

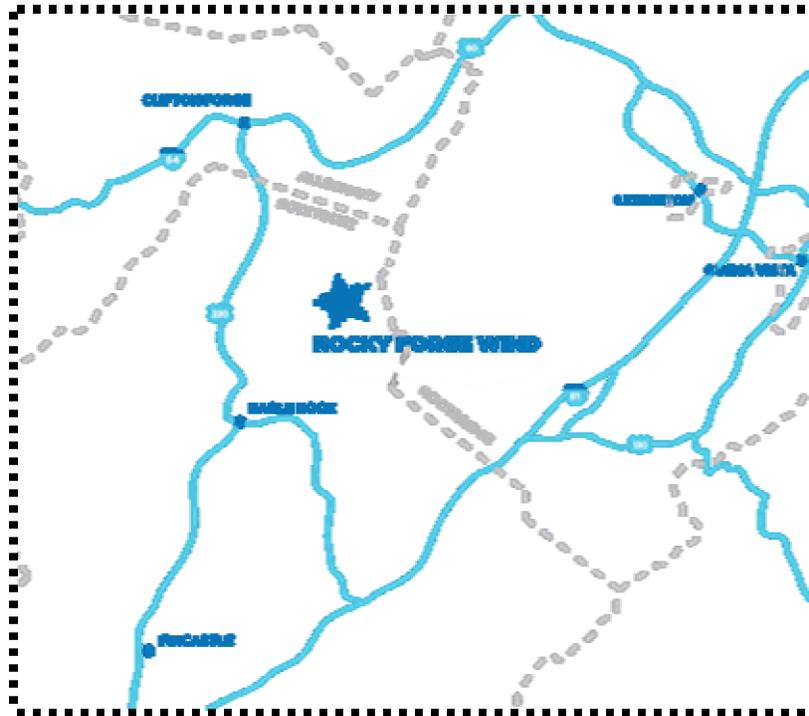
# ROCKY FORGE WIND, LLC

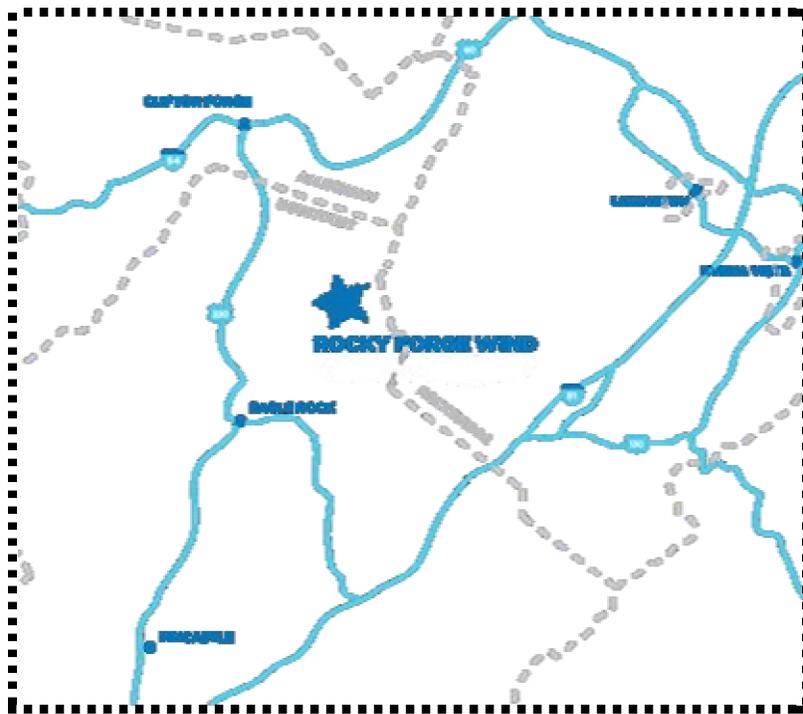
## Small Renewable Energy Projects (Wind) Permit by Rule

### Application for PBR Modification

Date: ~~June~~ August 24, 2020

Modification Application and Supporting Materials Submitted on ~~First Day of Public Notice~~





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## I. ABOUT THE MODIFICATIONS

Rocky Forge Wind, LLC (Rocky Forge Wind) is developing the Rocky Forge Wind Project (Project) in Botetourt County, Virginia. The Virginia Department of Environmental Quality (DEQ or the Department) authorized use of the Small Renewable Energy Projects (Wind) Permit by Rule (PBR) for the Rocky Forge Wind Project on March 2, 2017 (the 2017 Authorization).

The 2017 Authorization included two parcels (tax map numbers 13-2 and 20-3). Since that approval, two changes to the tax parcels have occurred. The first was a boundary line adjustment made to parcel 13-2. This modification changed the boundary at the northwest corner of the parcel and created a 600-acre parcel identified as tax map parcel 6-5. This parcel 6-5 is no longer part of the Project. In addition, a 7.9-acre parcel (20-3A) was carved out of parcel 20-3 for construction of a new house. Parcel 20-3A will remain a part of the Project together with tax map parcels 13-2 and 20-3. The property under lease for the Project includes 6,753 acres (Property).

The Property is situated on the southernmost portion of North Mountain, a mountain ridge running northeast to southeast for approximately 17 miles along the northeastern side of Botetourt County and extending northeast (see the context map in **Attachment 11B**). North Mountain is west of the Blue Ridge Mountains and is along the eastern front of the Allegheny/Appalachian Mountains. North Mountain varies in elevation from 1,200 to 3,440 feet with steep slopes, long ridges, and continuous valleys that are typical of this part of the Appalachians. The nearest community to the Project is Eagle Rock, approximately 4.2 miles to the southwest. Near the southern boundary of the Property is Mill Creek, a creek that joins the James River in Eagle Rock.

