



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
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BOSTON, MA 02109-3912**

**FACT SHEET and
STATEMENT OF BASIS for
PERMIT MODIFICATION #1**

July 11, 2022

**Outer Continental Shelf Preconstruction and Operating Air Permit
800 MW Offshore Wind Farm
Vineyard Wind 1, LLC**

**Offshore Renewable Wind Energy Development
Massachusetts Wind Energy Area**

**EPA Draft Permit Number
OCS-R1-03-M1**

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Acronyms and Abbreviations

BOEM	Bureau of Ocean Energy Management
CAA	Clean Air Act
CA SIP	California State Implementation Plan
CFR	Code of Federal Regulations
CH ₄	Methane
CO	Carbon monoxide
COA	Corresponding onshore area
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CZMA	Coastal Zone Management Act
DEIS	Draft Environmental Impact Statement
DERC	Discrete Emission Reduction Credit
EAB	Environmental Appeals Board
EGRID	Environmental Protection Agency's Emissions & Generation Resource Integrated Database
EPA	United States Environmental Protection Agency
EJ	Environmental Justice
ERC	Emission Reduction Credit
ESA	Endangered Species Act
ESP	Electrical Service Platform
FWS	U.S. Fish and Wildlife Service
g/kw-hr	Grams per kilowatt-hour
H ₂ SO ₄	Sulfuric acid
HAP	Hazardous Air Pollutant
ISO NE	ISO New England
KV	Kilovolt
KW	Kilowatt
MassDEP	Massachusetts Department of Environmental Protection
MW	Megawatt
NHPA	National Historical Preservation Act
NMFS	National Marine Fisheries Service
NMHC	Non-methane hydrocarbons
NNSR	Nonattainment New Source Review
N ₂ O	Nitrous oxide
NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxides
OCS	Outer Continental Shelf
OECLA	Offshore Export Cable Laying Activities
Pb	Lead
PM	Particulate matter
PM ₁₀	Particulate matter with an aerodynamic diameter less than or equal to 10 microns
PM _{2.5}	Particulate matter with an aerodynamic diameter less than or equal to 2.5 microns

PSD	Prevention of Significant Deterioration
PTE	Potential to emit
SIL	Significant Impact Levels
SO ₂	Sulfur dioxide
Title V	The operating permit regulations in 310 CMR 7.00, appendix C
Tpy	Tons per year
VW1	Vineyard Wind 1, LLC
VOC	Volatile organic compounds
WDA	Wind Development Area
WTG	Wind Turbine Generators

I. General Information

Applicant's name and address: Vineyard Wind 1, LLC
700 Pleasant Street, Suite 510
New Bedford, Massachusetts 02740

Location of regulated activities: Wind Development Area (WDA): Outer Continental Shelf (OCS) Lease Area OCS-A 0501, located in federal waters off the Massachusetts coast. The WDA, at its nearest points, is approximately 23 kilometers (km) from the southeast corner of Martha's Vineyard and a similar distance from the southwest side of Nantucket.

Draft OCS permit number: OCS-R1-03-M1

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On March 18, 2022, the U.S. Environmental Protection Agency (EPA) Region 1 received a request from Vineyard Wind 1, LLC (VW1) to modify the permit issued to Vineyard Wind 1, LLC on May 19, 2021. EPA received subsequent requests from VW1 for additional revisions to the permit on May 7 and May 11, 2022. The initial permit was effective on June 21, 2021. Since the initial permit was issued, EPA has gained more experience with the application of the CAA permitting program for outer continental shelf (OCS) sources to offshore wind projects. In a subsequent permit for a similar offshore wind project, EPA developed permitting conditions for some construction equipment that differs from those in the permit issued to VW1. VW1 requested two modifications to the initial permit to conform certain conditions in its permit to those prepared by EPA for a similar outer continental shelf (OCS) source. VW1 also requested a minor revision to the engine requirements in the permit to allow for the installation of one 150 kW engine instead of three 40 kW engines. The modification will also clarify several permit conditions and make other minor technical corrections within the permit.

The basis for all other elements of the permit not discussed in this modification are explained in the June 28, 2019, Fact Sheet for the initial permit and remain unchanged.¹ The EPA prepared this Fact Sheet and draft modification to the OCS air permit in accordance with 40 CFR Part 124

¹ The June 28, 2019 Fact Sheet for the original draft permit is available online at <https://www.epa.gov/caa-permitting/permit-documents-vineyard-wind-1-llcs-wind-energy-development-project-800mw-offshore>.

- Procedures for Decision Making. All applicable CAA permitting requirements for Vineyard Wind 1, LLC are contained within EPA permit number OCS-R1-03-M1.

The EPA's permit decisions are based on the information and analysis provided by the applicant and the EPA's own technical expertise. This Fact Sheet and Statement of Basis documents the information and analysis the EPA used to support the modification to the OCS permit. It includes a description of the proposed changes to the permit and the bases for those changes.

II. Proposed Modification to the Permit

In the March 18, 2022, request for modification and subsequent requests received on May 7 and May 11, 2022, VW1 requested: (1) that EPA remove the requirements in the permit for pull-ahead anchor cable-laying vessels and the requirement to obtain offsets for construction emissions, consistent with EPA decisions made in the OCS air permit for the South Fork Wind Farm issued on January 18, 2022;² (2) a minor revision to the engine requirements in the permit to allow for the installation of one 150 kW engine instead of three 40 kW engines; (3) an 18-month extension to the commence construction deadline for activities subject to the permit; and (4) several other minor administrative changes. EPA is addressing these requests and proposing several other technical corrections and clarifications to existing permit conditions.

