OCS-A 0501 MASS USA

# VINEYARD WIND

# Draft Construction and Operations Plan

## Volume III Text

## Vineyard Wind Project

June 3, 2020


**Submitted by**
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**Submitted to**
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**Sterling, Virginia 20166**

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Epsilon ASSOCIATES INC.

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June 3, 2020

Table of Contents

# TABLE OF CONTENTS

# TABLE OF CONTENTS (Continued)

# TABLE OF CONTENTS (Continued)

# TABLE OF CONTENTS (Continued)

# TABLE OF CONTENTS (Continued)

# TABLE OF CONTENTS (Continued)

## List of Appendices

## List of Figures

## List of Figures (Continued)

## List of Figures (Continued)

## List of Figures (Continued)

## List of Figures (Continued)

# List of Tables

## List of Tables (Continued)

## List of Tables (Continued)

# List of Acronyms

| | |
|---|---|
| AC | Alternating current |
| ACS | American Community Survey |
| ADLS | Aircraft Detection Lighting System |
| AGL | Above ground level |
| AMAPPS | Atlantic Marine Assessment Program for Protected Species |
| AMSL | Above Mean Sea Level |
| AIS | Automatic Identification System |
| APE | Area of Potential Effect |
| AR | Avangrid Renewables |
| ASMFC | Atlantic State Marine Fisheries Commission |
| ATC | Air Traffic Control |
| ATON | Aids to Navigation |
| BACT | Best Available Control Technology |
| BIA | Biological Important Area |
| BLS | Bureau of Labor Statistics |
| BMP | Best Management Practices |
| BOEM | Bureau of Ocean Energy Management |
| °C | Degrees Celsius |
| CAD | Confined Aquatic Disposal |
| Call | Call for Information and Nominations |
| CBA | Community Benefit Agreement |
| CBP | County Business Patterns |
| CCC | Cape Cod Commission |
| CCS | Center for Coastal Studies |
| CEQ | Council on Environmental Quality |
| CFR | Code of Federal Regulations |
| CIP | Copenhagen Infrastructure Partners |
| CL | Carapace (i.e., shell) lengths |
| cm | Centimeters |
| CO | Carbon Monoxide |
| $CO_2$ | Carbon Dioxide |
| COA | Corresponding Onshore Area |
| COP | Construction and Operations Plan |
| CPT | Cone penetrometer test |
| CSV | Construction support vessel |
| CTV | Crew Transfer Vessel |
| CVA | Certified Verification Agent |
| cy | Cubic yard |
| dB | Decibels |
| DMF | Massachusetts Division of Marine Fisheries |
| DO | Dissolved Oxygen |

## List of Acronyms (Continued)

| | |
|---|---|
| DoD | United States Department of Defense |
| DOE | United States Department of Energy |
| DOER | Massachusetts Department of Energy Resources |
| DP | Dynamically positioned |
| DPS | Distinct Population Segments |
| DPW | Department of Public Works |
| E | Endangered |
| E | Extensive |
| EA | Environmental Assessment |
| ECA | Emission Control Area |
| ECC | Export Cable Corridor |
| EEA | Executive Office of Energy and Environmental Affairs |
| EEZ | Exclusive Economic Zone |
| EFH | Essential Fish Habitat |
| eGRID | Environmental Protection Agency's Emissions & Generation Resource Integrated Database |
| EJ | Environmental Justice |
| EMF | Electromagnetic Field |
| ENF | Environmental Notification Form |
| EO | Executive Order |
| EPA | Environmental Protection Agency |
| ERC | Emission Reducing Credits |
| ERP | Environmental Results Program |
| ERP | Emergency Response Plan |
| ESA | Endangered Species Act |
| ESP | Electrical service platform |
| EU | European Union |
| EWB | New Bedford Regional Airport |
| f | Fall |
| °F | Degrees Fahrenheit |
| FAA | Federal Aviation Administration |
| FDR | Facilities Design Report |
| FIR | Fabrication and Installation Report |
| FL | Fishery Liaison |
| FMP | Fishery Management Plan |
| FNP | Federal Navigation Project |
| FONSI | Finding of No Significant Impact |
| FR | Fishery Representative |
| ft | Feet |
| $ft^2$ | Square feet |

