STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

CASE 18-E-0071 – In the Matter of Offshore Wind Energy.

ORDER ESTABLISHING OFFSHORE WIND STANDARD AND FRAMEWORK FOR PHASE 1 PROCUREMENT

Issued and Effective: July 12, 2018

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STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

At a session of the Public Service Commission held in the City of Albany on July 12, 2018

COMMISSIONERS PRESENT:

John B. Rhodes, Chair
Gregg C. Sayre
Diane X. Burman, concurring
James S. Alesi

CASE 18-E-0071 – In the Matter of Offshore Wind Energy.

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BY THE COMMISSION:

INTRODUCTION

On August 1, 2016, the Public Service Commission (Commission) adopted a Clean Energy Standard (CES) designed to achieve a statewide goal of 50% renewable generation resources by 2030 (the 50 by 30 goal).[1] In the CES Framework Order, the Commission considered the potential role of offshore wind as a component in the mix of renewable resources needed to achieve the State's goal. Recognizing that New York has a substantial potential for offshore wind production, the Commission requested that the New York State Energy Research and Development

[1] Case 15-E-0302, et al., Large-Scale Renewable Program and Clean Energy Standard, Order Adopting a Clean Energy Standard (issued August 1, 2016)(CES Framework Order). The 50 by 30 goal was adopted as part of a strategy to reduce statewide greenhouse gas emissions by 40% by 2030. The CES is divided into a Renewable Energy Standard (RES) and a Zero-Emissions Credit (ZEC) requirement.

Authority (NYSERDA) perform a study to identify the appropriate mechanisms to achieve this potential, and make recommendations for the Commission's consideration.[2]

On January 29, 2018, NYSERDA released the New York State Offshore Wind Master Plan (Master Plan), which presents a comprehensive roadmap to encourage the development of 2,400 MW of offshore wind by 2030. The Master Plan is supported by 20 studies regarding a variety of environmental, social, economic, regulatory, and infrastructure-related issues. In particular, the Master Plan: 1) identifies the most favorable areas for potential offshore wind energy development; 2) describes the economic and environmental benefits of offshore wind energy development; 3) addresses mechanisms to procure offshore wind at the lowest ratepayer cost; 4) analyzes costs and cost-reduction pathways; 5) recommends measures to mitigate potential impacts of offshore wind energy development; 6) identifies infrastructure requirements and assesses existing facilities; and, 7) identifies workforce opportunities. The Master Plan is supported by NYSERDA's Offshore Wind Policy Options Paper (Options Paper), which was filed with the Commission for consideration.

The Master Plan describes a significant declining cost trend for offshore wind in Europe and elsewhere where offshore wind is deployed, as regional construction and operational capabilities are developed. The Master Plan also describes the nascent offshore wind industry in the U.S., and the associated supply chain and infrastructure limitations that are a consequence of this early stage of development. For these

[2] The RES program assumed no offshore wind generation through 2023, although it anticipated that offshore wind would likely contribute in the program's later years.

reasons, the Options Paper recommends two phases for offshore wind development: the first phase would initiate the procurement of Offshore Wind Renewable Energy Credits (ORECs) associated with approximately 800 MW of offshore wind over an initial two-year period; and the remainder of the offshore wind would be procured in future years as the domestic offshore wind industry matures and the resulting expected price declines materialize.

As the Master Plan and Options Paper indicate, offshore wind is projected to provide numerous benefits in addition to playing a significant role in contributing toward achieving the CES targets and reducing greenhouse gas emissions. Because of its proximity and direct access to load centers, offshore wind would provide substantial reliability and diversity benefits to the electric system. Offshore wind also has the potential to create thousands of jobs for New Yorkers, both in construction of the facilities and in the operations and maintenance of the completed projects. It may also produce significant public health benefits by displacing fossil-fired generation in the downstate area.

With this Order, New York takes another major step toward establishing a clean energy future that is secure, reliable, and cost-effective. As discussed below, the Commission determines that a series of actions related to offshore wind are necessary to help achieve the CES goal, as part of a strategy to reduce statewide greenhouse gas emissions by 40% by 2030 in a fair and cost-effective manner.[3] The Commission therefore adopts a supplementary goal, to contribute toward the overall objective of the CES, whereby the quantity of

[3] By Executive Order, it is also a goal of the State of New York to reduce current greenhouse gas emissions from all sources within the State 80% below levels emitted in the year 1990 by the year 2050. Executive Order No. 24 (2009) [9 NYCRR 7.24; continued, Executive Order No. 2 (2011) 9 NYCRR 8.2].

electricity supplied by renewable resources and consumed in New York State should include the output of 2.4 GW of new offshore wind generation facilities by 2030. The supplementary goal is based on contributions towards achievement by each New York Load Serving Entity (LSE) serving retail customers, including the non-jurisdictional Long Island Power Authority (LIPA) and New York Power Authority (NYPA).

In furtherance of this supplementary goal, the Commission adopts an Offshore Wind (OSW) Standard to maximize the value potential of new offshore wind resources by jump-starting the industry to serve New York State. The primary components of the OSW Standard include: (a) initial procurement solicitations, to be held by NYSERDA, NYPA and/or LIPA in 2018 and 2019, for ORECs associated with approximately 800 MW of offshore wind (i.e., Phase 1); and (b) an obligation on LSEs to obtain, on behalf of their retail customers, the ORECs procured in Phase 1 in an amount proportional to their load.

BACKGROUND

In establishing the CES, the Commission recognized that offshore wind would most likely become an important resource in meeting the 50 by 2030 goal. As the Commission stated, "New York is fortunate to have substantial potential for offshore wind production and with appropriate time, careful planning and deliberate action, the State has the opportunity to exploit its geographic advantage to develop offshore wind and promote the beneficial attendant economic activity associated with this burgeoning industry."[4] At the time, the Commission found that a separate offshore wind obligation, in the context of the CES, was not warranted in light of the commercial status of the domestic offshore wind industry and Governor Cuomo's

[4] CES Framework Order at 18.

directive to NYSERDA to develop a Master Plan for offshore wind development for the State.[5] Instead, the Commission indicated in the CES Framework Order that the appropriate next step was to await NYSERDA's study and request that NYSERDA include, in its analysis, recommendations on the best solutions for maximizing the potential for offshore wind in New York.[6] Then, as part of his 2017 State of the State Address, Governor Cuomo set a wind energy development goal of 2.4 GW by 2030,[7] and in his 2018 State of the State Address, called for the procurement of at least 800 MW of offshore wind power ORECs between two solicitations to be issued in 2018 and 2019.[8]

The Master Plan reflects extensive public input and anticipates ongoing outreach and communication. It contains twenty studies and benefited from over a year's worth of outreach with stakeholders such as commercial and recreational fishermen, consumer advocates, elected officials, labor and business leaders, Long Island and New York City communities, non-governmental organizations, the offshore wind energy industry, and State and federal agencies.[9] In addition to

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[5] 2016 New York State of the State Policy Book, pgs. 80-82. https://www.governor.ny.gov/sites/governor.ny.gov/files/atoms/files/2016_State_of_the_State_Book.pdf.

[6] CES Order at 106.

[7] 2017 New York State of the State Policy Book, pgs. 54-57. https://www.governor.ny.gov/sites/governor.ny.gov/files/atoms/files/2017StateoftheStateBook.pdf.

[8] 2018 New York State of the State Policy Book, pgs. 218-220. https://www.governor.ny.gov/sites/governor.ny.gov/files/atoms/files/2018-stateofthestatebook.pdf.

[9] The twenty studies are: Analysis of Multibeam Echo Sounder and Benthic Survey Data; Assessment of Ports and Infrastructure; Aviation and Radar Assets Study; Birds and Bats Study; Cable Landfall Permitting Study; Cables, Pipelines, and Other Infrastructure Study; Consideration of Potential Cumulative Effects; Cultural Resources Study; Environmental Sensitivity Analysis; Fish and Fisheries Study; Health and Safety Study;

targeting specific groups for engagement, the State held seven public information meetings throughout New York City and Long Island to share information about the Master Plan and its associated studies. Each of the seven public information meetings included presentations about the Master Plan and supporting studies, a public question and answer period, and an open house period to allow for one-on-one meetings between State agency representatives and any individuals who wanted to discuss specific issues.

The Master Plan reflects a Study Area of approximately 16,740 square miles covering a roughly square-shaped area paralleling the coast of Long Island on the North and the Continental Shelf on the Southeast. This area is regulated by the federal Bureau of Ocean Energy Management (BOEM) which has entered into six lease agreements for wind development in areas along the Atlantic coast between New Jersey and New England. BOEM is expected to issue additional leases near the end of 2019.

The Master Plan reports that in Europe, over 12.6 GW of offshore wind resources are in operation and an additional 24.2 GW have been approved. The cost of offshore wind in Europe has fallen substantially as a result of local infrastructure development and economies of scale.[10] For example, in the United

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Marine Mammals and Sea Turtles Study; Marine Recreational Uses Study; Offshore Wind Injection Assessment; Preliminary Offshore Wind Resource Assessment; Sand and Gravel Resources Study; Shipping and Navigation Study; U.S. Jones Act Compliant; Offshore Wind Turbine Installation Vessel Study; Visibility Threshold Study; The Workforce Opportunity of Offshore Wind in New York; and Offshore Wind Policy Options Paper. https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/New-York-Offshore-Wind-Master-Plan. Appendix W of the Master Plan includes a detailed summary of the outreach and engagement which helped inform it.

[10] Master Plan at 30; Policy Options Paper at 16ff.

Kingdom a 2017 auction achieved prices that were, on average, 47% lower than prices achieved in a 2015 auction.[11] NYSERDA projects that a mature offshore wind industry could deliver electricity to New York's downstate load areas at prices ranging from approximately $80-$130/MWh (in 2017 dollars) by 2030,[12] although the ultimate prices may be lower given recent market indicators. NYSERDA estimates that the long-term cost of the 2.4 GW program, accounting for carbon benefits and net of wholesale market revenues, will range between a $1.1 billion benefit and a $2.7 billion cost at net present value, depending on a number of factors including the procurement method.[13]

Regarding the Master Plan Workforce Study, NYSERDA explains that, due to the size of towers and blades, construction of offshore wind projects requires regionally based waterfront facilities. Dedicated port facilities are also required for ongoing operation and maintenance work. NYSERDA screened 65 port sites within the state and determined that New York Harbor, the Hudson River, and Long Island contain numerous suitable candidates for manufacturing, assembly, operations, and maintenance. The Master Plan estimates that a 2.4 GW New York procurement target, as a component of 8 GW deployed regionally by 2030, would result in up to 5000 jobs, including 2000 long-term jobs dedicated to operations and maintenance. While New York has inherent advantages in attracting Atlantic coast offshore wind development, including its central location, the State will be proactive in developing workforce expertise, infrastructure, and other prerequisites to attracting offshore wind jobs.

[11] Master Plan at 16.

[12] Policy Options Paper at 18.

[13] Policy Options Paper, Appendix D.

For the reasons described above, the Master Plan recommended that it is timely to begin procuring the resource to provide for a substantial contribution of offshore wind toward the 50 by 30 goal. The procurement of 2.4 GW by 2030 would account for approximately one-third of the carbon reductions to be achieved through the 50% by 2030 goal.

