

**Final Supplemental Generic  
Environmental Impact Statement  
for  
Procurement of Offshore Wind**

**March 31, 2020**

**Prepared for:**

**NEW YORK STATE PUBLIC SERVICE COMMISSION  
Michelle Phillips**

Secretary to the Commission  
New York State Public Service Commission  
Three Empire State Plaza  
Albany, NY 12223-1350  
(518) 474-6530

Email: [secretary@dps.ny.gov](mailto:secretary@dps.ny.gov)

**Prepared by:**

**NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE**

**and**

**ECOLOGY AND ENVIRONMENT, INC., MEMBER OF WSP**

**Area Affected by Action:** New York State

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**Agency Contact Persons:** John Garvey, New York State Department of Public Service, 90 Church Street, New York, NY 10007, (212) 417-2200; Greg Lampman, New York State Energy Research & Development Authority, 17 Columbia Circle, Albany, NY 12203 (518) 862-1090

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## List of Abbreviations and Acronyms

2018 OSW Order	Order Establishing Offshore Wind Standard and Framework for Phase 1 Procurement
BMP	Best Management Practices
BOEM	Bureau of Ocean Energy Management
CES	Clean Energy Standard
Commission	Public Service Commission
Cumulative Study	New York State Offshore Wind Master Plan Consideration of Potential Cumulative Effects
DOI	Department of the Interior
DPS	New York State Department of Public Service
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
Phase 1 Report	<i>Launching New York's Offshore Wind Industry: Phase 1 Report</i>
GEIS	Generic Environmental Impact Statement
GHG	Greenhouse Gases
GW	Gigawatts
IPCC	Intergovernmental Panel on Climate Change
ISO-NE	Independent System Operator-New England
Master Plan	New York State Offshore Wind Master Plan
MBTA	Migratory Bird Treaty Act
MMP Tool	Mitigation and Monitoring Practices Tool
MMPA	Marine Mammal Protection Act
MOU	Memorandum of Understanding
MW	megawatts
NEPA	National Environmental Policy Act
NGO	Non-governmental Organization
NOAA Fisheries	National Oceanic and Atmospheric Administration National Marine Fisheries Service
NO <sub>x</sub>	Nitrogen Oxides

## List of Abbreviations and Acronyms (cont.)

NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSEP	New York State Energy Plan
NYSERDA	New York State Energy Research and Development Authority
OCS	Outer Continental Shelf
OCSLA	Outer Continental Shelf Lands Act
OREC	Offshore Wind Renewable Energy Certificate
Options Paper	<i>Offshore Wind Policy Options Paper</i>
PJM	Pennsylvania New Jersey Maryland
PM <sub>2.5</sub>	Particulate Matter Less than 2.5 Microns
ROD	Record of Decision
RODA	Responsible Offshore Development Alliance
SGEIS	Supplemental Generic Environmental Impact Statement
SAP	Site Assessment Plan
SEQRA	New York State Environmental Quality Review Act
SO <sub>2</sub>	Sulfur Dioxide
TWG	Technical Working Group
UME	Unusual Mortality Event
USFWS	U.S. Fish and Wildlife Service

# Executive Summary

In May 2018, the New York State Department of Public Service (DPS) prepared a Generic Environmental Impact Statement (GEIS) pursuant to the New York State Environmental Quality Review Act (SEQRA), that analyzed the potential environmental impacts associated with the State's procurement of 2,400 megawatts (MW) of offshore wind by 2030. The Public Service Commission's (Commission) published the final GEIS (2018 GEIS) as part of the Order Establishing Offshore Wind Standard and Framework for Phase 1 Procurement in 18-E-0071 (2018 OSW Order). The 2018 GEIS and 2018 OSW Order compliments the Order Adopting a Clean Energy Standard (CES or CES Order), where the Commission recognized the development of offshore wind generation as one of numerous avenues required to achieve the State's renewable energy goals.

New York State's first statewide offshore wind solicitation, issued in November 2018 (ORECRFP18-1), garnered the most competitive market response to date among all U.S. state offshore wind solicitations. The New York State Energy Research and Development Authority (NYSERDA) received a total of 18 proposals from four developers. In October 2019, NYSEDA executed two contracts totaling 1,696 megawatts (MW). A second statewide solicitation planned for 2020 has the potential to result in a near-term total procurement of offshore wind beyond the 2,400 MW analyzed in the 2018 GEIS. Due to this rapid expansion of the offshore wind market and the successful inaugural solicitation in New York, this Supplemental Generic Environmental Impact Statement (SGEIS) will consider, in general and conceptual terms, the effects of an expected additional procurement of approximately 1,800 MW of offshore wind in the near term.

Consistent with 6 New York Codes, Rules and Regulations (NYCRR) §617.9(a)(7), an SGEIS is the appropriate mechanism for assessing environmental impacts in this matter. The additional procurement would represent a change in circumstances from the 2018 GEIS so additional evaluation of the potential effect on adverse impacts identified in prior analyses is required.

This SGEIS identifies and describes changes in the potential areas of environmental impact from the 2018 GEIS that may be associated with the State's incremental increase of approximately 1,800 MW in expected procurement of offshore wind in the near term, so that those potential impacts can be assessed in the future when specific offshore wind projects are undertaken or approved. This SGEIS builds upon and incorporates by reference relevant material from the 2018 GEIS.

The Proposed Action under consideration is the near-term procurement of approximately 1,800 MW of additional offshore wind through a competitive procurement for resources with the ability to deliver energy into New York. The Proposed Action would take advantage of the rapidly falling costs of offshore wind and advance the achievement of the State's renewable goals and directives. The procurement contemplated by the Proposed Action would likely encourage the development of new offshore wind development in the Atlantic Ocean. However, those projects if developed could be undertaken in a broad range of scenarios with variables, including, but not limited to, the geographic area of the marine environment subject to development, project timing, spatial scale, and technology. Therefore, it is not possible at this stage to meaningfully assess the specific potential environmental impacts of future offshore wind projects. Project-specific reviews would assess, at a site-specific level, all relevant potential environmental impacts as required under SEQRA. Those reviews will occur once a specific project is selected in the procurement and subsequently advances to the deployment stage.

Consistent with 6 NYCRR §617.9(a)(7), this SGEIS evaluates the potential for significant adverse environmental impacts arising from the near-term procurement of approximately 1,800 MW of additional offshore wind. The scope of this SGEIS addresses issues either not addressed in the 2018 GEIS or that need further analysis based on the increased scale of the proposed offshore wind procurement, including the resources for which potential unavoidable adverse impacts may occur and, therefore, potential cumulative impacts could occur. The 2018 GEIS addressed resource areas potentially impacted by development of offshore wind projects, including biological resources (benthic communities, marine mammals and sea turtles, fish, and birds), marine commercial and recreational uses and vessel traffic, cultural resources, socioeconomic, and visual and aesthetic resources. Potential impacts were considered in the context of regulatory requirements for avoidance, minimization, and mitigation strategies. The 2018 GEIS concluded that the resources for which potential unavoidable adverse impacts may occur and, therefore, potential cumulative impacts could occur as well include: (1) displacement, disturbance, or loss of habitat for marine mammals and sea turtles; (2) sensory disturbance to fish; (3) conflict with use of space for commercial and recreational vessels; and (4) displacement, disturbance, or loss of habitat and mortality/injury to birds. Therefore, this SGEIS considers the effects of the incremental increase of approximately 1,800 MW of offshore wind on these resources.

Other areas of potential impact analyzed in the 2018 GEIS that were determined to not experience a change in type or scale of impacts include: benthic communities, cultural resources, socioeconomic resources, visual and aesthetic resources, air quality, and climate change. These resources continue to not experience a potential significant adverse effect from the change in type or scale of impacts associated with the additional expected procurement, and therefore are not analyzed further in this SGEIS.

The Commission identified the No Action alternative as the reasonable alternative to the Proposed Action, wherein the State would not implement the procurement of an additional 1,800 MW of offshore wind in the near term. In the No Action alternative scenario, the State still expects to achieve its OSW goals and directives, although with the additional procurements the achievement of those goals may be accelerated. However, under the No Action alternative, development of offshore wind may still occur, and corresponding impacts on the marine environment may as well.

This SGEIS also considers the unavoidable impacts, irreversible and irretrievable commitment of resources, and effects on energy consumption due to the procurement of an additional 1,800 MW of offshore wind generating capacity. Since the Proposed Action of this SGEIS is not site- or project-specific, there are no unavoidable adverse impacts or irreversible and irretrievable commitment of resources associated with the Proposed Action. Any resulting development of offshore wind encouraged by the Proposed Action would consider site- or project-specific potential impacts during the federal and State approval processes for offshore wind project development. Furthermore, while the Proposed Action may affect the State's electric generation portfolio, it is not expected to directly or indirectly affect the amount of electricity used in the State or the amount of energy conserved in the State.

The Proposed Action could result in direct benefits in the form of additional economic development, workforce employment, and the avoidance of adverse health outcomes relative to those described in the 2018 GEIS. The Proposed Action also has the potential to lead to additional secondary benefits described in the GEIS, including further development of coastal tourism, indirect jobs associated with construction and operation, purchases of local products and services, and new or increased tax payments by employees and facilities.

The Commission, as lead agency, provided notice of completion and acceptance of the Draft SGEIS on February 6, 2020. The public notice provided in Docket 18-E-0071 and the Environmental Notice Bulletin identified the type of environmental impact statement (EIS), the contact person, and where to obtain physical and electronic copies of the document. Comments on the Draft SGEIS were requested to be filed via email, e-filing, mail, or delivery by Friday, March 20, 2020. Appendix A provides the responses to comments received on the Draft SGEIS. Revisions made to the Draft SGEIS are summarized in Appendix B.

# 1

## SEQRA and Description of the Proposed Action

In May 2018, the DPS prepared a GEIS pursuant to SEQRA, that analyzed the potential environmental impacts associated with the State's procurement of 2,400 MW of offshore wind by 2030.<sup>1</sup> The Commission published the 2018 GEIS as part of the 2018 OSW Order. The 2018 GEIS and 2018 OSW Order compliments the CES Order where the Commission recognized the development of offshore wind generation as one of numerous avenues required to achieve the State's renewable energy goals.<sup>2</sup>

In October 2019, NYSERDA released *Launching New York's Offshore Wind Industry: Phase 1 Report* (Phase 1 Report).<sup>3</sup> As described in the Phase 1 Report, New York State's first statewide offshore wind solicitation, issued in November 2018 (ORECRFP18-1), garnered the most competitive market response to date among all U.S. state offshore wind solicitations. NYSERDA received a total of 18 proposals from four developers. In October 2019, NYSERDA executed two contracts totaling 1,696 MW of offshore wind. A second statewide solicitation in 2020 has the potential to result in a near-term total procurement of offshore wind beyond the 2,400 MW analyzed in the 2018 GEIS. In addition, states neighboring the New York transmission grid set goals for development of more than 20,000 MW of offshore wind. Due to this rapid expansion of the offshore wind market and the successful inaugural solicitation in New York, this SGEIS will consider, in general and conceptual terms, the effects of an expected additional procurement of approximately 1,800 MW of offshore wind capacity in the near term. This SGEIS builds upon and incorporates by reference relevant material from the 2018 GEIS.

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<sup>1</sup> References in this document to offshore wind (and variations thereof) refer to the ability of an offshore wind facility to generate a maximum amount of power (in MW). For example, ten turbines rated at 10 MW each would yield a total nameplate capacity of 100 MW. Actual production will vary based on factors such as wind speed and curtailment procedures.

<sup>2</sup> The CES adopted the State Energy Plan goal that 50% of New York's electricity is to be generated by renewable sources by 2030 (50 by 30 goal) as part of a strategy to reduce statewide greenhouse gas emissions by 40% by 2030 (Case 15-E-0302, et al.).

<sup>3</sup> NYSERDA. 2019. *Launching New York's Offshore Wind Industry: Phase 1 Report* (Phase 1 Report). Final Report. Report Number 19-41. Accessed December 5, 2019. <https://www.nysERDA.ny.gov/All-Programs/Programs/Offshore-Wind/Offshore-Wind-Solicitations/Generators-and-Developers/2018-Solicitation>.

## **1.1 The New York State Environmental Quality Review Act**

SEQRA, as set forth in Article 8 of the Environmental Conservation Law, declares that it is the State’s policy to:

“... encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and enhance human and community resources; and to enrich the understanding of ecological systems, natural, human and community resources important to the people of the state.”

The purpose of SEQRA is to incorporate the consideration of environmental factors into the planning, review, and decision-making processes of State, regional, and local government agencies at the earliest possible time. Consistent with this intent, SEQRA requires agencies to identify the adverse impacts that could result from their actions and to consider how those impacts might be avoided or minimized. If the agency determines that an action may have a significant adverse impact, then the agency must prepare an Environmental Impact Statement (EIS).

### **Preparation of a Supplemental Environmental Impact Statement**

The 2018 GEIS was prepared in compliance with SEQRA to address the environmental impacts of the State’s goal of procuring 2,400 MW of offshore wind. SEQRA also addresses circumstances that may require a SGEIS, including changes proposed for the project, newly discovered information, or a change in circumstances related to the project. For the proposed 1,800 MW increase in the State’s goal for offshore wind procurement, consistent with 6 NYCRR §617.9(a)(7), a SGEIS is the appropriate mechanism for assessing environmental impacts. The proposed procurement of additional capacity represents a change in circumstances from the 2018 GEIS, and this SGEIS evaluates the potential effect the additional procurement on the adverse impacts identified in prior analyses that could result from the additional expected procurement.

