

**SouthCoast Wind Outer Continental Shelf Air Permit Application –
Response to US EPA Request for Additional Information on January 30, 2024
SouthCoast Wind Responses in Red**

OCS Sources

1. In the emissions spreadsheet (Rev1_20231129), the jack-up vessel associated with both construction and operating activities is the only identified OCS source¹. EPA is aware of other vessels associated with similar identified activities which are also considered OCS sources. Specifically noted in previous applications are the platform supply vessels associated with monopile installation during construction, service operation vessel and crew transport vessels associated with multiple activities (turbine commissioning/completion, offshore array cable, offshore export cable) during construction; and service operation vessel and crew transport vessels associated with planned repairs during annual operations. While EPA is aware that each project is unique, it is not clear why the vessels mentioned above and otherwise associated with the SCW project are not considered OCS sources. Please provide further rationale on why these vessels are not considered OCS sources consistent with the regulatory definition below so that we may document it in the fact sheet.

Response: SouthCoast Wind (SCW) has re-evaluated which vessels associated with the Project could become OCS sources during either Construction or Operation and Maintenance phases of the Project. The vessels listed below have the potential to become OCS sources because they may be attached to and erected on the seabed or because they may physically attach to another OCS source based on anticipated operations. Note that the specific vessels that become OCS sources may change from this list based on the actual vessels contracted for the Project and how they are ultimately used onsite. This information has been included in Section 2.4 of the revised permit application as well as the emissions calculation spreadsheet (Rev2_20240228).

Vessels associated with construction that have the potential to become OCS sources:

- Heavy lift crane installation vessel
- Heavy lift transport vessels
- Jack-up vessel
- DP accommodation vessel
- Crew transfer vessels
- Tugboats
- Multi-purpose support vessels

Vessels associated with O&M that have the potential to become OCS sources:

- Jack-up vessel

¹ Per 40 CFR Part 55, OCS source means any equipment, activity, or facility which: (1) Emits or has the potential to emit any air pollutant; (2) Is regulated or authorized under the Outer Continental Shelf Lands Act ("OCSLA") (43 U.S.C. § 1331 *et seq.*); and (3) Is located on the OCS or in or on waters above the OCS. This definition shall include vessels only when they are: (1) Permanently or temporarily attached to the seabed and erected thereon and used for the purpose of exploring, developing or producing resources therefrom, within the meaning of section 4(a)(1) of OCSLA (43 U.S.C. § 1331 *et seq.*); or (2) Physically attached to an OCS facility, in which case only the stationary sources aspects of the vessels will be regulated.

- Service operation vessel
- Crew transfer vessels
- Tugboats
- Multi-purpose support vessels

Emissions factors for potential OCS sources were based on EPA's 2022 guidance "Ports Emissions Inventory Guidance: Methodologies for Estimating Port-Related and Goods Movement Mobile Source Emissions"². Since specific vessels have not yet been contracted, no updates to emission factors are proposed at this time. Once vessels are formally selected, a decision on whether to apply for exceptions from control technology requirements as detailed in 40 CFR 55.7 will be made based on the availability of vessels.

2. In emission spreadsheet (Rev1_20231129), the jack up vessel is identified to be a Category 3 Tier 2 engine. The PM emission factor used in the spreadsheet appear to exceed the emissions allowed by the applicable standard under [40 CFR part 60](#) and is prohibited by BACT³. Unless the facility applies for and is granted an exemption using the procedure in 40 CFR 55.7, the facility would be required to comply with the PM emission standard contained in 60.4204(c)(4). Please clarify if the facility anticipates the jack-up vessel being able to meet the PM emission standards in 60.4204(c)(4), or if the facility will need to apply for an exemption using the procedure in 40 CFR 55.7

Response: SCW does not yet have a contract for the vessel that will be used and as such cannot confirm whether the PM emission rate can be met. Once the vessel is formally selected, a decision on whether to apply for exceptions from control technology requirements as detailed in 40 CFR 55.7 will be made based on the availability of vessels.

Generators

3. Please clarify the discrepancy concerning the operating hours of O&M engines between the spreadsheet (Rev1_20231129) and the response to comment (RTC). The spreadsheet (Rev1_20231129) indicates 4hrs/day and the RTC indicates 4hrs/month.

Response: The planned operation for these generators is 4 hours/month. The Column H heading in the emissions spreadsheet was a typo, incorrectly indicated the value was "Operating Hrs/Day" when it should have read "Operating Hrs/Month". Calculations correctly assumed the value was "per month" and did not need any revision. The heading in Column H has been corrected on the "O&M_Engines" tab in the revised emissions calculations spreadsheet (Rev2_20240228).

4. The facility did not quantify the VOC emissions in any of the spreadsheet calculations (Rev1_20231129) for the engines during construction and operation. In many cases, previous applications have chosen to represent VOC emissions for this same type of unit using HC emissions factor as a surrogate (which is conservative). Please provide the VOC emissions associated with the engines during construction and operation.

² <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1014J1S.pdf>

³ According to the criteria within 40 CFR 1042, it would indicate this engine's model year to fall between 2011 through 2015 and make it an applicable engine under 40 CFR Part 60, Subpart IIII. In addition, the jack-up vessel will be subject to the BACT. In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under [40 CFR part 60, 61, or 63](#). Per Subpart IIII (40 CFR 60.4204(c)(4)), "Owners and operators of non-emergency stationary CI engines with a displacement of greater than or equal to 30 liters per cylinder must meet the following requirements: Reduce particulate matter (PM) emissions by 60 percent or more or limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.15 g/KW-hr (0.11 g/HP-hr).