A. Cable Laying Vessel Requirements

In the initial permit for the VW1 project, EPA determined that the offshore export cable-laying activities (OECLA) met the definition of an OCS source when the cable laying vessel uses an anchoring system in the federal waters area of Nantucket Sound, thereby temporarily attaching to the seabed. Once an activity, facility, or equipment (e.g., the OECLA) is considered an OCS source, then the emission sources of that OCS source become subject to the permitting requirements of 40 C.F.R part 55. Therefore, EPA's May 19, 2021, permit contained part 55 permitting requirements for the OECLA.

In the initial VW1 permit application, VW1 proposed to treat pull-ahead anchor cable laying vessels (CLVs) in the OECLA as OCS sources based primarily on a conclusion that the CLVs constitute OCS sources as defined in 40 CFR § 55.2 because they temporarily attach to the seabed. EPA proposed the VW1 draft permit for comment consistent with the permit application and did not receive adverse comments on this permitting approach for treating pull-ahead anchor CLVs involved in OECLA as OCS sources. In the context of the VW1 permit, and consistent with VW1's initial application, EPA focused mainly on whether the pull-ahead anchor CLVs were attached to the seabed. Since the VW1 permit was issued, EPA issued a permit for another offshore wind farm to South Fork Wind, LLC. During the permitting

² The permit documents and administrative docket for the South Fork Wind Farm are available on EPA's website at <https://www.epa.gov/caa-permitting/south-fork-wind-llcs-south-fork-windfarm-outer-continent-shelf-air-permit>.

process, South Fork Wind submitted a letter on September 30, 2020, to EPA³ providing a rationale to support its conclusion that pull-ahead anchor CLVs should not be considered OCS sources. In response to the letter and the permit application for South Fork Wind, EPA reevaluated this issue and more fully considered the criteria that must be met for a vessel to be classified as an OCS source. EPA determined that, although pull-ahead anchor CLVs are attached to the seabed, this equipment does not meet the other two criteria for classifying a vessel as an OCS source and, therefore, should not be subject to the permitting requirements applicable to OCS sources. Please refer to EPA's June 24, 2021, Fact Sheet for the South Fork Wind permit for a detailed discussion of EPA's analysis of pull-ahead anchor CLVs.⁴ On January 18, 2022, EPA issued the final permit for South Fork Wind and did not treat CLVs as part of the OCS source, consistent with its proposed action, based on the rationale reflected in the June 24, 2021, Fact Sheet, that cable-laying vessels using either a pull-ahead anchor system or a dynamic positioning system did not meet all three criteria to qualify vessels as OCS sources. To provide consistent treatment in the permitting of sources with similar characteristics, EPA is proposing to modify the VW1 permit to remove the requirement that the OECLA is an OCS source, which is consistent with the analysis for the South Fork Wind Farm.

B. Offset Requirements for Construction Emissions

In the May 19, 2021, initial permit for VW1, EPA included a requirement to obtain nitrogen oxide (NO_x) and volatile organic compound (VOC) emission offsets for construction emissions. In doing so, EPA followed an approach it had applied in the first OCS permit EPA issued for a wind farm in 2011.⁵ In the fact sheet for the Vineyard Wind 1 permit, EPA stated that based on construction and operations emissions, "the ... facility's potential emissions exceed the permit applicability threshold for ... NNSR [nonattainment new source review] ... requirements, including the requirement to offset NO_x and VOC emissions."⁶ During the public comment periods for these permits, EPA did not receive comments on these OCS statutory and regulatory requirements and/or the application of offset requirements for OCS sources' construction emissions.

Since the initial VW1 permit was issued, EPA has re-assessed the application of the offset requirements under the NNSR program to OCS sources subject to part 55. As a result of EPA's re-assessment, EPA determined that the emission offset requirements under the CAA and NNSR

³ Letter from Stephen C. Fotis, Counsel for Orsted Wind Power North America LLC to Anne Austin, Former Principal Deputy Administrator for the Office of Air and Radiation (OAR) regarding "Treatment of Offshore Cable-Laying Vessel Activities under the 40 CFR Part 55, Outer Continental Shelf Air Regulations." A copy of the letter can be found in the docket for South Fork Wind permit, available at <https://www.epa.gov/caa-permitting/epa-issued-cao-permits-region-1>.

⁴ The June 24, 2021 Fact Sheet for South Fork Wind can be accessed at available at <https://www.epa.gov/caa-permitting/south-fork-wind-llcs-south-fork-windfarm-outer-continental-shelf-air-permit>.

⁵ See EPA permit and supporting permit documents for Cape Wind Energy Project (dated June 2, 2011). Available online at <https://www.epa.gov/caa-permitting/permit-documents-cape-wind-associates-llc-cape-wind-energy-project-horseshoe-shoal>.