The Commission, as lead agency, provided notice of completion and acceptance of the Draft SGEIS on February 6, 2020. The public notice provided in Docket 18-E-0071 and the Environmental Notice Bulletin identified the type of EIS, the contact person, and where to obtain physical and electronic copies of the document. Comments on the Draft SGEIS were requested to be filed via email, e-filing, mail, or delivery by Friday, March 20, 2020. Appendix A provides the responses to comments received on the Draft SGEIS. Revisions made to the Draft SGEIS are summarized in Appendix B.

## **1.2 Description of the Proposed Action**

The Proposed Action is the near-term procurement of approximately 1,800 MW of additional offshore wind capacity through a competitive procurement. The Proposed Action would take advantage of the rapidly falling costs of offshore wind development and advance the achievement of the State’s renewable goals and directives.

### **1.3 Purpose of this SGEIS**

Consistent with 6 NYCRR §617.9(a)(7) this SGEIS evaluates the potential for significant adverse environmental impacts arising from the near-term procurement of an additional increase of approximately 1,800 MW of offshore wind. The scope of this SGEIS addresses issues either not addressed in the 2018 GEIS or issues that need further analysis based on the increased scale of the proposed procurement of an additional 1,800 MW of offshore wind.

The 2018 GEIS addressed resource areas potentially impacted by development of offshore wind, including biological resources (benthic communities, marine mammals and sea turtles, fish, and birds), marine commercial and recreational uses and vessel traffic, cultural resources, socioeconomic, and visual and aesthetic resources. The environmental setting considered the marine environment, under state and federal jurisdiction; specifically, the geographic regions defined by Bureau of Ocean Energy Management as the North Atlantic Outer Continental Shelf and the Mid-Atlantic Outer Continental Shelf. Potential impacts were considered in the context of regulatory requirements for avoidance, minimization, and mitigation strategies. The 2018 GEIS concluded that the resources for which potential unavoidable adverse impacts may occur and, therefore, potential cumulative impacts that could occur include: (1) displacement, disturbance, or loss of habitat for marine mammals and sea turtles; (2) sensory disturbance to fish; (3) conflict with use of space for commercial and recreational vessels; and (4) displacement, disturbance, or loss of habitat and mortality/injury to birds. Therefore, this SGEIS considers the effects of the additional development of approximately 1,800 MW of offshore wind on these resources.

Other areas of potential impact analyzed in the 2018 GEIS that were determined to not experience potential significant adverse effects include: benthic communities, cultural resources, socioeconomic resources, visual and aesthetic resources, air quality, and climate change. These resources continue to not experience a potential significant adverse effect from the change in type or scale of impacts associated with the additional expected procurement, and therefore are not analyzed further in this SGEIS.

This SGEIS incorporates by reference the description of public benefits as required by 6 NYCRR § 617.9(b)(5)(i) that may result from increasing the supply of offshore wind resources described in Section 1.3 of the 2018 GEIS.

### **1.4 Relationship to Other Plans and Programs**

The additional offshore wind procurement will interact with a number of additional energy-related programs and plans in New York. Many of these programs are described in the New York State Energy Plan (NYSEP) and include, for example, initiatives contemplated under the Reforming the Energy Vision (REV) regulatory proceeding. Other related plans and programs include the New York State Offshore Wind Master Plan (Master Plan), the CES, NYSERDA's Clean

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## 1 *SEQRA and Description of the Proposed Action*

Energy Fund, the New York Green Bank, and the Regional Greenhouse Gas Initiative.<sup>4</sup> Under the “No Action” alternative scenario (see Chapter 6), these current programs are maintained and continue working towards achievement of New York’s clean energy goals and directives, including the procurement of up to 2,400 MW of offshore wind under the 2018 GEIS, without developing a specific procurement program for an additional 1,800 MW of offshore wind in the near term.

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<sup>4</sup> On July 18, 2019, Governor Cuomo signed the Climate Leadership and Community Protection Act (the CLCPA) which includes a mandate for New York State to develop 9,000 MW of offshore wind by 2035. See, Chapter 106 of the Laws of 2019. The potential environmental impacts associated with the State’s procurement of 9,000 MW of offshore wind generation capacity by 2035 will be analyzed in a separate supplemental SEQRA review to the SGEIS published in May 2016 in Case 15-E-0302.

# 2

## Description of Changes

Consistent with NYCRR § 617.9(b)(5)(ii), this chapter provides information on changes to the state and regional offshore wind industry as it relates to the implementation of the State's offshore wind procurement goals. The background information presented in this chapter and in Chapter 3 provides the baseline condition for assessing the potential impacts of the Proposed Action (Chapters 5 through 10). The information presented below becomes part of the No Action scenario (Chapter 6) and may assist in understanding the likely impacts of the Proposed Action.

This chapter builds upon and incorporates reference material from Chapter 2 of the 2018 GEIS. Chapter 2 of the 2018 GEIS focused primarily on trends in electricity demand and a description of potential offshore wind projects in New York and in the region. This SGEIS provides a description of the changes in those conditions relevant to evaluating the potential environmental impacts of the procurement:

- Section 2.1: Changes in Offshore Wind Markets
- Section 2.2: Changes in Potential Offshore Wind Projects
- Section 2.3: Potential Design Changes in Offshore Wind Projects

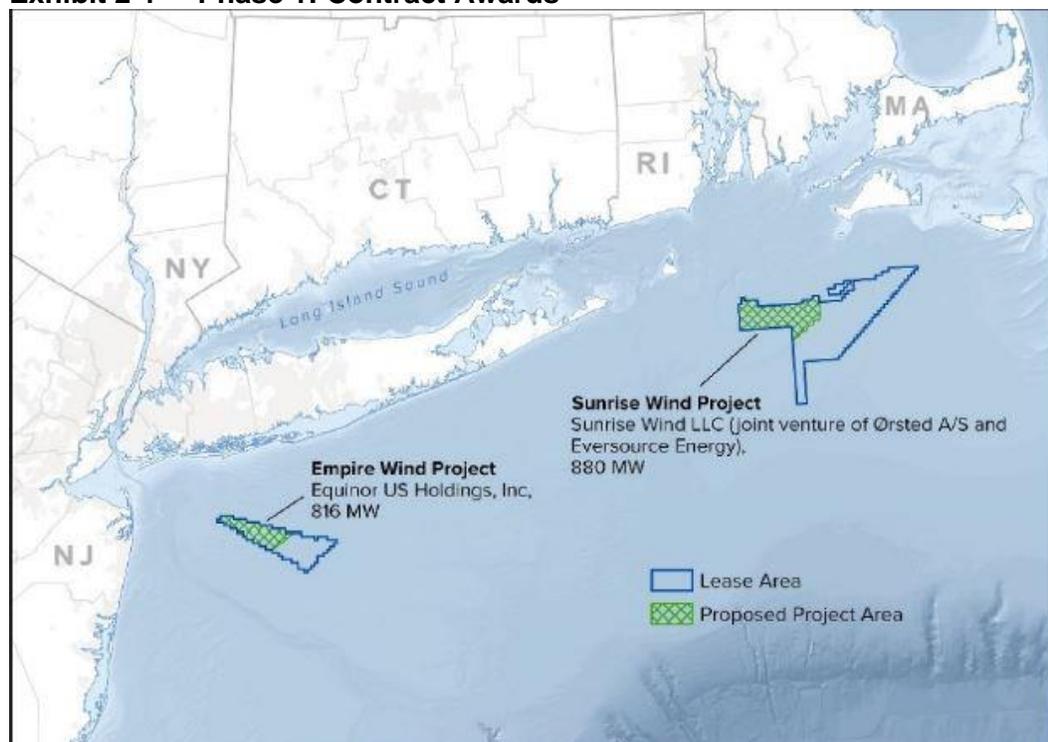
Updates included in the aforementioned sections differ from the content of Chapter 2 of the 2018 GEIS in order to include relevant updates to the regional offshore wind industry and State programs concerning offshore wind. The information presented below is limited and focused on specific factors that may assist in understanding the potential impacts of the Proposed Action.

### **2.1 Changes in Offshore Wind Markets**

The New York State and regional commitment to the offshore wind industry demonstrated by recent successful procurements creates a near-term opportunity for additional procurement and advancement of efforts to meet the State's offshore wind goals. After issuance of the 2018 OSW Order, NYSERDA procured 1,696 MW of offshore wind, enough to power more than one million New York homes and the single largest renewable energy procurement in United States history. On October 23, 2019, NYSERDA executed contracts with Equinor Wind US LLC for the 816 MW Empire Wind Project, and with Sunrise Wind LLC (a

joint venture of Ørsted A/S and Eversource Energy) for the 880 MW Sunrise Wind Project (Exhibit 2-1).<sup>5</sup>

**Exhibit 2-1 Phase 1: Contract Awards**



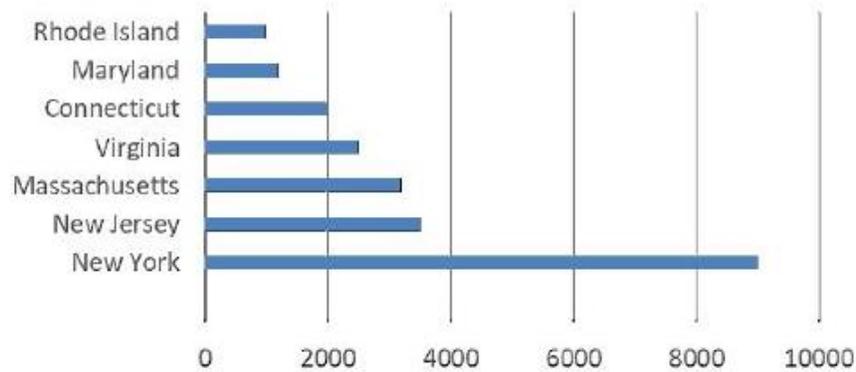
Source: NYSERDA

A second statewide solicitation planned for 2020 has the potential to result in a near-term total procurement of offshore wind in New York State beyond the 2,400 MW analyzed in the 2018 GEIS. The Proposed Action for the additional procurement of approximately 1,800 MW of offshore wind reflects New York’s commitment to achieving its renewable energy goals and the anticipated availability of offshore wind in the region, as discussed below.

The regional commitment to development of offshore wind also continues to grow. Other states in the region have established offshore wind goals that total more than 20,000 MW (Exhibit 2-2). Awarded solicitations collectively total over 6,000 MW, and additional solicitations and related actions are underway (Exhibit 2-3).

<sup>5</sup> Phase 1 Report (see note 4).

**Exhibit 2-2 Regional Offshore Wind Goals (MW)**



Source: Final Report

The Independent System Operator-New England (ISO-NE) and the PJM Interconnection LLC (PJM) are among the main grid connections in the region. The ISO-NE includes the coastal states of Connecticut, Maine, Massachusetts, New Hampshire, and Rhode Island; and the PJM Interconnection includes the coastal states of Delaware, Maryland, New Jersey, North Carolina, and Virginia. Considering the existing grid interconnections and the location of offshore wind leases in federal waters, offshore wind is a regional resource with the potential for procurements to include geographic diversity. This creates opportunity for New York, but also enhances the competition for offshore wind developments, and exposes New York to actions undertaken by other markets, including a potential shortage in supply should procurements outpace the Bureau of Ocean Energy Management’s (BOEM) identification of new lease areas.<sup>6</sup> Since publication of the 2018 GEIS, development of offshore wind has experienced increased interest from other states in the region. Local governments, decision-makers, stakeholders, workforce, and supply chains in the region are preparing to respond to the needs of the growing offshore wind industry in the U.S.

**Exhibit 2-3 New York State and Regional Offshore Wind Procurements and Solicitations**

State	Procurements	Additional Solicitations/Actions
New York	1,696 MW from Equinor Wind US LLC for the 816 MW Empire Wind Project and from Sunrise Wind LLC (a joint venture of Ørsted A/S and Eversource Energy) for the 880 MW Sunrise Wind Project (October 2019). <sup>7</sup>	“Climate Leadership and Community Protection Act (CLCPA)” signed into law in July 2019, mandating 9 GW in offshore wind capacity by 2035. <sup>8</sup>

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

**Exhibit 2-3 New York State and Regional Offshore Wind Procurements and Solicitations**

State	Procurements	Additional Solicitations/Actions
Connecticut	200 MW and 100 MW from Revolution Wind Project (procurements in June 2018 and December 2018, respectively). <sup>9, 10</sup>  804 MW from Vineyard Wind’s Park City Project (solicitation won December 2019; final contract pending). <sup>11</sup>	“An Act Concerning the Procurement of Energy Derived from Offshore Wind” signed into law on June 7, 2019, mandating 2,000 MW of offshore wind energy by 2030. <sup>12,13</sup>
Maine	N/A	State legislators have called for up to 5 gigawatts (GW) of offshore wind by 2030. <sup>14</sup>
Maryland	248 MW from US Wind and 120 MW from Ørsted’s Skipjack Project (May 2017). <sup>15</sup>	“Clean Energy Jobs Act” signed in law in May 2019, mandating 1,200 MW of solicitations for offshore wind to begin in 2020. <sup>16,17</sup>

