January 18, 2024

By Hand

Hon. Bernard J. Logan, Clerk
State Corporation Commission
Document Control Center
1300 East Main Street, First Floor
Richmond, Virginia 23219

Re: Application of Appalachian Power Company for approval to construct and operate a battery energy storage system
Case No. PUR-2024-00001

Dear Mr. Logan:

Enclosed for filing please find one original and one copy of the Public version of Appalachian Power Company’s Application for approval to construct and operate a battery energy storage system.

The Company is also filing today under separate cover an original and 15 copies under seal of the Confidential version of this Application, and a Motion for Protective Ruling.

Please do not hesitate to call if you have any questions.

Sincerely,

Noelle J. Coates

Enclosures

cc: William H. Chambliss, Esq.
    C. Meade Browder, Jr., Esq.
COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

APPLICATION OF
APPALACHIAN POWER COMPANY Case No. PUR-2024-00001

For approval to construct and operate a battery energy storage system

APPLICATION

Pursuant to the Utility Facilities Act, Chapter 10.1 of Title 56, and Section 56-580 of the Code of Virginia, and the Filing Requirements in Support of Applications for Authority to Construct and Operate an Electric Generating Facility, Chapter 302 of Agency 5 of Title 20 of the Administrative Code of Virginia, Appalachian Power Company ("Appalachian" or the "Company") petitions the State Corporation Commission of Virginia (the "Commission") for approval to construct and operate a battery energy storage system ("BESS") project along its Glade-Whitetop distribution circuit (the "Project"). In support of its Application, the Company respectfully states the following:

A. Background

Appalachian is a Virginia public service corporation serving approximately 540,000 customers in Virginia with its main office in Charleston, West Virginia and offices at Three James Center, 1051 East Cary Street, Suite 1100, Richmond, Virginia 23219. The names and addresses of the Company's legal counsel are listed at the foot of this Application.

The following witnesses offer testimony in support of this Application:

- **John Mark Neal**, Distribution System Planning Supervisor for Appalachian. Mr. Neal describes the Project, the need for the Project, and the distribution-related issues that it will address. Mr. Neal also discusses the alternative traditional solution for the Glade-Whitetop circuit, and why it is not expected to be the optimal solution; and the cost of service benefits expected from the Project.
Hallie L. Long, Regulatory Consultant VA/TN for Appalachian. Ms. Long summarizes the filing and how the Project relates to the Company’s compliance with the storage requirements set forth in the Virginia Clean Economy Act. She also sponsors the economic impact analysis conducted by the Company and highlights the anticipated benefits of job creation and tax revenue to the Project area, and sponsors the DEQ Supplement and environmental impact analysis for the Project. Finally, Ms. Long addresses the Company’s environmental justice considerations related to the Project and reliability benefits associated with the Project.

B. **Statutory and Regulatory Framework**

The VCEA mandates that Appalachian petition the Commission by the end of 2035 for necessary approvals to construct or acquire 400 MW of new, utility-owned energy storage resources in order to enhance reliability and performance of its generation and distribution system. To meet that obligation, the Commission’s *Regulations Governing the Deployment of Energy Storage* establish interim targets that require Appalachian to petition for any necessary approvals of at least 25 MW of storage by December 31, 2025. This Application is the first of several to meet that target. In addition to this mandate, Section 56-585.1 A 6 declares that energy storage facilities “are in the public interest.”

The Utility Facilities Act establishes that

it shall be unlawful for any public utility to construct, enlarge or acquire, by lease or otherwise, any facilities for use in public utility service, except ordinary extensions or improvements in the usual course of business, without first having obtained a certificate from the Commission that the public convenience and necessity require the exercise of such right or privilege [“CPCN”].

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1 Va. Code 56-585.5.E.
3 20VAC5-335-30A.
As Appalachian will use the Project in service to its customers, and does not appear to be an ordinary extension or improvement, it is subject to the Utility Facilities Act’s requirement to seek a CPCN from the Commission.

Moreover, although one potential use of the Project is to improve reliability, as discussed in more detail below, the Company plans to use the Project in ways that are similar to traditional generation facilities. Thus, the provisions of Section 56-580 D also potentially apply, which states that

The Commission shall permit the construction and operation of electrical generating facilities in Virginia upon a finding that such generating facility and associated facilities (i) will have no material adverse effect upon reliability of electric service provided by any regulated public utility, (ii) are required by the public convenience and necessity, if a petition for such permit is filed after July 1, 2007, and if they are to be constructed and operated by any regulated utility whose rates are regulated pursuant to § 56-585.1, and (iii) are not otherwise contrary to the public interest. In review of a petition for a certificate to construct and operate a generating facility described in this subsection, the Commission shall give consideration to the effect of the facility and associated facilities on the environment …

The Application and supporting testimony and evidence meet the requirements of the Code and applicable regulations, as set out below.

C. The Project, its Benefits, and its Impact

The Project will be composed of two separate BESS sites connected to the Glade-Whitetop 34.5 kV distribution circuit in Southwestern Virginia, with a total rating of 7.5 MW (capacity) and 30 MWh (energy). One site is located in Smyth County, the other in Grayson County. Mr. Neal describes the Project and its proposed locations in more detail.

1. Uses and Benefits

As Company witness Neal explains, Appalachian will use the system to benefit its customers in two primary ways. First, the Company will utilize the Project to reduce costs for customers. The Project will be operated to lower the Company’s overall system demand and
thus reduce the need for other sources of generation during periods when customer demand is high. The Project will help reduce the Company’s load during the PJM five coincident peak hours, which would result in a lower Fixed Resource Requirement load/capacity obligation and allow for the avoidance of incremental capacity purchases or the ability to make an incremental sale of capacity in the future. The Company will also use the Project to arbitrage energy prices by releasing stored energy during high-priced times, which can lead to incremental market revenues reducing the total cost of service. Both uses can decrease the total cost of service to the general body of customers.