## List of Acronyms (Continued)

| | |
|---|---|
| FTZ | Federal Trade Zone |
| G&G | Geophysical and geotechnical |
| gal | Gallons |
| GDP | Gross domestic product |
| G.L. | General Law |
| HAPs | Hazardous air pollutants |
| HDD | Horizontal directional drilling |
| HFO | Heavy fuel oils |
| HPWMA | Hyannis Ponds Wildlife Management Area |
| hr | Hour |
| HRG | High-resolution geophysical |
| HSE | Health, Safety and Environment |
| HVAC | High-voltage alternating current |
| HVDC | High-voltage alternating current |
| Hz | Hertz |
| IALA | International Association of Lighthouse Authorities |
| IEC | International Electrotechnical Commission |
| IFR | Instrument flight rules |
| IHA | Incidental Harassment Authorization |
| IMCA | International Marine Contractors Association |
| IMO | International Maritime Organization |
| IPF | Impact Producing Factor |
| ISO | Independent System Operator |
| kHz | KiloHertz |
| kJ | Kilojoules |
| km | Kilometers |
| $km^2$ | Square kilometers |
| kV | kilovolt |
| L | Liters |
| L | Localized |
| LAER | Lowest Achievable Emission Rate |
| LOA | Letter of Authorization |
| Lpk | Peak sound pressure |
| LT | Long-term |
| m | Meters |
| $m^2$ | Square meters |
| $m^3$ | Cubic meters |
| MA | Massachusetts |
| Max | Maximum |

## List of Acronyms (Continued)

| | |
|---|---|
| MAAQS | Massachusetts Ambient Air Quality Standards |
| MAFMC | Mid-Atlantic Fisheries Management Council |
| MA CZM | Massachusetts Coastal Zone Management |
| MA DEP | Massachusetts Department of Environmental Protection |
| MA DMF | Massachusetts Division of Marine Fisheries |
| MA EFSB | Massachusetts Energy Facility Siting Board |
| MA WEA | Massachusetts Wind Energy Area |
| MassCEC | Massachusetts Clean Energy Center |
| MassDFW | Massachusetts Division of Fisheries and Wildlife |
| MassDOT | Massachusetts Department of Transportation |
| MassGIS | Massachusetts Bureau of Geographic Information |
| MARPOL | Marine Pollution |
| MEPA | Massachusetts Environmental Policy Act |
| mg/L | Milligram per liter |
| $\mu$g/L | Microgram per liter |
| $\mu$m | Micromolar |
| $\mu$Pa | MicroPascal |
| mi | Miles |
| MHC | Massachusetts Historic Commission |
| MLLW | Mean Lower Low Water |
| mm | Millimeters |
| $mm^2$ | Square millimeters |
| MMPA | Marine Mammal Protection Act |
| MMS | Mineral Management Service |
| MP | Monopile |
| m/s | Meters per second |
| MSD | Marine sanitization device |
| MVA | Minimum vectoring altitude |
| MVC | Martha's Vineyard Commission |
| MVY | Martha's Vineyard Airport |
| MW | Megawatt |
| NAAQS | National Ambient Air Quality Standards |
| NRA | Navigational Risk Assessment |
| NUWC | Naval Undersea Warfare Center |
| NAICS | North American Industry Classification System |
| NARW | North Atlantic Right Whale |
| NBDC | National Data Buoy Center |
| NCCA | National Commission for Certifying Agencies |
| NEAMAP | Northeast Area Monitoring and Assessment Program |