- <sup>9</sup> Renewable Energy World. 2019. “PPA for 200-MW Offshore wind Farm Approved by Connecticut Regulators.” Accessed December 6, 2019. <https://www.renewableenergyworld.com/2018/12/27/ppa-for-200mw-offshore-wind-farm-approved-by-connecticut-regulators/>.
- <sup>10</sup> Connecticut Department of Energy and Environmental Protection (DEEP). 2018. “Governor Malloy Announces Zero-Carbon Resource Selections.” Accessed December 6, 2019. <https://www.ct.gov/deep/cwp/view.asp?Q=607002&A=4965>.
- <sup>11</sup> Greentech Media. 2019. “Vineyard Wins as Connecticut Chooses 804 MW Offshore Wind Project.” Accessed December 6, 2019. <https://www.greentechmedia.com/articles/read/breaking-connecticut-selects-vineyards-804mw-offshore-wind-project>.
- <sup>12</sup> Connecticut General Assembly. 2019. “An Act Concerning the Procurement of Energy Derived from Offshore Wind.” [House Bill No. 7156]. Accessed December 6, 2019. [https://www.cga.ct.gov/asp/cgabillstatus/cgabillstatus.asp?sel-BillType=Bill&which\\_year=2019&bill\\_num=7156](https://www.cga.ct.gov/asp/cgabillstatus/cgabillstatus.asp?sel-BillType=Bill&which_year=2019&bill_num=7156).
- <sup>13</sup> Connecticut DEEP. 2019. “2019 Offshore Wind Procurement: Up to 2,000 Megawatts.” Accessed December 6, 2019. [https://www.ct.gov/deep/cwp/view.asp?a=4405&Q=608948&deep-Nav\\_GID=2121](https://www.ct.gov/deep/cwp/view.asp?a=4405&Q=608948&deep-Nav_GID=2121).
- <sup>14</sup> American Jobs Project. “The Maine Jobs Project: A Guide to Creating Jobs in Offshore Wind.” Accessed December 6, 2019. [http://americanjobsproject.us/wp/wp-content/uploads/2018/06/Maine\\_Report\\_6\\_7\\_18\\_FINAL.pdf](http://americanjobsproject.us/wp/wp-content/uploads/2018/06/Maine_Report_6_7_18_FINAL.pdf).
- <sup>15</sup> Maryland PSC. 2017. “Case No. 9431, In the Matter of the Applications of US Wind, Inc. and Skipjack Offshore Energy, LLC for a Proposed Offshore Wind Project(s) Pursuant to the Maryland Offshore Wind Energy Act of 2013, Order No. 88192.” Accessed December 6, 2019. <http://www.psc.state.md.us/wp-content/uploads/Order-No.-88192-Case-No.-9431-Offshore-Wind.pdf>.
- <sup>16</sup> Renewable Energy World. 2019. “Maryland lawmakers pass Clean Energy Jobs Act.” Accessed December 6, 2019. <https://www.renewableenergyworld.com/2019/04/09/maryland-lawmakers-pass-clean-energy-jobs-act/#gref>.
- <sup>17</sup> The Office of Governor Larry Hogan. 2019. “Governor Hogan outlines bold energy strategy.” Accessed December 6, 2019. <https://governor.maryland.gov/2019/05/22/governor-hogan-outlines-bold-energy-strategy/>.

### Exhibit 2-3 New York State and Regional Offshore Wind Procurements and Solicitations

State	Procurements	Additional Solicitations/Actions
Massachusetts	800 MW from Vineyard Wind (May 2018). <sup>18</sup>  804 MW from Mayflower Wind (solicitation won October 2019; final contract pending). <sup>19</sup>	“An Act to Promote Energy Diversity” signed into law August 2016, requiring 1,600 MW of offshore wind capacity by 2027. <sup>20</sup>  “An Act to Advance Clean Energy” signed into law on July 2018, requiring an analysis to be completed to support an additional target of 1,600 MW of offshore wind by 2035 (doubling Massachusetts’ 2016 goal). <sup>21</sup>
New Hampshire	N/A	In 2019, Governor Sununu requested BOEM to establish an intergovernmental offshore renewable energy task force, and the State legislature passed a resolution supporting offshore wind development. <sup>22</sup>
New Jersey	1,100 MW from Ørsted’s Ocean Wind Project (July 2019). <sup>23</sup>	“Offshore Wind Economic Development Act” (OWEDA) signed into law in August 2010, and Executive Order #8 signed in January 2018, which directs relevant state agencies to implement OWEDA in order to meet the State goal of 3,500 MW of offshore wind by 2030. <sup>24</sup>
Rhode Island	400 MW from Deepwater Wind’s (later acquired by Ørsted U.S. Offshore Wind) Revolution Wind Project (June 2019). <sup>25</sup>	In 2017, Governor Raimondo established a target of 1,000 MW of renewable energy by 2020. <sup>26</sup>

<sup>18</sup> Wind Power Monthly. 2018. “Vineyard Wind secures levelized cost of \$65/MWh.” Accessed December 6, 2019. <https://www.windpowermonthly.com/article/1489414/vineyard-wind-secures-levelised-cost-65-mwh>.

<sup>19</sup> Massachusetts Clean Energy. 2019. “Massachusetts 83C II.” Accessed December 6, 2019. <https://macleanenergy.com/83c-ii/>.

<sup>20</sup> The Commonwealth of Massachusetts. 2016. “An Act to Promote Energy Diversity.” [House Bill No. 4568]. Accessed December 6, 2019. <https://malegislature.gov/bills/189/house/h4568>.

<sup>21</sup> The Commonwealth of Massachusetts. 2018. “An Act to Advance Clean Energy.” [House Bill No. 4857]. Accessed December 6, 2019. <https://malegislature.gov/Bills/190/H4857>.

<sup>22</sup> New Hampshire House Joint Resolution (HJR). 2019. “A resolution supporting efforts to develop wind power off the New Hampshire coast.” [19-0402]. Accessed December 6, 2019. [http://www.gencourt.state.nh.us/bill\\_Status/billText.aspx?id=398&sy=2019&txtFormat=html](http://www.gencourt.state.nh.us/bill_Status/billText.aspx?id=398&sy=2019&txtFormat=html).

<sup>23</sup> New Jersey BPU. 2019. “New Jersey Board of Public Utilities Awards Historic 1,100 MW Offshore Wind Solicitation to Ørsted’s Ocean Wind Project.” Accessed December 6, 2019. <https://www.bpu.state.nj.us/bpu/newsroom/2019/approved/20190621.html>.

<sup>24</sup> New Jersey Department of Environmental Protection (DEP). n.d. “Offshore Wind in New Jersey: Legislation.” Accessed December 6, 2019. <https://www.nj.gov/dep/aqes/offshorewind.html>.

<sup>25</sup> Recharge News. 2019. “Ørsted US offshore wind project gets key state approval.” Accessed December 6, 2019. <https://www.rechargenews.com/wind/orsted-us-offshore-wind-project-gets-key-state-approval/2-1-612409>.

<sup>26</sup> Center for Climate and Energy Solutions (C2ES). 2019. “From Coast to Coast: Offshore Wind Energy Expands in the United States.” Accessed December 6, 2019. <https://www.c2es.org/document/from-coast-to-coast-offshore-wind-energy-expands-in-the-united-states/>.

**Exhibit 2-3 New York State and Regional Offshore Wind Procurements and Solicitations**

State	Procurements	Additional Solicitations/Actions
Virginia	In 2018, the Virginia State Corporation Commissions approved the Coastal Virginia Offshore Wind Project by Dominion Energy (Ørsted contracted as developer) for 12 MW with construction anticipated to be complete in 2020. <sup>27</sup>	Executive Order #43 signed in September 2019, with a goal of 2.5 GW of offshore wind by 2026. <sup>28</sup>

**2.2 Potential Offshore Wind Projects**

Offshore wind development along the Atlantic Coast continues to advance with using BOEM’s existing lease area designations. Exhibit 2-4 lists known offshore wind projects in the region, including the development status of each lease. If ultimately developed without an offtake agreement, these lease areas could develop into wind farms from which New York State could procure additional offshore wind.

**Exhibit 2-4 Offshore Wind Projects under Development in the Region<sup>29</sup>**

Project Name (Lease Area)	Developer	Lease Area Description	Status	Off the Coast of
Garden State Offshore Energy (GSOE I) (OCS-A 0482)	Ørsted US Offshore Wind and PSEG partnership	70,098 acres	SAP submitted	Delaware
Dominion (OCS-A 0483)	Dominion Virginia Power (lessee)	112,800 acres	SAP approved (10/12/17)	Virginia
Revolution Wind (OCS-A 0486)	Ørsted US Offshore Wind and Ever-source, a 50-50 joint venture	97,683 acres. 700 MW anticipated	COP survey amendments (5/31/19)	Rhode Island and Massachusetts
South Fork Wind Farm (OCS-A 0486)	Ørsted US Offshore Wind and Ever-source, a 50-50 joint venture	11,387 acres (OCS-A 0486 is 97,498 acres in total) — 132 MW is anticipated	COP updated (5/24/19)	Rhode Island and Massachusetts
Sunrise Wind (OCS-A 0487)	Ørsted US Offshore Wind and Ever-source, a 50-50 joint venture	67,250 acres — 880 MW is anticipated	SAP due 1/1/23	Offshore Rhode Island and Massachusetts
MarWin (OCS-A 0490)	US Wind	79,707 acres. 1,000 MW anticipated	SAP approved (3/22/18)	Maryland

<sup>27</sup> Dominion Energy. 2019. “Coastal Virginia Offshore Wind.” Accessed December 6, 2019. <https://www.dominionenergy.com/company/making-energy/renewable-generation/wind/coastal-virginia-offshore-wind>.

<sup>28</sup> Commonwealth of Virginia. 2019. “Executive Order #43.” Accessed December 6, 2019. <https://www.governor.virginia.gov/media/governorviriniagov/executive-actions/EO-43-Expanding-Access-to-Clean-Energy-and-Growing-the-Clean-Energy-Jobs-of-the-Future.pdf>.

<sup>29</sup> New York State Fisheries Technical Working Group. 2019. “Lease Map.” Accessed December 17, 2019. <https://nyfisheriestwg.ene.com/Resources/LeaseMap>.

**Exhibit 2-4 Offshore Wind Projects under Development in the Region<sup>29</sup>**

Project Name (Lease Area)	Developer	Lease Area Description	Status	Off the Coast of
Coastal Virginia Offshore Wind (CVOW) Project (OCS-A 0497)	Virginia Department of Mines, Minerals and Energy (lessee). Virginia Electric and Power Company (Dominion) (lease operator); Ørsted US Offshore Wind (developer).	2,135 acres — 12 MW is anticipated	Approved Research Activities Plan (RAP) (3/24/16)	Virginia
Ocean Wind (OCS-A 0498)	Ørsted US Offshore Wind	16,0480 acres — 1,100 MW anticipated	SAP approved (5/16/18)	New Jersey
Atlantic Shores Offshore Wind (OCS-A 0499)	Shell New Energies LLC and EDF Renewables North America, 50-50 joint venture	183,353 acres — 2,500 MW anticipated	Transferred to Shell/EDF in December 2018	New Jersey
Bay State Wind (OCS-A 0500)	Ørsted US Offshore Wind and Ever-source, a 50-50 joint venture	192,000 acres — 800 MW anticipated	COP submitted (3/18/19)	Massachusetts
Vineyard Wind (OCS-A 0501)	Vineyard Wind, Avangrid Renewables and Copenhagen Infrastructure Partners (CIP), a 50-50 joint venture	166,866 acres	SAP approved (5/10/18). BOEM published NOI in Federal Register on 12/7/18 for the Draft EIS for the COP. Public commented period ended 2/22/19, which included an extension of the 45-day period due to the federal government shut-down.	Massachusetts
Kitty Hawk (OCS-A 0508)	Avangrid Renewables	122,405 acres — 2,400 MW anticipated	Lease effective as of 11/1/17	North Carolina
Empire Wind & Boardwalk Wind (OCS-A 0512)	Equinor Wind US	79,350 acres — 2,000 MW anticipated	SAP approved (11/21/18)	New York
Skipjack Wind Farm (OCS-A 0519)	Ørsted US Offshore Wind (developer); Skipjack Offshore Energy (lessee)	26,331 acres. 120 MW anticipated	COP submitted (4/23/19)	Delaware
TBD (OCS-A 0520)	Equinor Wind US	128,811 acres — 2,000 MW anticipated	Lease acquired 12/14/18	Massachusetts
Mayflower Wind Energy (OCS-A 0521)	Shell New Energies LLC and EDPR Offshore North America LLC, 50-50 joint venture	127,388 acres	Lease acquired 12/14/18	Massachusetts

**Exhibit 2-4 Offshore Wind Projects under Development in the Region<sup>29</sup>**

Project Name (Lease Area)	Developer	Lease Area Description	Status	Off the Coast of
Vineyard Wind (OCS-A 0522)	Vineyard Wind, Avangrid Renewables and Copenhagen Infrastructure Partners (CIP), a 50-50 joint venture	132,370 acres	Lease acquired 12/14/18	Massachusetts
N/A (New York Bight Call Area)	N/A	1,735,192 acres	Call for Information and Nominations on 4/11/18. Draft Wind Energy Areas issued in late November 2018, including BOEM's primary recommendations and secondary recommendations for areas within the New York Bight Call Areas.	Four Call Areas in the New York Bight (Hudson South, Hudson North, Fairways South, and Fairways North), which include 222 whole OCS blocks and 172 partial blocks totaling approximately 2,047 square nautical miles.
N/A (North Carolina Call Area)	N/A	185,227 acres	Due to their proximity and shared attributes, the Call Areas have been coupled with the planning and leasing process for the South Carolina Call Areas. Call for Information and Nominations on 11/23/15.	Two Call Areas offshore North Carolina (Wilmington East and Wilmington West)
N/A (South Carolina Call Area)	N/A	855,791 acres	Call for Information and Nominations on 11/23/15.	Four Call Areas offshore South Carolina (Grand Strand, Cape Romain, Charleston, Winyah)

Key:

- TBD = to be determined
- N/A = not applicable
- SAP = Site Assessment Plan
- COP = Construction and Operations Plan
- EIS = Environmental Impact Statement
- NOI = Notice of Intent
- BOEM = Bureau of Ocean Energy Management
- RAP = Research Activities Plan

### 2.3 Potential Design Changes in Offshore Wind Projects

The additional 1,800 MW of offshore wind could occur through several types of changes in offshore wind development, including an increase in number of turbines at a proposed project, an increase in the size of turbines, and potentially a corresponding increase in the number of inter-array cables.

