those projects, if developed, could be undertaken in a broad range of scenarios with countless variables, including the geographic area of the marine environment (offshore between Maine and North Carolina), project timing (2018 to 2030), project scale, and project technology. Therefore, it is not possible at this stage to meaningfully assess the specific potential environmental impacts of future offshore development pursuant to SEQRA.

Given these circumstances, and consistent with SEQRA regulations, 6 NYCRR §617.10(a), this GEIS is broader and more general than a site- or project-specific EIS, and identifies potential areas where environmental impacts could be caused by the construction and operation of new offshore wind energy projects. The Commission anticipates that these areas of potential impact will be studied in the future, as part of the environmental review conducted for offshore wind energy development and/or transmission projects at the time they are proposed. Those project-specific reviews would assess, at a site-specific level, all relevant potential environmental impacts as required under SEQRA.

## **II. FACTS AND CONCLUSIONS RELIED UPON**

In developing this findings statement, the Commission has reviewed the Final GEIS, issued on June 14, 2018. The following findings are based on the facts and conclusions set forth in the Final GEIS.

### **A. Public Need and Benefits**

Depending on the site- or location-specific aspects of offshore wind energy development that results from the Action, increasing the supply of offshore wind energy resources by 2,400 MW is expected to result in the following public benefits:

- **Public health benefits** due to avoided emissions of greenhouse gases and criteria air pollutants. As increased use of renewable energy sources, such as offshore wind, would lead to improved air quality, society benefits from



reduced negative health impacts and increased employee productivity. For example, as air quality improves, state health care expenditures for treatment of asthma, acute bronchitis, and respiratory conditions may be reduced.

- **Climate change benefits** related to the reduction in reliance on fossil fuel energy. Climate change projections indicate increased temperatures between 4° Fahrenheit (F) and 10° F by the year 2100 for the northeastern and southeastern United States. As a result, it is projected that the northeast will see increases in total precipitation, frequency of heavy precipitation, sea level rise, and storm surge, which in turn are expected to increase flooding and coastal erosion and further strain aging infrastructure. Extreme heat events and longer summer droughts also are expected in the region as a result of climate change. Similarly, the southeast is projected to experience heavy precipitation, sea level rise, more intense hurricanes and storm surge, and periods of extreme drying.
- **Ecosystem services benefits** due to reduced impacts on land and water uses, as renewable energy sources displace fossil fuel sources from New York's energy supply portfolio. For example, wind turbines require nearly no water to operate and thus "do not pollute water resources or strain supply by competing with agriculture, drinking water systems, or other important water needs."
- **Fuel diversity benefits.** The Action would likely serve to maintain fuel diversity by spurring investment in offshore wind energy development. The addition of new renewable electricity supplies also would reduce the State's reliance on natural gas.
- **Economic development benefits.** Offshore wind energy development spurred by the Action is expected to create net regional economic benefits. These benefits can take the form of manufacturing of wind energy equipment; job and revenue creation; stable, sustained wages, as the lifespan of an offshore wind facility is at least 25 years; and the effects of spending throughout local economies.
- **Accelerated cost reductions for offshore wind technologies.** Offshore wind energy development spurred by the Action is expected to contribute to significant cost reductions for the underlying technology.

**B. Potential Impacts**

Since the construction and operation of a specific facility are not the subject of the GEIS, the applicability, magnitude, duration, intensity, etc., of the types of impacts identified below would depend substantially on the specific offshore wind energy facility, setting, local species, and local communities of the affected area(s). It should further be noted that, depending on the location and other attributes of a specific offshore wind energy project, that project may have additional types of impacts not enumerated below.

***Benthic Communities***

Offshore wind energy development has the potential to impact benthic resources due to habitat disturbance. The installation of foundations would occur individually and sequentially in benthic habitat, which would temporarily create suspended sediment. Benthic fauna generally adapt to such minor, temporary increases in suspended sediments. The installation of foundations also would cause a loss of benthic habitat proportional to the surface area replaced by physical structures on the sea floor. In the footprint of pile-driving and excavation activities, mortality could occur from direct contact, removal, or smothering. Benthic communities typically recolonize after construction activities. Offshore wind energy could also provide a potential increase in benthic communities because the turbine foundations would make new surface area available for growth and development of benthic communities. Depending on site specific conditions, the increase in benthic communities could include introduction of invasive species. Benthic communities may be affected by exposure to contaminated sediments dislodged from the sea bed by construction of turbine foundations and electric cable installations. Avoidance of contaminated sediments is determined through sediment sampling and testing that occurs in detailed facility siting investigations.