Second, the Company will use the Project a primary source of power for customers served by the Glade-Whitetop distribution circuit, who have experienced a disproportionately high levels of outages. Appalachian serves approximately 2,790 end-use customers on that circuit, which has a total exposure of approximately 260 miles that traverse a mountain range, making it difficult to access in outage restoration situations. The circuit accumulated over 4.2 million customer minutes of interruption in 2022, making it one of the worst performing distribution circuits in the Company’s system from a reliability perspective.

Thus, the Project will both improve reliability for Appalachian’s customers and reduce the Company’s cost of service – both of which advance the public interest.

2. Environmental Justice

As Company witness Long testifies, the Company’s environmental justice analysis identified the presence of a Justice40 community within the Project area. Additionally, 45% of the Project area’s population is comprised of low-income residents, qualifying the area as a low-income community as defined by the Environmental Justice Act.5

5 Va. Code § 2.2-234.
The Project is not anticipated to have disproportionately high or adverse environmental impacts on the environmental justice communities in the area. To the contrary, the Project will provide direct reliability benefits to those communities, as discussed above and by Mr. Neal.

3. Economic Impact

The economic impact analysis that Ms. Long sponsors concludes that, based on the proposed $57.3 million capital investment for the Project, it is anticipated the planned spend will create or support 109 jobs annually over its duration, including 75 direct jobs. This results in an added $28.5 million to the Gross Regional Product (GRP) of the project area. Additionally, the capital expenditure activity is expected to result in an estimated $2.8 million in local and state taxes.

4. Environmental Impact

The Project will have a minimal impact on the environment, as Ms. Long explains. The Project will not emit harmful pollutants or greenhouse gases during operations. In contrast, it will contribute to reducing the need for traditional generating facilities, such as coal or natural gas, that can be a significant source of pollutants. The only anticipated temporary air quality effects are potential fugitive dust associated with grading an entrance to Site 2 during construction, which will be mitigated pursuant to environmental regulations. A full analysis can be found in the DEQ Supplement, which Ms. Long sponsors.

5. Cost and Rate Impact

The Project is both less expensive than traditional solutions to reliability concerns along the Glade-Whitetop circuit and has a minimal impact on customer bills. The Project has an estimated total cost of approximately $57.3 million with approximately $34.5 million for the procurement and installation of the BESS components. This cost is less than the estimated $64 million that a traditional wires solution for reliability concerns would cost. The estimated first-
year rate impact for residential customers is 0.36 percent. The Company will file for recovery of eligible project cost in a future VCEA filing.

D. Conclusion

This Application and its supporting testimony and evidence demonstrate that the Company has the technical and financial fitness to construct, operate and maintain the Project; that Project fully satisfies the applicable statutory requirements; that it will have no material adverse impact upon the reliability of electric service provided by any regulated public utility; that it is required by the public convenience and necessity; and that the Project is the public interest.

WHEREFORE Appalachian Power Company respectfully requests that the Commission approve this Application, and grant such other relief as it deems just and proper.

Respectfully submitted,

APPALACHIAN POWER COMPANY

Dated: January 18, 2024

By: Counsel

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CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing Application of Appalachian Power Company was served electronically on this 18th day of January 2024 on:

Confidential Version:

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[Signature]
DIRECT TESTIMONY OF
JOHN MARK NEAL
FOR APPALACHIAN POWER COMPANY
IN VIRGINIA S.C.C. CASE NO. PUR-2024-00001
SUMMARY OF DIRECT TESTIMONY OF
JOHN MARK NEAL

In my testimony, I:

- Discuss a project that the Company has evaluated: a non-wires alternative, battery energy storage solution on the Glade-Whitetop distribution circuit (the Project);
- Describe the need for the Project and the distribution-related issues that it will address;
- Discuss the alternative traditional solution for the Glade-Whitetop circuit, and why it is not expected to be the optimal solution; and
- The cost of service benefits affiliated with the Project.
Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION.

A. My name is John Mark Neal. My business address is 404 29th Street W, Charleston, WV 25387. I am the Distribution System Planning Supervisor for Appalachian Power Company (APCo), a subsidiary of American Electric Power Company, Inc.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE.

A. I hold a Bachelor of Science Degree in Electrical Engineering from West Virginia Institute of Technology. I have over 33 years of engineering experience with AEPSC in both distribution improvement and operations and system planning: including 23 years as a supervisor. I am a registered professional engineer in the State of West Virginia - Registration No. 14783.

Q. PLEASE BRIEFLY DESCRIBE YOUR JOB DUTIES AND RESPONSIBILITIES.

A. I am responsible for distribution system capacity and reliability improvements across the entire APCo footprint. I oversee the efforts of system planners who are each assigned specific areas of responsibility across APCo to identify both distribution system needs and improvements.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY?

A. Yes, I have filed testimony in West Virginia for Case No. 21-0840-E-IDS. I have also filed testimony in Virginia for Case No. PUR-2022-00014 as well as Case No. PUR-2023-00061.
Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. My testimony supports the Company's request for approval of a Certificate for Public Convenience and Necessity (CPCN) from the Virginia State Corporation Commission (Commission) in order to own, operate, and maintain utility-scale energy storage facilities as a part of its distribution system. Specifically, my testimony:

- Describes the potential for a non-wires alternative, energy storage solution on APCo's Glade-Whitetop distribution circuit in the form of a Battery Energy Storage System (BESS);
- Describes the distribution-related issues that the Project would address;
- Explains why the installation of the Project is anticipated to be the best option when compared to other solutions considered; and
- The cost of service benefits affiliated with the project.