The 2018 GEIS considered trends in the average increase in size and capacity of offshore turbines in Section 5.1. At that time, it was projected that by 2022 an average nameplate capacity of offshore turbines would be 10 MW, and by 2030, 15 MW. These trends affect the array density, which combines the nameplate capacity of turbines, the spacing of the turbines, and the wind resource. Each project developer considers multiple site-specific factors, and an array density will be unique for each project. In 2018, the National Renewable Energy Laboratory (NREL) reported an array density of 3 MW per square kilometer based on an average turbine capacity of 5.5 MW. NREL also reported that three manufacturers announced the development of turbines rated greater than 10 MW.<sup>30</sup> Similarly, per the Phase 1 Report, the Equinor Wind US LLC Empire Wind Project is expected to be developed with 60 to 80 wind turbines, with an installed capacity of more than 10 MW each. In October 2019, U.S. Wind notified the Maryland Public Service Commission that it was considering 10 MW and 12 MW turbines, and in June 2019, Skipjack notified the Commission that it plans to use 12 MW turbines.<sup>31</sup> U.S. Wind also stated that its selection of a larger turbine will enable the project to utilize fewer turbines further from shore. The array density of offshore wind projects is increasing more quickly than the projections in the 2018 GEIS, and the footprint of additional capacity would not be expected to increase linearly or in direct proportion to the proposed MW. The average turbine capacity associated with the proposed procurement of an additional 1,800 MW is anticipated to be larger than the average turbine capacity considered in the 2018 GEIS, and a decrease in the project footprint may occur.

The actual size of turbines installed as part of specific offshore wind projects may vary, with a corresponding range of potentially affected areas. For example, developers may choose to use a fewer number of larger turbines rather than a greater number of smaller turbines to generate an additional 1,800 MW of offshore wind. The combined footprint of these larger turbines may be equal to and would likely be smaller than the combined footprint of a set of smaller turbines that have the same total generation capacity. If all the additional 1,800 MW of offshore wind occurs at one location, the current anticipated array density represents a potential footprint of approximately 82,000 acres, or less than 1 percent of the geographic scope of analysis considered in the 2018 GEIS (an area offshore of New York identified by the State as most likely to accommodate offshore wind development).

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<sup>30</sup> USDOE. 2018. 2018 Offshore Wind Technologies Market Report. Accessed January 16, 2020. Available at:

<sup>31</sup> Maryland Public Service Commission. 2019. Order No. 89395 - Case Nos. 9628 and 9629 - Order Establishing Inquiry Into Material Changes in Turbine Selection. Accessed January 16, 2020.

In addition, Section 5.1 of the 2018 GEIS considered monopile and jacket foundations as the most likely design of wind turbine structures for the Atlantic Coast. Since then, developers have been considering alternatives, including both gravity foundations and floating turbines. For example, Equinor Wind US LLC committed to using gravity-based structure foundations for the Empire Wind Project.<sup>32</sup> The use of gravity-based foundations would significantly reduce or avoid pile driving and associated noise impacts during offshore wind turbine installation, compared to the use of monopile and jacket foundations.

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<sup>32</sup> NYSERDA. 2019.

# 3

## Environmental Setting

Consistent with 6 NYCRR §617.9(b)(5)(ii), Chapter 3 of the 2018 GEIS provided a “concise description of the environmental setting of the areas to be affected, sufficient to understand the impacts of the proposed action and alternatives.” As described in Chapter 3 of the 2018 GEIS, the environmental setting focuses primarily on the marine environment, which includes submerged lands, subsoil, seabed, and water under States’ jurisdiction and federal jurisdiction (termed the Outer Continental Shelf [OCS]).<sup>33</sup> The marine environment under federal jurisdiction includes the geographic regions defined by BOEM as the North Atlantic OCS and Mid-Atlantic OCS.<sup>34</sup> The environmental setting considered herein includes these offshore areas from which offshore wind can reasonably be expected to be transmitted to New York State, including waters offshore of New York State.<sup>35</sup> Consistent with 6 NYCRR §617.9(b)(5)(ii), Chapter 3 of the 2018 GEIS provided a “concise description of the environmental setting of the areas to be affected, sufficient to understand the impacts of the proposed action and alternatives.”

This SGEIS incorporates by reference material from Chapter 3 of the 2018 GEIS and provides relevant updates to the regional environmental setting as they pertain to the resources for which the 2018 GEIS indicated potential unavoidable adverse impacts including sensitive biological resources: (marine mammals and sea turtles, fish, and birds), commercial and recreational uses, and vessel traffic. Based on a review of recent literature and agency species listings, relevant environmental changes since the 2018 GEIS are discussed below.

The 2018 GEIS identifies “sensitive biological resources” as state-listed and federally listed species that could exist within the environmental setting for regional offshore wind development, including those designated as threatened or endangered, as well as marine mammals protected under the Marine Mammal Protection Act (MMPA), fish with designated Essential Fish Habitat (EFH) under the

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<sup>33</sup> BOEM. n.d. “Outer Continental Shelf.” Accessed December 17, 2019. <https://www.boem.gov/Outer-Continental-Shelf/>.

<sup>34</sup> The North Atlantic OCS includes the planning area off the coasts of Maine, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, and New Jersey, while the Mid-Atlantic OCS includes the planning area off the coasts of Delaware, Maryland, Virginia, and North Carolina.

<sup>35</sup> BOEM. 2014. “Outer Continental Shelf (OCS) Planning Area Boundaries.” Accessed December 17, 2019. <https://www.boem.gov/Atlantic-OCS-Planning-Area>.

Magnuson-Stevens Fisheries Conservation and Management Act, coral reefs, marine sanctuaries, and migratory birds protected under the Migratory Bird Treaty Act (MBTA).

The status and potential for occurrence of federally listed species identified in Exhibit 3-1 of the 2018 GEIS has not changed; however, the federally endangered North Atlantic right whale has continued to experience an Unusual Mortality Event (UME) since before the 2018 GEIS was issued.<sup>36</sup> As part of the active UME for the North Atlantic right whale, three whales were stranded in 2018 and 10 whales were stranded in 2019 (i.e., reported since the time of the 2018 GEIS).<sup>37</sup> A total of 30 mortalities are associated with the active UME, the majority (21) of which were in Canada.<sup>38</sup> Mortalities were primarily the result of vessel strike and fisheries entanglements.<sup>39</sup> The North Atlantic right whale is an especially sensitive marine mammal species due to its declining population trend since 2010.<sup>40</sup> The current population of North Atlantic right whales is estimated to have declined from approximately 451 in 2016 to 428 in 2017.<sup>41, 42</sup>

Other marine mammals subject to new or ongoing UMEs since the 2018 GEIS was issued include humpback whales, minke whales, and pinnipeds (specifically harbor and gray seals).<sup>43,44,45</sup> However, these marine mammals are not federally

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<sup>36</sup> The MMPA (16 U.S.C. 1421h Sec. 410) defines a UME as “a stranding that is unexpected; involves a significant die-off of any marine mammal population; and demands immediate response.” In 2006, seven new criteria were established for designating a mortality event as “unusual” (71 FR 75234); most of the criteria do not signify a population-level impact.

<sup>37</sup> *Ibid.*

<sup>38</sup> *Ibid.*

<sup>39</sup> Daoust, P.Y., E.L. Couture, T. Wimmer, and L. Bourque. 2018. Incident Report: North Atlantic Right Whale Mortality Event in the Gulf of St. Lawrence, 2017. Collaborative Report Produced by: Canadian Wildlife Health Cooperative, Marine Animal Response Society, and Fisheries and Oceans Canada. 256 pp.

<sup>40</sup> Pettis, H.M., R.M. Pace III, and P.K. Hamilton. 2018. North Atlantic Right Whale Consortium 2018 Annual Report Card. Report to the North Atlantic Right Whale Consortium. Accessed December 26, 2019. <https://www.narwc.org/report-cards.html>.

<sup>41</sup> Pettis, H.M., et al. 2018. “North Atlantic Right Whale Consortium 2017 annual report card to the North Atlantic Right Whale Consortium.” Amended 8/18/2018. Accessed December 26, 2019. <https://www.narwc.org/report-cards.html>.

<sup>42</sup> Pettis, H.M., R.M. Pace III, and P.K. Hamilton. 2018. North Atlantic Right Whale Consortium 2018 Annual Report Card. Report to the North Atlantic Right Whale Consortium. Accessed December 26, 2019. <https://www.narwc.org/report-cards.html>.

<sup>43</sup> NOAA Fisheries. 2019. “2016-2019 Humpback Whale Unusual Mortality Event along the Atlantic Coast. Accessed December 13, 2019. <https://www.fisheries.noaa.gov/national/marine-life-distress/2016-2019-humpback-whale-unusual-mortality-event-along-atlantic-coast>.

<sup>44</sup> NOAA Fisheries. 2019. “2017-2019 Minke Whale Unusual Mortality Event along the Atlantic Coast.” Accessed December 13, 2019. <https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2019-minke-whale-unusual-mortality-event-along-atlantic-coast#minke-whale-strandings>.

<sup>45</sup> NOAA Fisheries. 2019. “2018–2019 Pinniped Unusual Mortality Event Along the Northeast Coast.” Accessed December 23, 2019. <https://www.fisheries.noaa.gov/new-england-mid-atlantic/marine-life-distress/2018-2019-pinniped-unusual-mortality-event-along>.

listed and the potential for occurrence of these species in the North Atlantic and Mid-Atlantic OCS has not changed since the 2018 GEIS.

Exhibit 3-2 in the 2018 GEIS lists migratory birds included on the U.S. Fish and Wildlife Service (USFWS) 2008 Birds of Conservation Concern list<sup>46</sup> and other migratory birds that potentially occur in the area of the OCS and could be affected by wind power development. Numerous other migratory bird species protected under the MBTA may be present in the Atlantic OCS; however, as discussed in the 2018 GEIS, those species are not expected to be particularly susceptible to the effects of offshore wind development activities. However, information on some species identified in Exhibit 3-2 in the 2018 GEIS may be indicative of the anticipated effects of climate change. For example, during the winter of 2018-2019, extraordinary numbers of razorbill (*Alca torda*) occurred in the waters south of Long Island.<sup>47</sup> The expanded presence may be the result of climate change as cold water from increasing ice melt is affecting the North Atlantic Oscillation, which in turn is affecting distribution of razorbill prey such as sand lance (family *Ammodytidae*). Increases in razorbill off Long Island have been correlated with strong fluctuations in the North Atlantic Oscillation.<sup>48,49</sup>

Exhibit 3-3 of the 2018 GEIS lists the New York State endangered and threatened animal species believed or known to occur in New York. Exhibit 3-1 below lists the New York State endangered and threatened animal species believed or known to occur in New York not identified in Exhibit 3-3 in the 2018 GEIS. Additionally, the New York State Department of Environmental Conservation (NYSDEC) is proposing to revise the state's endangered, threatened, and species of concern list. The draft list is available for review, and public comments were accepted until January 24, 2020.<sup>50</sup>

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<sup>46</sup> U.S. Fish and Wildlife Service. 2008. Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia. 85 pp. Accessed January 21, 2020. <https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>

<sup>47</sup> Futuyma, D. 2019. Region 10 - Marine regional report. *The Kingbird*. Vol. 69, No. 2, June 2019. Published by the New York State Ornithological Association.

<sup>48</sup> Ibid.

<sup>49</sup> Veit, R.R. and L.L. Manne. 2015. Climate and changing winter distribution of alcids in the Northwest Atlantic. *Front. Ecol. Evol.* 3:38. doi: 10.3389/fevo.2015.00038.

<sup>50</sup> NYSDEC. 2020. "Current and Proposed Status of All Species on Proposed List." Accessed March 24, 2020. <https://www.dec.ny.gov/animals/7494.html>.

**Exhibit 3-1 Additional New York State Listed Endangered and Threatened Animal Species Believed or Known to Occur in New York<sup>51</sup>**

Species	New York State Status
<b>Mammals</b>	
Humpback whale ( <i>Megaptera novaeangliae</i> ) <sup>a</sup>	E
<b>Reptiles</b>	
Green sea turtle ( <i>Chelonia mydas</i> )	T
Loggerhead sea turtle ( <i>Caretta caretta</i> )	T
Kemp's Ridley sea turtle ( <i>Lepidochelys kempii</i> )	E
Leatherback sea turtle ( <i>Dermochelys coriacea</i> )	E
Atlantic hawksbill sea turtle ( <i>Eretmochelys imbricata</i> ) <sup>a</sup>	E
<b>Birds</b>	
Eskimo Curlew ( <i>Numenius borealis</i> ) <sup>a</sup>	E
Red Knot ( <i>Calidris canutus rufa</i> )	T
<b>Fish</b>	
Gilt Darter ( <i>Percina evides</i> )	E

Note:

<sup>a</sup> Species that are currently state-listed but that NYSDEC is proposing to remove from the State list.

Key:

E = Endangered

T = Threatened

Since the 2018 GEIS was issued, one change potentially relevant to the commercial and recreational uses of the marine environment in the North Atlantic and Mid-Atlantic OCS is the December 2018 competitive lease sale (i.e., auction) for Wind Energy Areas offshore Massachusetts, including Lease Areas OCS-A 0520 (128,811 acres), OCS-A 0521 (127,388 acres), and OCS-A 0522 (132,370 acres).<sup>52</sup> These leases reflect a substantial increase in the potential area to be developed for offshore wind, as discussed in Chapter 2 of this SGEIS. However, these areas are contiguous with previously established lease areas off the coast of Massachusetts, and they are expected to be managed by BOEM in a way that suitably accommodates other marine users by applying the mitigation strategies outlined in Chapter 4 of this SGEIS. The 2018 GEIS noted that three international transatlantic fiber optic cables proposed for landfall in Virginia Beach were under construction and therefore were not shown on Exhibit 3-4 of the 2018 GEIS. Since then, the North American Submarine Cable Association Cable Awareness (NASCA) chart and corresponding NOAA nautical chart for the area have been updated to reflect installation of two of these Virginia Beach cables (BRUSA and

<sup>51</sup> Ibid.