## List of Acronyms (Continued)

| | |
|---|---|
| NEFMC | New England Fisheries Management Council |
| NEFSC | Northeast Fisheries Science Center |
| NEXRAD | Next Generation Radar |
| NHESP | National Heritage and Endangered Species Program |
| NH DES | New Hampshire Department of Environmental Services |
| NJDEP | New Jersey Department of Environmental Protection |
| nm | Nautical miles |
| NMFS | National Marine Fisheries Service |
| No. | Number |
| NOAA | National Oceanic and Atmospheric Administration |
| NODEs | Density Estimates |
| $NO_2$ | Nitrogen Dioxide |
| $NO_x$ | Nitrogen Oxide |
| NOI | Notice of Intent |
| NOTAMs | Notice to Airmen |
| NPDES | National Pollutant Discharge Elimination System |
| NRLM | Non-road, locomotive, or marine |
| NROC | Northeast Regional Ocean Council |
| NTMs | Notices to Mariners |
| NTU | Nephoelometric Turbidity Unit |
| NUWC | Naval Undersea Warfare Center |
| NWS | National Weather Service |
| $O_3$ | Ozone |
| O&M | Operations and Maintenance Facilities |
| OCS | outer continental shelf |
| OCSLA | Outer Continental Shelf Lands Act |
| OECC | Offshore Export Cable Corridor |
| OEM | Original Equipment Manufacturers |
| OPAREA | Navy Operation Area |
| OSP | Optimum Sustainable Population |
| OSRP | Oil Spill Response Plan |
| PAL | Public Archaeological Laboratory |
| PAM | Passive acoustic monitoring |
| PATON | Private aids to navigation |
| PAVE/PAWS | Precision Acquisition Vehicle Entry/Phased Array Warning System |
| PD | Pile driving |
| Pb | Lead |
| PEIS | Programmatic Environmental Impact Statement |

## List of Acronyms (Continued)

| | |
|---|---|
| people/mi$^2$ | People per square mile |
| PEP | Population Estimate Program |
| PM | Particulate matter |
| ppm | Parts per million |
| PSO | Protected species observer |
| psu | Practical Salinity Units |
| PTS | Permanent threshold shift |
| PVC | Polyvinyl chloride |
| RFI | Request for Interest |
| RFP | Request for Proposals |
| RI | Rhode Island |
| RI DEM | Rhode Island Department of Environmental Management |
| rms | Root mean squared |
| RNA | Rotor Nacelle Assembly |
| ROTV | Remotely operated towed vehicle |
| ROV | Remotely operated vehicle |
| ROW | Right-of-way |
| RPS ASA | Applied Science Associates, Inc. |
| RSD | ripple scour depressions |
| RTA | Regional Transit Authority |
| RV | Research vessel |
| s | Spring |
| SAP | Site Assessment Plan |
| SARs | Stock Assessment Reports |
| SCADA | Supervisory control and data acquisition |
| SD | Standard Deviation |
| SEFSC | Southeast Fisheries Science Center |
| SELcum | Cumulative sound exposure level |
| SMAST | University of Massachusetts School of Marine Science and Technology |
| SMS | Safety Management System |
| $SO_2$ | Sulfur dioxide |
| Sound | Nantucket Sound |
| SOV | Service Operations Vessel |
| SPUE | Sightings per unit effort |
| ST | Short-term |
| STSSN | Sea Turtle Stranding and Salvage Network |
| su | Summer |
| T | Threatened |
| TBD | To be determined |
| TBF | To be filed |

## List of Acronyms (Continued)

| | |
|---|---|
| TDWR | Terminal Doppler Weather Radar |
| THPO | Tribal Historic Preservation Officer |
| TN | Total nitrogen |
| TNASS | Canadian Trans-North Atlantic Sighting Survey |
| TP | Total phosphorous |
| TP | Transition piece |
| tpy | Tons per year |
| TSHD | Trailing suction hopper dredge |
| TSS | Total suspended sediment |
| TSS | Traffic separation scheme |
| TTS | Temporary threshold shifts |
| Typ | Typical |
| u | Uncommon |
| US | United States |
| USACE | United States Army Corps of Engineers |
| USCG | United States Coast Guard |
| USCGC | United States Coast Guard Cutter |
| USDOE | United States Department of Energy |
| USDOI | United States Department of Interior |
| USFWS | United States Fish & Wildlife Service |
| Utility ROW | Utility Right of Way |
| VFR | Visual flight rules |
| VMS | Vessel Monitoring System |
| VOC | Volatile organic compounds |
| VT | Vessel Traffic |
| VTA | Vineyard Transit Authority |
| w | Winter |
| WDA | Wind Development Area |
| WEA | Wind Energy Area |
| WNS | White nose syndrome |
| WQI | Water Quality Index |
| WTG | Wind turbine generator |
| XLPE | Cross-linked polyethylene |