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January 12, 2023

VIA ELECTRONIC MAIL

Morgan McGrath  
U.S. EPA Region 1  
5 Post Office Square, Suite 100  
Boston, Massachusetts 02109

RE: Phase 1 of New England Wind OCS Air Permit Application

Dear Morgan:

I am writing on behalf of Park City Wind LLC (“the Proponent”) to respond to your December 16, 2022 email requesting clarification on the Best Available Control Technology (BACT) for sulfur hexafluoride (SF<sub>6</sub>) switchgear on the wind turbine generators (WTGs) for Phase 1 of New England Wind (“the Project”). As explained below, emerging “SF<sub>6</sub>-free” control technologies for potential use in WTG switchgear (e.g., air insulated switchgear and fluoronitrile gas blends) are not included in Step 1 of the BACT analysis because their inclusion would be devoid of the numerous factors that must be considered in selecting a WTG design. It would thus impermissibly dictate a redesign of a critical component that is inherent to the Proponent’s ability to achieve its stated purpose, thus regulating the basic business objective of the proposed facility.

### **Overview of GHG BACT**

The Clean Air Act defines “BACT” as an emission limit that is based on a “case-by-case” analysis of the “maximum degree of reduction of each pollutant subject to regulation . . . from any major emitting facility . . . taking into account energy, environmental, and economic impacts and other costs,” that is “achievable” by employing certain identified processes, techniques, or technologies. 42 U.S.C. § 7479(3); 40 C.F.R. § 52.21(b)(12).

The Environmental Appeals Board (“EAB”) explained in *In re Northern Michigan University*, that the BACT definition requires permit issuers to “proceed[] on a case-by-case basis, taking a careful and detailed look, attentive to the technology or methods appropriate for the particular facility, . . . to seek the result tailor-made for that facility and that pollutant.” 14 E.A.D. 283, 291 (EAB 2009) (citations and quotations omitted). “BACT is therefore a site-specific determination

that results in the selection of an emission limitation representing application of control technologies or methods that are appropriate for the particular facility.” *In re Arizona Public Service Co.*, 17 E.A.D. 323, 326 (EAB 2016), *citing In re Prairie State Generating Co.*, 13 E.A.D. 1, 12 (EAB 2006), *aff’d Sierra Club v. EPA*, 499 F.3d 53 (7th Cir. 2007); *In re Three Mountain Power, LLC*, 10 E.A.D. 39, 47 (EAB 2001); *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 128-29 (EAB 1999).

EPA’s 2011 GHG Permitting Guidance recommends that BACT analysis for greenhouse gas emissions (“GHGs”) be conducted in the same manner as for any other regulated pollutant. U.S. EPA, EPA-457/B-11-001, *PSD and Title V Permitting Guidance for Greenhouse Gases* 17 (Mar. 2011) (“GHG Guidance”). The GHG analysis thus applies the pre-existing analytical framework, including the five-step “top-down” method described in the 1990 NSR Manual, which provides:

The top-down process provides that all available control technologies be ranked in descending order of control effectiveness. The PSD applicant first examines the most stringent – or “top” – alternative. That alternative is established as BACT unless the applicant demonstrates, and the permitting authority in its informed judgment agrees, that technical considerations, or energy, environmental, or economic impacts justify a conclusion that the most stringent technology is not “achievable” in that case.

Office of Air Quality Planning & Standards, U.S. EPA, *New Source Review Workshop Manual* (draft Oct. 1990) (“1990 NSR Manual”) at B.2 (emphasis added).<sup>1</sup>

### **Step 1: Identify Candidate Control Technologies for SF<sub>6</sub>-Containing Equipment on the WTGs**

The first step in the top-down BACT process is to identify all “available” control options to reduce fugitive emissions of SF<sub>6</sub> from switchgear on the WTGs. GHG Guidance at 24. In its Outer Continental Shelf Air Permit Application (“Application”), the Proponent considered control technologies both within and outside the US in its analysis, with a search of permits through EPA’s RBLC identifying 22 facilities with entries for SF<sub>6</sub> emissions from switchgear. The most stringent emission rate for SF<sub>6</sub>-insulated equipment identified through this search is the use of manufacturer-sealed systems that are certified by the manufacturer to meet a leak rate of no more than 0.5% per calendar year and are equipped with leak detection systems. The use of sealed SF<sub>6</sub>-insulated equipment with leak detection systems is the only available control option for the Project.

While the Proponent recognizes that there are some emerging “SF<sub>6</sub>-free” control technologies for potential use on WTG switch gear, they were not considered in Step 1 of the analysis because Step 1’s

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<sup>1</sup> The EAB explained in *In re La Paloma Energy Center* that “the NSR Manual is not a binding Agency regulation, and consequently strict application of the methodology described in it is not mandatory nor is it the required vehicle for making BACT determinations.” 16 E.A.D. at 273 n. 4 (citations omitted); *see also In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 183 (EAB 2000) (“This top-down analysis is not a mandatory methodology, but it is frequently used by permitting authorities to ensure that a defensible BACT determination, involving consideration of all requisite statutory and regulatory criteria, is reached.”).

broad look at potential pollution control options is “not without limits.” GHG Guidance at 26. As the EAB explained in *In re Arizona Public Service Co.*, BACT cannot “redefine the design of the source”:

Consideration of fundamentally different facility types than those proposed by permit applicants generally is not required. Indeed, EPA guidance and Board precedent, affirmed by the U.S. Court of Appeals for the Seventh Circuit, give permitting authorities the discretion to exclude a proposed control alternative from consideration in the BACT analysis, if that proposed alternative would ‘redefine the design of the source.’” NSR Manual at B.13; *see Sierra Club v. EPA*, 499 F.3d 653, 654-57 (7th Cir. 2007), *aff’d In re Prairie State Generating Co.*, 13 E.A.D. 1 (EAB 2006); *see also Util. Air Regulatory Group v. EPA*, 134 S. Ct. 2427, 2448 (2014); *In re Sierra Pac. Indus.*, 16 E.A.D. 1, 48-49 (EAB 2013); *In re City of Palmdale*, 15 E.A.D. 700, 729-30 (EAB 2012); GHG Guidance at 26-27. If a permitting authority decides that a proposed alternative would constitute a redefinition of the source, it will not list the alternative as a potential control option in Step 1 of its BACT analysis, and it will not consider that option further. NSR Manual at B.13.

17 E.A.D. at 335.

Through a body of case law, the EAB, has set forth the process by which to determine whether an emissions control option would fundamentally redefine a proposed source. *See e.g., In re La Paloma Energy Center*, 16 E.A.D. 267, 285 (EAB 2014); *In re City of Palmdale*, 15 E.A.D. at 724-39, appeal docketed sub nom. *Simpson v. EPA*, No. 12-74124 (9th Cir. Dec. 18, 2012); *In re Desert Rock Energy Co.*, 14 E.A.D. 484, 524-30 (EAB 2009); *In re Prairie State Generating Co.*, 13 E.A.D. at 14-34. Permitting authorities should first examine how the applicant defines the proposed facility’s “end, object, aim, or purpose,” *i.e.*, “the facility’s basic design.” The permit issuer then should take a “hard look” at which design elements are “inherent” to the applicant’s purpose and which design elements could possibly be altered to achieve pollutant emissions reductions without disrupting the applicant’s “basic business purpose” for the proposed facility. Additionally, the proposed facility design must be derived for reasons independent of air quality permitting. Each determination, like each BACT analysis itself, requires a case-by-case analysis and is highly fact- and circumstance-specific. *La Paloma*, 16 E.A.D. at 287 (citing CAA § 169(3), 42 U.S.C. § 7479(3)) (defining “BACT” as a “case-by-case” determination); GHG Guidance at 26.

As demonstrated below, requiring the use of emerging “SF<sub>6</sub>-free” control technologies in WTG switchgear as BACT would redefine the design of the facility and regulate the Proponent’s basic business objective.

### **The WTGs Are Inherent to Proponent’s Basic Business Purpose**

As stated in Proponent’s Application, the objective of Phase 1 is to construct, operate, and decommission an offshore renewable wind energy facility that will deliver power to one or more

Northeastern states and/or to other offtake users.<sup>2</sup> The facility will include up to 62 wind turbine generators (WTGs), with a maximum tip height of 357 m (1,171ft). It will also include one or two ESPs that serve as common interconnection points for the WTGs, as well as inter-array and export cables.

The WTG is the fundamental design element that is “inherent” to the Proponent’s ability to achieve its stated purpose. It is the design element that produces the power necessary for delivery to one or more Northeastern states and/or to other offtake users. It is also the element around which all other elements of the project are designed and engineered to ensure compatibility.

Given its inherent importance, selecting a WTG design considers multiple factors with no one factor determinative. These include, but are not limited to, the size and capacity of the WTG, the site-specific wind resource and oceanographic conditions, supply chain availability within the time frame needed for construction, demonstrated reliability of the WTG, operation and maintenance services provided, and terms and conditions of service contracts offered. The Proponent, like other developers, carefully weighs the pros and cons of each potential WTG supplier to ensure that the selected WTG meets the numerous technical requirements and works commercially with the project business model. BACT dictating an emerging control technology for a WTG would be a fundamental change to the project, as it would be devoid of these critical considerations and would thus regulate the Proponent’s basic business objective for the proposed facility. *See Desert Rock Energy Co.*, 14 E.A.D. at 530 (“BACT, in most cases, should not be applied to regulate the applicant’s purpose or objective for the proposed facility.” (citations omitted)); *In re City of Palmdale*, 15 E.A.D at 735-39 (technical considerations are appropriately considered in determining whether a control option would constitute a redesign of the source).

These considerations are particularly important at this stage of the project as the Proponent has not yet selected a WTG. Offshore construction is not expected to commence until 2026 and the procurement process is in its early stages and will not likely be concluded for many months. Selecting a WTG supplier is a highly competitive and complex process, with each supplier offering the technical, service, and commercial terms discussed above. It is also important to note that existing SF<sub>6</sub>-free control technologies are proprietary technologies that are specific to a WTG supplier and cannot be transferred between suppliers. Thus, not all suppliers participating in the procurement process will offer SF<sub>6</sub>-free control technologies for a WTG that meets the site-specific conditions and requirements of the proposed project, if SF<sub>6</sub>-free control technologies are offered at all. For these reasons and consistent with established law and policy, SF<sub>6</sub>-free control technologies cannot dictate the overall design of the WTG and are thus not “achievable” for the proposed project. As such, they are not appropriately considered potential control options in Step 1 of the BACT analysis.

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<sup>2</sup> Together, the objective of Phase 1 and Phase 2 of New England Wind is to deliver approximately 2,600 MWs of clean energy to New England

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Please let me know if you have any questions or if you would like to discuss this further.

Sincerely,



Geri Edens  
Counsel for New England Wind

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M. Roll  
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