⁶ See page 14 of EPA's Fact Sheet for the Vineyard Wind 1 Offshore Wind Farm. Available online at <https://www.epa.gov/sites/default/files/2021-06/documents/vineyard-wind-1-llc-fs-sob.pdf>.

regulations do not apply to construction emissions on the OCS. EPA interprets CAA sections 173, 40 CFR part 51 and the Massachusetts NNSR regulations to support the conclusion that offsets for construction emissions are not required for sources onshore and are also not required for OCS sources under section 328 of the CAA and 40 CFR part 55. EPA discussed the basis for this interpretation in the October 20, 2021, Supplemental Fact Sheet for the South Fork Wind Farm permit action.⁷ After considering public comments received during the public comment period, on January 18, 2022, EPA issued the final permit for the South Fork Wind Farm without requiring offsets for construction emissions, consistent with the direction in the October 20, 2022, Supplemental Fact Sheet and based on the rationale provided therein. To provide consistent treatment in the permitting of sources with similar characteristics, EPA is proposing to modify the VW1 permit to remove the requirement to obtain emission offsets for construction activities. The proposed permit modification does not alter any control technology requirements for OCS sources engaged in construction activities or any requirement in the permit to obtain emission offsets for operational emissions.

C. Engine Requirements

VW1 also requested a revision to Condition IV.B.2 of the permit to allow the use of up to ~150 kilowatt (kW) temporary diesel engines on the wind turbine generators (WTGs) for commissioning activities during the construction period. VW1's OCS Air Permit application for the initial permit originally described the use of up to three 40 kW generators (120 kW total power) on each WTG to support commissioning activities based on VW1's best understanding of the WTG commissioning process at the time of submission. Since the initial permit application, VW1 has selected a WTG supplier who has determined that there is not enough room on the WTG foundation to accommodate three separate 40 kW generators. Consequently, the contractor is proposing to use a single generator on each WTG with a power rating of ~150 kW to deliver approximately the same amount of power.

In the June 28, 2019, Fact Sheet for the original permit, EPA determined that the Best Available Control Technology (BACT) and LAER for the engines on the WTGs are the Tier 3 engine requirements in 40 CFR part 1042. Therefore, Condition IV.B.2 of the permit required the ~ 40 kW engines on the WTGs to comply with the engine standards in 40 CFR § 1042.101(a). Because the BACT and LAER analyses were based on the applicable standards for marine engines in part 1042 and were not dependent on the specific engine power rating, the requested change to the permit does not alter EPA's BACT or LAER analysis in the original draft permit. The ~150 kW engines that VW1 proposes to operate at the WTGs will still be required to meet the Tier 3 engine requirements in 40 CFR § 1042.101(a) for marine engines.

Furthermore, as part of its permit modification application, VW1 provided an analysis to support its conclusion that the emissions increase from operation of the ~150 kW generator engines

⁷ The October 20, 2021 Supplemental Fact Sheet for the South Fork Wind Farm is available at <https://www.epa.gov/system/files/documents/2021-10/sfw-supplemental-fs-10-20-2021.pdf>.

would not result in a significant emissions increase at the facility or alter the conclusion of the previous air quality impacts analysis. Depending on the pollutant, the change in emissions would be -0.3% to 1.9% of the overall construction emissions from the WDA facility included in the OCS air permit application for the original permit. EPA has evaluated VW1's analysis and concurs with the permittee's conclusion that the requested permit modifications do not necessitate any changes to the previous air quality impact analysis for this source.

EPA notes that the emissions calculations presented in VW1's analysis indicate a drop in annual particulate matter emissions due to a lower emission rate from the Tier 3 engine requirements in 40 CFR § 1042 for a 150-kW engine vs. a 40-kW engine. Given the drop in the emission rate, there are no potential PM impacts to Class I areas, given the original analysis showed impacts well below the Class I Significant Impact Levels (SILs).

Additionally, the emission calculations in VW1's analysis show a 0.5% increase in total annual NO_x emissions during the construction phase. The original construction emissions modeling analysis showed an annual nitrogen dioxide (NO₂) impact of 0.009 ug/m³, well below the Class I SIL of 0.1 ug/m³. The 0.5% increase in annual NO_x emissions therefore would not cause an exceedance of the Class I SIL. Although carbon monoxide (CO) emissions may increase by 1.9% due to the 150-kW engine, there is no Class I PSD increment or other Class I air quality standard for CO. Therefore, EPA concurs with VW1's conclusion that the proposed modification does not alter our prior conclusion that the project will not significantly impact a Class I area.

In addition to the requested change, the EPA has included a permit condition restricting the operation of the engines on each WTG and ESP to no more than 500 hours annually per engine at each WTG or ESP location during the operational phase of the project. Air quality impacts from the engines on the WTGs and ESP were modeled as if they were operating intermittently at no more than 500 hours in a given year at a given location as stated in VW1's Operations & Maintenance Air Quality Modeling Report.⁸ For PSD permits, emission scenarios included in the modeling compliance demonstration for the 1-hour NO₂ National Ambient Air Quality Standard (NAAQS) are meant for emissions that are continuous enough or frequent enough to contribute significantly to the annual distribution of daily maximum 1-hour concentrations.⁹ VW1's screening modeling indicated that impacts for annual NO₂ and annual PM_{2.5} were below the significance threshold and no further analysis was warranted, but a refined analysis was required for 1-hour NO₂ and 24-hour PM_{2.5}. Therefore, the anticipated hours of engine use per year of operation and maintenance were factored into the emission estimate for 1-hour average NO₂ modeling for VW1. We are proposing to include a permit condition in the modified permit that restricts the operation of the generator engines on the WTGs and ESP to mitigate the source's

⁸ See Section 4.7.2.6 of VW1's Operation & Maintenance Air Quality Modeling Report (November 2018), which is included in the administrative docket for the permit at <https://www.regulations.gov/docket/EPA-R01-OAR-2019-0355>.