<sup>52</sup> Bureau of Ocean Energy Management. n.d. Commercial Leases OCS-A 0520, 0521, And 0522 (web page). Accessed January 16, 2020. <https://www.boem.gov/renewable-energy/state-activities/commercial-leases-ocs-0520-0521-and-0522>.

MAREA),<sup>53</sup> and a fourth cable has been proposed for landfall at the same general location.<sup>54</sup> These changes are consistent with the marine spatial use considered in the 2018 GEIS. Similarly, updates to NASCA and NOAA Charts since October 2018 indicate the installation of a new trans-Atlantic telecommunication cable making landfall in New Jersey (Havfrue Segment 1).<sup>55</sup> This cable closely parallels an existing cable on the Atlantic OCS and does not represent a significant change in baseline conditions. No other significant changes to commercial and recreational uses of the marine environment were identified since the 2018 GEIS. This conclusion is based primarily on a literature review of literature regarding commercial and recreational fishing practices available on the Tethys database<sup>56</sup> categorized under the human dimensions (i.e., fisheries, marine spatial planning, navigation, recreation and tourism), and fishery management plans available from the Mid-Atlantic Fishery Management Council and Atlantic States Marine Fisheries Commission.<sup>57,58</sup> Additionally, there are no active or requested sand or gravel leases in the Mid-Atlantic or North Atlantic OCS.<sup>59</sup>

Based on a review of publicly available databases that provide automatic identification system transects for fishing and transportation vessels, as well as vessel monitoring system data for multiple commercial fisheries, significant changes to vessel traffic in North Atlantic and Mid-Atlantic OCS waters occurred since the 2018 GEIS.<sup>60,61,62</sup>

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<sup>53</sup> Global Marine Group. 2019. NASCA Cable Awareness Chart - Mid-Atlantic Region, Chart no. 12200 – Cape May to Cape Hatteras. Edition No. 3 August 2019. Accessed January 16, 2020. <https://nasca.globalmarine.group/northeastcharts/12200.pdf>.

<sup>54</sup> Huawei Marine Networks. 2017. “TeleGeography Submarine Cable Map.” Accessed January 16, 2020. <https://www.submarinecablemap.com/#/>.

<sup>55</sup> Global Marine Group. 2019. NASCA Cable Awareness Chart - Mid-Atlantic Region, Chart no. 12300 - Approaches to New York. Edition No. 3 August 2019. Accessed January 16, 2020. <https://nasca.globalmarine.group/northeastcharts/12300.pdf>.

<sup>56</sup> Tethys. 2020. “Knowledge Base.” Accessed January 13, 2019. <https://tethys.pnnl.gov/knowledge-base-all>.

<sup>57</sup> Mid-Atlantic Fishery Management Council. 2020. “Fishery Management Plans and Amendments.” Accessed on January 13, 2020. <http://www.mafmc.org/fishery-management-plans>.

<sup>58</sup> Atlantic States Marine Fisheries Commission. 2020. “Fisheries Management.” Accessed January 13, 2020. <http://www.asmfmc.org/fisheries-management/program-overview>.

<sup>59</sup> BOEM. 2019. Requests and Active Leases [web page]. Updated November 4, 2019. Accessed January 17, 2020. <https://www.boem.gov/marine-minerals/requests-and-active-leases>.

<sup>60</sup> Mid-Atlantic Ocean Data Portal (MARCO portal). 2020. “Theme Map.” Accessed January 13, 2020. <https://portal.midatlanticocean.org>.

<sup>61</sup> Northeast Ocean Data. 2020. “Theme Maps.” Accessed January 13, 2020. <https://www.northeastoceandata.org/data-explorer/>.

<sup>62</sup> Marine Cadastre. 2020. “National Viewer.” Accessed January 13, 2020. <https://marinecadastre.gov/nationalviewer/>.

# 4

## Regulatory Framework and Mitigation of Potential Adverse Impacts

Consistent with 6 NYCRR §§617.9(b)(5)(iv) and 617.11(d)(5) of SEQRA, Chapter 4 of the 2018 GEIS identified federal and state regulations that will help ensure, to the maximum extent practicable, avoidance, minimization, or mitigation of adverse environmental impacts that may occur due to the procurement of 2,400 MW of offshore wind. This SGEIS incorporates by reference material from Chapter 4 of the 2018 GEIS and provides relevant updates to federal and state regulations and guidance concerning offshore wind development activities, as well as updates related to avoidance, minimization, and mitigation strategies.

### 4.1 Federal and State Regulations and Guidance Relevant to Offshore Wind Development Activities

As described in Chapter 4, Section 4.1 of the 2018 GEIS, offshore wind development projects in the OCS are subject to review and decision-making by BOEM and other federal and state agencies. Offshore wind farm developers will be expected to adhere to these project-specific and site-specific regulations and permitting processes. Exhibit 4-1 in the 2018 GEIS lists federal and New York State regulations, permits, review, and guideline processes potentially applicable to offshore wind development. The requirements identified in Exhibit 4-1 in the 2018 GEIS remain in effect without substantive changes and will continue to help ensure, to the maximum extent practicable, avoidance, minimization, or mitigation of adverse environmental impacts that may occur due to the procurement of an additional 1,800 MW of offshore wind. However, recent changes are being implemented at the federal level with the intention of streamlining certain review processes that are relevant to offshore wind projects, as described below.

Pursuant to Executive Order 13807 (August 15, 2017), the One Federal Decision approach is being implemented via an April 2018 Memorandum of Understanding (MOU) between multiple federal agencies, including the Department of Interior (DOI), which is the parent agency for BOEM.<sup>63</sup> The MOU is intended to “establish a cooperative relationship for the timely processing of environmental reviews

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<sup>63</sup> 2018 Memorandum of Understanding Implementing One Federal Decision under Executive Order 13807 (Effective April 10, 2018). Accessed December 20, 2019.

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## 4 Regulatory Framework and Mitigation of Potential Adverse Impacts

and authorization decisions for proposed major infrastructure projects... For each major infrastructure project, agencies will work together to develop a single permitting timetable for the necessary environmental review and authorization decisions, prepare a single EIS, sign a single record of decision (ROD), and issue all necessary authorization decisions within 90 days of issuance of the ROD, subject to limited exceptions.”<sup>64</sup> The MOU follows DOI Secretarial Order 3355, which was executed on August 31, 2017, to implement Executive Order 13807 by streamlining the National Environmental Policy Act (NEPA) review processes conducted by DOI bureaus such as BOEM.<sup>65</sup> Because Order 3355 was in effect several months in advance of the 2018 GEIS, and the order’s prescribed review periods are consistent with the MOU, no significant change to the NEPA review is anticipated for the offshore wind projects associated with the proposed additional 1,800 MW procurement.

Since publication of the 2018 GEIS, both the USFWS and National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) adopted revisions to the ESA Section 7 consultation process with respect to interagency cooperation. The final Section 7 rules were effective as of October 28, 2019 (84 FR 44976). These rule changes more closely align USFWS policy with that of NOAA Fisheries, such that no significant change is anticipated to the ESA consultation process for an offshore wind project.

### 4.2 Avoiding, Minimizing, and Mitigating Potential Impacts

As described in the 2018 GEIS, the required avoidance, minimization, and mitigation of potential environmental impacts from future offshore wind development would occur on a project-specific basis as part of the leasing and permitting process for each offshore wind project.

Exhibit 4-2 of the 2018 GEIS summarized measures required by regulation or developed through agency consultations based on site-specific conditions that avoid, minimize, or mitigate, to the extent practicable, potential impacts on environmental resources from offshore wind development. Since the 2018 GEIS, BOEM, New York State, and other parties at the local, state, regional, and federal level continue to identify and develop additional measures to avoid, minimize, and mitigate potential adverse impacts from offshore wind development. These efforts are informing current and future guidance, regulations, contracts, and agreements to implement additional suitable measures, as exemplified in the discussion below.

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<https://www.whitehouse.gov/wp-content/uploads/2018/04/MOU-One-Federal-Decision-m-18-13-Part-2-1.pdf>.

<sup>64</sup> Ibid.

<sup>65</sup> The Secretary of the Interior. 2017. Order 3355 – Subject: Streamlining National Environmental Policy Act Reviews and Implementation of Executive Order 13807. Accessed December 20, 2019. [https://www.doi.gov/sites/doi.gov/files/elips/documents/3355\\_-\\_streamlining\\_national\\_environmental\\_policy\\_reviews\\_and\\_implementation\\_of\\_executive\\_order\\_13807\\_establishing\\_discipline\\_and\\_accountability\\_in\\_the\\_environmental\\_review\\_and\\_permitting\\_process\\_for.pdf](https://www.doi.gov/sites/doi.gov/files/elips/documents/3355_-_streamlining_national_environmental_policy_reviews_and_implementation_of_executive_order_13807_establishing_discipline_and_accountability_in_the_environmental_review_and_permitting_process_for.pdf).

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In 2018, BOEM issued a final summary report of the March 2017 Best Management Practices Workshop for Atlantic Offshore Wind Facilities and Marine Protected Species.<sup>66</sup> In 2019, BOEM issued additional guidelines regarding the preparation of renewable energy Site Assessment Plans (SAPs). These additional guidelines identify the applicability of certain best management plans (BMPs) to meteorological towers and metocean buoys, and also include oil spill response requirements for SAP activities.<sup>67</sup> BOEM is also preparing new guidance for BMPs resulting from the ROD for the 2007 Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternate Use of Facilities on the Outer Continental Shelf.<sup>68</sup> For instance, BOEM proposed new guidelines for lighting and marking structures related to offshore wind development, which address both environmental and navigational safety.<sup>69</sup>

Since 2018, in furtherance of New York State's commitment to responsible offshore wind development, NYSERDA has continued to build upon the planning and outreach efforts first undertaken during the Master Plan<sup>70</sup> development. NYSERDA has conducted over 100 briefings with stakeholders; hosted seven open houses and stakeholder roundtables; and convened four Technical Working Groups (TWGs) in the areas of Environmental; Commercial Fishing; Maritime; and Jobs and Supply Chain to gather input on responsible offshore wind development. These collaborative TWGs are recognized in the offshore wind industry for their expertise and continued engagement of local stakeholders, which is advancing agency and developer awareness of ways to avoid, minimize, and mitigate potential impacts from offshore wind development.<sup>71</sup> For example, based on recommendations of the TWGs, the Commission included a contract requirement for offshore wind developers to submit a fisheries mitigation plan and an environmental mitigation plan, and commit to consulting with the Environmental TWG

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<sup>66</sup> BOEM. 2018. Summary Report: Best Management Practices Workshop for Atlantic Offshore Wind Facilities and Marine Protected Species (2017). Sterling (VA): US Department of the Interior, Bureau of Ocean Energy Management, Atlantic OCS Region, Washington, D.C. OCS Study BOEM 2018-015. Accessed January 17, 2020. <https://www.boem.gov/renewable-energy/best-management-practices-workshop-atlantic-offshore-wind-facilities-and-marine>.

<sup>67</sup> BOEM. 2019. "Information Requirements for a Renewable Energy Site Assessment Plan (SAP)." June 2019. Accessed December 20, 2019. <https://www.boem.gov/sites/default/files/renewable-energy-program/BOEM-Renewable-SAP-Guidelines.pdf>.

<sup>68</sup> Ibid.

<sup>69</sup> BOEM. 2019. "Draft Proposed Guidelines for Providing Information on Lighting and Marking of Structures Supporting Renewable Energy Development". <https://www.boem.gov/renewable-energy/regulatory-framework-and-guidelines>.

<sup>70</sup> NYSERDA. 2018. "New York State Offshore Wind Master Plan: Charting a Course to 2,400 MW of Offshore Wind Energy." Accessed December 6, 2019. <https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/Offshore-Wind-in-New-York-State-Overview/NYS-Offshore-Wind-Master-Plan>.

<sup>71</sup> NYSERDA. n.d. "Offshore Wind in New York State: Stakeholder and Public Outreach." Accessed December 6, 2019. <https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/Offshore-Wind-in-New-York-State-Overview/Getting-to-2035/Stakeholder-and-Public-Outreach>.

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#### 4 Regulatory Framework and Mitigation of Potential Adverse Impacts

and Commercial Fishing TWG to further refine the respective plans.<sup>72,73</sup> These plans require the developers to describe their strategies for evaluating and responding to effects of the built structures using statistically sound methods. This approach has elicited commitments from developers to making public all non-proprietary environmental data collected during project development. The timely release of this data reinforces the transparency of these projects and is invaluable in evaluating projects in near real-time, allowing for adaptive management and improved understanding of ecosystem dynamics.<sup>74</sup>

In addition, NYSERDA developed a publicly available Mitigation and Monitoring Practices Tool (MMP Tool) in 2019 to aid the TWGs and other parties in evaluating BMPs for offshore wind development at both broad and project-specific scales.<sup>75</sup> The MMP Tool is a comprehensive database containing guidance from agency reports, environmental assessments, scientific literature, and technical guidance documents that allows users to consider MMPs across various categories, such as resource groups, stressors, potential effects, and development phases of offshore wind projects. The MMP Tool was updated in March 2020 based on feedback from the Environmental TWG.<sup>76</sup>

Exhibit 4-2 in the 2018 GEIS summarized measures required by regulation or developed through agency consultations based on site-specific conditions to avoid, minimize, or mitigate, to the extent practicable, potential impacts on environmental resources from offshore wind development. Exhibit 4-1 presents additional examples of measures to avoid, minimize, and mitigate potential environmental impacts from future offshore wind development, including those identified in the NYSERDA MMP tool and/or advanced by BOEM since 2018, particularly with respect to marine mammals, sea turtles, fish, birds, and recreational and commercial users.