Q. ARE YOU SPONSORING ANY EXHIBITS IN THIS PROCEEDING?

A. I am sponsoring the following exhibits:

- APCo Exhibit No. ___ (JMN) Schedule 1 - Location of the Glade-Whitetop 34.5kV station BESS solutions
- APCo Exhibit No. ___ (JMN) Schedule 2 - Topographical maps
- APCo Exhibit No. ___ (JMN) CONFIDENTIAL Schedule 3 - Cash Flow

I. GLADE-WHITETOP BATTERY STORAGE PROJECT

Q. WHAT ARE THE PLANNED LOCATIONS FOR DEPLOYMENT OF THE BESS SYSTEMS.

A. APCo is proposing to deploy BESS systems at two separate locations along the Glade-Whitetop feeder in southwestern Virginia as noted in APCo Exhibit No. ___ (JMN) Schedule 1. APCo Exhibit No. ___ (JMN) Schedule 2 gives a closer aerial view of the two proposed locations.
Q. PLEASE DESCRIBE THE PROPOSED SITES.

A. Site number 1 is proposed to be located at 315 Laurel Valley Road, Troutdale, Virginia and is recorded as parcel 86A-2-41 on the Smyth County tax maps. The property is currently owned by the Washington County Board of Supervisor (WCBS). It is an approximately two-acre parcel at the intersection of Laurel Valley Road and Serenity Cove Road in Smyth County. The study site is the existing Washington County Konnarock Community Manned Solid Waste Convenience Station. Minimal clearing or grading will be needed to develop the study site for the proposed BESS facility because it has been previously developed. The study site is bordered by residences to the north and east and largely vacant land to the south and west. No National Hyrdography Dataset (NHD) or National Wetlands Inventory (NWI) hydrology resources are mapped on the study site, but the FEMA 100-year floodplain crosses the southern edge of the study site. Approximately 0.7-mile of single-phase distribution line would need to be upgraded to connect to the existing Whitetop 34-kV Circuit west of the study site.

Site number 2 is proposed to be located at the Schumate property in Whitetop, Virginia and is recorded as parcel 63A-109C on the Grayson County tax maps. The property is currently owned by Samuel C. and Sarah R. Schumate. This second site is a portion of an approximately 22-acre parcel north of U.S. Route 58 in Grayson County. The parcel is an active tree farm and is bordered by agricultural parcels. One cemetery is known to exist on an adjacent parcel but will be avoided by the Project. Study Site B6 is approximately 10 feet above U.S. Route 58 and the terrain slopes to the south. Some grading and tree clearing, and a new access road will be needed to develop the study site for the proposed BESS facility. No NHD or NWI resources are mapped on the study site,
but a water spring was identified during a site visit. The existing Whitetop 34-kV Circuit parallels U.S. Route 58 just south of the study site.

Q. **WHAT IS THE STATUS OF THE EFFORT TO ACQUIRE THE NECESSARY SITE(S)?**

A. APCo recently secured an option to purchase site number 1 in Smyth County from the WCBS. This option to purchase will expire in July 2024. The Company currently has an option for a purchase agreement with the Schumates for site number 2. This option to purchase will expire in March 2024, but will be renewed.

Q. **ARE THERE ANY APPLICABLE LOCAL ZONING OR LAND USE APPROVALS NECESSARY?**

A. A proposed BESS facility in the Rural Farm Zoning District in Grayson County may require a Special Use Permit because the proposed infrastructure is not addressed in the Grayson County Zoning Ordinance. Public utilities, such as a BESS facility, are exempt from the Smyth County Zoning Ordinance when used for local distribution. The Company will review the proposed BESS facility designs with local officials and secure the necessary permit(s) prior to construction.

Q. **PLEASE DESCRIBE THE PROJECT.**

A. The Project will be composed of two separate BESS sites connected to the Glade-Whitetop 34.5 kV distribution circuit, with a total rating of 7.5 MW (capacity) and 30 MWh (energy). Each BESS site will require the construction of fenced facilities and will be connected to the primary voltage of the Glade-Whitetop circuit. Communication infrastructure and smart switching devices will also be deployed or upgraded around the BESS sites to interface them to the distribution circuit, and allow for coordination.
between both facilities, the Company's real-time operations systems, and existing or future distribution automation schemes on this circuit. At this time, the Project has an estimated total cost of approximately $57.3 million with approximately $34.5 million for the procurement and installation of the BESS components. It is also estimated that O&M expenses of approximately $60,000 per year, plus an additional $40,000 every fifth year, will be necessary to support the ongoing operation of the proposed facilities over their 20-year expected life. Additionally, there will be approximately $240,000 in O&M expense associated with distribution line improvements that are necessary to support the project. The anticipated outlay of both capital and O&M expense are shown in APCo Exhibit No. (JMN) CONFIDENTIAL Schedule 3.

Q. PLEASE DESCRIBE THE MAJOR SYSTEMS, FACILITY CONFIGURATION, AND EXPECTED SUPPLIERS OF MAJOR COMPONENTS OF THE PROJECT.

A. Each facility will have a BESS consisting of containers with batteries, inverter skids, and a control system. DC output from each battery container will be coupled with an inverter that provides AC output. The control system manages the charging and discharging cycles between the BESS facility and the APCo distribution system. The BESS facility will be interconnected to the APCo distribution grid through an appropriately rated transformer and standard protective device (recloser). The selected BESS provider is HICO America with Samsung supplying the batteries and EPC Power providing the inverters.

Q. HOW WILL THE BESS SYSTEMS BE UTILIZED?

A. The systems can provide benefits to the Company's customers in two different ways. The first use case is to utilize the systems as a load reducer that will lower the Company's
overall system demand and thus reduce the need for other sources of generation during periods when customer demand is high. The second use case is to utilize the systems as a primary source of power for a limited number of customers served by the Glade-Whitetop distribution circuit when the primary source of power is interrupted.