***Marine Mammals and Sea Turtles***

Offshore wind energy development has the potential to impact marine mammals and sea turtles due to displacement, disturbance, loss, and conversion of habitat, as well as injury or mortality. Pile-driving and excavation activities are likely to temporarily displace species from their typical habitat due to the associated noise disturbance; this disturbance may additionally lead to changes in typical foraging and reproductive behaviors, and may mask important acoustic signals. Increased vessel traffic may also disturb marine mammals and sea turtles, leading to their displacement into areas of higher

vessel traffic and could increase chance of collision with vessels. Injury or mortality of marine mammals and sea turtles could occur due to noise during pile driving and an increased potential for collision with vessels. The potential risk of noise-related injury, or behavioral changes from noise, would be highest for high-frequency cetaceans due to their sensitivity to loud, high-frequency noise generated by pile driving. Less is known about sea turtle hearing and thresholds; however, sea turtles may be protected from pile driving and other impulsive noise because of their rigid external shell, which may protect the organs inside the shell area. Smaller marine mammals and sea turtles in particular are likely to return to prior habitat after construction, particularly if the presence of offshore wind energy leads, as expected, to new habitat and increases benthic and fish communities.

### ***Fish***

Offshore wind energy development may impact fish due to displacement, disturbance, loss, or conversion of habitat, as well as injury or mortality. During construction, the installation of foundations would temporarily create suspended sediment. The majority of sediments would settle quickly, minimizing turbidity, and fish would generally relocate to nearby habitats to avoid impacts. Impacts on fish from turbidity during construction would be expected to be temporary. Pile-driving and excavation activities are likely to displace fish from regular swimming, foraging, and spawning habitats, and the fish may relocate to nearby habitats due to sensory disturbances. The majority of fish would temporarily relocate to ample available nearby habitat, and would likely return to pre-existing habitats after construction. Noise associated with pile driving could potentially exceed the NOAA Fisheries criteria for cumulative sound exposure level, and may cause injury and/or mortality to some fish species.

Offshore wind energy development may also lead to the conversion of open water to an artificial reef-like habitat. Added structures (i.e. turbine foundations) would create a new hard-bottom habitat similar to an artificial reef, which could cause a shift in species presence and diversity. Artificial reef-like habitats may attract new fish species to the area that may use the structures as a refuge from predators.

### ***Birds and Bats***

Offshore wind energy may impact birds and bats due to displacement, disturbance, or loss of habitat, and injury or mortality. Increased noise, human presence, vessel traffic, and the presence of large structures are likely to displace species

from their typical habitat. This displacement may result in long-term habitat loss if new conditions are unsuitable to certain species, and may result in birds avoiding areas of increased activity and structures, affecting migration and other movements. Construction activities may also temporarily displace birds from migrating, breeding, foraging, and nesting areas, and could contribute to over-crowding and competition at alternative foraging sites. Impacts to other species such as fish may cause changes in available fish prey. These impacts would be temporary and likely to only occur in small areas within the footprint of offshore wind energy. Furthermore, the presence of wind turbines may lead to avian injury or mortality due to direct collision. As noted in the Birds and Bats Study, the known occurrence of bats in offshore waters is relatively low and mainly concentrated during migration periods. Their general lack of presence in offshore waters makes impacts on either individual species or the population of bats unlikely.

#### ***Marine Commercial and Recreational Uses and Vessel Traffic***

The marine commercial and recreational uses, and marine transportation affected by offshore wind energy development would include recreational boating activities, other general vessel traffic, and commercial and recreational fishing. Primary potential impacts to these resources would be potential conflicts with the use of the same area. Recreational boaters may be displaced from areas of construction and associated vessel traffic, and recreational activities may be displaced from the footprint of a specific project. Vessel traffic would increase during construction, and some temporary diversions of commercial and recreational vessel traffic could occur. Potential impacts to commercial and recreational fishing could result from conflicts with the use of the space that displaces commercial and recreational vessels from fishing areas, and/or displacement of fish from the areas accessible by commercial and recreational vessels. Offshore wind energy may limit certain fishing practices, restrict access to fish, or displace fish from traditional fishing areas. The occurrence of these potential impacts, which could result in a lower economic return for commercial fishing than would occur in the absence of new wind energy projects, would depend on project- or site-specific conditions and the size, number, and distribution of turbines proposed in a particular area.