New York State's efforts to facilitate offshore wind development through collaborative development of measures to avoid, minimize or mitigate impacts are being complemented at the regional level by recent actions of other agencies, developers, and stakeholders. For example, an MOU was executed in March 2019 between the Responsible Offshore Development Alliance (RODA), NOAA Fisheries, and BOEM, to engage fishing stakeholders and develop a regional research and monitoring framework "to ensure decisions are based on the best available

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<sup>72</sup> NYSERDA. 2018. ORECRFP18-1 Appendix D – Elements of the Fisheries Mitigation Plan. Accessed December 18, 2019. <https://www.nyserdera.ny.gov/All-Programs/Programs/Offshore-Wind/Offshore-Wind-Solicitations/Generators-and-Developers/2018-Solicitation>.

<sup>73</sup> NYSERDA. 2018. ORECRFP18-1 Appendix E – Elements of the Environmental Mitigation Plan. Accessed December 18, 2019. <https://www.nyserdera.ny.gov/All-Programs/Programs/Offshore-Wind/Offshore-Wind-Solicitations/Generators-and-Developers/2018-Solicitation>.

<sup>74</sup> Phase 1 Report (see note 4).

<sup>75</sup> NYSERDA. 2020. Mitigation and Monitoring Practices Tool for Offshore Wind Energy Development – User Manual. Accessed March 27, 2020. <https://nyfisheriestwg.ene.com/Re-sources/MMPTool>.

<sup>76</sup> Ibid.

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science.”<sup>77</sup> One developer, Vineyard Wind, also entered into an agreement directly with several non-government organizations (NGOs) regarding seasonal wind installation activities to avoid or minimize potential effects of construction on North Atlantic right whales.<sup>78</sup>

In summary, since the 2018 GEIS was issued, numerous efforts have been made to identify and develop additional measures to avoid, minimize, and mitigate potential adverse impacts from offshore wind development, including an emphasis on adaptive management based on the collection of project-specific data. Under the proposed additional 1,800-MW procurement, the new and previously identified measures would be suitably implemented on a project-specific basis, as required by the necessary state and federal permits and authorizations, in accordance with federal and state laws and regulations. Such measures may be supplemented by non-regulatory initiatives aimed at enhancing developer and stakeholder collaboration to identify and incorporate less impactful approaches to offshore wind facility design, construction, and operation.

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<sup>77</sup> National Oceanic and Atmospheric Administration’s National Marine Fisheries Service, Bureau of Ocean Energy Management, and the Responsible Offshore Development Alliance (NOAA Fisheries, BOEM, and RODA). 2019. *Memorandum of Understanding Between the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service, Bureau of Ocean Energy Management, and the Responsible Offshore Development Alliance*. Accessed December 12, 2019. <https://www.boem.gov/sites/default/files/renewable-energy-program/NOAA-BOEM-MOU.pdf>.

<sup>78</sup> Stephens, E., K. Kennedy, C. O’Mara, and P. Brooks. 2019. Vineyard Wind – NGO Agreement. Accessed December 17, 2019. <https://www.nrdc.org/sites/default/files/vineyard-wind-whales-agreement-20190122.pdf>.

**Exhibit 4-1 New Potential Avoidance, Minimization, and Mitigation Measures for Offshore Wind Development**

Resource(s)	Potential Avoidance, Minimization, and Mitigation Measures	References
Benthic Fish Marine Mammals Sea Turtles	<p>Develop a monitoring plan to evaluate how project-related activities may impact biological factors (e.g., migration patterns, species abundance, spawning behavior, fish movements/aggregations, larval transport and settlement) and physical and structural factors (e.g., benthic habitat burial or degradation, scouring, and turbidity) during construction, operations, and decommissioning.</p> <p>Develop plans for potential spills, contaminated sediments, and other project- or site-specific emergency protocols.</p>	<p>Bureau of Ocean Energy Management (BOEM). 2016d. <i>Collaborative Fisheries Planning for Virginia’s Offshore Wind Energy Area. OCS Study 2016-040</i>. Prepared under BOEM Cooperative Agreement M14AC00029 and Virginia Department of Mines, Minerals, and Energy C13-6030. Prepared by Virginia Coastal Zone Management Program. Accessed online at: <a href="https://www.dmme.virginia.gov/de/LinkDocuments/OffshoreWind/Virginia-Wind-Energy-Area-Collaborative-Fisheries%20Planning-Final-Report.pdf">https://www.dmme.virginia.gov/de/LinkDocuments/OffshoreWind/Virginia-Wind-Energy-Area-Collaborative-Fisheries%20Planning-Final-Report.pdf</a>. Accessed on February 6, 2019.</p> <p>BOEM. 2019. Guidelines for Information Requirements for a Renewable Energy Site Assessment Plan (SAP). Accessed online at: <a href="https://www.boem.gov/Final-SAP-Guidelines/">https://www.boem.gov/Final-SAP-Guidelines/</a>. Accessed on December 18, 2019.</p>
Commercial and Recreational Uses	<p>Include safety lighting on towers at a height visible to smaller vessels and during low visibility (fog) as they approach installations.</p>	<p>BOEM. 2019. “Draft Proposed Guidelines for Providing Information on Lighting and Marking of Structures Supporting Renewable Energy Development.” Accessed online at: <a href="https://www.boem.gov/renewable-energy/regulatory-framework-and-guidelines">https://www.boem.gov/renewable-energy/regulatory-framework-and-guidelines</a>. Accessed on December 20, 2019.</p>

# 5

## Areas of Potential Environmental Impact

### 5.1 Introduction

Consistent with 6 NYCRR §617.10(a), Chapter 5 of the 2018 GEIS reviewed potential impacts from the procurement of 2,400 MW of offshore wind. The 2018 GEIS addressed resource areas potentially impacted, including biological resources (benthic communities, marine mammals and sea turtles, fish, and birds), marine commercial and recreational uses and vessel traffic, cultural resources, socioeconomics, and visual and aesthetic resources. Potential impacts were considered in the context of regulatory requirements for avoidance, minimization, and mitigation strategies. The 2018 GEIS identified resources for which potential unavoidable adverse impacts may occur and, therefore, potential cumulative impacts could occur on these resources. The 2018 GEIS concluded that the resources for which potential unavoidable adverse impacts may occur and, therefore, potential cumulative impacts that could occur include: (1) displacement, disturbance, or loss of habitat for marine mammals and sea turtles; (2) sensory disturbance to fish; (3) conflict with use of space for commercial and recreational vessels; and (4) displacement, disturbance, or loss of habitat and mortality/injury to birds.

This SGEIS incorporates by reference material from Chapter 5 of the 2018 GEIS and analyzes the potential for significant adverse environmental impacts from the procurement of an additional 1,800 MW of offshore wind on the resources for which potential unavoidable adverse impacts may occur. Offshore wind projects, if developed, could be undertaken in a broad range of scenarios with variables, including, but not limited to, the geographic area of the marine environment subject to development, project timing, spatial scale, and technology. The potential for additional environmental impact from procurement of an additional 1,800 MW of offshore wind is primarily due to the increase in number, size, and spatial distribution of turbines that would be installed, including associated construction and operation activities. As discussed in Section 2.3, the average turbine size associated with the proposed additional offshore wind is expected to be the same as the average turbine size discussed in the 2018 GEIS. The actual size of turbines installed as part of specific offshore wind projects may vary, with a corresponding range of potential impacts on environmental resources, depending on the size of the area in which the turbines are distributed, foundation type, and total footprint (i.e., area of disturbance) of the turbines. As with the 2018 GEIS, these qualitative discussions do not substitute for project-specific environmental reviews, which may result in the identification of site-specific impacts not set forth below.

## 5.2 Displacement, Disturbance, Loss, or Conversion of Habitat for Marine Mammals and Sea Turtles

As described in Chapter 5 of the 2018 GEIS, impacts may occur on marine mammals and sea turtles from increased vessel traffic and sensory disturbance activities, specifically, pile-driving, excavation activities, and vessel traffic during construction. The 2018 GEIS concluded that because of the minimal overall spatial coverage of offshore wind development and the ability of marine mammals and sea turtles to avoid structures and use other available habitat that significant adverse cumulative impacts would not be expected.

The additional 1,800 MW of offshore wind may result in some minor additional spatial coverage, sensory disturbance activities, and associated temporary displacement of marine mammals and sea turtles or no additional spatial coverage and displacement depending on the selected wind facility design, including turbine size and spacing. As described in Section 2.3, selection of turbine size affects the spatial coverage, and turbines of larger generation capacity may have a smaller footprint than a set of turbines of lower individual generation capacity, though they may both have the same total generation capacity. As described in the 2018 GEIS for 2,400 MW of offshore wind, and new information provided in Chapter 4 on avoiding, minimizing, and mitigating potential impacts, activities associated with construction and operation of projects providing an additional 1,800 MW of offshore wind would follow measures required by regulation or through consultation with state and federal agencies in compliance with the Marine Mammal Protection Act and the Endangered Species Act. In addition, the marine environment provides sufficient alternative habitat to allow marine mammals and sea turtles to avoid impacts from sensory disturbance and displacement. The overall spatial coverage of an additional 1,800 MW of offshore wind would not significantly reduce or modify marine mammal and sea turtle habitat, and based on current studies, it is anticipated that, during construction activities, most species would avoid the structures or use other nearby available habitat.<sup>79,80</sup> Advancements in turbine anchoring systems discussed in Section 2.3 (i.e., gravity-based foundations) may substantially reduce the amount of pile driving and associated noise-related disturbance during turbine installation. Given the spatial distribution within and between offshore wind projects, the available habitat in the marine environment, potential reductions in pile driving, and project-specific agency consultations, significant adverse impacts on marine mammals and sea turtles would not be expected from an additional 1,800 MW of offshore wind capacity.

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<sup>79</sup> Thompson, P.; Lusseau, D.; Barton, T.; Simmons, D.; Rusin, J.; and Bailey, H. 2010. "Assessing the responses of coastal cetaceans to the construction of offshore wind turbines." *Marine Pollution Bulletin*, 60(8). 1200-1208.

<sup>80</sup> Edrén, S.M.C and Andersen, S.M. 2010. "The effect of a large Danish offshore wind farm on harbor and gray seal haul-out behavior." *Marine Mammal Science*, 26(3). 614-634.

### 5.3 Sensory Disturbance to Fish

As described in Chapter 5 of the 2018 GEIS, impacts on fish may occur from the temporary increase of noise and other sensory disturbances from pile driving, excavating, and increased vessel traffic associated with construction. The 2018 GEIS concluded that because of the spatial distribution of offshore wind projects and the available habitat, significant adverse cumulative effects would not be expected.

Based on a literature review of marine related journals,<sup>81,82,83,84</sup> and available information on agency websites,<sup>85,86,87,88</sup> the marine environment in the North Atlantic and Mid-Atlantic OCS and fish species that inhabit it have not significantly changed since the 2018 GEIS was issued.

The additional 1,800 MW of offshore wind capacity may result in some minor additional temporary increase of noise and other sensory disturbances from pile driving, excavating, and increased vessel traffic associated with construction or no additional impacts depending on the selected wind facility design, including turbine size and spacing. Pile driving for additional foundations would occur in isolated areas during a temporary timeframe. Most affected fish species would be expected to relocate to surrounding areas and experience disturbances less frequently or of lower magnitude. Further, advancements in turbine anchoring systems mentioned in Section 5.1 (i.e., gravity-based foundations), may substantially reduce the amount of pile driving and associated noise-related disturbance during turbine installation. Given the spatial distribution of offshore wind projects, available habitat, potential reductions in pile driving, and project-specific agency consultations, significant adverse impacts on fish would not be expected. Therefore, the procurement of an additional 1,800 MW of offshore wind generation capacity in the near term would not result in significant adverse impacts on fish.

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<sup>81</sup> Boon, Philip and John Baxter, eds. 2020. *Aquatic Conservation: Marine and Freshwater Ecosystems*. Accessed January 15, 2020. <https://onlinelibrary.wiley.com/journal/10990755>.

<sup>82</sup> Regoli, F. and I. Sokolova, eds. 2020. *Marine Environment Research*. Accessed January 15, 2020. <https://www.sciencedirect.com/journal/marine-environmental-research>.

<sup>83</sup> Duarte, Carlos, ed. 2020. *Frontiers in Marine Science*. Accessed January 15, 2020. <https://www.frontiersin.org/journals/marine-science#>.

<sup>84</sup> Smith, Garriet, ed. 2020. *Journal of Oceanography and Marine Research*. Accessed January 15, 2020. <https://www.longdom.org/oceanography-marine-research.html>.

<sup>85</sup> National Oceanic and Atmospheric Administration Fisheries (NOAA). 2020. "Northeast Fisheries Science Center." Accessed on January 13, 2020. <https://www.nefsc.noaa.gov/>.

<sup>86</sup> Bureau of Ocean Energy Management (BOEM). n.d. "Atlantic OCS Region." Accessed January 13, 2020. <https://www.boem.gov/regions/atlantic-ocs-region>.

<sup>87</sup> New England Fishery Management Council. 2020. "Northeast Multispecies." Accessed January 13, 2020. <https://www.nefmc.org/management-plans/northeast-multispecies>.

<sup>88</sup> Mid-Atlantic Fisheries Management Council. 2020. "Northeast Regional Marine Fish Habitat Assessment." Accessed January 13, 2020. <http://www.mafmc.org/nrha>.