⁹ PSD review for this project is required for NO_x, and for NO₂ and as a precursor to ozone and PM_{2.5}. EPA released supplemental guidance related specifically to modeling requirements related to the 1-hour NO₂ standard for PSD permits. See "Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO₂ National Ambient Air Quality Standard" dated March 1, 2011.

contribution to ambient NO₂ levels based on dispersion conditions to ensure compliance with the NAAQS, consistent with EPA’s 2011 NO₂ modeling guidance.¹⁰

D. Other Administrative Changes, Clarifications, and Corrections

1. Other Changes Requested by Permittee

- a. The May 19, 2021, permit identified the location of the Wind Development Area (WDA) for the VW1 project as the northern portion of Lease Area OCS-A 0501. In June 2021, Lease Area OCS-A 0501 was segregated into Lease Areas OCS-A 0501 and OCS-A 0534. The VW1 project is still located in Lease Area OCS-A 0501. However, Lease Area OCS-A 0501 is now 65,296 acres in size and the WDA occupies the entire newly formed Lease Area as opposed to the northern portion of the Lease Area. This change does not impact the project’s construction or operation plans, and has no impact on emissions.
- b. VW1 also requested that EPA correct two section references—one in Section IX.12 (proposed permit Condition IX.11) and one in Section XVII of the initial permit—that inadvertently directed the reader to the wrong section. The initial permit inadvertently referenced the wrong section of the permit in each of these locations.
- c. The initial permit referenced engine standards previously codified at 40 CFR part 89 and part 94. On June 29, 2021, EPA completed a final rulemaking that migrated “legacy” engine regulations from Subchapter C to Subchapter U of Chapter 1, Title 40 of the CFR. As a result, the Tier 1 and Tier 2 marine engine emission standards previously located in 40 CFR part 89 (for engines <37 kW) and 40 CFR part 94 (for engines ≥37 kW) have been incorporated into Appendix I of 40 CFR part 1039 and Appendix I of 40 CFR part 1042, respectively. See 86 FR 34308. Therefore, VW1 requested that EPA update the permit terms to reflect the correct citations to the Tier 1 and Tier 2 engine standards. EPA is proposing revised permit terms to replace all references to the emission standards in 40 CFR part 89 with the correct citations to 40 CFR part 1039, Appendix I and to replace all references to the emission standards in 40 CFR part 94 with the correct citations to 40 CFR part 1042, Appendix I.
- d. In accordance with Condition X.2 of the permit and EPA’s regulations at 40 CFR § 55.6(b)(4) and § 52.21(r)(2), VW1 requested that EPA extend the commence construction deadline in Condition X.2 of the permit. VW1 requested the extension to align with the permit modification to remove the permit conditions for pull-ahead anchor cable laying vessels. As originally contemplated, the cable laying vessels would have triggered the 18-month period under which construction of the project should have commenced before the permit becomes invalid. However, after the permit modification to remove the permit conditions for pull-ahead anchor cable laying vessels, the construction period will not be

¹⁰ *Id.*

triggered until the first OCS source is erected in the wind development area, which is scheduled for the summer of 2023 and will likely be the erection of the first WTG or electrical service platform. Since VWI has provided an adequate justification for extending this commence construction deadline, EPA is proposing to revise Condition X.2 of the permit to extend the commence construction date to 18-months from the effective date of the modified permit. EPA is also proposing to correct the citation to the underlying applicable provision in 40 CFR § 52.21. The final permit had cited 40 CFR 52.21(q)(2) instead of 40 CFR 52.21(r)(2).

2. Additional Changes Proposed by EPA

EPA is proposing several other technical corrections and clarifications in the modified permit. EPA believes these changes are administrative in nature, and do not substantively alter any permit conditions or authorize additional activities at the source. A description of the proposed change and the rationale for each of the proposed revisions is provided below.

- a. EPA reorganized the definitions for “the Permittee” and “primary crew transfer vessel” in Section III of the draft permit because these definitions were not in alphabetical order.
- b. EPA added a definition for *marine engine* to Section III of the draft permit. The term *marine engine* is used in the permit when referencing the engine standards at 40 CFR part 1042 (and formerly 40 CFR part 94), which are applicable to marine engines as defined in part 1042. Therefore, EPA is adding the definition of marine engine from 40 CFR part 1042 to clarify the permit terms and conditions applicable to marine engines. In addition, EPA removed the definition for *auxiliary engine* because this definition is now included in the definition of *marine engine*.
- c. In Condition IV.B.2 and IV.C2, EPA corrected the engine parameter terminology to be consistent with the underlying applicable regulations in 40 CFR § 1042.101(a). The permit previously indicated an engine’s design displacement in kilowatts per liter (kW/l). However, engine displacement is a measure of cylinder volume and is not a function of the engines output. An engines power density is measured in kW/l.
- d. The EPA has clarified Table 2 in Condition IV.D.5 of the permit for consistency with the underlying applicable regulations. The NO_x emission limits set out in Table 2 are intended to reflect the combination of the international consensus standards contained in Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL Annex VI) and EPA’s Clean Air Act (CAA) emission standards for Category 3 marine diesel engines installed on U.S. vessels contained in 40 CFR parts 1042 and 1043. The Annex VI NO_x limits apply to all engines above 130 kW installed on a vessel.¹¹ EPA’s CAA standards for Category 3 engines are consistent with the MARPOL Annex VI NO_x limits (40 CFR § 1043.60), but also apply HC and CO limits to Tier 2 and 3 Category 3 engines (40 CFR § 1042.104(a)(3) and (4)).