Response: VOC emissions have been calculated for the engines as shown on tabs "P1_Const_Engines", "P2_Const_Engines", and "O&M_Engines" in the revised emissions calculations spreadsheet (Rev2_20240228). VOC emission factors were based on hydrocarbon factors provided in EPA's non-road compression engine exhaust emission standards⁴. Total Project VOC emission on the "Summary", "Summary_w_fuel" tabs of the spreadsheet were also updated to reflect these added emissions.

5. Please clarify which engines during construction and operation are being requested as emergency verses non-emergency and provide us with the anticipated annual operating hours (hpy) for each engine type proposed with both construction and operation. In addition, please clarify which generators will be permanently installed or affixed to the WTGs and/or OSPs, and which will be removed after commissioning.

Response: SCW is planning to use the following engines during construction per each project (Project 1 and Project 2):

- 747 kW pile driving hammer engines (3) to be used during foundation installation (non-emergency).
- 429 kW air compressor engines (30) to be used for bubble curtain noise mitigation during pile driving (non-emergency).
- 1400 kW generator (1) on each OSP during commissioning, will be removed once commissioning is completed (non-emergency).
- 150 kW generators (up to 60) on WTGs during commissioning, will be removed once commissioning is completed (non-emergency).

Emissions calculations and planned operating hours for these engines can found on the "P1_Const_Engines" and "P2_Const_Engines" tabs of the calculation spreadsheet (Rev2_20240228). An additional column has been added to the spreadsheet that indicates annual operating hours, which conservatively assumes all engine usage occurs in a single calendar year.

There will be no permanently installed engines on the WTGs. SCW will permanently install a 1280 kW generator on each OSP that would be used for back-up power only. These units will only be regularly used for routine testing (4 hours/month).

Additional text has been included in Section 3.3 of the revised permit application to clarify planned usage of each of the engines.

⁴ <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100QA05.pdf>

SF6

6. EPA understands the rationale in the RTC and supplemental letter from the manufacturer for the infeasibility of SF6 GIS on the OSP. However, there is a discrepancy in specifying the infeasibility of SF6 for Project 1 versus Project 2. It is not clear if it is infeasible for Project 2. Please provide the anticipated dates for procurements and design of Project 2 GIS (akin to the level of detail that was provided for Project 1 if possible – if not possible please clarify why).

Response: SouthCoast Wind is evaluating the technical and economic feasibility of using the SF6-free alternating current equipment for the Project 2 OSP. Final decisions for the Project 2 OSP equipment will be made once additional market information is available, but procurement for Project 2 has not yet commenced. If technically and economically feasible, SouthCoast Wind will use SF6-free equipment for the Project 2 OSP.

7. Please provide the total CO₂e emissions (tpy) associated with the SF₆ leak rate of 0.1%. The application mentions an Air Emission Summary in Attachment 6 of Appendix C, but EPA is having trouble locating it.

Response: SouthCoast Wind originally provided SF₆ emissions as CO₂e in the archive of modeling files provided digitally as Attachment 6 of the dispersion modeling report (Appendix C of the permit application). These emissions were based on a maximum permissible leakage rate of 0.89% per year. On a follow-up call on February 7, 2024, EPA requested clarification from SouthCoast Wind on whether the proposed leakage rate is 0.89% or 0.1%.

Current designs for products that use SF₆ gas have leakage rates that are much lower than historic products and are on the order of 0.1% per year⁵. Therefore, SouthCoast Wind proposes a maximum permissible SF₆ leakage rate of 0.1% based on current industry standards. This leak rate complies with the Massachusetts regulatory requirement limiting the annual leak rate to 1 percent per 310 CMR 7.72(5)(a). Greenhouse gas emissions of SF₆ as carbon dioxide equivalent (CO₂e) were calculated using a global warming potential (GWP) of 23,500 from the most recent Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report⁶. SF₆ emissions as CO₂e are provided in Table 3-3 of the revised permit application.

Emissions

8. EPA noted that the worst-case construction year emissions differ significantly between the spreadsheet (Rev1_20231129) and the application (April 2023, pg 33). It appears like SCW used the total project emissions instead of worst year construction emissions. EPA asked SCW to walk through the rationale behind these differences and provide clarity.

Response: Emissions presented in the April 2023 application were intended to conservatively represent the worst-case year, assuming all of Project 1 emissions could take place in one year (for consistency with the dispersion modeling). Since that submittal (and noted in the response to comments provided in October 2023) an overestimation of transit emissions reflected in the April 2023 permit application has been corrected. Table 4-2 of the revised permit application is now consistent with the spreadsheet calculations (Rev2_20240228) for the worst-case year.

⁵ <https://www.siemens.com/us/en/products/energy/techttopics/techttopics-111.html>

⁶ https://ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf

Application

9. Please revise the permit application and resubmit for clarity – specifically we are request revisions to those relevant pages where the information has changed (such as emission) so that we have a uniform application in the docket for this permitting action. This resubmission is for clarity and will not change the administrative completeness date.

Response: The permit application has been updated to incorporate all revisions since the last full submittal in April 2023. All EPA comments and SCW responses (including those herein) are included in new Appendix E. A hardcopy version of the emission calculation spreadsheet (Rev2_20240228) is provided in new Appendix D.

Confidentiality

Lastly, although not discussed during our meeting last week, we are evaluating the confidentiality claim on the RTC document recently submitted. Attached is a document that summarizes what is needed for facilities to claim “confidential business information” on materials submitted to the Agency. I’m sending you this in the event we determine the documents can be considered confidential.

Response: Following discussions between EPA Counsel and SCW General Counsel, EPA has indicated this matter is resolved.