The 2017 Authorization approved a site plan of approximately 336 acres, of which the project anticipated using roughly 200 acres for facilities. Since the original authorization, Rocky Forge Wind has refined the Project's design to reflect newer, more efficient wind turbine models, prompting the need to apply for modifications to the 2017 Authorization.

This request for modifications of the previously authorized Project (the "Modifications") includes the following:

- a. The 2017 Authorization permitted a site plan totaling approximately 336 acres, of which the project anticipated utilizing roughly 200 acres for facilities. The revised Project design includes several *de minimis* disturbance areas of along the route used to move the turbines to the ridgeline that were not part of the originally reviewed disturbance zone. These *de minimis* additions along planned access roads and within the substation area result in approximately 18 acres of additional disturbance corridor. The addition of these *de minimis* areas will allow Rocky Forge Wind to reduce overall impacts to the Project site. This includes a section of approximately 52 acres that is completely removed from the Site Plan due to the fewer turbines and progressed engineering (see **Attachment 11A**). The current design for the project uses approximately 120 acres of the site, representing a reduction of 80 acres, or 40%.
- b. Since the 2017 Authorization, taller, more efficient turbine models have become available that will allow the Project to produce more energy with fewer turbines. These newer turbines are visually and mechanically similar to previous models, but feature incremental

improvements in software, generator capacity, tower height, and blade length. The originally authorized Project consisted of up to 25 turbines with a maximum height of 550 feet. **The representative turbine for the originally authorized Project was the N131, 3.0 MW turbine, which would have resulted in a project swept area of 336,955 m<sup>2</sup>.**

This modification proposes to install up to 22 turbines with a maximum height of 680 feet located in the same footprint along the ridgelines within the disturbance zone. Ultimately, Rocky Forge Wind will use wind turbines that are suited for the area, provide long-term functionality, and are manufactured by companies that have a proven track record in wind turbine production. The chosen turbine will comply with Botetourt County ordinances and PBR requirements and will meet the needs of the Project. **Given the request to keep up to 22 turbines in this modification application, and in response to public comment, Rocky Forge Wind commits to a final project configuration of number of turbines and wind turbine rotor diameters that results in a rotor swept area that is less than 336,955 m<sup>2</sup>.**

Rocky Forge Wind proposes to install turbines along approximately 3.5 miles of the southernmost portion of North Mountain (the Project Area). The majority of the Project Area is dominated by mature hardwood forest with some areas of younger growth hardwood forest where timber harvests have occurred. Several open fields are present along the access routes and ridgeline within the Project Area. Currently, four temporary meteorological (MET) towers are located along the ridgeline to collect continuous wind data. A natural gas easement operated by TransCanada and existing Virginia Electric and Power Company overhead transmission lines run parallel to a portion of Mill Creek along the southern and eastern boundary of parcel 20-3. The Project Area is accessible by existing public and private access roads. A limited number of public and private roads will be improved to accommodate construction and operation of the Project.

The power generated by the Project including the Modifications will be linked to the electric transmission grid operated by PJM via the existing 230kV transmission lines that traverse the Property.

## **II. PERMIT BY RULE COMPLIANCE ANALYSIS**

The Wind PBR process sets out 14 requirements that must be addressed to comply with, and obtain, the PBR. This document and its attachments comprise the Rocky Forge Wind application for PBR approval of the Modifications to the 2017 Authorization.

This application is structured to show first the specific PBR Requirement, then explain our analysis of compliance with the PBR requirement. Where appropriate and informative, we also provide additional information intended to help explain the Modifications and application documents in a useful context.

### **1. NOTICE OF INTENT**

**REQUIREMENT (9 VAC 15-40-30.A.1.):**

*In accordance with § 10.1-1197.6 B 1 of the Code of Virginia, and as early in the project development process as practicable, furnishes to the department a notice of*

*intent, to be published in the Virginia Register, that he intends to submit the necessary documentation for a permit by rule for a small renewable energy project.*

#### COMPLIANCE ANALYSIS:

A notice of intent for this Modification request was provided to DEQ on June 1, 2020. DEQ then provided notice to the Virginia Regulatory Town Hall and that notice was published online at the Virginia Regulatory Town Hall on June 8, 2020. A copy of the notice of intent provided to the DEQ and the notice as published in the Virginia Regulatory Town Hall are included as **Attachment 1**.

## 2. **COMPLIANCE WITH LOCAL LAND USE ORDINANCES**

#### REQUIREMENT (9 VAC 15-40-30.A.2.):

*In accordance with § 10.1-1197.6 B 2 of the Code of Virginia, furnishes to the department a certification by the governing body of the locality or localities wherein the small renewable energy project will be located that the project complies with all applicable land use ordinances.*

#### COMPLIANCE ANALYSIS:

In addition to the PBR, the Modifications must obtain approval from Botetourt County, which is the local governing body with jurisdiction over the Project location.

Rocky Forge Wind submitted an application to Botetourt County to modify the Project as described in this PBR Modification application. A public hearing for the Special Exception Permit (SEP) modification was held on May 11, 2020, and the Planning Commission unanimously recommended approval of the Project. On May 26, 2020 the Botetourt County Board of Supervisors approved the SEP Amendment for Rocky Forge Wind.

Rocky Forge Wind has worked closely with the Botetourt County planning and economic development staff and County leadership to ensure the Project is well suited for the County. The company voluntarily reached out to close neighbors of this Project, civic and environmental groups, and required notices were provided.

The following documents are included as attachments.