Q. WHAT ARE THE DISTRIBUTION-LEVEL ISSUES THAT THE PROJECT WOULD RESOLVE?

A. The Project could address both reliability and capacity issues. APCo serves approximately 2,790 end-use customers on the Glade-Whitetop circuit, a distribution circuit with a total exposure of approximately 260 miles that traverses a mountain range, making it difficult to access in outage restoration situations. The circuit accumulated over 4.2 million customer minutes of interruption in 2022, making it one of the worst performing distribution circuits in the APCo system from a reliability perspective.

In addition, from a capacity perspective, per APCo’s latest distribution load forecast, the Glade Station T-2 transformer, which serves the Glade-Whitetop circuit, is projected to exceed its thermal rating at peak during the winter of 2026-2027 if some new customer spot loads that are proposed in the area materialize.

Q. HOW WOULD THE PROJECT IMPROVE OR ADDRESS THE IDENTIFIED DISTRIBUTION-LEVEL ISSUES?

A. The Project would help improve and address the reliability issues by locating a temporary power source closer to the customers served on the latter half of the Glade-Whitetop circuit. This source of power would be available to serve the load of a large group of customers (up to as many as 1,390) when the primary source of power to the circuit is interrupted by faults on the system that require manual intervention to restore. When an
outage occurs on the distribution circuit connected to the Project, protective equipment will operate to isolate the cause of the outage. Once the cause of the outage is isolated, the remaining area(s) with a direct and non-interrupted electric connection to the BESS sites can be restored remotely and served by the BESS until either the facilities are restored or the stored energy in the BESS is depleted. The total duration of the continued service provided by the two BESS sites will depend on the amount of load served by the BESS during the outage.

Additionally, the BESS will help improve and address the capacity issues by providing a local energy source in front of the Glade Station Transformer T-2 that can be discharged if it is observed at some point in the future that the loading on the transformer is approaching its maximum rating. As it is discharged while connected to the grid, the battery will help reduce the overall loading on the Transformer to help avoid an overload.

Q. IS IT POSSIBLE THAT AN AREA SERVED BY THE PROJECT DURING AN OUTAGE EVENT COULD STILL EXPERIENCE AN OUTAGE?

A. Yes, it is possible. If the restoration process for the initial outage takes longer than the period over which the BESS can serve the connected load, those customers served by the BESS will experience an outage. However, the total outage time experienced by customers will have been reduced by the amount of time that the BESS was able to serve the load. Additionally, it is possible that, after the BESS has restored power to some customers, another outage could disrupt and further isolate additional customers being served by the BESS. Finally, it is also possible that if the cause of the outage is in close proximity to the either of the BESS sites, it might not be possible to isolate the cause of
the outage without also isolating the BESS, which would cause the area served by the
BESS to also experience an outage.

Q. WHAT OTHER SOLUTIONS ARE BEING IMPLEMENTED OR CONSIDERED
BY APCO TO IMPROVE OR ADDRESS THE IDENTIFIED DISTRIBUTION-
LEVEL ISSUES?

A. The Company recently completed a project to add additional reclosers and a set of
regulators to the existing Distribution Automation Circuit Reconfiguration (DACR)
scheme on the Smyth Station-West circuit. This improvement allows some customers on
the Glade-Whitetop circuit to be served from alternate sources when outages occur during
heavier loading periods.

There is also a proposed project in APCo’s 2025 work plan, at a conceptual cost
of $2.2 million, to create a new three-phase tie line between the Glade-Whitetop circuit
and the Independence Station-Rural circuit. This project would upgrade some
distribution line on the Independence-Rural circuit from single phase to multiphase and
reconductor 5.6 miles of the distribution circuit with a larger conductor to create a three-
phase tie line. This will create the possibility to transfer customers between the two
circuits manually during outages in the area.

Finally, there is a larger project the Company has been considering for the 2028-
2030 timeframe, at a conceptual cost of $62.5 million to create a new station (Volney),
which would provide a new distribution source in the area; reconfigure three large
existing 34 kV circuits into six; and support the installation of additional DACR schemes
among the new circuits. For the Glade-Whitetop circuit, the Volney project would lead
to a circuit reconfiguration and overall load reduction on the Glade Station T-2
transformer and the Glade-Whitetop circuit, which would also help improve or address
the identified distribution level reliability and capacity issues.

The Company perceives the Project to be complementary to the DACR and
distribution circuit multi-phasing projects mentioned above, and as an alternative to the
Volney project mentioned above.

Q. WHAT ARE THE COST OF SERVICE BENEFITS PRODUCED BY THE
PROJECT?

A. The Project will produce the following cost of service benefits:

1. **Capacity cost reduction** - The Project will act as a distribution level load
   reducer producing benefits, which can decrease the total cost of service to the
general body of customers. The Project will help reduce the Company’s load
during the PJM five coincident peak (5CP) hours, which would result in a
lower Fixed Resource Requirement (FRR) load/capacity obligation and allow
for the avoidance of incremental capacity purchases or the ability to make an
incremental sale of capacity in the future. The reduction of the Company’s
load settled by PJM will also shift some of its zonal Load Serving Entity
(LSE) Open Access Transmission Tariff (OATT) charges to other LSEs in the
zone, reducing charges billed to the Company.

2. **Energy arbitrage** - Energy storage systems can store energy during periods
   of excess generation when market prices are low and discharge stored energy
during high-priced market periods. This ability to arbitrage energy prices
during high-priced times can lead to incremental market revenues reducing the
total cost of service.
Q. DOES THE PROJECT SUPPORT THE VIRGINIA CLEAN ECONOMY ACT'S OBJECTIVE OF REDUCING EMISSIONS IN THE COMMONWEALTH?

A. Yes. The Project can serve to reduce greenhouse gas emissions and help in meeting net-zero objectives. Battery storage systems can smooth out renewable energy fluctuations by balancing the renewable energy generation—which is dependent on external factors such as weather conditions—with demand by storing excess energy during times of high renewable output and discharging it during periods of low generation. The increased utilization from stored energy generated by renewable resources will help to decrease the reliance on traditional power plants that rely on fossil fuels, leading to a reduced carbon footprint.

