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VINEYARD WIND

Draft Construction and Operations Plan

Volume III Text

Vineyard Wind Project

October 22, 2018

Submitted by

**Vineyard Wind LLC
700 Pleasant Street, Suite 510
New Bedford, Massachusetts 02740**

Submitted to

**Bureau of Ocean Energy Management
45600 Woodland Road
Sterling, Virginia 20166**

Prepared by

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3 Mill & Main Place, Suite 250
Maynard, Massachusetts 01754**

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October 22, 2018

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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 Agreement
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
µg/L	Microgram per liter
µm	Micromolar
µPa	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
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	Nephelometric 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
SMASST	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