- Botetourt County Approval of the Modifications to the SEP (**Attachments 2A(1.1) and 2A(1.2)**)
- Local Governing Body Certification (**Attachment 2B**)

## 3. **INTERCONNECTION STUDIES**

#### REQUIREMENT (9 VAC 15-40-30.A.3.):

*In accordance with § 10.1-1197.6 B 3 of the Code of Virginia, furnishes to the department copies of all interconnection studies undertaken by the regional transmission organization or transmission owner, or both, on behalf of the small renewable energy project.*

**COMPLIANCE ANALYSIS:**

The following Interconnection studies have been approved and were submitted to DEQ as a part of the original PBR application: the Feasibility Study Report, the System Impact Study Report, and the Facilities Study. These studies remain valid for the Modifications.

**4. INTERCONNECTION AGREEMENTS**

**REQUIREMENT (9 VAC 15-40-30.A.4.):**

*In accordance with § 10.1-1197.6 B 4 of the Code of Virginia, furnishes to the department a copy of the final interconnection agreement between the small renewable energy project and the regional transmission organization or transmission owner indicating that the connection of the small renewable energy project will not cause a reliability problem for the system. If the final agreement is not available, the most recent interconnection study shall be sufficient for the purposes of this section. When a final interconnection agreement is complete, it shall be provided to the department. The department shall forward a copy of the agreement or study to the State Corporation Commission.*

**COMPLIANCE ANALYSIS:**

The final Interconnection Services Agreement and Interconnection Construction Services Agreement were provided to DEQ on April 25, 2017 in accordance with 9 VAC 15-40-30.A.4. These agreements remain valid for the Modifications.

**5. MAXIMUM GENERATION CAPACITY CERTIFICATION**

**REQUIREMENT (9 VAC 15-40-30.A.5.):**

*In accordance with § 10.1-1197.6 B 5 of the Code of Virginia, furnishes to the department a certification signed by a professional engineer licensed in Virginia that the maximum generation capacity of the small wind energy project, as designed, does not exceed 100 megawatts.*

**COMPLIANCE ANALYSIS:**

The Project including the Modifications will not exceed 100 megawatts (MW) and will meet up to the maximum Project size to be interconnected to the electrical grid, as stipulated in the interconnect agreements (referenced in section 4 above). A certification of compliance signed by a professional engineer licensed in Virginia is included as **Attachment 5**. A non-utility certification is included as **Attachment 5A**.

6. **ANALYSIS OF POTENTIAL IMPACT ON AIR QUALITY STANDARDS**

REQUIREMENT (9VAC 15-40-30.A.6.):

*In accordance with § 10.1-1197.6 B 6 of the Code of Virginia, furnishes to the department an analysis of potential environmental impacts of the small renewable energy project's operations on attainment of national ambient air quality standards.*

COMPLIANCE ANALYSIS:

The Modifications requested in this application will not be a detriment to attainment of national ambient air quality standards, as the operations will not have off-gassing or any burning as associated with traditional energy generation. Operation of the Project with the Modifications will not have a negative effect on air quality. In fact, they will have an improvement on air quality, as operating the Project with the Modifications will over time, and throughout the PJM Grid, reduce the need to operate traditional energy generating facilities that do have a negative impact on air quality. The Modifications will not produce carbon emissions, nitrogen oxide, sulfur dioxide, particulates, fly ash or other particulates as associated with conventional energy generation. Thus, energy generation from the proposed Project with the Modifications would offset the following emissions improving the air shed as estimated below:

- 185,870 tons of carbon dioxide
- 223,390 lbs of nitrogen oxides
- 290,800 lbs of sulfur dioxide

The above calculations are estimates generated based on projected annual production of the Project as modified with offsets calculated utilizing the EPA AVERT Tool at <https://www.epa.gov/statelocalenergy/avert-web-edition>.

7. **ANALYSIS OF POTENTIAL BENEFICIAL/ADVERSE IMPACTS ON NATURAL RESOURCES**

Please note that as required by the Permit by Rule, the analysis under this section 7 is broken into three sub-sections: A. Wildlife, B. Historic Resources, and C. Other Natural Resources.

REQUIREMENT (9 VAC 15-40-30.A.7.):

*In accordance with § 10.1-1197.6 B 7 of the Code of Virginia, furnishes to the department, where relevant, an analysis of the beneficial and adverse impacts of the proposed project on natural resources. The owner or operator shall perform the analyses prescribed in 9VAC 15-40-40. For wildlife, that analysis shall be based on information on the presence, activity and migratory behavior of wildlife to be collected at the site for a period of time dictated by the site conditions and biology of the wildlife being studied, not exceeding 12 months.*

**A. ANALYSIS OF POTENTIAL BENEFICIAL/ADVERSE IMPACTS ON NATURAL RESOURCES (WILDLIFE)**

**REQUIREMENT (9 VAC 15-40-40.A):**

*Analyses of wildlife. To fulfill the requirements of § 10.1-1197.6 B 7 of the Code of Virginia, the applicant shall conduct preconstruction wildlife analyses. The analyses of wildlife shall include the following:*

1. Desktop surveys and maps. . . .
2. Breeding bird surveys. . . .
3. Field survey of non-avian resources. . . .
4. Raptor migration surveys. . . .
5. Map and field studies of avian resources in Coastal Avian Protection Zones. . . .
6. Bat acoustic surveys. . . .
7. Mist-netting or harp-trapping surveys. . . .
8. Wildlife report.

**COMPLIANCE ANALYSIS:**

**1. Desktop Survey and Maps**

Reviews of the Virginia Department of Game and Inland Fisheries (DGIF) Fish and Wildlife Information Service (FWIS) database were included in the original PBR application, and were completed again on June 1, 2020, to identify changes in state listed species and state Species of Greatest Conservation Need (SGCN) with the potential to be affected by the Project (Table 1). Although DGIF indicated in a May 20, 2020 telephone call with Rocky Forge Wind representatives that the desktop surveys included in the original permit application were adequate for the Modification, Rocky Forge Wind conducted an additional desktop review to further understand any changes in species status since the 2017 Authorization (see **Attachment 7A(1)**).