#### ***Cultural Resources***

Offshore wind energy could potentially result in impacts on submerged and terrestrial cultural resources. Potential impacts could include physical and visual impacts. Submerged cultural

resources may experience impacts, including vessel collisions during surveys, construction activities, and the inadvertent disturbance of cultural remains. Similarly, potential visual impacts on cultural resources include impacts on the views, viewsheds, and/or setting of onshore (terrestrial) architectural or other built resources, landscapes, seascapes, and traditional cultural properties. However, the level of impact would depend on the location of infrastructure relative to the cultural resource, as well as the significance of the cultural resource (i.e., listed or potentially eligible for listing on the NRHP).

### ***Socioeconomic***

The procurement of 2,400 MW of offshore wind energy could result in direct socioeconomic impacts in the form of economic development, workforce employment, and the avoidance of adverse health outcomes. These socioeconomic benefits could occur at local, county, state, and/or regional levels. Growth in the supply chain of the offshore wind energy industry, including manufacturing facilities and the shipment of supplies, may benefit communities throughout the Atlantic coastal region associated with the marine environment. Workforce opportunities would include jobs in manufacturing, construction, and operation. Job opportunities are likely to be concentrated in areas nearest to port facilities. Of these jobs, many would be in operations and maintenance, which create steady job opportunities throughout the typical 25-year lifespan of offshore wind turbines. NYSERDA assessed the workforce benefits of offshore wind energy development in "The Workforce Opportunity of Offshore Wind in New York" study. The study estimated that New York could realize nearly 5,000 new jobs in manufacturing, installation, and operation of offshore wind facilities.

Reducing pollution by even modest amounts in highly populated areas would be an additional benefit, resulting in significant socioeconomic benefits. NYSERDA's Options Paper uses the EPA's Co-Benefits Risk Assessment (COBRA) Health Impacts Screening and Mapping Tool to estimate how the emission reductions from implementation of 2,400 MW of offshore wind energy would affect ambient air quality and adverse health impacts throughout the coastal region. The screening-level analysis found that the implementation of 2,400 MW of offshore wind energy would result in 8 to 18 fewer premature deaths annually and would avoid multiple adverse health outcomes in 2030 across the northeast United States. The model estimated the monetary value of the total health benefits to be between \$73M and \$165M in 2030. However, these benefits should continue well beyond 2030, and the total health benefits from the

procurement of 2,400 MW of offshore wind energy could be on the order of \$1B.

### ***Visual and Aesthetic Resources***

Potential visual impacts on cultural resources include impacts on the views, viewsheds, and/or setting of onshore (terrestrial) architectural or other built resources, landscapes, seascapes, and traditional cultural properties. Visual impacts also could result from the presence of construction equipment (e.g., jack-up barges and cranes), commuting vessels, and wind turbine components. The majority of construction activities would occur during daytime hours. At night, vessels would use USCG-regulated lights in addition to work lights, angled downward, for worker safety. To meet Federal Aviation Administration requirements, projects could employ permanent and continuous lighting, which produces flashing red lights visible from long distances, or an aircraft detection lighting system (ADLS), which would activate turbine lighting only when aircraft are within visual range.

When viewing a wind turbine from a beach-level position 20 miles away, the curvature of the Earth alone would screen approximately 142 feet of the lower portion of a typical wind turbine. At 25 miles, only the uppermost portions of the wind turbine would be visible, and at 30 miles, the curvature of the Earth would partially to completely screen the center of the wind turbine. The predominant sky condition is overcast, occurring 55% to 65% of the time, during which visibility of offshore turbines would be difficult. Furthermore, the New York State Offshore Wind Master Plan Visibility Threshold Study found that during 16% of daylight hours, visibility would be less than 10 miles, meaning that turbines located beyond 10 miles would not be visible.

### ***Air Quality and Climate Change***

The primary direct impacts on air quality from offshore wind energy would result from vessel emissions. Vessels transporting equipment, materials, and employees would be powered by fossil fuel combustion and would emit air pollutants. The number of vessel trips associated with the construction and operation of offshore wind energy would be small compared to existing vessel traffic, and the resulting emissions would be comparably small.