¹¹ There is an exemption for engines installed on ships that operate only domestically, provided they are covered by an alternative program.

In addition, EPA's program defines the central power bin category as 130 to 2000 rpm, and the small category as over 2000 rpm. Annex VI, on the other hand, defines the central category as "130 or more but less than 2,000 rpm" and the small category as "2,000 rpm or more." For simplicity, because the ships that will be operating under this permit are expected to be foreign flagged, Table 2 reflects the Annex VI category definitions. Since both 40 CFR § 1043.60 and Annex VI refer to rounding to the first decimal place, this discrepancy does not lead to a change in the applicable standards.

EPA also revised the language in Condition IV.D.5 to clarify that foreign flagged vessels should meet the NO_x limits in Annex VI, and domestic flagged vessels are subject to EPA's standards. EPA also replaced the references to "IMO" with "Annex VI" to clarify the applicable regulation.

- e. In Section V of the permit, EPA requires the Permittee to obtain a minimum of 96 tons per year (tpy) of NO_x Continuous Emission Reduction Credits (CERCs) and 2 tpy of VOC CERCs prior to the beginning of the Operational Phase of the WDA facility. These numbers are based on a multiplier of 1.26. The Massachusetts NNSR requirements at 310 CMR 7.00: Appendix A(6)(e)(1) use a 1.2 multiplier to determine the amount of emissions required to be offset. If offsets are acquired from the Massachusetts trading bank, 310 CMR 7.00 Appendix B(3)(e)2 requires that an additional five percent of offsets be obtained thereby increasing the multiplier to 1.26. However, the permit allows the Permittee to obtain offsets through mechanisms outside of the Massachusetts trading bank, in which the additional five percent adjustment would not apply. Therefore, EPA has clarified the number of offsets required for operating emissions in the final permit to require the Permittee to obtain 96 tpy of NO_x and 2 tpy of VOC CERCs if the offsets are obtained from the Massachusetts trading bank. If the CERCs are obtained from another mechanism identified in the permit, the Permittee is required to obtain 92 tpy of NO_x and 2 tpy of VOC CERCs.
- f. In Section VIII of the draft permit, EPA clarified that the requirement to record the OCS source status of each vessel in Conditions VIII.1 and VIII.2 applies to both the construction and operation phase.
- g. In Section VIII of the draft permit, EPA revised Condition VIII.3 as requested by VW1 to clarify that the requirement to record engine parameters for all vessel engines included in the OCS source's PTE only applies to the operational phase. By requiring engine records for each engine included in the PTE of the operational phase, this provision ensures that engine records are maintained for engines located on vessels that operate as an OCS source to determine compliance with Section IV and VI of the permit, as well as engine records for vessels that do not operate as an OCS source but are operating within 25 miles of the OCS source to determine compliance with Section V of the permit.

In addition to the requested change, EPA engine regulations are based on engine displacement expressed as "liters per cylinder." Therefore, the recordkeeping requirements should require records with that terminology. EPA has replaced the term

“cylinder size” with “engine displacement” to accurately reflect the terminology used in the underlying applicable regulations. EPA made the same correction to the corresponding reporting requirement in Condition IX.2 of the permit.

EPA also revised Condition VIII.3 to include a requirement to document whether the vessel is a domestic or foreign-flagged vessel. This requirement was included on page 56 of the June 28, 2019, Fact Sheet for the initial draft permit¹², but was inadvertently omitted from the permit. This information is necessary to determine compliance with the vessel engine requirements in the permit.

- h. EPA added a recordkeeping requirement to Section VIII of the permit that requires the Permittee to maintain engine records for vessels operating as an OCS source during the construction phase. EPA also added a requirement to maintain engine records for engines located on the ESP or WTGs. These records are required to determine compliance with the WTG and ESP engine requirements and for the engine requirements for vessels operating as an OCS source in Sections IV and VI of the permit.
- i. The EPA revised Condition VIII.7 of the permit to clarify the recordkeeping requirements that apply to engines on vessels operating within 25 miles of the WDA facility’s centroid during the operational phase of the project.
- j. The EPA revised Condition VIII.11 of the permit to clarify that this condition is only required while the vessels are operating as an OCS source.
- k. The EPA added Condition VIII.15 to the permit requiring the Permittee to keep records of all required information necessary to submit annual Source Registration / Emissions Statements to MassDEP in accordance with 310 CMR 7.12. This recordkeeping requirement is necessary to ensure compliance with the corresponding reporting requirement in Condition IX.8 of the permit.
- l. The EPA revised the fee requirements in Section XVI.B of the permit to remove the requirement from the initial permit to pay an application fee of \$24,305. VW1 paid this fee on May 14, 2021, and therefore this permit condition is no longer necessary. The EPA added a permit condition to pay all applicable application fees in accordance with the fee provisions in the Massachusetts regulations at 310 CMR 4.00 and 7.00 upon notification by EPA. Permit modification OCS-R1-03-M1 is subject to an application fee of \$2,370 for a non-major comprehensive plan approval.
- m. The EPA revised Section XVI.C of the permit to clarify that the annual fee provisions for the Title V permit only apply to the operations phase of the project. This is consistent with the underlying applicable regulations at 310 CMR 7.00, Appendix C and 40 CFR part 70.