**Table 1:** Federally and state listed threatened and endangered species and Tier 1/Tier 2 SGCN with potential to occur within the Modifications as of June 2020.

| Species                        | Federal Status | State Status       | Potential to Occur |
|--------------------------------|----------------|--------------------|--------------------|
| <b>AVIAN</b>                   |                |                    |                    |
| American black duck            |                | Tier 2a            | Unlikely           |
| American woodcock <sup>+</sup> |                | Tier 2a            | Unlikely           |
| Black-billed cuckoo            |                | Tier 2b            | Unlikely           |
| Cerulean warbler               |                | Tier 2a            | Confirmed          |
| Golden eagle                   | Protected      | Tier 1a            | Confirmed          |
| Golden-winged warbler          |                | Tier 1a            | Unlikely           |
| Loggerhead shrike              |                | Tier 1a/Threatened | Unlikely           |
| Migrant loggerhead shrike      |                | Threatened         | Unlikely           |
| Northern saw-whet owl          |                | Tier 1c            | Unlikely           |
| Peregrine falcon               |                | Tier 1a/Threatened | Confirmed          |
| Yellow-crowned night heron     |                | Tier 2a            | Unlikely           |
| <b>MAMMAL</b>                  |                |                    |                    |
| Little brown bat               |                | Tier 1a/Endangered | Low                |
| Northern long-eared bat        | Threatened     | Tier 1a/Threatened | Confirmed          |

| Species                                   | Federal Status | State Status       | Potential to Occur |
|---|----------------|--------------------|--------------------|
| Tri-colored bat                           |                | Tier 1a/Endangered | Low                |
| Eastern small-footed Myotis <sup>+</sup>  |                | Tier 1a            | Low                |
| <b>NON-AVIAN VERTEBRATE</b>               |                |                    |                    |
| Northern pinesnake                        |                | Tier 1a            | Unlikely           |
| Orangefin madtom                          |                | Tier 2b/Threatened | Unlikely           |
| Peaks of Otter salamander                 |                | Tier 1c            | Unlikely           |
| Roughhead shiner                          |                | Tier 1b            | Unlikely           |
| <b>INVERTEBRATE</b>                       |                |                    |                    |
| Appalachian grizzled skipper <sup>+</sup> |                | Tier 1a/Threatened | Unlikely           |
| Atlantic pigtoe <sup>+</sup>              |                | Tier 1a/Threatened | Unlikely           |
| James Spiny mussel                        | Endangered     | Tier 1a/Endangered | Unlikely           |
| Regal fritillary                          |                | Tier 1a            | Unlikely           |
| Tawny crescent                            |                | Tier 2c            | Unlikely           |
| Yellow lance <sup>+</sup>                 | Threatened     | Tier 2a/Threatened | Unlikely           |

<sup>+</sup> Species that have been added to the table or upgraded to Tier 1/Tier 2 status since the 2017 Authorization.

## 2. Breeding Bird Surveys

Western EcoSystems Technology Inc. (WEST) and Copperhead Environmental Consulting completed breeding bird surveys within the area proposed for development as a part of the original PBR application (see Attachments 7A(2.1) and 7A(2.1.a) to the original PBR application) in accordance with PBR Guidance and DGIF recommendations.

The breeding bird and nest survey reports confirm that due to the location and nature of the proposed wind Project, it is not expected to have a significant impact on breeding bird species. The Modifications requested in this application do not change the results of this analysis. DGIF has indicated that no additional breeding bird surveys are required for the Modifications.

## 3. Field Survey of Non-Avian Resources

During agency meetings with USFWS, DGIF, and DEQ, it was agreed that site-specific field surveys for Tier 1 or Tier 2 non-avian vertebrate resources were not necessary due to the fact that it is unlikely for these species to occur within the Project Area (see Table 1). DGIF has confirmed that no additional non-avian vertebrate resource surveys are required for the Modifications.

## 4. Raptor Migration Surveys

WEST conducted migratory raptor surveys in accordance with USFWS and DGIF approved protocols as part of the original PBR application (see Attachment 7A(4) to the original PBR application). Since the original data was collected for all raptors migrating through the area regardless of flight height, the information provided in the original report is sufficient to address the Modifications requested in this application and do not change the results of this analysis. DGIF has indicated that no additional raptor migrations surveys are required for the Modifications.

## 5. Map and Field Studies for Avian Resources in Coastal Avian Protection Zones

The Modifications are not located in part or in whole within one or more Coastal Avian Protection Zones, therefore CAPZ field studies were not required.

## 6. Bat Acoustic Surveys

Acoustic surveys were completed as a part of the original PBR application (Attachment 7A(6) to the original PBR application). The Modifications requested in this application do not change the results of this analysis. DGIF has indicated that no additional bat acoustic surveys are required for the Modifications.

## 7. Additional Bat Acoustic and Mist-Netting Surveys

Acoustic surveys and mist-net surveys were conducted for federal- and state-listed bats in accordance with USFWS and DGIF approved protocols as part of the original PBR application (Attachment 7A(7) to the original PBR application). Since the Project has already confirmed potential presence of northern long-eared bat, Indiana bat, tri-colored bat, and little brown bat, the Modifications requested in this application do not change the results of this analysis. DGIF has indicated that no additional bat acoustic or mist-netting surveys are required for the Modifications.