## 5.4 Spatial Conflicts with Commercial and Recreational Fishing

As described in Chapter 5 of the 2018 GEIS, impacts on commercial and recreational fishing activities may occur from the conflicting use of the same space by offshore wind projects with commercial and recreational vessels. The 2018 GEIS concluded that the construction and operation of 2,400 MW of offshore wind would restrict or exclude fishing within only approximately 3% of the geographic scope of analysis presented in the Master Plan’s Consideration of Potential Cumulative Effects (i.e., an area offshore of New York identified by the State as most likely to accommodate offshore wind development), leaving large areas available without conflicts for fishing.

Based on a review of literature review of marine related journals,<sup>89,90,91,92</sup> and available information on agency websites,<sup>93,94,95,96</sup> and fishery management plans available from the Mid-Atlantic Fishery Management Council and Atlantic States Marine Fisheries Commission,<sup>97,98</sup> the marine environment in the North Atlantic and Mid-Atlantic OCS and the fish species of commercial and recreational importance that inhabit it have not significantly changed since the 2018 GEIS was issued, nor have U.S. Atlantic fisheries management practices changed significantly over this period. Similarly, based on a literature review, commercial and recreational fisheries practices have not significantly changed since the 2018 GEIS.

The additional 1,800 MW of offshore wind may result in some minor additional spatial coverage and conflicting use of space or no additional spatial coverage and conflicting use of space depending on the selected wind facility design, including turbine size and spacing. As described in Section 4.2, BOEM and New York State have advanced efforts to avoid, minimize, and mitigate impacts on commer-

<sup>89</sup> Boon, Philip and John Baxter, eds. 2020. *Aquatic Conservation: Marine and Freshwater Ecosystems*. Accessed January 15, 2020. <https://onlinelibrary.wiley.com/journal/10990755>.

<sup>90</sup> Regoli, F. and I. Sokolova, eds. 2020. *Marine Environment Research*. Accessed January 15, 2020. <https://www.sciencedirect.com/journal/marine-environmental-research>.

<sup>91</sup> Duarte, Carlos, ed. 2020. *Frontiers in Marine Science*. Accessed January 15, 2020. <https://www.frontiersin.org/journals/marine-science#>.

<sup>92</sup> Smith, Garriet, ed. 2020. *Journal of Oceanography and Marine Research*. Accessed January 15, 2020. <https://www.longdom.org/oceanography-marine-research.html>.

<sup>93</sup> National Oceanic and Atmospheric Administration Fisheries (NOAA). 2020. “Northeast Fisheries Science Center.” Accessed January 13, 2020. <https://www.nefsc.noaa.gov/>.

<sup>94</sup> Bureau of Ocean Energy Management (BOEM). n.d. “Atlantic OCS Region.” Accessed January 13, 2020. <https://www.boem.gov/regions/atlantic-ocs-region>.

<sup>95</sup> New England Fishery Management Council. 2020. “Northeast Multispecies.” Accessed January 13, 2020. <https://www.nefmc.org/management-plans/northeast-multispecies>.

<sup>96</sup> Mid-Atlantic Fisheries Management Council. 2020. “Northeast Regional Marine Fish Habitat Assessment.” Accessed January 13, 2020. <http://www.mafmc.org/nrha>.

<sup>97</sup> Mid-Atlantic Fishery Management Council. 2020. “Fishery Management Plans and Amendments.” Accessed January 13, 2020. <http://www.mafmc.org/fishery-management-plans>.

<sup>98</sup> Atlantic States Marine Fisheries Commission. 2020. “Fisheries Management.” Accessed January 13, 2020. <http://www.asmfc.org/fisheries-management/program-overview>.

cial and recreational fisheries since 2018. Specific examples include ongoing research projects funded by NYSERDA and BOEM to investigate means of maintaining access to fishing grounds and the potential economic impacts on surfclam and ocean quahog commercial fishing.<sup>99,100</sup> Assuming all of the additional 1,800 MW of offshore wind comes from new turbines placed within the geographic scope of analysis of the Master Plan, the scale-up would represent a total of approximately 1% of the area offshore of New York that would likely accommodate wind development, leaving large areas available without conflicts for fishing. Therefore, the procurement of an additional 1,800 MW of capacity in the near term would likely not result in significant adverse impacts on commercial and recreational fisheries.

### 5.5 Displacement, Disturbance, Loss, or Conversion of Habitat and Injury/Mortality to Birds

As described in Chapter 5 of the 2018 GEIS, impacts on birds may result from the potential increase in the probability of disturbance and displacement due to noise, human presence, vessel traffic, and the presence of newly introduced large structures, particularly with respect to direct collision with construction cranes and turbines. The 2018 GEIS concluded that the spatial distribution of offshore wind development, the available habitat in the marine environment, and agency consultations, significant adverse cumulative impacts on birds would not be expected.

Based on a literature review, including documents available on the Tethys database<sup>101,102</sup> and resources containing avian sightings,<sup>103,104,105</sup> the environmental

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<sup>99</sup> New York State Energy Research and Development Authority (NYSERDA). 2019. *NYSERDA Selects Five Projects to Advance Understanding of Environmental and Fishery Topics in Support of Responsible Offshore Wind Development*. Accessed November 15, 2019.

<https://www.nyserda.ny.gov/About/Newsroom/2019-Announcements/2019-08-08-NYSERDA-Selects-Five-Projects-to-Advance-Understanding-of-Environmental-and-Fishery-Topics-in-Support-of-Responsible-Offshore-Wind-Development>.

<sup>100</sup> Bureau of Ocean Energy Management (BOEM). 2019. *Understanding Potential Economic Impacts to Surfclam/Ocean Quahog Commercial Fishing from Offshore Wind Energy Facility Construction and Operation (AT-19-03)*. Environmental Studies Program: Ongoing Study. Revised on October 11, 2019.

<sup>101</sup> Tethys. 2020. "Knowledge Base: Receptor - Birds." Accessed January 14, 2020. <https://tethys.pnnl.gov/knowledge-base-marine-energy?f%5B0%5D=receptor%3A271>.

<sup>102</sup> Winship, A.; Kinlan, B.; White, T.; Leirness, J.; Christensen, J. 2018. *Modeling At-Sea Density of Marine Birds to Support Atlantic Marine Renewable Energy Planning*. Report No. BOEM 2018-010. Accessed January 14, 2020. <https://tethys.pnnl.gov/publications/modeling-sea-density-marine-birds-support-atlantic-marine-renewable-energy-planning>.

<sup>103</sup> The Cornell Lab of Ornithology. 2020. "eBird." [Web Application]. Accessed January 15, 2020. <https://ebird.org>.

<sup>104</sup> The New York State Ornithological Association. 2018. *The Kingbird*, 68(2, 3, 4). Accessed January 15, 2019. <https://nybirds.org/Publications/kingbird.htm>.

<sup>105</sup> The New York State Ornithological Association. 2019. *The Kingbird*, 69(1, 2). Accessed January 15, 2019. <https://nybirds.org/Publications/kingbird.htm>.

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## 5 *Areas of Potential Environmental Impact*

conditions for birds have not significantly changed since the 2018 GEIS was released.

The additional 1,800 MW of offshore wind may result in some minor additional spatial coverage or no additional spatial coverage depending on the selected wind facility design, including turbine size and spacing. If offshore wind projects use larger wind turbines to achieve the additional capacity, the rotor-sweep zone (including the maximum and minimum blade sweep height) would increase, potentially increasing the risk of bird collision for each turbine, depending on the species. However, use of fewer larger turbines to achieve the additional 1,800 MW of generating capacity may reduce the overall probability of bird collisions compared to a greater number of smaller turbines, depending on the species. Given the spatial distribution of offshore wind development, the available habitat in the marine environment, and project-specific agency consultations, significant adverse impacts on birds due to the Proposed Action would not be expected. Therefore, the procurement of an additional 1,800 MW of offshore wind in the near term should not result in significant adverse impacts on birds.

# 6

## Alternatives Considered

Consistent with 6 NYCRR §617.9(b)(5)(v) of the SEQRA regulations, this chapter provides a description and evaluation of the range of reasonable alternatives to the Proposed Action that are feasible. This chapter builds upon and incorporates reference material from Chapter 6 of the 2018 GEIS.

The Commission has identified the No Action alternative as the reasonable alternative to the Proposed Action. The No Action alternative evaluates the adverse or beneficial changes that are likely to occur in the reasonably foreseeable future, in the absence of the Proposed Action.

In the No Action alternative scenario, the State still expects to achieve its offshore wind goals. However, under the No Action alternative, the State would not procure the additional approximately 1,800 MW of offshore wind in the near-term. Instead, procurement would be limited to the 2,400 MW of offshore wind evaluated in the 2018 GEIS.

The No Action alternative may result in less timely development of offshore wind projects, and perhaps less diversity in generation type, in the State's renewable generation portfolio. In connection with that reduction, there could be adverse or beneficial changes, depending on the other types of renewable energy sources that ultimately would be used under the No Action alternative to achieve the State's goals and directives. For example, under the No Action alternative, grid solar energy and onshore wind projects would be expected to contribute a greater percentage of the renewable energy generation portfolio than if the Proposed Action is implemented. Such a No Action scenario would require more grid solar and onshore wind development, which would likely result in greater potential land use and other land-based environmental impacts. In addition, new structures and transmission components of land-based renewables could require permanent clearing of habitat and tree removal to create open spaces, as well as temporary disturbances during construction.

Under the No Action alternative, environmental conditions would not change from the current baseline described in Chapter 3. The impacts on the marine environment described in Chapter 5 may be less likely to occur under the No Action alternative, or may occur to a lesser degree. For example, the No Action alternative could result in fewer potential impacts on marine mammals and sea turtles if development of less offshore wind infrastructure (e.g., wind turbines and offshore transmission cables) occurs.

However, it should be noted that under the No Action alternative, additional development of offshore wind facilities in the region may still occur, and associated impacts on the marine environment of any such development would still occur. Under the No Action alternative, additional wind facility development could occur offshore of New York State and its electricity would be procured by other states. As outlined in Chapter 2, offshore wind is a regional resource, and several states throughout the region are taking actions to procure offshore wind, as well as setting aggressive goals and implementing directives for the future procurement of offshore wind. Under the No Action alternative, the increased competition in the offshore wind market introduced by other states in the region may lead to fewer purchase options for the State in the future. Some amount of offshore wind could still be obtained from other states indirectly, although how much is obtained and when the associated offshore wind facility development would occur remains less certain.

The socioeconomic impacts associated with the Proposed Action may be reduced under the No Action alternative. Chapter 9 of this SGEIS discusses these socioeconomic benefits of the Proposed Action in detail, including air quality benefits and job creation. Regarding air quality, the No Action alternative would change or reduce the corresponding health benefits of reduced emissions. Similarly, the No Action alternative would change or reduce the anticipated increase in workforce, including new jobs in manufacturing, installation and operation offshore wind facilities, that would result from the development, construction and operation of an additional increase of approximately 1,800 MW of offshore wind in New York.

# 7

## Unavoidable Adverse Impacts

Consistent with 6 NYCRR §617.9(b)(5)(iii)(b), Chapter 7 of the 2018 GEIS analyzed unavoidable adverse impacts from the procurement of 2,400 MW of off-shore wind. Unavoidable adverse impacts are impacts that, if an action is implemented, cannot be avoided or adequately mitigated. The 2018 GEIS concluded that, at a generic level, there were no unavoidable adverse impacts that could not be mitigated.

As discussed, this SGEIS incorporates by reference material from Chapter 7 of the 2018 GEIS and analyzes the potential for unavoidable adverse environmental impacts from the procurement of an additional 1,800 MW of offshore wind. This SGEIS is not intended to evaluate specific offshore wind projects and their potential site-specific environmental impacts; rather it identifies whether the Proposed Action or alternatives could pose unavoidable adverse impacts at a generic level. As set forth in Chapter 5, there are no unavoidable adverse impacts that could not be mitigated through one or more of the mechanisms discussed in Chapter 4. Similarly, as discussed in Chapter 6, the No Action alternative presents no such unavoidable adverse impacts either.

# 8

## Irreversible and Irretrievable Commitment of Resources

Pursuant to 6 NYCRR §617.9(b)(5)(iii)(c), Chapter 8 of the 2018 GEIS assessed the irreversible and irretrievable commitments of environmental resources associated with the procurement of 2,400 MW of offshore wind. An irreversible commitment of resources occurs when an action's impacts would limit future use options if the change cannot be reversed, reclaimed, or repaired. An irretrievable commitment of resources occurs when the used or consumed resource is neither renewable nor recoverable for use by future generations without reclamation. Irretrievable commitments are not necessarily irreversible and can include the loss of production or harvest of natural resources. The 2018 GEIS concluded that irreversible and irretrievable commitments of resources would be identified in site-specific environmental analyses and avoided or minimized in accordance with applicable laws and regulations.

This SGEIS incorporates by reference material from Chapter 8 of the 2018 GEIS and provides an assessment of the irreversible and irretrievable commitment of environmental resources from the procurement of an additional 1,800 MW of offshore wind. Consistent with the assessment of the 2018 GEIS, the Proposed Action would help the State meet its renewable goal and directives, and would not directly result in an irreversible or irretrievable commitment of resources because no specific project site would be endorsed, approved, or constructed. While the procurement process does not guarantee that any specific offshore wind project would be built, the future construction and operation of new offshore wind projects that may occur in response to the Proposed Action could result in irreversible and irretrievable commitment of resources. The principal commitment of resources for the construction and operation of a new offshore wind project is any portion of the marine environment that would be occupied by a project. Chapter 5 of this SGEIS and the 2018 GEIS describes the potential impacts and resource commitments associated with the offshore wind projects in the Atlantic OCS. However, such resource commitments would be identified in site-specific environmental analyses and avoided or minimized in accordance with applicable law and regulations, as discussed in Chapter 4 of the 2018 GEIS and this SGEIS.