¹² The June 28, 2019 Fact Sheet for the initial draft permit is available at <https://www.epa.gov/caa-permitting/permit-documents-vineyard-wind-1-llcs-wind-energy-development-project-800mw-offshore>.

- n. The EPA revised the requirements in Section XXI of the permit to allow for the submittal of electronic reporting upon notification of availability of such a system by EPA. The existing permit language prohibited the submittal of electronic reporting. EPA made this revision to allow for e-reporting if an EPA-approved option for e-reporting becomes available.

III. Summary of Permit Revisions

EPA is proposing to modify the May 19, 2021, permit as requested by VW1. EPA has also made several other changes to the permit as described above. A summary of the proposed permit revisions is provided in Table 1 below. Please refer to the Redline-Strikeout version of the modified draft permit for a detailed description of the proposed permit revisions.¹³

Table 1 – Summary of Proposed Permit Revisions

Permit Section & Condition	Summary of Permit Revision
Acronyms & Abbreviations	Removed acronym for OECLA – Offshore Export Cable Laying Activity.
All	Replaced acronym VW with VW1.
Section I	Removed the phrase “in the northern half of” from the description of the source to reflect the project occupies all of lease area OCS-A 501.
Section I	Deleted the description that the wind farm consists of two separate OCS sources and OECLA as the second source.
Section I	Removed paragraph describing the Anchored Cable Laying Vessels and the applicability of regulatory programs to the OECLA.
Section II	Removed references to the OECLA from the list of air emission sources (Table 1).
Section III	Removed the definition of <i>Anchored Cable Laying Vessel</i> .
Section III	Removed the definition of <i>Auxiliary Engine</i> . This definition has been incorporated into the added definition for <i>Marine Engine</i> .
Section III	Removed references to the OECLA and Anchored Cable Laying Vessel from the definition of <i>Construction Start Date</i> .
Section III	Removed definition of <i>Discrete Emission Reduction Credits (DERC)</i> .
Section III	Added definition for <i>marine engine</i> and removed separate definition of <i>auxiliary engine</i> .
Section III	Removed the definition of <i>Nantucket Sound Area</i> as it only applies to the OECLA.
Section III	Removed reference to the Nantucket Sound Area in the definition of OCS source.
Section III	Removed reference to the OECLA in the definition of Secondary Crew Transfer Vessel.
Section III	Removed reference to the OECLA in the definition of Supply Vessel.
Section III	Reorganized the definitions of <i>The Permittee</i> and <i>Primary Crew Transfer Vessel</i> to the correct alphabetical order.
Section III	Removed the phrase “northern half of” from the definition of <i>Wind Development Area</i> .
Sections III, IV, and VIII	Replaced all references to the emission standards in 40 CFR § 89 with 40 CFR § 1039 – Appendix I and 40 CFR § 94 with 40 CFR § 1042 – Appendix I to reflect the correct regulatory citation.
Condition IV.B.2 and IV.C.2	EPA corrected the engine parameter terminology to be consistent with the underlying applicable regulations in 40 C.F.R part 1042.101(a)

¹³ EPA has included a redline-strikeout version of the draft permit modification in the administrative docket available at or the permit at <https://www.regulations.gov/docket/EPA-R01-OAR-2019-0355>.