### ANALYSIS SUMMARY (WILDLIFE REPORT):

This Section 7A and the relevant attachments as provided in the application for the original Project and this Modification application constitute the wildlife report for the Modifications. Discussions with DGIF on May 20, 2020, and review of existing data indicate that the Modifications can be constructed and operated with limited risk of impacts to state-listed threatened or endangered species or Tier1/Tier 2 SGCN (see Attachment 7A(8) of the original PBR application for related agency correspondence). The proposed Modifications do not change the risks to wildlife and no new field studies are necessary to evaluate the Modifications' impact on wildlife. Therefore, the Modifications meet the requirements of the PBR with respect to wildlife resources.

### Birds

During the avian surveys, no federally listed species were observed, and only one state-listed threatened species (peregrine falcon) was recorded, indicating risk of take is very unlikely. Very few Virginia Tier 1 and Tier 2 SGCN species (n=3) and Birds of Conservation Concern (n=6) were documented, and only in low numbers, indicating very low risk of significant adverse impacts to these species. Raptor use, including bald and golden eagles, documented for the site was low compared to other wind Project sites in the region, and the species documented consisted primarily of common raptors, suggesting low risk of impact (Attachments 7A(2.1), 7A(2.1a), 7A(2.2), and 7A(4) to the original PBR application). In addition, there were no raptor or eagle nests observed within four miles of the Project, and there are no known eagle nests within 10 miles, so impact to nesting raptors is also unlikely to result from construction or operation of the Project.

The Modifications requested in this application do not change the results of the analysis or the risk of impact to federally and state listed species, Tier 1 and Tier 2 SGCN species, or eagles.

To ensure that the risk to federally and state listed species and eagles remains low during Project operations, Rocky Forge Wind will incorporate risk minimization measures such as minimizing attractants (e.g., site hygiene/carrion removal) and training of staff to recognize these species and respond appropriately if present, and will continue to coordinate with USFWS during operations to respond if the risk profile changes during the life of the Project. The Modifications requested in this

application do not change this risk profile and the avian risk minimization measures for the Project will also be applicable to the Modifications.

### Bats

Results of the acoustic data analysis and follow up mist-net surveys confirm summer presence of northern long-eared bat (federally and state threatened), and it is likely that migratory risk may be present for these and other federally and state listed threatened or endangered or Tier 1/Tier 2 SGCN bats (i.e., Indiana bat, little brown bat, and tri-colored bat). Operational adjustments will be implemented to avoid the potential for take of federally listed bats resulting from collision with turbines during spring and fall migration, as well as the summer roosting period (see the mitigation plan described in Section 8). While these avoidance measures are intended to eliminate the potential for listed bat take, they will also substantially reduce take of all bat species, including state-listed endangered species such as little brown bats and tri-colored bats. The modifications requested in this application do not change this analysis. The formal mitigation plan attached as Attachment 8 to the original PBR application remains appropriate for the Modifications and no changes to that plan are proposed to accommodate the Modifications set out in this application.

### Beneficial and Adverse Impact Summary

The National Wildlife Federation suggests that climate change poses substantial risk to wildlife resources and their habitats,<sup>1</sup> and according to the 2015 Virginia Wildlife Action Plan,<sup>2</sup> “although some of these impacts may not occur in the next 10 to 25 years, it is very possible that extreme heat wave or storm events may occur earlier than average temperature or precipitation increases and have a more significant, immediate, effect on resources. These extreme events, rather than averages will likely have the greatest impact on species (Klopfer et al. 2012).”

The beneficial impact of the Modifications on wildlife is the fact that the Project as modified is a renewable source of energy that will not contribute to climate change and its associated adverse effects on wildlife and their habitat. In addition to reducing greenhouse gas pollution, the Modifications are designed to minimize adverse impacts on air and water resources that are important to wildlife species. The potential adverse impact of the Modifications on wildlife includes the possibility of take as described above. However, risk to species of concern is minimal with the implementation of minimization and avoidance measures as discussed above and outlined in the formal mitigation plan attached as Attachment 8 to the original PBR application, which remains appropriate for the Modifications and no changes to that plan are proposed to accommodate the Modifications set out in this application.

## **B. ANALYSIS OF POTENTIAL BENEFICIAL/ADVERSE IMPACTS ON NATURAL RESOURCES (HISTORIC RESOURCES)**

### REQUIREMENT (9 VAC 15-40-40.B):

*Analyses of historic resources. To fulfill the requirements of § 10.1-1197.6 B 7 of the Code of Virginia, the applicant shall also conduct a preconstruction historic resources analysis. The analysis shall be conducted by a qualified professional meeting the*

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<sup>1</sup> National Wildlife Federation, Carbon Pollution: A Game Changer for America’s Hunting and Fishing Heritage, available at [www.nwf.org](http://www.nwf.org).

<sup>2</sup> Va. Dept. of Game and Inland Fisheries, Virginia’s 2015 Wildlife Action Plan (Sept. 2015).

*professional qualification standards of the Secretary of the Interior's Standards for Archeology and Historic Preservation (9VAC 15-40-120 B 2) in the appropriate discipline. The analysis shall include each of the following:*

1. *Compilation of known historic resources . . . .*
2. *Architectural survey. . . .*
3. *Archaeological survey. . . .*
4. *Historic resources report.*

**COMPLIANCE ANALYSIS:**

Dutton + Associates (“Dutton”) was retained to conduct the analysis of potential impacts on historic resources for the Modifications requested in this application. Dutton staff, who are qualified professionals based in Midlothian, Virginia, that meet the Secretary of the Interior’s Standards for Archeology and Architectural History, completed the work.

Areas of proposed ground disturbance associated with the Modifications were shovel tested and a report prepared regarding any findings of archaeological sites and their potential eligibility for VLR/NRHP listing (see **Attachment 7B**). No cultural features were identified as potentially eligible for listing within the VLR/NRHP as a result of these surveys.