# 9

## Growth-Inducing Aspects and Socioeconomic Impacts

Pursuant to 6 NYCRR §617.9(b)(5)(iii)(d), Chapter 9 of the 2018 GEIS identified and discussed the potential growth-inducing impacts, including potential program costs and benefits, associated with the procurement of 2,400 MW of offshore wind. Growth-inducing aspects generally refer to “secondary” impacts, or the potential for an action to trigger further development. The 2018 GEIS indicated that procurement of offshore wind has the potential to lead indirectly to development of emerging technologies, a new source of coastal tourism, employment associated with construction and operations, purchases of local products and services, and new and increased tax payments by employees and facilities. This SGEIS incorporates by reference material from Chapter 9 of the 2018 GEIS and provides an assessment of the potential growth-inducing impacts from the procurement of an additional 1,800 MW of offshore wind.

### 9.1 Impacts on Growth and Community Character

The 2018 GEIS pointed to a number of potential new sources of tourist attractions resulting from offshore wind projects, including boat tours, diving at turbine foundations that serve as artificial reefs, and education and information centers related to offshore wind development. For example, following the completion of the Block Island Wind Farm, the Block Island Ferry and other private charter boats began operating facility tours to the Block Island Wind Farm. Additional research completed since the 2018 GEIS suggests that the offshore wind facility had a positive effect on tourism in the local community. In particular, a study published in 2019 reviewed Airbnb data in the Block Island Community and three nearby communities before and after construction of the Block Island Wind Farm. The study found an increase in nightly Airbnb reservations and revenue during summer months in the Block Island community following construction of the Block Island Wind Farm.<sup>106</sup>

Consistent with the growth-inducing effects identified in the 2018 GEIS, the Proposed Action of increasing 1,800 MW of offshore wind generation capacity in the near term is expected to lead to a proportional increase in development of emerging technologies, coastal tourism, employment associated with construction and

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<sup>106</sup> Carr-Harris, Andrew and Corey Lang. 2019 Sustainability and Tourism: The Effect of the United States’ First Offshore Wind Farm on the Vacation Rental Market, *Resource and Energy Economics*.

operation, purchases of local products and services, and tax payments by employees and facility owners.

### 9.2 Potential Program Costs

The 2018 GEIS provided a range for potential program costs for full deployment of 2,400 MW of offshore wind by 2030 based on the NYSERDA Offshore Wind Policy Options (Offshore Wind Options Paper). The Offshore Wind Options Paper included various procurement program designs and costs. NYSERDA's Phase 1 Report estimated the equivalent cost for the two contracts totaling 1,696 MW of offshore wind to be a nearly 40% cost decline from the Offshore Wind Options Paper estimates.<sup>107</sup> The Offshore Wind Options Paper estimated net costs for the 2,400 MW of offshore wind capacity to range from \$0.1 billion to \$2.7 billion. The Phase 1 Report reported a net cost and benefit of the Phase 1 offshore wind contracts is expected to range between a net cost of \$4.51 per megawatt hour and a net benefit of \$22.00 per megawatt hour (2018 dollars), depending on future market energy and capacity prices. This equates to a range of net impacts over the life of the contracts between a net cost of approximately \$0.4 billion and a net benefit of approximately \$1.9 billion (2018 dollars using a 6.55% discount rate). Procurement of an additional 1,800 MW of offshore wind would be expected to result in a proportional increase in potential program costs compared to estimates in the Phase 1 Report, and would not be expected to be significantly higher than costs presented in the 2018 GEIS.

### 9.3 Potential Program Benefits

As described in the 2018 GEIS, offshore wind development is expected to provide significant beneficial impacts from a reduction in greenhouse gas (GHG) emissions and related beneficial impacts on public health, jobs in the offshore wind sector, and economies of scale.

The 2018 GEIS and Offshore Wind Options Paper estimated the potential carbon benefits of the reduction in carbon dioxide (CO<sub>2</sub>) from development of 2,400 MW of offshore wind capacity by 2030 to equal \$1.9 billion. The carbon benefits represent an avoidance of costs related to climate, such as changes in net agricultural productivity, human health, property damages from increased flood risk, and changes in energy system costs. The Offshore Wind Options Paper also estimated approximately \$1 billion in additional health benefits from significantly lower levels of particulate matter less than 2.5 microns (PM<sub>2.5</sub>), ozone, nitrogen oxides (NO<sub>x</sub>), and sulfur dioxide (SO<sub>2</sub>) in the New York City metropolitan area. In comparison, approximately \$0.4 billion in net direct costs to \$1.9 billion in net direct benefits will be realized from NYSERDA's Phase 1 procurement of 1,696 MW of offshore wind capacity, based on contracted prices and depending on future market prices.<sup>108</sup> The Phase 1 procurement will provide an additional \$0.7 billion in health benefits and \$3.2 billion in economic activity, such that the procurement

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<sup>107</sup> Phase 1 Report (see note 4).

<sup>108</sup> NYSERDA estimated the net health benefits in the 2019 Phase 1 Report by scaling results from NYSERDA's Offshore Wind Master Plan.

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## 9 Growth-Inducing Aspects and Socioeconomic Impacts

results in an overall benefit to New Yorkers.<sup>109</sup> An additional 1,800 MW of offshore wind generation capacity would increase expected net carbon and health benefits beyond those identified in the 2018 GEIS and increase benefits in proportion to estimates in NYSERDA's Phase 1 Report.

The 2018 GEIS and Offshore Wind Options Paper estimated an annual average of nearly 2,400 to 5,000 jobs in New York State for manufacturing, installation, and operation could be created from the development of 4,000 to 8,000 MW of offshore wind capacity in the Atlantic region. This range includes 1,900 to 3,500 peak annual jobs that would support the development of 2,400 MW of offshore wind capacity in New York State. The number of jobs per MW based on estimates from NYSERDA's Phase 1 report were within the range of estimates identified in the Offshore Wind Options Paper. The Phase 1 report estimates approximately 1,600 jobs in project development, component manufacturing, installation, and operations from the development of 1,696 MW of offshore wind capacity. Therefore, procurement of an additional 1,800 MW of offshore wind capacity serving New York State would be expected to result in a proportional increase in the number of jobs estimated in the 2018 GEIS.

As noted in the 2018 GEIS, the State's procurement of offshore wind capacity could result in the State capitalizing on both the expected cost reductions that will come with building a regional U.S. industry of a sufficient scale to replicate declining cost trajectories observed in European offshore wind markets, and the corresponding economic benefits from becoming a "hub" for the emerging domestic offshore wind industry. The 2018 GEIS and Offshore Wind Options Paper stated that it "may take several years for the U.S. offshore wind industry to mature sufficiently to realize significant scale-related reductions in costs." The Offshore Wind Options Paper also stated that "greater than projected growth of the market volume (increased deployment), would result in accelerated learning in New York, while less than projected deployment would result in slower New York learning."<sup>110</sup> The paper assessed a base case Phase 1 procurement schedule with 400 MW solicitations in 2018 and 2019, while NYSERDA's actual Phase 1 procurement was for development of over 1,600 MW of offshore wind capacity. Furthermore, all proposals submitted in response to the Commission's Phase 1 procurement featured infrastructure investments to support future supply chain localization.<sup>111</sup> Therefore, an incremental increase of 1,800 MW of offshore wind generation capacity would likely result in the state realizing economies of scale at an accelerated rate compared to that described in the 2018 GEIS.

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<sup>109</sup> Ibid.

<sup>110</sup> NYSERDA. 2018. "Offshore Wind Policy Options Paper." Accessed online at: <https://www.nyserd.ny.gov/All-Programs/Programs/Offshore-Wind/New-York-Offshore-Wind-Master-Plan>. Accessed January 2, 2020.

<sup>111</sup> Phase 1 Report (see note 4).

# 10

## Effects on Energy Consumption

Consistent with 6 NYCRR §617.9(b)(5)(iii)(e) of the SEQRA regulations, this chapter considers the Proposed Action's potential impacts on the State's energy consumption. This chapter builds upon and incorporates by reference material from Chapter 10 of the 2018 GEIS.

The near-term procurement of an incremental increase of approximately 1,800 MW of offshore wind generation capacity, to the extent it does not significantly impact retail prices, is not expected to directly or indirectly affect the amount of electricity used in the State or the amount of energy conserved in the State. The Proposed Action, however, may affect the State's electric generation portfolio and foster greater penetration and adoption of renewable energy at the grid scale. The Proposed Action could expand offshore wind as a source of New York's overall electric generation mix, thereby helping the State to achieve its renewable energy goals and directives.

# 11

## List of Preparers

<b>New York State Department of Public Service</b>	
John Garvey	3 Empire State Plaza Albany, NY 12223-1350
Thomas Rienzo	3 Empire State Plaza Albany, NY 12223-1350
<b>Ecology and Environment, Inc.</b>	
Madison Clapsaddle	200 Bendix Road, Suite 250 Virginia Beach, VA 23452
Sarah Courbis	333 SW Fifth Avenue, Suite 600 Portland, OR 97204
Jone Guerin	368 Pleasant View Drive Lancaster, NY 14086
Steven MacLeod	368 Pleasant View Drive Lancaster, NY 14086
Kathleen Marean	90 Broad Street, Suite 1906 New York, NY 10004
Mike Morgante	368 Pleasant View Drive Lancaster, NY 14086
Jeff Norris	1501 Lee Highway, Suite 306 Arlington, VA 22209
Alyssa Russell	5665 Flatiron Parkway, Suite 250 Boulder, CO 80301
Carl Sadowski	1501 Lee Highway, Suite 306 Arlington, VA 22209
Katy White	333 SW Fifth Avenue, Suite 600 Portland, OR 97204
Janine Whitken	1501 Lee Highway, Suite 306 Arlington, VA 22209

# A

## **Responses to Comments on the Draft Supplemental Generic Environmental Impact Statement**

Commenter	Comment Letter Number – Comment Number	Comment	Response
NRDC, NWF, WCS, TNC, Audubon NY	1	<p>Pile driving noise during the construction phase has been identified as a stressor of high concern for marine wildlife...</p> <p>Fortunately, there are commercially-available options for the construction of offshore wind turbines that do not require pile driving, and thus avoid the noise impacts stemming from this activity. These options, referred to here as 'quiet foundations,' currently include various designs of suction bucket and gravity-based foundations. Sediment conditions in the New York Bight and elsewhere on the Atlantic OCS appear generally conducive to the use of quiet foundations. Indeed, the 800+ Megawatt Empire Wind project demonstrates the viability of these technologies through the proposed use of gravity-based foundations. We strongly encourage further research on the potential for and expansion of quiet foundations for next generation wind turbines across as broad a set of sea floor conditions as possible.</p> <p>The undersigned organizations recommend the state of New York incentivize the use of quiet foundations as a means of avoiding underwater noise during offshore wind development. Specifically, we request the New York State Public Service Commission give preferential scoring credit to projects that commit to adopting quiet foundations. Incentivizing this technology could help advance the offshore wind industry while avoiding a serious environmental impact.</p>	<p>At a generic, non-site-specific level, this SGEIS identifies the broad potential impacts that could be caused by the types of activities that could result from the State's increase of approximately 1,800 MW in expected procurement of offshore wind in the near term (in addition to the 2,400 MW evaluated in the 2018 GEIS). This SGEIS also discusses at a high-level certain avoidance, minimization, and mitigation measures that could be considered during federal and state regulatory review of project-specific offshore wind energy development, recognizing that additional or different measures may be appropriate for specific projects.</p> <p>This SGEIS acknowledges that the use of gravity-based foundations will reduce in-water noise impacts during offshore wind project construction compared to the use of pile or jacket foundations (see Section 2.3), particularly with respect to marine mammals, sea turtles, and fisheries (see Sections 5.2 and 5.3). However, this SGEIS is not intended to recommend or prescribe any specific construction techniques for developers. The selection of installation techniques for any specific project must consider multiple design factors and impacts on different resources. For example, as described in the New York State Master Plan Consideration of Potential Cumulative Effects, incorporated by reference in the SGEIS, use of monopile and jacket foundations would minimize certain impacts due to relatively small footprints compared to alternative gravity foundations that typically require tens to hundreds of square meters of seafloor.<sup>1</sup> The procurement mechanism and associated scoring criteria for OSW will be evaluated separately in the PSC proceeding and are not appropriate subject matter for this SGEIS.</p>

## Notes:

1. U.S. Department of the Interior, Minerals Management Service (USDOI MMS). 2007. Final Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternate Use Facilities on the Outer Continental Shelf. Chapter 3: Overview of Potential Alternative Energy Technologies on the OCS.

# B

## **Revisions to the Draft Supplemental Generic Environmental Impact Statement**

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## ***B Revisions to the Draft Supplemental Generic Environmental Impact Statement***

This appendix represents the edits made to the Draft Supplemental Generic Environmental Impact Statement (SGEIS) and captures any new information that may have been added.

### **EXECUTIVE SUMMARY**

- Revised to reflect the public notice and comment period on the Draft SGEIS.

### **CHAPTER 1: SEQRA AND DESCRIPTION OF THE PROPOSED ACTION**

#### **1.1 The New York State Environmental Quality Review Act**

- Revised to reflect the public notice and comment period on the Draft SGEIS.

### **CHAPTER 3: ENVIRONMENTAL SETTING**

#### **Exhibit 3-1 Additional New York State Listed Endangered and Threatened Animal Species Believed or Known to Occur in New York**

- Revised to include additional fish and bird species.

### **APPENDIX A: RESPONSES TO COMMENTS ON THE DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT**

- Incorporated to include responses to public comments.