Permit Section & Condition	Summary of Permit Revision
Condition IV.B.2	EPA revised the permit condition to allow for the installation of a 150-kW generator engine in lieu of three 40-kW generator engines.
Condition IV.B.3	EPA added a limit to restrict the hours of operation to 500 hours per year for each generator engine at each WTG location during the operational phase.
Condition IV.C.3	EPA added a limit to restrict the hours of operation to 500 hours per year for each generator engine at the ESP location during the operational phase.
Condition IV.D.4	Deleted “including, a domestically flagged Anchored Cable Laying Vessel”.
Condition IV.D.5	Deleted “including, a foreign flagged Anchored Cable Laying Vessel”. Clarified language in Condition IV.D.5 and Table 2 to reflect the applicable regulations in Annex VI and EPA’s program at 40 CFR part 1042.
Condition IV.D.6	Deleted “including the Anchored Cable Laying Vessel (if foreign flagged)”.
Condition IV.D.8	Deleted reference to the OECLA.
Section V	Removed the NNSR offset provisions previously located in Condition V.A.1, V.A.5, V.A.6, and V.A.7 of the May 19, 2021, permit that required the Permittee to obtain DERCs for NOx and VOC construction emissions.
Section V	Relocated the provisions previously located in Conditions V.A.2 and V.A.4 of the May 19, 2021, permit to Section VIII – Recordkeeping Requirements. The draft permit maintains the requirements to record and calculate daily emissions, but has been revised to clarify that these requirements only apply to the operational phase.
Section V	Deleted the provisions previously located in Condition V.A.3 of the May 19, 2021, permit that required the Permittee to track daily nitrogen oxide (NOx) emissions for the OECLA.
Section V	Clarified the number of offsets required for operating emissions based on the mechanism used to obtain the offsets.
Condition VIII.1 and VIII.2	Clarified that each condition applies to both the construction and operational phase.
Condition VIII.3	Removed reference to the OECLA from the recordkeeping requirements for engines on vessels that become OCS sources.
Condition VIII.3	Revised provision to clarify that requirement to record engine parameters for vessel engines for all engines included in the PTE applies during the operational phase. Revised condition includes requirement to record if the vessel is a domestic or foreign-flagged vessel. Additionally, the term “cylinder size” was replaced with “engine displacement” to accurately reflect the terminology used in engine regulations.
Section VIII	Added requirement to maintain engine records for engines on vessels operating as an OCS source during the construction phase.
Section VIII	Added requirement to maintain engine records for engines on the WTGs and ESP.
Section VIII	Revised Condition VIII.5 of the May 19, 2021, permit to add clarifier that requirement to record vessel engine data applies to vessels included in the PTE during the operational phase. Added a clarifier to specify the total hours of engine operation should be recorded when a vessel is operating at or within 25 miles of the WDA facility’s centroid. Corrected references to permit sections to reflect changes in modified draft permit. Note that Condition VIII.5 of the May 19, 2021, permit is Condition VIII.7 in the proposed draft permit.
Condition VIII.11	Clarified permit condition only applies to vessels while operating as an OCS source.
Section VIII	Added Condition VIII.15 to require recordkeeping of necessary elements to comply with the reporting requirement in Condition IX.8.
Condition IX.1	Deleted “and the Nantucket Sound Area”.
Condition IX.2	The term “cylinder size” was replaced with “engine displacement” to accurately reflect the terminology used in engine regulations.
Section IX (previous Condition IX.9)	Removed requirement to demonstrate that DERCs used for compliance with construction offset requirements are surplus, quantifiable, enforceable, and permanent.

Permit Section & Condition	Summary of Permit Revision
Section IX (previous Condition IX.10.c and d)	Removed requirement to report the number of NO _x and VOC offsets obtained during the construction phase of the project.
Condition IX.11	Corrected typographical error to reference Section XXI instead of XVIII.
Condition X.2	Extended the date in which construction must commence in accordance with 40 C.F.R 55.6(b)(4) and 40 CFR 52.21(r)(2).
Section XVI.B	Revised OCS fee payment requirements to include a requirement to submit fees in accordance with applicable regulations and remove fee payment requirements that have already been met.
Section XVI.C	Revised Section XVI.C to clarify the annual fees and reporting requirements for title V only apply to the operational phase.
Section XVII	Corrected typographical error to reference Section XVI.C instead of XVI.B.
Section XXI	Revised the reporting submittal requirements in Section XXI to allow for electronic submittal of reporting upon notification from EPA.

IV. Consultations

For the purposes of the Endangered Species Act (ESA), Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), and the National Historic Preservation Act (NHPA), the issuance of an OCS air permit is a federal action undertaken by the EPA. The Bureau of Ocean Energy Management (BOEM) is the lead federal agency for authorizing renewable energy activities on the OCS and the Vineyard Wind 1 wind farm is also a federal action for BOEM.¹⁴ BOEM's regulations at 30 CFR part 585 require Vineyard Wind 1 to obtain a Construction and Operation Plan (COP) approval before commencing construction on the windfarm. In conjunction with the COP approval, BOEM is also responsible for issuing the Record of Decision (ROD) on the Environmental Impact Statement conducted under the National Environmental Policy Review Act (NEPA).¹⁵ The EPA assesses its own permitting action (i.e., to issue an OCS air permit for the WDA facility and OECLA) as interrelated to, or interdependent with, BOEM's COP approval and issuance of the NEPA ROD for the Vineyard Wind windfarm. Accordingly, the EPA has designated BOEM as the lead Federal agency for purposes of fulfilling statutory obligations under the aforementioned statutes.¹⁶ BOEM has accepted the designation as lead Federal agency.¹⁷

BOEM issued the NEPA ROD for the Vineyard Wind 1 project on May 10, 2021. On April 26, 2022, the EPA notified BOEM as the lead Federal agency, that EPA received a permit

¹⁴ More information on the BOEM's Renewable Energy Program can be found at <https://www.boem.gov/Renewable-Energy/>.

¹⁵ More information on the NEPA process can be found at <https://www.epa.gov/nepa/national-environmental-policy-act-review-process>.

¹⁶ A copy of the July 25, 2018, letter from EPA R1 to the BOEM regarding lead agency designation is included in the administrative record.

¹⁷ A copy of the September 24, 2018, letter from the BOEM to EPA R1 accepting lead agency designation is included in the administrative record.

modification request for the Vineyard Wind 1, LLC (VW1) Clean Air Act OCS air permit.¹⁸ As discussed in Section II.B above, the proposed modification will not change the conclusion from the original air quality impact analysis that the project will not significantly impact ambient air around the project area or in a Class I area. In addition, the requested modification does not represent a substantial change in the design or operation at the facility from VW1's COP. Therefore, EPA does not view this modification as impacting compliance with the statutes for which BOEM is the lead Federal agency.