NYSERDA will convene several technical working groups to continue addressing some of the challenges associated with offshore wind development. The initial technical working groups will be in the areas of jobs and supply chain, commercial and recreational fishing, maritime activities, and environmental issues. The Master Plan also emphasized the need for continued public input throughout the process, and timely, transparent responses to public concerns and questions. NYSERDA's website will continue to function as a portal for inquiries from the public.[14] New York State agencies and authorities will also coordinate with the federal government and eventual project developers to ensure the continuation of robust public engagement. New York State agencies and authorities also will sponsor and/or host in-person group meetings, conferences, webinars, workshops, and/or public information sessions and may support specialty liaisons to serve as a point of contact for particular groups.

NOTICE OF PROPOSED RULEMAKING

Pursuant to the State Administrative Procedure Act (SAPA) §202(1), a Notice of Proposed Rulemaking (Notice) was published in the State Register on April 4, 2018 [SAPA No. 18-E-0071SP1]. The time for submission of comments pursuant to the Notice expired on June 4, 2018. In response to the Notice, 42 organizations and numerous individuals filed comments. A

[14] https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/New-York-Offshore-Wind-Master-Plan.

general summary of the comments in contained in the following section, and a complete summary of comments is attached as Appendix A. Responses to specific comments are also included in discussions below.

COMMENTS

Comments demonstrate widespread support for an offshore wind procurement requirement, in the size and timeframe proposed in the Options Paper.[15] Utilities, public energy authorities, the City of New York, the Suffolk County Executive, environmental advocates, labor organizations, and other parties agree that a jump-start of the offshore wind industry is needed for cost-effective fulfillment of the State's carbon reduction goals in general, and the CES goals in particular.

Parties generally confirm the potential for significant economic activity in New York associated with offshore wind; many comments emphasize that the best method to

[15] Comments in support of the initiative were submitted by Acadia Center, Anbaric, Audubon (Audubon New York, National Wildlife Federation, The Nature Conservancy, Wildlife Conservation Society, and Natural Resources Defense Council), Bay State Wind, City of New York, Clean Energy Advocates (Natural Resources Defense Council, Sierra Club, National Wildlife Federation, Acadia Center, Environmental Advocates of New York, Pace Energy & Climate Center, and New York League of Conservation Voters), Climate Jobs NY, Direct Energy, Deepwater Wind, EDFR Offshore, Equinor, Green Building Council, Innogy, Joint Utilities (Central Hudson, Consolidated Edison, New York State Electric & Gas, National Grid, Orange and Rockland, and Rochester Gas and Electric), Long Island Federation of Labor AFL-CIO, Long Island Power Authority, New York Power Authority, National Wildlife Federation, NYU Institute for Policy Integrity, New York State Building and Construction Trades Council, Offshore Wind Alliance/American Wind Energy Association, Shell Energy, Siemens, Sierra Club, Sustainability Institute at Molloy College, Suffolk County Executive, Union Group (Utility Workers of America, AFL-CIO, Local 1-2, IBEW New York State Utility Labor Council), Vineyard Wind, and Workforce Development Institute.

secure that activity is to establish an ongoing commitment to offshore wind procurement. The New York Offshore Wind Alliance and American Wind Energy Association (OWA/AWEA) presents an analysis, independent of NYSERDA's, which shows a potential maximum increase of over 13,000 jobs during the peak period of the initiative. NYPA states that it can make economic development power incentives available to assist in developing a New-York-based offshore wind industry. The Suffolk County Executive emphasizes the readiness of educational institutions on Long Island to provide training and support for offshore wind energy.

Labor interests are strongly in support of the offshore wind initiative. The Long Island Federation of Labor, AFL-CIO, New York State Building & Construction Trades Council, a coalition of utility-industry labor groups (collectively, "the Union Group"), the Workforce Development Institute, the Long Island Chapter of the U.S. Green Building Council, and Climate Jobs NY stress the economic potential for New York if the project is undertaken correctly. These parties make specific recommendations for including economic considerations in the procurement process, as discussed below.

Opposition in written comments stems from three principal concerns. First is its potential effect on fisheries, as discussed below. Second is its potential for increased electricity prices. The third source of concern among some commenters is the initiative's potential impact on competitive markets.

Fishery interests express concerns about the potential impacts of offshore wind development on fish and seafood harvesting. The Long Island Commercial Fishing Association states that over 50% of the work area of New York-based fishing businesses may become off-limits. The Fisheries Survival Fund

states that BOEM does not sufficiently evaluate impacts when it issues leases, so that the State must protect and mitigate on behalf of the fisheries. They state that migration of buried cables presents obstacles to scallop fisheries, which may be unable to obtain insurance as a result. The Garden State Seafood Association argues that the potential impacts on commercial fisheries have not been adequately assessed. Seafreeze asserts that impacts must be studied more thoroughly before development begins. The fishery interests argue for a range of mitigation measures including compensation for business losses, optimal alignment and placement of turbines, continuous monitoring, and collaboration with regional Fishery Management Councils.

MI argues that the cumulative effect of the State's clean energy initiatives is placing upward pressure on power prices, threatening the competitiveness of New York businesses, and increasing the overall cost of achieving the CES. MI states that any economic benefits will be experienced in the downstate area, so the costs of the program should likewise be allocated downstate. The Business Council urges the Commission to reevaluate the CES itself based on cost concerns. The Business Council argues that the offshore wind initiative will result in higher overall energy costs, which will cause harm to economic activity across the state.[16]

The NYISO, while not opposed to the offshore wind proposal, states that the most effective solution will be one that leverages competitive markets to achieve the State's goals. IPPNY states that the cost of carbon should be reflected in

[16] The Business Council further argues that increasing business costs may have the unintended effect of driving carbon-intensive industries to other countries where they will emit more carbon than they would have if they remained in New York.

wholesale markets, which would allow renewable energy sources to compete directly without the need for specific programs such as an offshore wind procurement. IPPNY expresses skepticism that New York must participate in the jump-start of the offshore wind industry in order to obtain additional economic activity.

LEGAL AUTHORITY

The Commission's authority derives primarily from the New York State Public Service Law (PSL), through which numerous legislative powers are delegated to the Commission. Pursuant to PSL §5(1), the jurisdiction, supervision, powers and duties of the Commission extend to the manufacture, conveying, transportation, sale or distribution of electricity. PSL §5(2) requires the Commission to encourage all persons and corporations subject to its jurisdiction to formulate and carry out long-range programs, individually or cooperatively, for the performance of their public service responsibilities with economy, efficiency, and care for the public safety, the preservation of environmental values and the conservation of natural resources. PSL §66(2) provides that the Commission shall examine or investigate the methods employed by persons, corporations and municipalities in manufacturing, distributing and supplying electricity and have power to order such reasonable improvements as will best promote the public interest, preserve the public health and protect those using such gas or electricity. PSL §4(1) also expressly provides the Commission with all powers necessary or proper to enable [the Commission] to carry out the purposes of the PSL including, without limitation, a guarantee to the public of safe and

adequate service at just and reasonable rates,[17] environmental stewardship, and the conservation of resources.[18]

In addition to the PSL, the New York State Energy Law §6-104(5)(b) requires that "[a]ny energy-related action or decision of a state agency, board, commission or authority shall be reasonably consistent with the forecasts and the policies and long-range energy planning objectives and strategies contained in the plan, including its most recent update." The OSW Standard program established here is consistent with the renewable and clean energy targets established in the 2015 New York State Energy Plan, as well as the underlying principles elucidated in the Plan.[19] Therefore under State law, the Commission has clear authority to direct a comprehensive OSW Standard program, as discussed in this Order.

Federal law preempts contrary state law pursuant to the Supremacy Clause of the U.S. Constitution. Under the Federal Power Act, the Federal Energy Regulatory Commission (FERC) has exclusive authority to regulate the sale of electric energy at wholesale in interstate commerce. States retain the power to regulate the retail sale of electricity to end-use consumers. All Commission actions must take place within the

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[17] See International R. Co. v Public Service Com., 264 AD 506, 510 (1942).

[18] PSL §5(2); see also, Consolidated Edison Co. v Public Service Commission, 47 NY2d 94 (1979) (overturned on other grounds) (describing the broad delegation of authority to the Commission and the Legislature's unqualified recognition of the importance of environmental stewardship and resource conservation in amending the PSL to include §5).

[19] See 2015 New York State Energy Plan available at http://energyplan.ny.gov/Plans/2015.aspx (setting a target of 50% renewable consumption by 2030 and describing "guiding principles" including "Market Transformation"; "Community Engagement"; "Private Sector Investment"; "Innovation and Technology;" and "Customer Value and Choice."

"cooperative federalism"[20] structure of energy regulation and the myriad state and federal court cases that discern the extent of, and limitations on, the jurisdictional boundaries.

FERC has held that REC programs, purchasing "attributes," are for a commodity created by states that are not within the wholesale sale of electricity jurisdiction of FERC. Recent U.S. Supreme Court cases also make it clear that all retail sales of electricity, as well as "any other sale" not considered a wholesale transaction, are under State Commission authority.[21] The directives to LSEs and distribution utilities under consideration in these proceedings are only related to retail sales of electricity and carbon-free energy generation attributes (ORECs), Commission jurisdiction over which is well established and settled.[22]

Federal Law gives FERC the responsibility to ensure that prices charged in "wholesale" sales (i.e., sales for resale) are just and reasonable. In deregulated markets like New York, wholesale transactions typically occur through two

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[20] See FERC v Elec. Power Supply Assn, 136 S. Ct. 760 (2016); The Federal Power Act (June 10, 1920, ch. 285, pt. III, § 321, formerly § 320, as added Aug. 26, 1935, ch. 687, title II, § 213, 49 Stat. 863; renumbered Pub. L. 95–617, title II, § 212, Nov. 9, 1978, 92 Stat. 3148).

[21] Hughes v Talen Energy Mktg., LLC., 136 S. Ct. 1288, 1292 (2016) and FERC v Elec. Power Supply Assn, 136 S. Ct. 760, 766 (2016) (explaining that the Federal Power Act places any sale of electricity other than those at wholesale beyond the jurisdiction of the Federal Energy Regulatory Commission).

[22] Hughes v. Talen Energy Mktg., LLC, 136 S. Ct. 1288, 1291 [2016]; see also WSPP, Inc., 139 FERC 61,061 (2012)(explaining the REC transactions unbundled with wholesale energy and capacity are beyond FERC's jurisdiction); and Morgantown Energy Associates, 139 FERC 61,066 (2012) (recognizing that RECs are state-created and are a separate product from energy and capacity); American Ref-Fuel Company, 105 FERC 61,004 (2003)(explaining that RECs are a state law creation and not within FERC's jurisdiction).

mechanisms: bilateral contracts and auctions. For bilateral contracts between generators and LSEs, FERC may review the rate in the contract for reasonableness, although FERC generally presumes that rates established by good-faith arm's-length negotiation are reasonable. FERC may abrogate an otherwise valid bilateral contract if it harms the public interest, or it may apply buyer-side mitigation in the marketplace to counteract what it perceives to be the negative effects of the contract.