Q. WAS THE COMPANY ABLE TO USE RECENT EXPERIENCE AND KNOWLEDGE IN ITS PROPOSAL FOR THE PROJECT?

A. Yes. APCo has previously installed utility scale energy storage solutions to address distribution system reliability needs. For example, APCo deployed a 1MW utility scale energy storage solution at Chemical Station in Charleston, West Virginia in 2006 and a 2MW utility scale energy storage solution at Balls Gap Station in Milton, West Virginia in 2008. Both installations, which used sodium-sulfur (NaS) chemistry, have been retired. AEP also has a broader history with energy storage projects that resulted in the development of internal knowledge and experience for operating and maintaining such installations. The Company is applying this experience to the Glade-Whitetop Project.

Furthermore, the Company is committed to delivering clean, resilient, and reliable service through methods of continued improvements and modernizations, such as the
implementation of battery storage facilities. The Company has past and continued
success in increasing the flexibility, efficiency, reliability, and resilience of the electric
power system. With engineering excellence and creative strategies, the Company has
continued to strengthen the grid.

Q. WAS THE INSTALLATION COST THE ONLY CRITERION REVIEWED FOR
SELECTION OF THE PROJECT?
A. No. The Company has considered various factors in the selection of the Project.
From a cost perspective, the Company has considered the ongoing operations and
maintenance cost of operating the Project and also the potential need for the BESS
components of the project to be replaced every 20 years.

Q. WHAT TYPE OF UTILITY SCALE ENERGY STORAGE TECHNOLOGY IS
APCO PROPOSING TO INSTALL ON THE GLADE-WHITETOP CIRCUIT?
A. The proposed BESS will utilize Lithium-ion energy storage technology.

Q. WHAT IS THE EXPECTED USEFUL LIFE OF THE UTILITY SCALE ENERGY
STORAGE SOLUTIONS APCO PROPOSES TO INSTALL?
A. The expected useful life of the utility scale energy storage solutions APCo is proposing to
install is estimated to be 20 years.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?
A. Yes.
APCo Exhibit No. ___ (JMN) CONFIDENTIAL Schedule 3 – Cash Flow

REDACTED IN ITS ENTIRETY
TO THE APPLICATION OF
American Electric Power Company, Inc.

For a permit to construct and operate
an energy storage facility
Case No. PUR-2024-00001
DEQ Supplement

Filed: ________
Installation of the Glade – Whitetop 34-kV Circuit Battery Energy Storage Systems

DEQ Supplement

Prepared by:
Project Environmental Permit Management
40 Franklin Street SW
Roanoke VA, 24011
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3.0 REFERENCES

LIST OF APPENDICES
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Attachment 2 Threatened and Endangered Species Searches
Attachment 3 VCRIS Mapping Area
1. PROJECT DESCRIPTION

Study Site 1 (Parcel ID: 86A-2-41) is an approximately two-acre parcel at the intersection of Laurel Valley Road and Serenity Cove Road in Smyth County. The study site is the existing Washington County Konnarock Community Manned Solid Waste Convenience Station. Minimal clearing or grading will be needed to develop the study site for the proposed battery energy storage system ("BESS") facility because it has been previously developed. The study site is bordered by residences to the north and east and largely vacant land to the south and west. No NHD or NWI hydrology resources are mapped on the study site, but the FEMA 100-year floodplain crosses the southern edge of the study site. Approximately 0.7-mile of single-phase distribution line would need to be upgraded to connect to the existing Whitetop 34-kV Circuit west of the study site.

Study Site 2 (Parcel ID: 63-A-109C) is a portion of an approximately 22-acre parcel north of U.S. Route 58 in Grayson County. The parcel is an active tree farm and is bordered by agricultural parcels. One cemetery is known to exist on an adjacent parcel but will be avoided by the Project. Site 2 is approximately 10 feet above U.S. Route 58 and the terrain slopes to the south. Some grading and tree clearing, and a new access road will be needed to develop the study site for the proposed BESS facility. No NHD or NWI resources are mapped on the study site, but a water spring was identified during a site visit. The existing Whitetop 34-kV Circuit parallels U.S. Route 58 just south of the study site.

2. ASSESSMENT OF ENVIRONMENTAL EFFECTS

A. AIR QUALITY

Only air quality effects would be the potential for fugitive dust from grading an entrance to Site 2 (B6) which would be minimal and a short duration during construction. For both A(A12) and B(B6), there is a small air quality effects from vehicle and equipment emissions used to move and store the batteries on site.

For Site 1, The BESS will not emit any harmful air pollutants or greenhouse gases during operations. Construction of the BESS on this property has the potential to create temporary air quality degradation due to the use of heavy equipment, worker vehicle trips, and haul truck trips, but it is not expected to exceed regulatory thresholds. Depending on time of year and soil moisture, earth moving activities could result in dust emissions. Dust control in the form of water application will be implemented during construction to reduce the potential for slowly moving dust clouds that might degrade air quality with respect to particulate matter criteria. AEP will control fugitive dust during construction with strict adherence to erosion and sediment control plans in accordance with DEQ regulations.

For Site 2, the BESS will not emit any harmful air pollutants or greenhouse gases during operations. Construction of the BESS on this property has the potential to create temporary air quality degradation using heavy equipment, worker vehicle trips, and haul truck trips, but it is not expected to exceed regulatory thresholds. Depending on time of year and soil moisture, earth moving activities could result
in dust emissions. Dust control could be implemented during construction to reduce the potential for slowly moving dust clouds that might degrade air quality with respect to particulate matter criteria. AEP will control fugitive dust during construction in accordance with DEQ regulations. Various agricultural practices that currently occur on the property, which also involve the operation of equipment and have the potential to generate fugitive dust, will no longer take place after the land use is adapted by APCO for the BESS.