V. Environmental Justice

Executive Order (EO) 12898 entitled "Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations" requires that federal agencies identify and address, as appropriate and to the extent practicable and permitted by existing law, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. *See* Executive Order 12898, Section 1-101, 59 FR 7629 (Feb. 16, 1994). Consistent with EO 12898 and the EPA's "Plan EJ 2014: Considering Environmental Justice in Permitting,"¹⁹ the EPA must (1) consider the environmental justice issues, on a case by case basis, connected with the issuance of federal permits (particularly when permitting projects for major sources that may involve activities with significant public health or environmental impacts on already overburdened communities); and (2) focus on whether the federal permitting action would have disproportionately high and adverse human health or environmental effects on minority or low income populations. As discussed in Section II.B above, the proposed modification will not change the conclusion from the original air quality impact analysis that the project will not significantly impact ambient air around the project area or in a Class I area. In addition, the requested modification does not represent a substantial change in the design or operation at the facility. Please refer to the June 28, 2019, Fact Sheet for the original draft permit for EPA's EJ analysis for the Vineyard Wind 1 wind farm.²⁰

VI. Tribal Consultation and Enhanced Public Participation

Per the *EPA Policy on Consultation and Coordination with Indian Tribes*, the EPA Region 1 offers tribal government leaders an opportunity to consult on all OCS air permit actions. On May 16, 2022, the EPA notified the tribes in Massachusetts, Rhode Island, and Connecticut and provided the opportunity to conduct government-to-government consultation prior to issuing the

¹⁸ A copy of the April 26, 2022, letter from the EPA notifying the BOEM of the requested modification is included in the administrative record.

¹⁹ For additional information on addressing environmental justice in permitting, *see, e.g.*, the EPA's "Plan EJ 2014: Considering Environmental Justice in Permitting," available at <https://www.epa.gov/environmentaljustice/plan-ej-2014-considering-environmental-justice-permitting>. (last visited on April 3, 2019).

²⁰ EPA's June 28, 2019 Fact Sheet is available at <https://www.epa.gov/caa-permitting/permit-documents-vineyard-wind-1-llcs-wind-energy-development-project-800mw-offshore>.

OCS air permit.²¹ To date the EPA has not received a request from any tribe requesting consultation on this permit action. However, the tribes may request consultation at any time.

In order to comply with the Section 5-5(c) (“Public Participation and Access to Information”) of EO 12898, which requires that each federal agency work to ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public, the EPA has prepared a Public Notice, available on the EPA website at <https://www.epa.gov/caa-permitting/caa-permitting-epas-new-england-region>. Interested parties can also subscribe to an EPA email list that notifies them of public comment opportunities in Region 1 for proposed air pollution control permits via email at <https://www.epa.gov/caa-permitting/caa-permitting-epas-new-england-region>. These procedures, along with this Fact Sheet and Statement of Basis, will ensure an opportunity for meaningful involvement for all communities. In addition, the EPA will hold a public hearing for this permit action in areas with potentially impacted environmental justice communities.

VII. Comment Period, Hearings and Procedures for Final Decisions

All persons, including applicants, who believe any condition of the draft permit modification is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period. EPA prefers that all comments be submitted via email to Eric Wortman at wortman.eric@epa.gov. Comments may also be submitted electronically through <https://www.regulations.gov> (Docket ID # **EPA-R01-OAR-2019-0355**). If electronic submittal of comments is not feasible, hard copy comments may be submitted to the address below.

Eric Wortman
Air and Radiation Division (Mailcode: 05-2)
U.S. EPA Region 1
5 Post Office Square, Suite 100
Boston, MA 02109

A virtual public hearing will be held during the public comment period. See the public notice for details.²² The EPA will consider requests for extending the public comment period for good cause. In reaching a final decision on the draft permit modification, the EPA will respond to all significant comments and make these responses available to the public upon request and on EPA’s website at <https://www.epa.gov/caa-permitting/epa-issued-cao-permits-region-1>.

Following the close of the public comment period, and after the public hearing, the EPA will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the

²¹ A copy of the EPA’s May 16, 2022 letter offering government-to-government consultation to each of the tribes is included in the administrative record.

²² The public notice for the draft permit modification is available online at <https://www.epa.gov/caa-permitting/permit-documents-vineyard-wind-1-llcs-wind-energy-development-project-800mw-offshore>.

notice of issuance of the final permit decision, any interested parties may submit a petition for review of the final permit decision to the EPA's Environmental Appeals Board consistent with 40 CFR 124.19.

XV. EPA Contacts

Additional information concerning the draft permit may be obtained from:

Eric Wortman (Mailcode 05-2)
U.S. Environmental Protection Agency
5 Post Office Square - Suite 100
Boston MA 02109 - 3912
Telephone: (617) 918-1624
Email: wortman.eric@epa.gov

All supporting information regarding the original permit action and this modification can also be found on EPA's website at <https://www.epa.gov/caa-permitting/epa-issued-caa-permits-region-1> and at www.regulations.gov Docket ID. EPA-R01-OAR-2019-0355.