Auctions in New York are conducted by the New York Independent System Operator, Inc. (NYISO) pursuant to a FERC-approved tariff. The clearing price, if based on a reasonably competitive auction, is generally accepted by FERC as being the basis for a just and reasonable rate. Once FERC sets wholesale rates, a state may not conclude in setting retail rates that FERC-approved wholesale rates are unreasonable. A state must give effect to Congress' desire to give FERC plenary authority over interstate wholesale rates, and FERC and the courts will ensure that the states do not interfere with this authority. States may not seek to achieve ends, however legitimate, through regulatory means that intrude on FERC's authority over interstate wholesale rates. States may encourage production of new or clean generation through measures "untethered" to a generator's wholesale FERC-approved rate.[23]

DISCUSSION

OSW Standard

The reasons for adopting an Offshore Wind procurement requirement are compelling. Achieving the State's ambitious carbon reduction goals will require contributions from a variety of sources – no single technology or simple formula will suffice – and offshore wind will be an essential contributor. Offshore

[23] See Hughes, supra 136 S. Ct. 1288, 1299 (2016).

wind addresses the transmission and siting constraints that would otherwise inhibit the development of renewable power in the downstate area, and it has a higher capacity factor than other weather-variable renewable sources of generation. It is particularly well suited for the Atlantic coast, from siting and operations to system efficiency and potential output.[24] Clean power delivered directly to the downstate capacity zones will also have the effect of displacing local fossil generation and reducing local air contaminants.[25]

One approach to the development of offshore wind would be, as recommended by MI, to rely solely on competition within CES procurements. Both onshore and offshore wind are presently eligible to participate in RES procurements. Offshore wind, however, will be substantially more expensive than onshore wind in its early stages, due to the more challenging engineering involved and the local supply-chain economics. It is unlikely to win an RES procurement in the near future, but it may be competitive after initial barriers are addressed, economies of scale take root, and the declining cost trajectories continue.

Several factors support immediate action to develop offshore wind. First are the unique characteristics of offshore wind that require investor confidence and certain barriers to be overcome. Construction and operations require local waterfront facilities, which can only be economically developed with the assurance of continued demand well into the future. The front-loading of development infrastructure also means that prices

[24] The Acadia Center observes that a recent study by the Lawrence Berkeley National Laboratory finds that the value of offshore wind for New York is among the highest in the nation. See "Estimating the Value of Offshore Wind Along the United States' Eastern Coast," Lawrence Berkeley National Laboratory, April 2018.

[25] Master Plan at 25.

tend to be reduced substantially once the industry has become established. Front-loading the development of offshore wind is likely to produce the lowest-cost generation portfolio over the life of the CES.

Second is the fact that other states are also moving forward to procure offshore wind resources in the region. IPPNY proposes that New York could allow other states to perform the jump-starting of the industry. However, the potential economic development benefits of developing the supply chain in New York are large, and the best way to secure them is through a procurement process that both demonstrates New York's commitment to offshore wind on a large scale, and includes procurement criteria to provide for development within New York.

Third, the federal Investment Tax Credit (ITC) ramps down and expires in 2019, so immediate action is needed to take advantage of hundreds of millions of dollars in potential savings.

Fourth is the imminent need to move as quickly as is feasible to build a low-carbon energy system, as provided in the State Energy Plan. As described in the CES Framework Order, New York is vulnerable to the effects of climate change not only near its shoreline but throughout the state.

The concerns expressed by IPPNY and the NYISO, regarding impacts on power markets, are a matter of how the offshore wind procurement is conducted, as opposed to whether it should be conducted. These concerns are addressed in the discussion of Procurement Method below.

MI criticizes the NYSERDA cost estimates of the various procurement options in the Policy Options Paper, arguing that they are speculative, incremental to other clean energy program costs, and omit onshore transmission upgrades. However, the range of costs estimated by NYSERDA for the programs is

reasonable in the context of the overall benefits of developing the offshore wind resource. Taking into account the procurement method adopted in this Order (see below), and assuming the lowest-cost implementation of that method, NYSERDA's estimate for the overall cost of the 2.4 GW program (net of carbon benefits) would be approximately $200 million over the life of the program, at net present value. This estimate does not account for economic development and other benefits. Expenditures in New York resulting from this initiative have the potential to total over $6 billion.[26] Typical bill impacts for a 400 MW project in 2024 (the first year of operation) are estimated by NYSERDA to be between 0.11% and 0.41% depending on procurement methods.[27] Using the Index Procurement Option as a reference, the incremental bill impact of 800 MW of Phase 1 procurement, in 2025, would be 0.18%.[28] Recent wind procurement prices, both onshore and offshore, have been lower than originally estimated.[29] There is compelling evidence that costs will tend to decline sharply after a supply chain has been established. The initial jump-start should produce great value when it results in a large and affordable renewable resource within simple transmission distance of downstate loads. Costs

[26] Master Plan at 27-28. For cost estimates see Policy Options Paper at 105.

[27] Policy Options Paper at 65.

[28] Policy Options Paper at 64.

[29] The recent offshore wind procurement by Massachusetts, for which actual prices are not known publicly, procured 400 MW more than was initially targeted, indicating highly favorable bid prices. The Business Council argues that the Cost Study supporting the CES Framework Order was flawed and should be revisited. The Commission declines to revisit the CES Framework Order, but notes that the initial round of REC procurements in the RES program were priced below the projections in the Cost Study.

will be affected, to some extent, by the choice of a procurement method as discussed below. NYSERDA will also employ cost containment measures in the initial procurement process.

Offshore wind can result in direct benefits in the form of economic development, workforce employment, and the avoidance of adverse health outcomes, and can lead to secondary benefits in the form of development of emerging technologies, a new source of coastal tourism, indirect jobs associated with construction and operation, purchases of local products and services, and new and increased tax payments by employees and facilities.

Regarding the net effect on jobs, the Master Plan commissioned an analysis to evaluate new workforce opportunities in New York associated with large-scale development of offshore wind. This analysis accounts for offshore wind development scenarios that could be supported by policies in New York, as well as policies in other states in the Northeast. The Study found that New York is ideally suited for sustained offshore wind workforce opportunities. In particular: (1) New York can realize nearly 5,000 new jobs in manufacturing, installation, and operation of OSW facilities, with a regional commitment to scale development of the resource; approximately 3,500 of these jobs are expected to support wind farms off New York shores, with the remaining supporting regional projects; (2) nearly 2,000 of these jobs are in operations and maintenance, providing sustained career opportunities for New Yorkers as the average offshore wind facility life span is at least 25 years; (3) New York's workforce already possesses most of the attributes necessary to attract offshore wind manufacturers and developers, and skill development support from New York State will ensure new workers will have the skills needed to participate in this industry; (4) New York's existing infrastructure is well

positioned for offshore wind development throughout the region, with ports and manufacturing assets that are uniquely suited to offshore wind needs; and (5) the State's success in creating a clean, resilient, and affordable energy system has resulted in market opportunities that have triggered job growth across a range of technologies. Focused attention on ensuring that offshore wind development maximizes local content through use of existing ports and manufacturing infrastructure will be key in realizing the workforce potential in New York. The analysis forecasts that the State's attainment of offshore wind workforce and infrastructure can result in as much as $6.3 billion of expenditure in New York.

The concerns of the fishing industry are addressed in detail by the Final Generic Environmental Impact Statement (GEIS). Section 5.8.3 of the GEIS notes that the construction and operation of 2,400 MW of wind energy in areas offshore of New York would potentially restrict fishing within only approximately 3% of the area, leaving large areas available without conflicts for fishing.

The fishing industry argues for a range of mitigation measures including compensation for business losses, optimal alignment and placement of turbines, continuous monitoring, and collaboration with regional Fishery Management Councils. The Final GEIS examines, at a generic level, the potential impacts of procuring 2.4 GW of offshore wind energy, and indicates that potential environmental and socioeconomic impacts, both negative and positive, could result from the construction and operation of offshore wind farms. Any specific projects would undergo additional site-specific environmental review at the federal level. Such environmental review will include an assessment of impacts of each project on commercial fishing operations occurring in the project area and the identification of measures

that would be available to reduce adverse impacts. The Master Plan and the Final GEIS identify opportunities for participation in these processes to mitigate potential impacts; these are expressly addressed in this Order in the discussion of contract requirements, below. Associated transmission facilities would also be subject to site-specific environmental review at the State and local level for near-shore and land-based facilities.

The Final GEIS notes that offshore wind farm construction provides business opportunities for fishery industry vessels. Vessels are needed for conducting scientific studies prior to, during, and following construction. Studies may require fishing vessels capable of trawling, in which case local fishing vessels may be contracted. Construction contractors may also contract local industry vessels to ferry workers or provide security during installation operations. However, because offshore wind farms are a relatively new phenomenon, studies on the impacts have only been undertaken in recent years. These studies are necessarily limited to operating offshore wind farms, most of which are in northern Europe. Results of wind farm impact studies indicate that potential adverse risks of offshore wind farms occur mostly during construction (e.g., noise from pile driving, sediment dispersal), although some adverse risks may occur during operation as well (e.g., effects of habitat conversion resulting in the presence of invasive species and shifts in existing populations). Enhanced diversity and species abundance may also occur during operations and create beneficial impacts. Socioeconomic benefits, such as employment opportunities and improved port facilities, can begin before construction and carry through operations.

NYSERDA is implementing Technical Working Groups for ongoing consideration of specific issues associated with

offshore wind energy development. Engagement with the fishing industry and recreational fishing advocates is critical to the effective development of offshore wind energy. The Commercial and Recreational Fishing Technical Working Group will work to develop best management practices in order to prevent or reduce potential impacts associated with offshore wind energy development offshore of New York, ultimately optimizing the coexistence of these industries and minimizing project impacts at all phases of development. The Fish and Fisheries Study included in the Master Plan identifies a number of such measures, which include early engagement with the fishing community to develop a mutually acceptable mitigation plan. Because potential impacts on the fishing community are largely a function of site-specific variables, a more detailed analysis regarding these potential impacts also will take place at a project-specific level.

For the reasons described here, the Commission finds an OSW Standard timely and necessary, and adopts a goal of at least 2.4 GW of offshore wind capacity to be operational by 2030.

Phasing of Offshore Wind Procurement

The Options Paper proposed a strategy of soliciting approximately 800 MW of ORECs in 2018 and 2019 as the first phase of the Offshore Wind (OSW) Standard program. The main purpose of the two-phased approach is to stimulate the development of the domestic offshore wind industry, so that the later phases of offshore wind procurement will benefit from cost reductions achieved through supply chain development and economies of scale. NYSERDA estimates time-based reductions of 10%-50% across a range of cost components, between 2022 and

2030.[30] A secondary benefit of the initial phase is to demonstrate commitment to the State's goals, and to realize the economic development potential associated with construction, operation and maintenance of the offshore wind resources.