Dutton also confirmed that there will be no additional adverse impacts to historic resources that are listed or eligible for listing in the VLR/NRHP resulting from an increase in turbine height associated with the Modification based on the revised visual impact analysis (see **Attachment 7B**).

**ANALYSIS SUMMARY (HISTORIC RESOURCES REPORT):**

This Section 7B and the relevant attachments constitute the historic resources report for the Modifications.

Rocky Forge Wind agrees with Dutton’s determination that no cultural features associated with the Modifications are eligible for listing in the VLR/NRHP and that there will be no additional impacts to historic resources listed or eligible for listing in the VLR/NRHP based on increased turbine height. Rocky Forge Wind believes that the research completed to date, along with the nature of the proposed Modifications and the previously agreed-upon mitigation, appropriately takes into account any potential adverse impact from the Modifications on historic resources, and the Modifications meet the requirements of the PBR with respect to historic resources.

**Beneficial and Adverse Impact Summary**

The Modifications to the Project are generally neutral (neither beneficial nor adverse) with respect to impacts on historic resources. The formal mitigation plan attached as Attachment 8 to the original PBR application remains appropriate for the Modifications and no changes to that plan are proposed to accommodate the Modifications set out in this application.

**C. ANALYSIS OF POTENTIAL BENEFICIAL/ADVERSE IMPACTS ON NATURAL RESOURCES (OTHER NATURAL RESOURCES)**

**REQUIREMENT (9 VAC 15-40-40.C):**

*Analyses of other natural resources. To fulfill the requirements of § 10.1-1197.6 B 7 of the Code of Virginia, the applicant shall also conduct a preconstruction desktop survey of natural heritage resources within the disturbance zone.*

#### COMPLIANCE ANALYSIS:

##### 1. Natural Resources

###### **a)** Desktop Surveys

A desktop survey of natural heritage resources within and surrounding the Project Area was conducted in accordance with the above requirement for the original Project (Attachments 7C(1) and 7C(1.1) of the original PBR application).

Results of the survey indicated that “[t]here are no State Natural Area Preserves under DCR’s jurisdiction in the Project vicinity,” and that the proposed activity “will not affect any documented state-listed plants or insects”. DCR did identify two natural heritage resources with potential to occur within and adjacent to the Project boundary: the Central Appalachian Pine-Oak/Heath Woodland and piratebush (*Buckleya distichophylla*). Given that the Project location has not changed, additional desktop surveys are not warranted to address the Modifications as the original desktop survey encompassed the proposed Modifications.

###### **b)** Field Surveys

Rocky Forge Wind has completed the following surveys to further analyze natural resources known to occur within the Project Area, including the location of the Modifications.

Ecological Community Groups: Based on ecological surveys conducted by Wetland Studies and Solutions, Inc. (WSSI) as a part of the original PBR application, six natural ecological community groups were identified, one of which (Central Appalachian Pine-Oak/Heath Woodland) was identified as a natural heritage resource and will be mapped and recorded in the DCR Division of Natural Heritage databases (see Attachment 7C(1.1) of the original PBR application). Additional surveys were completed within the Project Area since 2017, which include the Modifications, and no additional natural ecological community groups were documented (see **Attachment 7C(1.1)**). In addition, the removal of approximately 52 acres of the originally permitted disturbance zone will result in the avoidance of 27.2 acres of impact to the Central Appalachian Pine-Oak/Heath Woodland.

Rock Outcrops: There are no additional rock outcrops within the Modifications requested in this application.

Wetlands: Additional wetlands impacts are not anticipated as a part of the Modifications requested in this application.

Invasive Plant Species: WSSI conducted surveys for invasive plant species in accordance with the protocol provided by DCR as part of the original PBR application. Results of the surveys indicate that overall the survey area has localized and low-level infestations of invasive species. Plant species identified by DCR as “early detection species,” such as giant hogweed and wavyleaf grass, were not observed in the survey area (see Attachment 7C(1.2) to the original PBR application). Additional surveys were completed within the Project Area

since 2017, which include the Modifications, and no additional invasive species, including early detection species, were documented (see **Attachment 7C(1.2)**).

Piratebush: WSSI also searched for piratebush, but no piratebush plants were observed during the surveys (see Attachment 7C(1.3) to the original PBR application). Additional surveys were completed within the Project Area since 2017, which include the Modifications, and no piratebush plants were documented (see **Attachment 7C(1.3)**).

## 2. Scenic Resources

Hill Studio was retained to conduct a visual assessment analysis to describe and predict potential changes to the visual quality of portions of northern Botetourt County, Virginia, within a five-mile study area around the Modifications. Hill Studio's methodology considered the number of viewers that would experience the change in pre- and post-construction conditions, the relative distance from the viewers to the change in the landscape, and the potential sensitivity of the viewer to this change. The study considered in particular, the visual impact of the Modifications on federally-designated or state-designated scenic resources. Hill Studio's report for the Modifications is included as **Attachment 7C(2)**.

Pages 6 through 10 of the Hill Studio report describe the visual impact of the Modifications on scenic resources.