However, renewable energy, including offshore wind energy, provides benefits for air quality and public health, and reductions in greenhouse gas emissions, because renewably-sourced energy reduces reliance on combustion-based electricity generation. These benefits vary dramatically by region and over

time depending on the generation portfolio in each region. The Options Paper predicts that achieving the goal of 2,400 MW of offshore wind energy capacity would result in a cumulative reduction of carbon emissions in New York by more than 5 million short tons of carbon dioxide (CO<sub>2</sub>) equivalents by 2030, representing about a third of the cumulative CO<sub>2</sub> emissions projected to be achieved under the "50 by 30" goal. Additionally, offshore wind energy would avoid an estimated 1,800 tons of NO<sub>x</sub>, 780 tons of SO<sub>2</sub>, and 180 tons of PM<sub>2.5</sub> in 2030 when compared to a scenario without offshore wind. The public health impacts from PM<sub>2.5</sub> and ozone, for which NO is a precursor, include respiratory and cardiovascular disease. How climate change will ultimately impact wildlife is not clearly defined; however, the success of many species will depend on their ability to adapt to these changes.

### ***Cumulative Impacts***

The Cumulative Study found that the resources for which potential unavoidable adverse impacts may occur and therefore potential cumulative impacts could occur include: (1) displacement, disturbance, or loss of habitat for marine mammals and sea turtles; (2) sensory disturbance to fish; and (3) conflict with use of space for commercial and recreational vessels. In addition, this GEIS considers the potential for cumulative impacts to occur on birds from displacement, disturbance, or loss of habitat and mortality/injury. Given the spatial distribution of offshore wind energy, and the available habitat in the marine environment, significant adverse cumulative impacts to marine mammals, sea turtles, and fish would not be expected. The construction and operation of 2,400 MW of offshore wind energy would restrict or exclude fishing within only approximately 3% of the geographic scope of analysis (an area offshore of New York identified by the State as most likely to accommodate offshore wind energy development), leaving large areas available without conflicts for fishing. As many bird populations are highly migratory, the Atlantic Flyway represents the likely area over which cumulative impacts may occur. Impacts to birds would occur at an individual level, and are not expected to occur at a population level. Given the spatial distribution of offshore wind energy development, the available habitat in the marine environment, and agency consultations, significant adverse cumulative impacts on birds would not be expected.

### **C. Mitigation of Potential Adverse Impacts**

Consistent with 6 NYCRR §§617.9(b)(5)(iv) and 617.11(d)(5) of SEQRA, this GEIS identifies federal and state regulations

that will help ensure, to the maximum extent practicable, avoidance, minimization, or mitigation of adverse environmental impacts that may occur due to the Proposed Action's procurement of 2,400 MW of offshore wind energy. In preparation of this GEIS, the Commission identified several measures intended to avoid or reduce potential adverse impacts.

As mandated by Section 8 of the Outer Continental Shelf Lands Act (OCSLA), the Bureau of Ocean Energy Management (BOEM) has the authority to identify offshore wind development sites within the Outer Continental Shelf (OCS) and to issue leases on the OCS for activities that are not otherwise authorized by the OCSLA, including wind farms. Therefore, development projects in the OCS are subject to review and decision-making by BOEM and other federal agencies. Additionally, each state authority has its own laws, regulations, and review processes, and offshore wind farm developers will also be expected to adhere to these project-specific and site-specific regulations and permitting processes. Exhibit 4-1 of this GEIS identifies federal and New York State regulations and permits and review and guidance processes potentially applicable to offshore wind energy development. These regulations and consultation processes intend to avoid and reduce adverse impacts in a number of resource areas, including, but not limited to, water quality and/or sediment, air quality, wildlife, cultural and visual, navigation, and transportation.

The required avoidance, minimization, and mitigation of potential environmental impacts from future offshore wind development would occur at a site-specific level. The following are examples of measures that would avoid, minimize, or mitigate, to the extent practicable, potential impacts on environmental resources from offshore wind energy development:

- Appropriate siting of development projects to avoid, to the extent practicable, impacts on protected or sensitive resources and existing or planned ocean uses and development.
- Implementation of federal and state regulatory requirements, guidelines and best management practices to minimize and mitigate potential impacts. Limit construction activity to specified times and/or seasons to reduce potential impacts on sensitive receptors (e.g., community facilities, recreation).
- Adhere to appropriate setbacks to minimize potential operational and visual impacts.
- Conduct proper assessment of existing resources and potential impacts on resources.



- Develop plans to protect natural resources (e.g., emergency response plans, erosion/scour control plans).
- Utilize appropriate lighting design and controls to minimize off-site illumination.