Parties broadly support the two-phased approach, with some cautioning that Phase 2 should be delineated and scheduled as early in the process as possible. The value of starting soon is emphasized for multiple reasons: the establishment of supply-chain resources is beginning in multiple states and New York must act quickly to maintain its leadership position; cost reductions will emerge from learning and infrastructure development curves, so that the more time those factors have to develop, the more savings will be available in later phases; and the federal ITC is phasing out, with 2019 being the last year for wind projects to participate. Vineyard Wind notes that flexibility in sizing of the Phase 1 awards will be needed, to avoid the possibility of a large project on a fixed schedule that might need to use a more-established supply chain elsewhere, rather than developing the supply chain in New York.

Clean Energy Advocates and others urge that a schedule for Phase 2 procurements should be established immediately. Vineyard Wind and Deepwater Wind state that a schedule of annual procurements will provide confidence in New York's commitment, which in turn will stimulate the development of supply chain resources in New York. The Joint Utilities also urge an immediate process to develop Phase 2 solicitations, arguing that the role for utilities in procurement, transmission, and interconnection should be clarified, and that immediate action is needed so that future procurements can be aligned with BOEM

[30] Policy Options Paper at 82.

leasing opportunities, as well as Green Bank and other financing opportunities.

The decision to pursue two phases of procurement is directly connected to the rationale for establishing a separate offshore wind procurement in the first place. Time is of the essence, as explained above, and a two-phased program allows for immediate action while reserving some decisions for further development. The schedule of procurements for the first phase is discussed below.

The OSW Standard compliance obligations and targets need to be coordinated with the RES Tier 1 requirements in order to avoid uncertainty in the land-based renewable electricity sector during years in which offshore wind procurements might comprise much or all of the Tier 1 procurement targets, if counted toward these established targets. The OSW Standard compliance obligation is separate and distinct from the RES requirements, while both the RES and OSW Standard compliance obligations will be used to satisfy the 50 by 30 goal.

Roles of NYSERDA, LIPA and NYPA, and Procurement Schedule

The Notice proposed that NYSERDA should administer the OSW Standard program, consistent with its role administering the RES and ZEC programs. NYSERDA would be responsible for all facets of program administration, other than those requiring direct administrative action by the Commission, and would procure and take title to ORECs and resell them to LSEs. NYSERDA's reasonable administrative costs and cost recovery fees would be recoverable if needed from LSEs as additions to the OREC price.

The Notice proposed that the first phase, consisting of ORECs associated with approximately 800 MW, should include solicitations conducted by NYSERDA, Long Island Power Authority (LIPA) and/or New York Power Authority (NYPA). LIPA and NYPA

contracts would not necessarily be proportional to their share of total load. Instead, LIPA and NYPA would work cooperatively with NYSERDA to achieve quantities that are efficient for each party. NYSERDA would procure the balance of 800 MW not planned for procurement by NYPA and LIPA.

The Notice specifically contemplates the option for LIPA and/or NYPA to conduct their own solicitations and their own OREC procurement options and methodologies, which may include reasonable adders for administrative and other fees. LIPA and/or NYPA could agree to have NYSERDA obtain a share of ORECs for them through NYSERDA's solicitations, or could conduct their own solicitations.

Most commenters agree with the proposal in the Notice to conduct early procurements for ORECs associated with approximately 800 MW in 2018 and 2019 in order to stimulate the industry, take advantage of the ITC which is set to step down and expire in 2019, and secure economic development benefits for New York. OWA/AWEA asserts that for New York to be the hub for OSW, it is imperative for the Commission to order the procurement of at least 800 MW of ORECs over the next two years. Some commenters suggest caution, however, in allocating capacity for procurements early on, suggesting that the declining cost trajectories and learning benefits will be lost if too much is allocated to Phase 1. Deepwater presents a study that indicates more frequent smaller procurements will likely lead to lower average costs than less frequent larger procurements. The study estimated cost declines ranging from 5% to 10% per year. The Joint Utilities (JU) recommend a thorough review of the first procurement and other relevant information, such as the process for OSW procurement in Massachusetts, in order to inform the 2019 procurement process.

Other commenters suggest that the amount procured in Phase 1 should be flexible in order to achieve the best price, and recommend that developers have flexibility in bidding capacity. Bay State Wind, for example, urges the Commission to give developers the latitude to bid as little as 200 MW, or as much as 800 MW in 2018, while Equinor urges the Commission to accept multiple bids per developer, ranging from 400 MW and above to allow for the lowest possible price. Most commenters urge the Commission to establish a predictable solicitation schedule in order to facilitate development of a local supply chain. Siemens Gamesa argues that bidders should be allowed to offer up to the full 800 MW in 2018 in order to realize economies of scale, including taking advantage of the ITC. Vineyard Wind recommends procurement sizes that parallel port infrastructure development plans for New York.

LIPA and NYPA agree that solicitations should be conducted cooperatively, although each expresses concerns unique to its circumstances. LIPA reserves the option to enter separate Purchased Power Agreements (PPAs) for offshore wind, if market opportunities make such agreements financially feasible. LIPA also argues that the costs of offshore wind procurements should be distributed evenly among LSEs on a statewide basis. LIPA further asserts that the cost of transmission upgrades, as well as any additional quick-start facilities or other resources to accommodate the variable nature of wind generation, should be incorporated into the REC price so that they can be paid by customers statewide.

NYPA observes that its customer contracts do not allow it to unilaterally pass through new costs, which may limit the ability of NYPA to purchase OREC attributes during Phase 1 of this program. OWA/AWEA suggest that LIPA and NYPA should

publish their plans to participate in the offshore wind initiative.

The Commission finds that, in continuity with the CES, NYSERDA should serve as the procurement agent for offshore wind. In the initial phase, ORECs associated with the output of approximately 800 MW will be procured over a two-year period, with the first solicitation issued in the fourth quarter of 2018 in light of the coming expiration of the ITC. Participation of LIPA and NYPA will be assumed, at least to the extent of their share of statewide load. Whether this participation occurs through direct procurements by LIPA or NYPA, or through purchase of ORECs from NYSERDA, the ultimate participation of LIPA and NYPA will be decided through consultations among NYSERDA, LIPA, and NYPA.[31] The quantity of ORECs that is procured by NYSERDA, LIPA and/or NYPA towards the Phase 1 goal need not be limited to the proportional share of retail load to be served, but instead could be based on quantities deemed efficient for each particular solicitation or award. NYSERDA will consult with LIPA and NYPA in this regard, and will determine prior to issuing its solicitation the extent to which LIPA and/or NYPA intend to perform their own procurements or participate in a NYSERDA procurement.

NYSERDA will have flexibility in implementing the 800 MW goal; for example, if sufficient attractive bids are received in the first solicitation, NYSERDA could award more than 800 MW in contracts in the first year alone. Rationales for procuring ORECs associated with more than 800 MW could include either bids lower than expected that take advantage of the ITC, or the need to secure economic development benefits, or a combination of

[31] Direct procurements using non-OREC methods such as power-purchase-agreements would provide useful information for the structuring of Phase 2 of the program.

these reasons. Conversely, if discussions with LIPA and/or NYPA indicate that their portion of the 2.4 GW goal is best met with an immediate solicitation by NYPA and/or LIPA, NYSERDA could reduce the size of its initial solicitation, or its initial contract award, accordingly. If NYSERDA (whether or not in combination with LIPA and/or NYPA) procures ORECs from 800 MW or more in the first year, a second procurement would require additional authorization by the Commission.

Deepwater's comments suggest restraint on the initial Phase 1 procurements, but other factors such as the ITC expiration and the need to stimulate the industry and position New York at the forefront of offshore development offset any learning curve affect likely to result from procurement sizing. NYSERDA, in its discretion, may be flexible as to quantity purchased, to tailor to the capacity of interconnection points, or to promote other efficiency factors such as economies of scale or learning curve effects.

Implementation Issues

Taking into consideration the numerous reasons for implementing the OSW Standard program as soon as possible, this Order establishes the necessary foundation to provide for swift implementation of the Phase 1 procurements for 2018 and 2019. These implementation components of the OSW Standard program, which are addressed below, include the establishment of an LSE obligation distinct from RES, description of the procurement method and contract terms, cost containment requirements, the parameters of project eligibility, scoring methodology and criteria, transmission requirements, cost allocations, and NYSERDA's role including its cost recovery. Because an offshore wind development requires years of planning and development before its commercial operation date (COD), other implementation issues that are not essential prerequisites for solicitations to

be conducted by NYSERDA, LIPA and/or NYPA in 2018 and 2019, will be addressed at a later time. These future implementation matters will be addressed in a deliberate manner, including adequate stakeholder notice, to ensure that market participants receive timely guidance on matters that affect them.

LSE Obligation

The Notice proposed that achievement of the offshore wind Phase 1 goals would be the responsibility of all load-serving entities (LSEs) serving retail load in the territory of electric distribution companies (EDCs). LSEs encompass investor-owned utilities (in their capacity as commodity suppliers), jurisdictional municipal utilities, and all competitive energy service companies (ESCOs).[32] As proposed, NYSERDA would purchase ORECs from eligible developers, on behalf of LSEs, and then resell them to the LSEs for compliance with the LSEs' obligation. Each LSE would be obligated to purchase the percentage of ORECs purchased by NYSERDA in a year that represents the portion of the electric energy load served by the LSE in relation to the total electric energy load served by all such LSEs. This is substantially identical to the procedure adopted by the Commission with respect to Zero Emission Credits in the CES Order.[33]

Parties broadly support this approach, although some ESCOs suggest that a compliance obligation should be borne by EDCs and charged to distribution customers, rather than to LSEs' supply customers. BlueRock, for example, argues that an EDC obligation would result in less customer confusion. ESCOs also argue that if the OREC requirement becomes effective soon,

[32] As in the CES Order, customers purchasing electricity directly from the NYISO would be subject to the OREC obligation as LSEs in their own right. See CES Framework Order at 94.

[33] CES Framework Order 149-150.

existing ESCO fixed rate contracts should be grandfathered to avoid customer confusion and dissatisfaction. NYPA similarly argues that its customer contracts do not allow it to unilaterally pass through new non-negotiated costs such as an offshore wind obligation, and that its economic development customers should not be required to participate. The New York Municipal Power Agency also argues that its members should be exempt. ESCOs further argue that they need the ability to trade ORECs with both NYSERDA and other LSEs in order to meet changing load. Multiple Intervenors (MI) argue that upstate customers should not bear the costs associated with the development of offshore wind projects because upstate regions will not experience any of the economic benefits that would occur as a result of such developments.

The Commission finds that it is appropriate to establish a distinct offshore wind LSE obligation that includes a compliance target for ORECs sufficient to achieve the offshore wind energy procurement goal of 2.4 GW by 2030. For purposes of the Phase 1 procurement, all LSEs serving retail load within a regulated distribution utility territory will be required to satisfy the compliance obligation and thereby be responsible for supplying a defined percentage of retail load with supply derived from eligible offshore wind resources. This will include investor-owned utilities serving in their role as electric commodity supplier of last resort, jurisdictional municipal utilities, competitive ESCOs serving electric commodity to retail customers, and community choice aggregators not otherwise served by an ESCO.[34] Other non-jurisdictional utilities, such as LIPA and NYPA, are also expected to adopt

[34] CES Framework Order at 94. For the reasons articulated in the CES Order, NYPA customers and municipal utilities will not be exempted.

offshore wind energy targets that are proportional to their load and reflect the Statewide goal.