2.A.1 Applicable Permit Requirements

The BESS does not require any air permits, would not emit pollutants during operations, and does not need emissions offsets or allowances.

2.A.2 Ambient Air Quality Effects

The BESS will have no ambient air quality effects beyond minor short-term effects during construction.

B. WATER SOURCE

No water source is required for the installation or operation of both BESS sites; as such, this discussion will focus on waterbodies within the BESS site.

The BESS Site 1 is located within the South Fork Holston watershed, Hydrologic Unit Code ("HUC") 06010102. According to the U.S. Geologic Survey ("USGS") National Hydrography Dataset ("NHD"). Additionally, no stream features occur on the BESS site.

The BESS Site 2 is located within the Upper New watershed, Hydrologic Unit Code ("HUC") 0505001. According to the U.S. Geologic Survey ("USGS") National Hydrography Dataset ("NHD"). A potential water spring was located on the property during a site visit.

C. DISCHARGE OF COOLING WATERS

No discharge of cooling waters is associated with the installation or operation of the BESS.

D. TIDAL AND NON-TIDAL WETLANDS

No tidal wetlands occur within the proposed BESS sites.
A desktop study using the National Wetlands inventory ("NWI") showed no wetlands within the project area for Site 1. Further studies will be completed once the property is acquired.

A desktop study using the National Wetlands inventory ("NWI") showed no wetlands within the project area for Site 2, but a water spring was located on an initial site visit. Further studies will be completed once the property is acquired.

E. SOLID AND HAZARDOUS WASTE

Site 1 shows no record of operating as a solid or hazardous waste site, or within the vicinity of the property.

Site 2 was formerly used as a solid waste convenience station for the surrounding rural community. Soil sampling and removal of any solid or hazardous waste will be conducted once the property is purchased. Any disposal will be transported to a permitting dumping area. No other areas within the vicinity of the property show any record of operating as a solid or hazardous waste site.

F. NATURAL HERITAGE, THREATENED AND ENDANGERED SPECIES

AEP conducted online database searches for threatened and endangered species for both BESS sites. The database searches conducted included the United States Fish and Wildlife Service ("USFWS") Information, Planning and Conservation ("IPaC") system, the Virginia Department of Wildlife Resources ("DWR") Virginia Fish and Wildlife Information Service ("VAFWIS"), and the Center for Conservation Biology ("CCB") Bald Eagle Nest Locator.

A desktop search for Site 1 concluded that there are 10 threatened, endangered, and candidate species on this species list with the vicinity of the BESS location. There are no critical habitats, refuge lands or fish hatcheries, and bald and/or golden eagles located within the project area under USFWS jurisdiction.

A desktop search for Site 2 concluded that there are 6 threatened, endangered, and candidate species on this species list with the vicinity of the BESS location. There are no critical habitats, refuge lands or fish hatcheries, and bald and/or golden eagles located within the project area under USFWS jurisdiction.

The results are summarized in Attachment 2.

G. EROSION AND SEDIMENT CONTROL

Currently, AEP is working under the assumption that both BESS sites will develop an Erosion and Sediment ("E&S") Control plan. Construction and maintenance of both BESS sites will adhere to all state
and local erosion and sediment control and stormwater management regulations. E&S control plans will be developed, and sites covered under the DEQ construction general permit for discharges of stormwater related to construction. Implementation of E&S measures will ensure adequate protections are given to wetlands and waterways downstream of the BESS sites.

H. CULTURAL RESOURCES

AEP conducted a desktop study of both BESS sites using the Virginia Cultural Resources Information System ("VCRIS") to locate any cultural or historical resources on or within the vicinity of the project locations. There were no cultural or historical resources located on either property.

A study of Site 1 shows no known historical or cultural resources within the vicinity of the project. A photo of the VCRIS study area is shown in Attachment 3.

A study of Site 2 shows 2 cemeteries adjacent to the property as well as a historical lithic workshop and camp. The first cemetery (DHR ID: 038-5114), also known as the Weaver cemetery is a rural architectural resource that does not appear to be associated with a specific historic figure or event and does not appear to be eligible for the National Register. The second cemetery (DHR ID: 44GY0130) is an Antebellum period cemetery with no other data present. The historical/cultural area (DHR ID: 44GY0317) is a location of a former Lithic workshop and camp dating between 15,000 B.C.E to 1606 C.E. A photo of the VCRIS study area is shown in Attachment 3.

I. CHESAPEAKE BAY PRESERVATION AREAS

The proposed BESS is not located within a Chesapeake Bay Preservation Act jurisdictional county.

J. WILDLIFE RESOURCES

Agency databases were reviewed to determine if the proposed Project locations has the potential to affect any threatened or endangered species as discussed in IPAC desktop report.

K. AGRICULTURAL, FOREST, AND RECREATIONAL RESOURCES

Site 1 has historically been used for agriculture purposes. Information pulled from the National Conservation Easement Database, Virginia Outdoors Foundation Mapper, and DCR Virginia Outdoors Plan Mapper show that there are no conservation easements, scenic resources, or recreational facilities within the immediate vicinity of the BESS.
Site 2 has been used as a residential solid waste convenience station. The use of historical imagery from Google Earth show that the site has been used as such since May of 1999. Information pulled from the National Conservation Easement Database, Virginia Outdoors Foundation Mapper, and DCR Virginia Outdoors Plan Mapper show that there are no conservation easements, scenic resources, or recreational facilities within the immediate vicinity of the BESS.

L. PESTICIDES AND HERBICIDES

For Site 1, herbicides were likely historically used on the BESS site due to the site formerly operating as a solid waste convenience station.

For Site 2, pesticides and herbicides were likely historically used on the BESS site given that the property operated for agriculture use.