- The report indicates that the presence of the wind turbines is not anticipated to impact the potential individual eligibility of any historic resources eligible for listing on the National Register of Historic Places or the Virginia Landmarks Register.
- Approximately 45.9% (7,812 acres) of the protected and conserved lands (as defined in the Hill Studio report) that are located within 5 miles of the Project (total of 16,648 acres) are within the viewshed.
- There are no private conservation easement lands within 2000 feet of the windfarm. Approximately 53.7% (1,521 acres) of private conservation easements that are located within 5 miles of the Project (total of 3,363 acres) are within the viewshed. The easement on these lands are held by the Blue Ridge Land Conservancy and the Virginia Outdoors Foundation.
- The U.S. Forest Service's Recreational Opportunity Map indicates that within the 5-mile study area, only "semi-primitive motorized" and "roaded" natural lands are located within the area of potential visual effect in the forests.
- The U.S. Forest Service's Scenery Management System indicates that some lands in the medium and low scenic management categories are within the area of potential visual effect, but the higher-priority scenic management lands are not located in the area of potential visual effect. This depends greatly on vantage point given forest cover.
- Approximately 44% (4.07 miles) of the portion of the James River designated as scenic (9.2 miles) is within the area of potential visual effect.
- Though parts of I-64 are designated as a scenic road, only turbine blade tips may be visible from a small portion of I-64 within the area of potential visual effect.
- The windfarm may be visible from north of Craig Creek Road, Botetourt Road, Narrow Passage Road, and U.S. 220, portions of which are designated as Virginia Byways.

Photographs showing modeled visual impacts on a variety of nearby buildings, locations, and resources are provided in the Hill Studio report.

ANALYSIS SUMMARY (OTHER NATURAL RESOURCES REPORT):

This Section 7C and the relevant attachments constitute the Other Natural Resources Report.

Review of existing data indicate that the Modifications can be constructed with limited risk of impacts to state natural or scenic resources. There are no State Natural Area Preserves under DCR's jurisdiction in the vicinity of the Modifications. One natural heritage resource was identified as occurring within the Project Area - Central Appalachian Pine-Oak/Heath Woodland. Rocky Forge Wind will further minimize impacts to the pine-oak/heath woodland, to the extent practicable. Rocky Forge Wind will additionally protect natural resources by siting the Modifications to minimize impacts to wetlands and streams and adhering to Soil Erosion and Sediment Control requirements and state stormwater management requirements.

The visual impact assessment of the Modifications indicates that while there are some visual impacts on resources within the five-mile study area, those impacts are extremely limited.

The Modifications meet the requirements of the PBR with respect to other natural resources.

Beneficial and Adverse Impact Summary

The beneficial impact of the Modifications on natural resources is the generation of substantial energy from wind without adverse impacts to air or water resources and with very limited impacts to wetlands and streams. In addition, the Modifications will have minimal production of wastes (such as small amounts of waste lubricants, etc.), as compared to other types of non-renewable energy generation Projects. As discussed in this Section 7C, while there are some visual impacts on natural resources within the study area, those impacts are very limited.

**8. MITIGATION PLAN**

REQUIREMENT (9 VAC 15-40-30.A.8.):

*In accordance with § 10.1-1197.6 B 8 of the Code of Virginia, furnishes to the department a mitigation plan pursuant to 9 VAC 15-40-60 that details reasonable actions to be taken by the owner or operator to avoid, minimize, or otherwise mitigate such impacts, and to measure the efficacy of those actions; provided, however, that the provisions of this subdivision shall only be required if the department determines, pursuant to 9 VAC 15-40-50, that the information collected pursuant to § 10.1- 1197.6 B 7 of the Code of Virginia and 9 VAC 15-40-40 indicates that significant adverse impacts to wildlife or historic resources are likely. The mitigation plan shall be an addendum to the operating plan of the wind energy project and the owner or operator shall implement the mitigation plan as deemed complete and adequate by the department. The mitigation plan shall be an enforceable part of the permit by rule.*

COMPLIANCE ANALYSIS:

The formal mitigation plan attached as Attachment 8 to the original PBR application remains appropriate for the Modifications and no changes to that plan are proposed to accommodate the Modifications set out in this application.

9. **CERTIFICATION OF DESIGN INCORPORATING MITIGATION PLAN**

REQUIREMENT (9 VAC 15-40-30.A.9):

*In accordance with § 10.1-1197.6 B 9 of the Code of Virginia, furnishes to the department a certification signed by a professional engineer licensed in Virginia that the project is designed in accordance with 9 VAC 15-40-80.*

*9 VAC 15-40-80. Small Wind Energy Project Design Standards.*

*The design and installation of the small wind energy project shall incorporate any requirements of the mitigation plan that pertain to design and installation if a mitigation plan is required pursuant to 9 VAC 15-40-50.*

COMPLIANCE ANALYSIS:

A certification by a professional engineer licensed in Virginia is included as **Attachment 9**.

10. **OPERATION PLAN INCORPORATING MITIGATION PLAN**

REQUIREMENT (9 VAC 15-40-30.A.10):

*In accordance with § 10.1-1197.6 B 10 of the Code of Virginia, furnishes to the department an operating plan that includes a description of how the project will be operated in compliance with its mitigation plan, if such a mitigation plan is required pursuant to 9 VAC 15-40-50.*

COMPLIANCE ANALYSIS:

The operation plan (incorporating the mitigation plan) is included as Attachment 10 to the original PBR application and remains appropriate for the Modifications. No changes to that plan are proposed to accommodate the Modifications set out in this application.

11. **SITE PLAN AND CONTEXT MAPS**

REQUIREMENT (9 VAC 15-40-30.A.11):

*In accordance with § 10.1-1197.6 B 11 of the Code of Virginia, furnishes to the department a detailed site plan meeting the requirements of 9 VAC 15-40-70.*

*9 VAC 15-40-70. Site Plan and Context Map Requirements.*

*A. The applicant shall submit a site plan that includes maps showing the physical features, topography, and land cover of the area within the site, both before and after construction of the proposed project. The site plan shall be submitted at a scale sufficient to show, and shall include, the following: (i) the boundaries of the site; (ii) the location, height, and dimensions of all existing and*

*proposed wind turbines, other structures, fencing, and other infrastructure; (iii) the location, grades, and dimensions of all temporary and permanent on-site and access roads from the nearest county or state maintained road; and (iv) water bodies, waterways, wetlands, and drainage channels.*

*B. The applicant shall submit a context map including the area encompassed by the site and within five miles of the site boundary. The context map shall show state and federal resource lands and other protected areas, Coastal Avian Protection Zones, historic resources, state roads, waterways, locality boundaries, forests, open spaces, and transmission and substation infrastructure.*

#### COMPLIANCE ANALYSIS:

A. A site plan reflecting the Modifications, prepared in accordance with 9 VAC 15-40-70.A., is included as **Attachment 11A**.