In the CES Framework Order, where the Commission applied the obligation to LSEs, it noted that in states which fully restructured and permit both wholesale and retail competition, the obligation to meet renewable generation goals falls on the individual retail commodity supplier.[35] Offshore wind generation is no different, and the allocation of costs to their respective component within retail rates will continue here. As under the CES program, each LSE will be responsible for supplying a defined percentage of retail load with supply derived from eligible offshore wind resources. This will place compliance costs primarily on generation supply charges, where they are most appropriately applied.[36] ESCOs that are concerned about their ability to flow through these additional costs to their supply customers will have ample time to build in these new compliance obligations into new contracts since the time difference between the procurement and obligation (i.e., the average time it takes to build an offshore wind development) will likely be at least five years, which is more than sufficient time to negotiate new supply contracts that generally have average tenures of only one to two years in duration.

NYSERDA will purchase ORECs from eligible offshore wind developers on behalf of LSEs, and then resell them to the LSEs for compliance with their obligations. Each LSE will be obligated to purchase the percentage of ORECs purchased by NYSERDA in a year that represents the portion of the electric energy load served by the LSE in relation to the total electric

[35] CES Framework Order at 10.

[36] CES Framework Order at 93.

energy load served by all such LSEs in the New York Control Area.[37]

In the Zero Emission Credit (ZEC) program, the contracts between NYSERDA and the LSEs are based on forecasts of load, and utilize a balancing reconciliation at the end of each program year such that each LSE will have purchased the correct proportion of ZECs on an annual basis. The OREC program will use a similar methodology in calculating the LSE obligation. However, in a February 22, 2018 Order,[38] the Commission directed Department of Public Service Staff (DPS Staff) and NYSERDA to develop and submit to the Commission for consideration, an implementation plan that would modify the way in which LSEs remit ZEC payments to NYSERDA from a payment structure based on a fixed ZEC obligation, calculated using the LSE's historic share of the statewide load, to a flexible, "pay-as-you-go" model, based on each LSE's known actual load. The Commission will act on this proposed implementation plan in the future. Therefore, in this proceeding, the Commission will defer a decision on the methodology to be used for calculating the LSE OREC obligation until a decision is reached on the soon to be filed ZEC obligation payment implementation plan.

As with the ZEC program, ORECs will not be tradable at this time, except between NYSERDA and the LSEs in the balancing reconciliation process. In this manner, after the reconciliation process, each LSE will have purchased the correct proportion of ORECs on an annual basis. Also like the ZEC program, there will be no option to pay an Alternative

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[37] As in the CES, the LSE's obligation will be measured at the wholesale level, i.e., grossed up to reflect the generation needed to serve customers prior to line losses.

[38] Case 15-E-0302, supra, Order Modifying Compliance Payment (issued February 22, 2018).

Compliance Payment (ACP) instead of obtaining the required amount of ORECs. The Commission concurs with the JU that the potential for compliance shortages driven by a lack of OREC supply due to forced outages or delays in commercial operation is too great in Phase 1 to allow for OREC trading and ACPs at this time. The Commission will reconsider this determination at a later time as the offshore wind industry develops in the U.S. and more federal lease sites are established.

For purposes of Phase 1, jurisdictional LSEs will not have the option to procure ORECs through bilateral agreements with eligible offshore wind generators for combined energy, capacity and/or ORECs. However, LIPA and/or NYPA may conduct their own solicitations and their own OREC procurement options and methodologies, including, but not limited to, the combined procurement of ORECs, energy, and/or capacity.[39] Whichever form the voluntary activities of LIPA and NYPA take, jurisdictional LSEs will not be responsible for any more than their proportional share of statewide load, in the context of the full 2.4 GW program.

MI argues that downstate customers should pay a higher percentage of the costs of offshore wind because the economic development benefits will be primarily downstate. Downstate customers have been paying and will continue to pay a proportional share of REC costs for the RES, even though the large majority of RES developments are upstate. The Commission applied the RES obligation on a statewide basis because the benefits of RES are likewise statewide. In the case of offshore wind, the economic and environmental benefits will also be

[39] When built, LIPA's 90 MW South Fork Offshore Wind project, which is structured as a purchase power agreement, will count towards LIPA's share of the Statewide offshore wind goal of 2.4 GW.

statewide. Moreover, the Master Plan identified potential port sites as far north as the Capital Region. Thus, the OSW Standard compliance obligation will be similarly applied statewide in proportion to load.

Procurement Method

The Notice identified six different procurement options, four of which had been analyzed by NYSERDA in the Options Paper. Three options analyzed by NYSERDA, including bundled power-purchase agreements (PPAs) and utility-owned generation (UOGs), were not put forward in the Notice because the Commission had explicitly rejected these options in the CES Framework Order.[40]

These six options included:

- Fixed OREC: Winning projects would receive a fixed as-bid OREC price throughout the contract lifetime – substantially identical to the approach adopted by the Commission for Tier 1 of the Renewable Energy Standard;
- Market OREC: OREC prices would vary over the life of the contract based on the net difference between the all-in revenue requirement of the project (strike price) and actual revenues earned by the project in power markets;
- Index OREC: Adjustable OREC prices that net periodically against a reference price expressed in a market index;
- Forward OREC: Similar to the Index OREC except that netting of the strike price would be performed periodically (e.g. every two years) against forward price forecasts within the applicable market zone;
- Fixed/Index OREC: Winning projects would receive an as-bid OREC price that would be adjusted periodically based

[40] DPS Staff and NYSERDA conducted a Technical Conference focused on the procurement options on March 8, 2018.

on the rate of change in forward price forecasts within the applicable market zone;

- Capped OREC: Similar to the Fixed/Index OREC except that at no time will an adjusted OREC price exceed the original bid price for that project.

In response to the Notice, parties directly involved in the offshore wind industry generally favor a method that provides the maximum amount of adjustment against fluctuations in energy and capacity market revenues, while other parties express a range of positions.

OWA/AWEA presents an economic analysis, supporting NYSERDA's analysis in the Options Paper, showing greater overall benefits where the procurement design provides for lower wholesale market risk. Reduced market risk is reflected in lower bid prices and, hence, lower OREC prices. The OWA analysis also asserts that the New York employment opportunities from offshore wind will vary in part based on the procurement method used. OWA further details its argument that Market ORECs and other options are legally valid.

Specifically, OWA favors the Market OREC approach above the other OREC approaches, because it presents the most risk reduction. OWA is joined in this recommendation by EDF Renewables, Vineyard Wind, Innogy, Equinor Wind, and Bay State Wind. OWA identifies bundled PPAs as the optimal approach, while acknowledging that PPAs were not adopted in the CES context and expressing that consideration of PPAs should not slow down the Commission's approval of the offshore program. Consumer Power Advocates (CPA), the Acadia Center, and LIPA also support Market ORECs. CPA points out that Market ORECs are the best mechanism for avoiding duplicative benefits in the future as carbon-oriented policy initiatives influence power markets.

In opposition to that position, the NYISO and IPPNY argue that, if any procurement method must be chosen, the Fixed OREC will be least disruptive of market mechanisms and will preserve the developers' incentive to be responsive to market forces. IPPNY argues that mechanisms such as Market ORECs would shift risk from developers to consumers, while developers are better suited for managing market risk than consumers are. NYISO states that the Index OREC, while not preferred, would be potentially workable.

Other parties express a range of intermediate positions. The Clean Energy Advocates agree with OWA that an option is needed to reduce risk and increase viability, and that all of the options are legally valid; but the Clean Energy Advocates put forward the Index Option as the best combination of cost savings and solid legal footing. The NYU Institute for Policy Integrity also argues that all of the options are sound, without identifying a preferred option. New York City advises a flexible, hybrid approach utilizing one of the indexed adjustment mechanisms.

The Joint Utilities argue that utility-owned generation offers the lowest-cost option (as evidenced by NYSERDA's analysis) and should be considered in this context. The JU note that utility-owned renewable generation is used in many other states, and that only this option enjoys the benefits of residual ownership after the contract term has expired. New York City, while not endorsing utility-owned generation, urges that no options should be foreclosed at this point given the nascent state of offshore wind. IPPNY, in arguing for the Fixed OREC, is strongly opposed to utility-owned generation on grounds that it will inhibit competitive entry into markets. Consumer Power Advocates agree with JU that utility ownership may be preferable, but only if utility shareholders bear market risk.

Direct Energy argues that ESCOs need predictability and that the Fixed OREC will ensure that the prices to be paid by LSEs will not vary over the contract term.

Shell Energy, while agreeing with other wind developers that an adjustment mechanism is preferred, also agrees with the argument that the mechanism should maintain incentives to maximize the value of participation in power markets. For this reason, Shell supports the Forward OREC.

Several parties caution that the Forward OREC, or any other market-index-based option, must be carefully designed. In particular, any future trading point must have high liquidity in order to be useful. Parties suggest that a quarterly reset would be more effective than an annual or biannual reset.

Several parties also note the potential conflict between a Fixed OREC and the carbon pricing that is currently being considered by the NYISO. The NYISO points out that REC recipients may receive a double payment if carbon values are built into wholesale prices, and REC contracts must take this into account.

The Commission recently considered and decided the issue of renewable procurement options when it adopted the CES in 2016. As part of the CES Framework Order, the Commission considered the need for long-term procurement, types of long-term procurement, and their interaction with power markets in New York. The Commission determined that some form of long-term procurement would be needed to provide assurance and encourage investment at reasonable costs.[41]

The principal question remaining was whether long-term procurement should involve only renewable attributes or also power contracts and/or utility investment. The Commission found

[41] CES Order at 99.

that PPAs would create unnecessary risk for utility ratepayers and could also create uncertainty as to federal preemption. Utility-owned generation was deemed inconsistent with long-term competitive goals. For that reason, the Commission determined that the CES program would begin by employing the method of fixed-price REC contracts.[42]

The unique characteristics of offshore wind warrant additional consideration of the approach to procurement. The concerns with PPAs and utility-owned generation remain as they were in the context of the CES. Without foreclosing the option for a provider to employ PPAs, the Commission will not require utilities to utilize them; similarly, the Commission will not reconsider the decision to prohibit utility-owned generation in this context.

With respect to REC procurement, however, the financial risk involved in developing offshore wind in its early stages indicates that some form of adjustable future revenue streams may be appropriate.

Two related constraints on this consideration are the market risk to be borne by customers, and the incentive for developers to respond to market conditions. To the extent that a mechanism removes all market risk from developers and may allow for a lower REC bid, it also places a degree of market risk onto customers. For that reason, a Fixed REC option may be preferred because it leaves market risk with developers who will, in many cases, be best equipped to manage risk and respond to market conditions.

Another constraint is the potential financial cost of delay and uncertainty caused by legal process. The procurement processes established here are fully within the Commission's

[42] CES Order at 100-101.

authority, and the legal analyses presented by OWA/AWEA and the Clean Energy Advocates support this conclusion. Nevertheless, there is litigation pending on matters concerning the interrelation between low-carbon procurements and wholesale markets, and until a final disposition is obtained there is an element of risk attached to any procurement method that includes adjustments.