Exhibit 4.2 of this GEIS further summarizes measures required by regulation or developed through agency consultations based on site-specific conditions that avoid, minimize, or mitigate, to the extent practicable, potential impacts on environmental resources from offshore wind energy development. These measures cover a number of resource areas, such as biological resources, cultural resources, visual resources, commercial and recreational uses, and air quality. The measures required by regulation are subject to revision if determined necessary by the responsible issuing agency, organization, or entity. Existing guidance or regulations may be updated or revised and/or new guidance or regulations may be developed after publication of this GEIS.

#### **D. Alternatives Considered**

The primary alternative is the No Action scenario. In this alternative scenario, the State still expects to achieve its "50 by 30" goal by employing a variety of resources, including offshore wind, in the renewable generation portfolio. Under the No Action alternative, grid solar energy and onshore wind energy would be expected to comprise a greater percentage of the renewable energy generation portfolio, than if the Action is implemented. Such a No Action scenario would require more grid solar and onshore wind energy development, which would likely result in greater potential land use and other land-based environmental impacts. The No Action alternative could result in fewer potential impacts on marine commercial and recreational uses, if development of less offshore wind infrastructure (e.g., wind turbines, offshore transmission cables) occurs. The potential land-based impacts associated with other renewable energy technologies would continue to occur under the No Action alternative, and as noted, may occur to a greater extent in order to achieve the "50 by 30" goal. Under the No Action alternative, development could occur offshore New York State and its electricity would be procured by other states. The No Action alternative would change, or reduce, the corresponding health benefits of reduced emissions. The benefits associated with the Action's procurement of 2,400 MW of offshore wind would change, and may be reduced. The Master Plan demonstrates that 2,400 MW of offshore wind energy development would reduce air pollution and create jobs.

**E. Unavoidable Adverse Impacts**

There are no unavoidable adverse impacts that could not be avoided, minimized, or mitigated through applicable federal and state laws, regulations, and review processes.

**F. Irreversible and Irretrievable Commitment of Resources**

The future construction and operation of new offshore wind energy farms that may occur in response to the Action could result in irreversible and irretrievable commitments of resources; however, such commitments would be identified in site-specific environmental analyses and avoided or minimized in accordance with applicable laws and regulations.

**G. Growth-Inducing Aspects**

The Action has the potential to lead indirectly to development of emerging technologies, a new source of coastal tourism, employment associated with construction and operation, purchases of local products and services, and new and increased tax payments by employees and facilities. The Action could result in the development of emerging technologies, potentially accelerating the commercialization of offshore wind energy. As a result, the region could experience the development of economies of scale for regional offshore wind energy, which would have the effect of advancing applicable technologies, increasing local knowledge, and reducing the cost of offshore wind energy development and ratepayers' energy costs. The ports would experience increased activities to accommodate all components of the supply chain for development, construction, and operation of offshore wind energy. The indirect benefits of workforce development and the utilization of existing port facilities would primarily occur through the increased purchases of local goods and services and added tax revenue to local economies. These new jobs could generate new residents, daily workers, and visitors. This new growth in turn could require transportation improvements and other services, and could lead to development of new housing closer to development locations and/or ports. The Action could result in the State capitalizing on both the expected cost reductions that will come with building a regional U.S. industry of a sufficient scale to replicate declining cost trajectories observed in European offshore wind markets, and the corresponding economic benefits from becoming a "hub" for the emerging domestic offshore wind industry.

**H. Effects on Energy Consumption**

The Action is not expected to directly or indirectly affect the amount of electricity used in the State or the amount of

energy conserved in the State. Rather, the Action is expected to foster greater penetration and adoption of renewable energy at the grid level. The Action could result in the installation of new renewable sources, and thus effect the characteristics of the supply sources that will be available to meet the State's electricity demand.

### III. CONCLUSIONS

Based on the discussion set forth in the Final GEIS, the Commission makes the findings stated above regarding the potential environmental impacts, as well as benefits, of the State's procurement of 2,400 MW of offshore wind energy capacity by 2030, and certifies that:

1. The requirements of the State Environmental Quality Review Act, as implemented by 6 NYCRR 617, have been met;
2. Consistent with social, economic, and other essential considerations from among the reasonable alternatives available, the Action being undertaken yields overall positive environmental impacts, primarily by reducing the State's use of, and dependence on, fossil fuels, among other benefits, and is one that avoids or minimizes adverse environmental impacts to the maximum extent practicable, and that adverse environmental impacts will be avoided or minimized to the maximum extent practicable by incorporating as conditions to the decision those mitigative measures that were identified as practicable; and
3. As applicable to the coastal area, the Action being undertaken is consistent with applicable policies set forth in 19 NYCRR §600.5.