The Botetourt County Special Exception Permit (SEP) allows the Applicant to make the following changes to the Project without amendment to the SEP: (i) relocation of exact turbine sites (or changes in turbine specifications), provided turbines remain along the ridge line; (ii) relocation of the underground cables to correspond to the locations of the turbines; (iii) modifications to the proposed gravel roads for access provided such entrance locations from the public roads remain along those sections of the Dagger Springs Road immediately adjacent to the Property; (iv) relocations to the substations and operations and maintenance buildings provided they are setback at least 200 feet from the Property line; (v) any deletion of Project roads, or other cleared areas or reduction in the total number of turbine sites and (vi) any other change that does not constitute a substantial deviation from the SEP.

Rocky Forge Wind will notify DEQ if any additional changes require state or federal permits not listed on the certification provided as **Attachment 12**.

Included in the Site Plan are the proposed locations for facilities associated with and needed for the construction and operation of the Project. The substation components are shown as proposed, but are subject to final engineering to determine exact size and components. The proposed substation site locations were included in the total disturbed area to ensure that they were accounted for in the environmental studies, consultation, and review of the Project as a whole.

The Project facilities shown on the Site Plan cover more area than will ultimately be impacted by the final Project design. Though much of the design has progressed, there are still parts of the design currently in process. For example, the substation design is currently in flux, thus the area of consideration is shown in the Site Plan. This area is slightly larger than the previous PBR Site Plan, but is still within the study limits of the site. Ultimately, the goal is to reduce the substation footprint along with disturbance associated with grading, stormwater features, and access road to the station to no more than approximately eight acres.

B. A context map is provided in accordance with 9 VAC 15-40-70 B, and is included as **Attachment 11B**.

12. **CERTIFICATION OF APPLICATION FOR ENVIRONMENTAL PERMITS**

REQUIREMENT (9 VAC 15-40-30.A.12):

*In accordance with § 10.1-1197.6 B 12 of the Code of Virginia, furnishes to the department a certification signed by the applicant that the small wind energy project has applied for or obtained all necessary environmental permits.*

COMPLIANCE ANALYSIS:

A certification is included as **Attachment 12**.

13. **PUBLIC REVIEW**

REQUIREMENTS (9 VAC 15-40-30.A.13):

*Prior to authorization of the project and in accordance with § 10.1-1197.6 B 13 and 14 of the Code of Virginia, conducts a 30-day public review and comment period and holds a public meeting pursuant to 9 VAC 15-40-90 . The public meeting shall be held in the locality or, if the project is located in more than one locality, in a place proximate to the location of the proposed project. Following the public meeting and public comment period, the applicant shall prepare a report summarizing the issues raised by the public and include any written comments received and the applicant's response to those comments. The report shall be provided to the department as part of this application;*

COMPLIANCE ANALYSIS:

**A Rocky Forge Wind conducted an extensive public comment and review process. The public review and comment period was conducted ran from July 9, 2020 through August 10, 2020. The Rocky Forge Wind made the application documents were made available for public review during this period through an online platform at www.rockyforgewind.com. The website provided the public with an easily accessible digital version of the application and supporting documents were for review. The site also made available allowed the public to submit comments and questions. Rocky Forge Wind also provided a physical copy of the documents for public review at the Botetourt County Circuit Court Clerk's office at 1 W Main St., Fincastle, VA 24090. A Because Virginia's State of Emergency Order (Executive Order 51) was still in effect, a physical public meeting was not possible. Instead, Rocky Forge Wind held a telephonic public meeting on July 28, 2020 from 5:00 PM to 7:00 PM at . Notice of the public review and comment period and public meeting were was published in the Fincastle Herald and the Lexington News-Gazette on June 24, 2020, and July 1, 2020. A Attachment 13A includes a copy of these notices is provided as Attachment 13A.**

A full report of comments received during the public review and comment periods and public meeting, as well as the associated responses from Rocky Forge Wind, is provided as **Attachment 13B**.<sup>3</sup>

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<sup>3</sup>~~Note that these materials will be provided after the close of the public comment period with the final application.~~

14. **PERMIT FEE**

REQUIREMENT (9 VAC 15-40-110.C.):

*In accordance with 9 VAC 15-40-110, furnishes to the department the appropriate fee.*

*9 VAC 15-40-110. Fees*

*C. Fee schedules. Each application for a permit by rule and each application for a modification of a permit by rule is a separate action and shall be assessed a separate fee. The amount of the permit application fee is based on the costs associated with the permitting program required by this chapter. The fee schedules are shown in the following table:*

| <i>Type of Action</i>  | <i>Fee</i>      |
|--|-----------------|
| <i>Permit by rule application (including first three years of operation)</i> | <i>\$16,000</i> |
| <i>Permit by rule modification (after first three years of operation)</i>    | <i>\$5,000</i>  |

COMPLIANCE ANALYSIS:

Payment of \$16,000 is included with this modification request application as stipulated by the PBR **requirements**.<sup>4</sup>

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<sup>4</sup>~~Note that the fee will be provided with the final application.~~

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