As described above, offshore wind procurement needs to begin immediately in order to cost effectively secure the economic and environmental benefits. In light of this overriding policy need, a method must be adopted that balances procurement concerns in a way that ensures immediate progress. The timing of procurement cannot be delayed by the possibility of disruptive legal process, or by the possibility of bidders being inhibited by the financial risk of non-adjustable contracts. Addressing the latter concern, however, may invoke the former. Also, some developers may find that managing market risks (and potential market gains) on their own, rather than through a contract with NYSERDA, may be the most cost-effective approach and therefore most beneficial to ratepayers. Ultimately, the balancing of various risks and rewards is a business judgment, and the most successful strategy will be one that enables bidders to optimize their bids based on their own perceptions of potential risks and rewards.

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. 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 price that was bid. This hybrid procurement approach is described in greater detail in Appendix B.

In this manner, the prompt development of offshore wind at least cost to consumers can be achieved. The various risks are balanced in a way that ensures immediate and uninterrupted progress, while developers will have access to an adjustable price option if that is necessary to produce the lowest possible bid price. Each of the two bid options meets the concerns of the NYISO and IPPNY that the procurement method should preserve incentives to respond to market conditions.

The Fixed OREC element of the bid will be established on the same terms as used in the CES solicitations. With respect to the Index OREC option, its operation is described in greater detail in Appendix C.

Procurement Term

The Notice proposed that solicitations conducted by NYSERDA would have 25-year contract terms. In the CES Order, the Commission determined that developers of new renewable facilities would be offered 20-year REC contracts to provide sufficient certainty to induce them to build new generation facilities. The Commission noted that it is unreasonable to expect an investor to make a long-lived capital investment without a revenue stream that is durable and certain.[43]

[43] CES Order at 143.

Among the parties supporting some type of long-term procurement process, there was general agreement that 25 years is a reasonable term in the context of offshore wind.

In light of the particular circumstances of offshore wind development, including substantial upfront capital costs, relatively long development lead times, and its nascent status in the U.S., a term of up to 25 years may be efficient. A 25-year term would reflect the need for sufficient and durable cashflow streams to secure financing for the large initial capital costs of offshore wind facilities. A minimum contract duration of 20 years is also reasonable, to maintain a financial incentive for the project developer to ensure continued successful operation of the project. NYSERDA will have discretion in fixing specific contract terms, which should be not less than 20 years nor more than 25 years.

Cost Containment

The Notice proposed that NYSERDA should employ a price benchmark in the bid evaluation process (i.e., upset price), similar to the method used in the Tier 1 RES procurements. NYSERDA would presumptively reject any bid higher than the confidential benchmark price, and would at all times have authority to reject all bids, taking into account not only the benchmark upset price but also recent auctions and market conditions.

Bay State Wind recommends that NYSERDA maintain a fairly wide band of acceptable pricing, and narrow it over time as the region gains experience. OWA/AWEA agree with the use of a maximum upset price based on other states' bidding processes/historical data with the option included of not selecting any bids, while warning against using other states' procurement prices as a guide without considering the procurement option used.

The City of New York supports including cost containment mechanisms in the solicitation and procurement process. The City states 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 states that details associated with the pricing and cost containment mechanisms need to be identified, analyzed, and properly evaluated via technical conferences, collaborative meetings, hearings, and other appropriate processes.

The Commission adopts the proposal identified in the Notice. The Commission expects competition among market participants will be an effective and important way to reduce costs. The proposal encourages a competitive result by allowing bids from projects in neighboring offshore regional states to participate (subject to the delivery of the energy to New York), and by continuing the price benchmarks used in the RES.

NYSERDA has used a confidential benchmark upset price for each solicitation since it began administering the Renewable Portfolio Standard (RPS) program in 2005. The metric served as an effective tool for containing program costs. The price at which the benchmark is set is meant to balance the objectives of encouraging investment in new projects and protecting ratepayers from the costs of accepting bids at any price. NYSERDA should continue using the maximum acceptable bid evaluation metric for the 2018 and 2019 solicitations and work with DPS Staff and consultants in determining the maximum acceptable bid, taking into consideration current market conditions, procurement experience in other states, and other relevant factors as it has done throughout the course of administering procurements. The maximum bid benchmark should be applied to both elements of the bid, as described above in the discussion of Procurement Method.

Commenters suggestions on setting the maximum bid metric should be taken into consideration by NYSERDA. In addition to the maximum bid benchmark, award criteria should include a reference to recent auctions and market conditions. NYSERDA retains the authority to reject all bids.

While the cost containment measures described above can be deployed as needed in Phase 1, in Phase 2 the Commission may consider further options to optimize competitive dynamics in the bid process. As NYSERDA's Options Paper indicates, stimulating competition among developers to develop a single de-risked site as opposed to each developer proposing projects in separately leased WEAs has been shown in Europe and by independent studies to lower costs.

Eligibility and Contract Requirements

Offshore wind procurement contracts can be conducted through a process similar to that used for large-scale renewables under RES Tier 1 procurements, which includes specific eligibility criteria. The Notice proposed that certain contract language and contract requirements, such as construction and in-service milestones and deadlines, bid bonds, cash bonds, and other contract arrangements, would be left to NYSERDA's discretion.[44] The Notice also proposed that other eligibility requirements regarding project labor agreements and prevailing wage requirements could be included in solicitations by NYSERDA, in its discretion, after consultation with DPS Staff.

[44] As in RES, it is envisioned that the offshore wind procurements would establish threshold criteria for a minimum level of project maturity at certain milestones in order to minimize the risk of selecting projects unable to reach COD within the time allowed. Milestones would need to reflect longer lead times for offshore wind development than is currently reflected in RES Tier 1 solicitations.

In this proceeding, a number of eligibility issues were specifically proposed in the Notice, including project COD, location/delivery, and siting, some of which are similar to those included in RES procurements and some of which are peculiar to offshore wind developments. The Notice proposed that any offshore wind procurement be limited to offshore wind electric generation facilities located in ocean waters of the United States, that become operational on or after January 1, 2015; that deliver their electric energy directly into the New York Control Area, or secure rights in an adjacent control area to deliver the energy into the New York Control Area; that upon submission of a bid have already obtained a lease for the offshore ocean site from BOEM; and that are located a minimum distance from shore necessary to minimize visual impacts from land, to be pre-determined by the Commission. With a view to maximizing competition, this eligibility approach would allow the supply of resources from waters offshore neighboring states such as Massachusetts, Rhode Island, and New Jersey to compete in the New York procurements (subject to delivery requirements).

The Notice proposed that the Commission consider whether additional siting standards are needed. NYSERDA and other State agencies, through the execution of the Master Plan, are developing siting practices for offshore wind projects in Federal waters.

Based on the comments, several of the proposed eligibility requirements are non-controversial, including delivery into New York or a neighboring control area, operational date after January 1, 2015, and having obtained a federal lease.

A number of parties argue that siting practices should be included as eligibility requirements and/or bid evaluation

criteria. A coalition of environmental groups,[45] the Sierra Club, and the Clean Energy Advocates urge that compliance with the Best Management Practices (BMP) being developed by NYSERDA in consultation with the Environmental Technical Working Group should be an eligibility requirement. OWA/AWEA and the Workforce Development Institute also support this proposal.

Multiple parties representing labor interests, as identified above, argue that labor standards, particularly prevailing wage and project labor agreements (PLA), should be included in the eligibility requirements. Climate Jobs NY submits a range of academic studies demonstrating project efficiencies that stem form prevailing wage and PLA requirements. The Business Council argues that such requirements will increase project costs and submits a study showing that school construction costs were increased where project labor agreements were used. Some members of the wind industry, as represented by OWA/AWEA, support considering prevailing wage and project labor agreements in this procurement process, as do the Clean Energy Advocates and Sierra Club.

Fishery interests urge that numerous protections should be built into the procurement process, including removing certain fishing grounds from consideration, requiring mitigation and compensation plans, and a 2-mile separation between turbines.

OWA/AWEA along with individual wind industry commenters object to the proposed 20-mile setback requirement. Equinor and others argue that there are inherent incentives to place wind turbines where they will have minimal visual impact. The City of New York argues that a simple mileage restriction

[45] Audubon New York, Natural Resources Defense Council, National Wildlife Federation, The Nature Conservancy, and Wildlife Conservation Society.

could foreclose innovative project design, and as an alternative, developers should be required to demonstrate how their proposed projects would minimize visual impacts.

Anbaric objects to the exclusion of independent transmission projects from the bidding process. The Acadia Center urges that the State's storage goals should be integrated with its offshore wind goals, and projects should be able to bid integrated wind/storage packages.

Eligibility

The Notice identified a number of essential and non-controversial project eligibility requirements that are adopted here. Upon consideration, the Commission finds that eligibility should be limited to offshore wind electric generation facilities, located in ocean waters of the United States, that become operational on or after January 1, 2015, deliver their electric energy into the New York Control Area, either by direct lead into New York or directly into an adjacent control area with transmission into the New York Control Area[46], and that have obtained a lease from BOEM.[47] Regarding other eligibility requirements, except to the extent requirements are specifically addressed in this Order, NYSERDA will have discretion to fashion eligibility requirements that carry out the intentions of this Order.

[46] The delivery requirement will be implemented in accordance with the Implementation Plan approved by the Commission in Case 15-E-0302, Order Approving Phase 1 Implementation Plan, issued February 22, 2017.

[47] Although additional lease areas are expected to be made available in time for subsequent solicitations, the Master Plan affirms that there are sufficient lease areas available at present to provide for a competitive procurement.

Contract Requirements

Additional contract requirements are described here, with the understanding that they will be included in solicitations at NYSERDA's discretion. If, in the course of developing the detailed solicitation, NYSERDA concludes that any of the requirements discussed below would be impractical or inefficient, NYSERDA may omit or modify the requirement, provided it supplies an explanation of its reason for doing so at the time of the solicitation. Any contract awarded must include provisions requiring compliance with the contract requirements specified in the solicitation.

With respect to fishery protection, the Final GEIS explains how the required avoidance, minimization, and mitigation of potential environmental impacts from future offshore wind development will occur at a site-specific level. As part of the permitting process for any specific offshore wind energy development, federal laws and regulations require the developer to consult with the appropriate agencies to ensure project-specific desktop and field surveys and activities comply with guidelines and regulations for offshore wind development. For instance, the developer is required to submit a survey plan to BOEM for review that describes the required geophysical and geological surveys, hazards surveys, archaeological surveys, and biological baseline collection studies for developing a site-specific design.

The Technical Working Group on Commercial and Recreational Fishing will develop best practices related to mitigation strategies. Each bidder will be required to commit to consulting with relevant State agencies in developing its approach to satisfying federal requirements relating to fisheries, and to full participation in the relevant Technical Working Groups. Bidders should further be required to submit a

fisheries mitigation plan, with a degree of specificity to be identified by NYSERDA in the bid solicitation, which may also include any best practices established by the Technical Working Group as of the time of the solicitation. Any compensation programs included in these plans will be considered and weighted in the bid evaluation process.

With respect to siting practices, multiple parties representing environmental interests, as well as industry and labor, support a requirement of Best Management Practices (BMPs). While the Commission fully agrees with the intent of these parties, it is premature to require compliance with practice standards that have not yet been developed and may not be in place prior to the solicitation date. As the Final GEIS details, there are standards and processes already governing the siting of offshore facilities. Phase 2 of this proceeding will consider additional requirements, taking into account the Technical Working Group product, as well as any experience gained during the Phase 1 solicitation.

Certain proposed practices, however, are well established and non-controversial and will presumptively be included as contract requirements for the Phase 1 solicitation. The first of these is consultation. A bid-winning developer will be required to consult with relevant State agencies in developing its approach to satisfying federal requirements relating to fishing, wildlife, and other environmental interests. The second is transparency. Environmental data collected by developers in the course of site assessment, development and operations will be made publicly available, except for data that is normally considered proprietary. Third is research funding. NYSERDA currently has an Environmental Research component in its Clean Energy Fund Investment Plan;

NYSERDA should file a proposed revision to this plan to enhance support of offshore wind environmental research.

With respect to visual impacts, maintaining a minimum distance from shore is critically important for the public acceptance of this program as well as maintaining the economic and societal value of onshore locations, including public recreational spaces. The Master Plan and the Final GEIS describe how a 20-mile minimum distance would prevent visibility from shore under most conditions. The argument of wind industry participants, that they have an inherent interest in reducing visibility impacts, is not persuasive. Developers will have a number of inherent incentives that they must balance against each other, and there is no assurance that the interest in reducing visual impacts will override other interests. The City of New York argues that developers should be able to propose alternatives with no more visual impact than a 20-mile standard would provide, which presumptively would include smaller facilities at closer distances. Smaller turbines, however, are not a preferred alternative, as they would be more densely placed, and closer to shore, exacerbating other sorts of potential impacts, such as those related to fisheries, environmental issues, and other concerns of ocean users. In addition, smaller turbines are likely less cost effective given their relative economies of scale.

Minimizing visual impacts is a strong concern, and will be a contract requirement. Based on the analysis in the Master Plan, a 20-mile setback from any coastal position would eliminate or minimize visual impacts under most daylight conditions. NYSERDA will have discretion to tailor the setback requirement if it determines that a modified approach is necessary to optimize the overall environmental and economic

benefits of this and future procurements. In addition, lighting controls to minimize nighttime visibility will be required.

With respect to economic development, the Commission has frequently relied on estimates of job creation, and economic development in general, in support of program initiatives, and economic development programs have been a staple of utility rate plans for many years.[48] In this instance, a new industry is being established in New York, with the primary stimulus being a state-driven procurement process. It is reasonable in this context to ensure that economic development takes the form of high-quality employment opportunities. Comments from the offshore wind industry indicate support for this approach. PLAs may be particularly valuable in the context of offshore wind procurements where time is of the essence. A PLA helps to assure timely compliance with contract terms and delivery of power by the specified COD. NYSERDA may consider prevailing wage and PLAs as contract requirements, taking into account potential costs and benefits in the context of offshore wind construction and operation. Additional potential labor standards were put forward by parties. NYSERDA in its discretion may consider these and other standards, taking into account their potential effects on economic development, project efficiency, and project cost.

Scoring and Criteria

In evaluating bid proposals in an offshore wind solicitation, criteria will need to be established in order to rank bids and subsequently decide which projects to contract

[48] See, e.g., Case 03-E-0188, Retail Renewable Portfolio Standard, Order Regarding Retail Renewable Portfolio Standard (issued September 24, 2004); Case 07-M-0548, Energy Efficiency Portfolio Standard, Order Establishing Energy Efficiency Portfolio Standard and Approving Programs (issued June 23, 2008),

with. The Notice proposed that NYSERDA should evaluate proposals through the use of both price and non-price categories, as is done with RES procurements. Non-price categories include the project's expected economic benefits to New York, and the overall viability of the project.

As proposed in the Notice, the scoring process would be substantially similar to the RES procurements, with the added consideration for offshore wind's distinct characteristics. The Notice proposed a relative weight of 70% to price, 25% to economic benefits, and 5% to project viability. NYSERDA would have flexibility in crafting the economic benefit criteria, which may include project labor agreements and prevailing wage to the extent they are not reflected in eligibility requirements. The Notice also indicated that the options of incorporating environmental impact criteria into the bid scoring calculations are reserved for consideration in Phase 2, and would not be considered for the Phase 1 competitive solicitations.

Numerous parties, including Bay State Wind, JU, LIPA, Vineyard Wind, the Union Group and the Workforce Development Institute argue that more weight should be placed on project viability, to distinguish the achievable from the unrealistic, and to ensure that state incentives are not stranded in support of projects which are never built. LIPA recommends an extensive list of criteria pertaining to viability that should be considered. Innogy supports the categories and weighting proposed in the Notice. CEA urges the Commission to include a high-quality employment and work product eligibility requirement for all bidders, including local hiring, purchasing from the local supply chain, and investments in ports. Equinor recommends increasing the weight assigned to economic benefits to 35% because it will provide a powerful incentive for wind

developers to design and develop their projects in a manner that provides the maximum economic benefit to New York. MI asserts that cost should be the only evaluation factor. A number of environmental groups, including Audubon et al. and Clean Energy Advocates, argue that environmental considerations should be a component of the evaluation criteria, while Equinor asserts that it may not be feasible for NYSERDA to accurately evaluate and weigh the environmental impact of a project when selecting bids.

Price will be the most important factor in a competitive solicitation under this program. In RES procurements, and the predecessor RPS program, 70% of the evaluation weight is accorded to the bid price. Given the importance of minimizing costs associated with OSW Standard compliance and the direct correlation between a project's bid price and its overall cost to ratepayers, NYSERDA will maintain the relative weighting of price at 70% in OSW Standard procurements and maintain a net present value evaluation method, as utilized in RES.

In order to gain the full economic benefits from Phase 1, NYSERDA is expected to include a local content provision in the evaluation criteria. The exact form and weighting of local content, and the extent to which it affects the evaluation of bids, will be within NYSERDA's discretion. To ensure objectivity and transparency in the evaluation process, NYSERDA will clearly describe the criteria in each solicitation and the rationale for their application will be appropriately documented in the contracting record. A variety of factors should be considered as economic benefit criteria, including the maximizing of project-specific spending and job creation in New York, investment in enabling supply chain and infrastructure in New York, and commitments to offshore wind industry and supply chain stimulating activities. Weight should be attributed to

those activities, expenditures and investments that create real, persistent and sustainable institutional or labor capabilities in New York State, and that lower the cost of future offshore wind projects. Criteria may also include other direct benefits to New York economic interests.

With respect to project viability, the arguments that the viability criterion should be more heavily weighted are persuasive. The time factors driving the Phase 1 procurement, including the imminent expiration of the ITC, elevate the importance of assuring that selected bids represent viable projects. There are a number of substantial viability concerns that NYSERDA will address, including: permitting plan and status; financing plan; developer experience; proposed technology; development and logistics plan; interconnection status; reasonableness of project development milestones; community outreach; environmental impact; and wind resource assessment. For these reasons, the weight accorded to viability will be 10%, with an ultimate weighting of 70% price, 20% economic benefits, and 10% viability.

The options of incorporating environmental impact criteria into the bid scoring calculations are reserved for consideration in Phase 2 due to the need for further analysis and development of best practices. Environmental factors may be addressed as eligibility requirements, as discussed above.

NYSERDA's bid evaluation will take into account the provisions of the Benefit Cost Analysis Framework already adopted by the Commission.[49] Award criteria may also reflect the potential impact of project sizing on timely and successful implementation of the program.

[49] Case 14-M-0101, Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework (issued January 21, 2016).

Transmission Options

Transmission is a large cost component of an offshore wind project.[50] The Master Plan estimates it may comprise 30% of total costs of an offshore wind development, and may have a significant impact on offshore wind feasibility, scalability, timing/sequencing, sizing, and risk exposure.[51]

The major strategic question for the Commission is whether transmission facilities should be individually built to support single projects ("direct radial"), or developed via a shared radial "backbone" to accommodate multiple projects. The former approach, according to the Options Paper, is simpler, more commonly used in offshore wind, and less risky to the timetable of initial projects; the latter approach offers potential economies but at the cost of uncertainty and potential delay. A subsidiary question is whether transmission should be owned by the project developer or by an independent entity.

In the Options Paper, NYSERDA recommended that for purposes of Phase 1, only direct radial transmission dedicated to specific projects and owned by the developer should be considered, with the option for a radial backbone approach reserved for Phase 2. NYSERDA explained that the number of developers and lease sites available to compete for a New York offshore wind procurement during Phase 1 are limited, dispersed, and not readily expandable. In the near-term, a shared radial system would create unnecessary risks of stranded assets and

[50] The discussion of transmission is limited to "wet transmission", which includes the onshore substation, offshore substation, and export cable.

[51] The NYISO has concluded that 2.4 GW of offshore wind can be injected into Zones J and K (New York City and Long Island) without thermal overload. NYISO "Offshore Wind Injection Assessment" (2017). http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_espwg/meeting_materials/2017-12-01/OSW.pdf.

provide limited cost advantages. The Notice proposed that both shared radial and independent ownership options should be reserved for further consideration in Phase 2.

Several parties argue that the initial solicitation should entertain bids for an independent backbone provider developing an Open Access Offshore Transmission (OAOT) system. Anbaric states that allowing independent transmission into the bidding process would provide more information and potentially reduce the costs of the procurement. Anbaric also states that requiring direct generator leads will lead to a piecemeal approach and will not optimize the available on-shore interconnection points, potentially increasing costs for later stages of offshore wind development. The Green Building Council and the Sustainability Institute concur with Anbaric's argument, noting that the generator lead approach, if applied to a full build-out of the wind potential in the offshore areas would result in a highly inefficient array of separate transmission cables.

The Joint Utilities argue that consideration of Phase 2 issues should begin immediately, particularly in regard to the issues around developing a transmission backbone and optimizing onshore interconnection locations. The JU claim that utility ownership of the transmission and interconnection assets could produce substantial ratepayer savings and should be one of the options considered. NYPA and the City of New York also urge that a coordinated approach to transmission should be initiated immediately. NYPA further states that it is prepared to participate and assist in this effort.

Several wind developers support the direct generator lead approach in the context of Phase 1. Equinor and Vineyard Wind argue that requiring a separate transmission provider would increase project uncertainty and the risk of delay. They

emphasize that transmission must be available when generation comes online. OWA/AWEA agrees that the generator lead approach reduces timing risk and the possibility of stranded assets, but OWA/AWEA is not opposed to the consideration of a backbone approach for later phases of the offshore wind program. NYPA agrees with the proposal in NYSERDA's Option Paper and the Notice that transmission for the first phase should be the responsibility of individual generation developers. NYPA adds that adopting this approach should not preclude ownership and operation by independent entities. Shell Energy states that the solicitation should allow developers the flexibility to own and control transmission or to partner with independent transmission providers.

Several factors are involved in considering the approach to transmission and interconnection. Timing and project certainty, costs, overall system efficiency, and effects on competitive markets must all be balanced. The solicitation process for Phase 1, as proposed in the Notice, would leave the responsibility for arranging transmission, and control of that transmission, with the developer. Other parties have urged a more coordinated and integrated approach, which could include independent or utility ownership.

The Commission determines that, for purposes of Phase 1, holding the generator responsible for transmission is the most easily-implementable and feasible option for jump-starting offshore wind development in New York. While the utility-owned approach would have the potential to achieve cost benefits through lower cost of finance and system coordination, those potential benefits must be weighed against significant implementation challenges, including the scoping of offshore wind transmission projects, potentially cumbersome and untested procurement processes and, most important, related risk to

developers involving construction timing, energy delivery, and stranded assets.

Presently, the wind energy areas (WEAs) available to compete for a New York offshore wind procurement during Phase 1 are widely dispersed and not readily coordinated. The sole lease area leased by BOEM directly off New York shores is capable of hosting approximately 1,000 MW and is leased to a single developer. Offshore wind projects in other leased areas within existing WEAs off the shores of Rhode Island, Massachusetts, and New Jersey could interconnect directly to New York or interconnect within an adjacent control area with energy delivered to NYISO.

BOEM is considering the lease of additional WEAs off New York shores,[52] which could be designated and leased within two years. By the time a Phase 2 procurement occurs, it is expected that BOEM will have leased additional areas where eligible projects could be built, which will allow consideration of additional transmission options. Because a delay of two years would irreparably impair the effort to develop a New York supply chain and would delay cost-reductions and scale, consideration of a backbone approach to transmission is best reserved for the Phase 2 process.

This does not preclude any potential independent developer from participating in the Phase 1 procurement process. NYSERDA will not entertain bids for transmission separate from generation; however, any generation developer is free to arrange

[52] On October 2, 2017, New York State submitted an identified Area for Consideration to BOEM, requesting that within this Area of Consideration, BOEM expeditiously identify and lease at least four new Wind Energy Areas, each capable of supporting at least 800 megawatts. https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/New-York-Offshore-Wind-Master-Plan/Area-for-Consideration.

for transmission with an independent developer to provide services, and present that arrangement in its bid. Ultimately the generator is responsible for timely delivery of energy, but the means of achieving that are not predetermined, and NYSERDA should take into account the potential effects on project viability of varying transmission arrangements.

If a developer presents a bid that includes transmission or interconnection systems that are built to serve greater capacity in the future, the overbuilt portions will not be accorded additional value in the bidding evaluation. The value of any overbuilt or pre-built facilities cannot be known until the availability of additional lease areas is known. Developers may choose to size their transmission facilities with increased future usage in mind, but that business decision should be reflected in the bids presented in subsequent procurements.

Phase 2 Scheduling

The Notice proposed that issues not addressed in Phase 1, including transmission options and additional environmental impact criteria, should be reserved for the second phase of this program.

Numerous parties argue that a procurement schedule should be established for the years following 2019, in order to provide certainty to developers and to demonstrate the State's commitment to the offshore wind program. JU and others argue that the process for considering transmission options should begin immediately, considering how long it is likely to take to develop and implement a shared backbone approach.

With this Order, the Commission is adopting a goal of 2.4 GW of offshore wind procurement. Consideration of Phase 2 will need to begin in 2019, and should be informed by Phase 1 experience, as well as market developments. Establishing a

fixed Phase 2 schedule at this time is less important than establishing a timely process for incorporating Phase 1 experience into future solicitations. NYSERDA will issue a report, within 30 days of executing contracts for Phase 1 procurements. The report will describe all aspects of the Phase 1 procurement and recommendations for Phase 2, including: Phase 1 prices among different types of bids; market conditions including number of bidders and feasible lease areas; efficacy of eligibility and scoring criteria; and, efficacy of using a maximum acceptable bid price. The Commission anticipates initiating a process for Phase 2 after receipt of the NYSERDA report and in a time frame that will provide for uninterrupted growth in offshore wind capacity.

With respect to transmission, the Commission agrees that immediate steps are needed to study a potential backbone system for Phase 2 and beyond. DPS Staff and NYSERDA will convene a technical conference no later than September 28, 2018. The subjects of the technical conference will include both the optimal configurations for cost-effective transmission of large-scale offshore wind development, and the various options for ownership and planning processes.

Carbon Pricing

The NYISO and others note that the NYISO is considering revisions to wholesale market pricing to internalize carbon values. Renewable providers with fixed OREC contracts would potentially receive a windfall from such a development, receiving both an increase in revenues from wholesale markets and a fixed OREC price, each reflecting the value of low-carbon characteristics. NYISO recommends that a carbon-index be added to any contract price, to reflect the potential addition of carbon values to wholesale prices. IPPNY recommends that any OREC contract should be designed to avoid a double payment.

If the NYISO implements carbon pricing in the manner described, the double payment issue has potential to be substantial. This problem will exist, however, not only for fixed OREC contracts not yet signed, but also for REC contracts already signed under the RES program. Moreover, the nature and extent of any carbon pricing mechanism to be adopted by the NYISO are not known at this time, and likely will not be known at the time OREC contracts are designed. As a result, there can be no clarity on what precise impact any potential carbon pricing proposal might have on REC prices bid into future NYSERDA solicitations. For those reasons, it may be more reasonable to expect the NYISO to address this issue in any actions it may take to establish carbon pricing in wholesale markets as an effective and efficient instrument for State policy.

Administration

The Notice proposed that NYSERDA's reasonable incremental administrative costs and fees associated with the OSW Standard program would be recoverable from LSEs as an adder to the OREC price. The Commission adopts this proposal, except that during the period before OREC purchases begin, NYSERDA shall use uncommitted RPS dollars to fund such costs. NYSERDA will assess bid fees as part of the solicitation process, estimated to total $3 million over a three-year period, which will be used to offset funding from RPS accounts.

OREC generators' confidence in NYSERDA's long-term ability to make timely payments will reduce a risk element and thereby reduce overall costs. This ability is dependent upon receipt of OREC proceeds in advance of the payment due date. As in the CES Order, the electric distribution companies shall serve as a financial backstop to ensure NYSERDA has sufficient funds to make timely payments to offshore wind developers. The

financial backstop guarantee must be established such that it can be called upon and implemented to timely address cash shortfalls and allow generators to be paid properly. The electric distribution companies will be directed to collaborate with NYSERDA, DPS Staff and other interested parties to further develop the financial backstop guarantee mechanism, and the electric distribution companies shall file tariffs including such a mechanism. The mechanism must give NYSERDA sufficient flexibility to manage its finances including its cash flow but also provide transparency and predictability for other stakeholders including electric distribution companies, LSE's and ratepayers. An efficient true-up method should also be considered such that large under or over collections can be avoided to the extent possible.

STATE ENVIRONMENTAL QUALITY REVIEW ACT

On February 22, 2018, the Commission accepted a draft Generic Environmental Impact Statement (GEIS) for Procurement of Offshore Wind. The minimum 30-day public comment period provided for the Draft GEIS ended on April 9, 2018. On April 17, 2018, the Commission extended the notice period until May 9, 2018. Written comments were received from ten entities. On June 14, 2018 the Commission accepted the findings of a Final GEIS. In conjunction with the decisions made in this Order, the Commission has considered the information in the FGEIS and hereby adopts the SEQRA Findings Statement prepared in accordance with Article 8 of the Environmental Conservation Law (SEQRA) and 6 NYCRR Part 617, by the Commission as lead agency for these actions. The SEQRA Findings Statement is attached to this Order as Appendix D. The SEQRA Findings Statement is based on the facts and conclusions set forth in the Final GEIS. The offshore wind program is expected to yield overall positive

environmental impacts, primarily by reducing the State's use of, and dependence on, fossil fuels, among other benefits.

CONCLUSION

For the reasons stated above, and in accord with the discussion in the body of this Order, the Commission adopts an Offshore Wind Standard.

The Commission orders:

1. The goal of procuring Offshore Wind Renewable Energy Credits (ORECs) associated with 2.4 GW of offshore wind capacity by 2030, in furtherance of the Renewable Energy Standard, is adopted.

2. Phase 1 of the offshore procurement program shall consist of procuring ORECs associated with approximately 800 MW of offshore wind, to be procured via solicitations tendered in 2018 and 2019, pursuant to the procurement methods and criteria discussed in the body of this Order.

3. Every Load Serving Entity (LSE) in New York State shall invest in new offshore renewable generation resources to serve their retail customers, as described in the body of this order and evidenced by the procurement from the New York State Energy Research and Development Authority (NYSERDA) of qualifying ORECs, acquired in quantities that satisfy mandatory minimum percentage proportions of the total load served by the LSE for the applicable calendar year. All LSEs are directed to provide NYSERDA with executed copies of standard contract OREC agreements (to be modeled largely on the existing standard ZEC contracts) by March 31, 2019.

4. The amount of ORECs procured by NYSERDA shall be determined following consultation and agreement among NYSERDA,

the New York Power Authority, and the Long Island Power Authority.

5. NYSERDA is authorized to expend up to $9,797,000 for the Offshore Wind Standard program (OSW Program) associated with salary and overhead expenses through December 31, 2023, one-time OSW Program non-recurring expenses, OSW Program system development and implementation costs, and 2018 through 2022 OSW Program Cost Recovery Fee (CRF) expenses, if any, by category up to the amounts shown in Appendix INSERT. NYSERDA is further authorized to repurpose up to $9,797,000 of uncommitted Renewable Portfolio Standard funds to pay for such administrative costs, which repurposing will be offset by any amounts collected as bid fees.

6. NYSERDA is authorized after 2023 to recover its going forward OSW Program costs through an OSW Adder to be determined by the Commission in the future and to be applied when ORECs are purchased from NYSERDA.

7. NYSERDA shall file quarterly reports containing itemized expenses associated with administration and the development costs of the OSW platforms and systems described in the body of this order. Each year after OREC collection commences, NYSERDA shall reconcile any variance between the actual calendar year OSW Program expenses and the authorized forecasted expenses as part of the OREC reconciliation. NYSERDA shall retain any unspent administrative funds for future ratepayer benefit.

8. Central Hudson Gas and Electric Corporation; Consolidated Edison Company of New York, Inc.; Orange and Rockland Utilities, Inc.; Niagara Mohawk Power Corporation d/b/a National Grid; New York State Electric & Gas Corporation; and Rochester Gas and Electric Corporation are authorized to collect the OSW price paid to NYSERDA to acquire the ORECs to be

offered, including the approved adder to cover the administrative costs and fees incurred by NYSERDA to administer the OSW program, from all supply customers on a volumetric basis. Each of such companies is directed to make tariff filings designed to implement the provisions set forth in this Order, including a financial backstop mechanism, to be effective no later than September 28, 2018.

9. The requirements of Public Service Law §66(12)(b)and 16 NYCRR §720-8.1 concerning newspaper publication of the tariff amendments directed in Clause 8 are waived.

10. Any measure necessary to the efficient administration of this program, not specifically addressed in this Order, is within the discretion of NYSERDA.

11. In the Secretary's sole discretion, the deadlines set forth in this Order may be extended. Any request for an extension must be in writing, must include a justification for the extension, and must be filed at least one day prior to the affected deadline.

12. This proceeding shall be continued.

By the Commission,

(SIGNED) KATHLEEN H. BURGESS
Secretary