While the BESS sites will consist of a gravel base for the batteries, there is the potential for use of herbicides to inhibit vegetation growth. The contractor or project personnel shall use herbicides in accordance with local, state, and federal regulations. Workers who apply herbicides shall have appropriate State and local herbicide applicator certifications and comply with all State and local regulations regarding herbicide use. Herbicides shall be mixed and applied in conformance with the manufacturer’s directions. To minimize harm to wildlife, vegetation, and waterbodies, herbicides shall not be applied directly to wildlife or waters. Herbicides shall not be applied when high winds or rain are occurring or imminent.

M. GEOLOGY AND MINERAL RESOURCES

The two BESS sites are located in the Southern Blue Ridge Subprovince consisting of broad upland plateaus with moderate slopes. At Site 2, the general bedrock area deposited are Neoproterozoic metasedimentary, metarhyolite, and metabasalt rock as well as Mesoproterozoic granite, granitic gneiss, and charnockite. At Site 1, the general bedrock area deposited are Paleozoic Cambrian dolomite, limestone, shale, and sandstone.

N. TRANSPORTATION AND INFRASTRUCTURE

Site 1 will be accessed off Laurel Valley Road (Route 603) at the intersection of Laurel Valley Road and Serenity Cove Road in Smyth County. A Land Use Permit from the Virginia Department of Transportation ("VDOT") potential will be required for existing construction entrances. Traffic will temporarily increase during the project and will resume as normal during operation. The route is currently well maintained and is believed to be able to adequately handle deliveries and materials to the site. It is not anticipated that the proposed BESS would interfere with federally regulated airspace or require notification to the Federal Aviation Administration.
Site 2 will be accessed off the Jeb Stuart Highway (Route 58) in Grayson County. A Land Use Permit from the Virginia Department of Transportation ("VDOT") will be required for new construction entrances. Traffic will temporarily increase during the project and will resume as normal during operation. The route is currently well maintained and is believed to be able to adequately handle deliveries and materials to the site. It is not anticipated that the proposed BESS would interfere with federally regulated airspace or require notification to the Federal Aviation Administration.
Attachment 1
Project Locations Maps

BESS Site 1

BESS Site 2
Attachment 2
Threatened and Endangered Species Searches

Site 1

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-9694 Fax: (804) 693-9032

In Reply Refer To: Project Code: 2024-0016450
Project Name: Gloucester Northern Distribution Circuit A

Subject: List of threatened and endangered species that may occur in your proposed project
location or may be affected by your proposed project

To Whom It May Concern:
The enclosed species list identifies threatened, endangered, proposed and candidate species, as
well as proposed and final designated critical habitat, that may occur within the boundary of your
proposed project, and/or may be affected by your proposed project. The species list fulfills the
requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the
proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination'
conducted by the Refuge. Please contact the individual Refuges to discuss any questions or
concerns.

New information based on updated surveys, changes in the abundance and distribution of
species, changed habitat conditions, or other factors could change this list. Please feel free to
contact us if you need more current information or assistance regarding the potential impacts to
federally proposed, listed, and candidate species and federally designated and proposed critical
habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the
Act, the accuracy of this species list should be verified after 90 days. This verification can be
completed formally or informally as desired. The Service recommends that verification be
completed by visiting the IPaC website at regular intervals during project planning and
implementation, and in consultation with species lists and information. An approved list may be requested
through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the
ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the
Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to
utilize their authorities to carry out programs for the conservation of threatened and endangered
species and to determine whether projects may affect threatened and endangered species and/or
designated critical habitat.
A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and/or critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the “Endangered Species Consultation Handbook” at:


**Migratory Birds:** In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BG&EPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/programs/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proprietors should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BG&EPA, Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Project Code in the header of this
letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):
- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Virginia Ecological Services Field Office
6659 Short Lane
Gloucester, VA 23061-4410
(804) 693-6694
PROJECT SUMMARY

Project Code: 2024-0016450
Project Name: Glade-Whitetop Distribution Circuit A
Project Type: Commercial Development
Project Description: Battery Energy Storage System
Project Location:
The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.67570755,-81.60230943491354,14z

Counties: Smyth County, Virginia
ENDANGERED SPECIES ACT SPECIES

There is a total of 10 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

USFWS does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

<table>
<thead>
<tr>
<th>NAME</th>
<th>STATUS</th>
<th>Species profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gray Bat Myotis griseascens</td>
<td>Endangered</td>
<td><a href="https://ecos.fws.gov/ecp/species/5320">https://ecos.fws.gov/ecp/species/5320</a></td>
</tr>
<tr>
<td>Indiana Bat Myotis sodalis</td>
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<td>Northern Long-eared Bat Myotis septentrionalis</td>
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<td>Tricolored Bat Perimyotis subflavus</td>
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<td><a href="https://ecos.fws.gov/ecp/species/10515">https://ecos.fws.gov/ecp/species/10515</a></td>
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**CLAMS**

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<tr>
<th>NAME</th>
<th>STATUS</th>
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<tbody>
<tr>
<td>Fluted Kidneyshell <em>Psychobranchus subintus</em></td>
<td>Endangered</td>
</tr>
<tr>
<td>Littlewing Pearlymussel <em>Pegias fabula</em></td>
<td>Endangered</td>
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<tr>
<td>Shiny Pigtoe <em>Fusconaia cor</em></td>
<td>Endangered</td>
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<tr>
<td>Slabside Pearlymussel <em>Pleuronaia dolabelloides</em></td>
<td>Endangered</td>
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</table>

**INSECTS**

<table>
<thead>
<tr>
<th>NAME</th>
<th>STATUS</th>
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<tbody>
<tr>
<td>Monarch Butterfly <em>Danaus plexippus</em></td>
<td>Candidate</td>
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**LICHENS**

<table>
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<tr>
<th>NAME</th>
<th>STATUS</th>
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<tbody>
<tr>
<td>Rock Gnome Lichen <em>Gymnoderma linerare</em></td>
<td>Endangered</td>
</tr>
</tbody>
</table>

**CRITICAL HABITATS**

**There are no critical habitats within your project area under this office's jurisdiction.**

You are still required to determine if your project(s) may have effects on all above listed species.

**USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES**

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

**There are no refuge lands or fish hatcheries within your project area.**
Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

<table>
<thead>
<tr>
<th>NAME</th>
<th>BREEDING SEASON</th>
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<tbody>
<tr>
<td>Bald Eagle <em>Haliaeetus leucocephalus</em></td>
<td>Breeds Sep 1 to Aug 31</td>
</tr>
<tr>
<td>Golden Eagle <em>Aquila chrysaetos</em></td>
<td>Breeds elsewhere</td>
</tr>
</tbody>
</table>

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read the supplemental information and specifically the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence ( )

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season ( )
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (l)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (-)
A week is marked as having no data if there were no survey events for that week.

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<thead>
<tr>
<th>SPECIES</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
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<tbody>
<tr>
<td>Bald Eagle</td>
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<tr>
<td>Nun-BCC Vulnerle</td>
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<td>Golden Eagle</td>
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<td>Nun-BCC Vulnerle</td>
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Additional information can be found using the following links:

- Eagle Management [https://www.fws.gov/program/eagle-management](https://www.fws.gov/program/eagle-management)

**MIGRATORY BIRDS**

Certain birds are protected under the [Migratory Bird Treaty Act](https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds) and the [Bald and Golden Eagle Protection Act](https://www.fws.gov/special-mitigation/). Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

2. The [Bald and Golden Eagle Protection Act](https://www.fws.gov/special-mitigation/) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)
For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the **Probability of Presence Summary** at the top of your list to see when these birds are most likely to be present and breeding in your project area.

<table>
<thead>
<tr>
<th>Name</th>
<th>Breeding Season</th>
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<tbody>
<tr>
<td>Bald Eagle <em>Haliaeetus leucocephalus</em></td>
<td>Breeds Sep 1 to Aug 31</td>
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<tr>
<td>Black-billed Cuckoo <em>Coccyzus erythropthalmus</em></td>
<td>Breeds May 15 to Oct 10</td>
</tr>
<tr>
<td>Black-capped Chickadee <em>Poecile atricapillus practicus</em></td>
<td>Breeds Apr 10 to Jul 31</td>
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<tr>
<td>Canada Warbler <em>Cardellina canadensis</em></td>
<td>Breeds May 20 to Aug 10</td>
</tr>
<tr>
<td>Chimney Swift <em>Chaetura pelagica</em></td>
<td>Breeds Mar 15 to Aug 25</td>
</tr>
<tr>
<td>Golden Eagle <em>Aquila chrysaetos</em></td>
<td>Breeds elsewhere</td>
</tr>
<tr>
<td>Golden-winged Warbler <em>Vermivora chrysoptera</em></td>
<td>Breeds May 1 to Jul 20</td>
</tr>
<tr>
<td>Kentucky Warbler <em>Oporornis formosus</em></td>
<td>Breeds Apr 20 to Aug 20</td>
</tr>
<tr>
<td>Northern Saw-whet Owl <em>Aegolius acadicus acadicus</em></td>
<td>Breeds Mar 1 to Jul 31</td>
</tr>
</tbody>
</table>

*This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.*

*This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA.*
NAME

Red-headed Woodpecker *Melanerpes erythrocephalus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

https://ecos.fws.gov/ecp/species/32958

Wood Thrush *Hylocichla mustelina*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

https://ecos.fws.gov/ecp/species/9431

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read the supplemental information and specifically the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence ( )

Green bars; the bird’s relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season ( )

Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (I)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

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<tbody>
<tr>
<td>Red Eagle</td>
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<tr>
<td>Vulnerable</td>
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<tr>
<td>Black-billed Curlew</td>
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<td>BCC Range-wide (CON)</td>
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### Categories of Birds and Their Status

<table>
<thead>
<tr>
<th>Species</th>
<th>Status</th>
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<tbody>
<tr>
<td>Black-capped Chickadee</td>
<td>BC - BCN</td>
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<tr>
<td>Canada Warbler</td>
<td>BCC - BCCN</td>
</tr>
<tr>
<td>Chimney Swift</td>
<td>BCC - BCCN</td>
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<tr>
<td>Glaucous Gull</td>
<td>BC (CON)</td>
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<td>Gull-billed Gull</td>
<td>BC (CON)</td>
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<tr>
<td>Kentucky Warbler</td>
<td>BCC - BCCN</td>
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<tr>
<td>Northern Saw-whet</td>
<td>BC (CON)</td>
</tr>
<tr>
<td>Red-headed Woodpecker</td>
<td>BCC (CON)</td>
</tr>
<tr>
<td>Wood Thrush</td>
<td>BCC - BCCN</td>
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</tbody>
</table>

**Additional Information**

- Eagle Management: [https://www.fws.gov/program/eagle-management](https://www.fws.gov/program/eagle-management)
IPAC USER CONTACT INFORMATION

Agency: American Electric Power
Name: Jared Webb
Address: 40 Franklin St. SW
City: Roanoke
State: VA
Zip: 24011
Email: jawebb@aep.com
Phone: 5407595620
Site 2

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
9999 Short Lane
Gloucester, VA 23061-4510
Phone: (804) 693-6994 Fax: (804) 693-9032

In Reply Refer To: November 15, 2023
Project Code: 2024-0016454
Project Name: Glade-Whitetop Distribution Circuit B

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.
A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:


**Migratory Birds:** In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BG EPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668A). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BG EPA, Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Project Code in the header of this
letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds

OFFICIAL SPECIES LIST
This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
(804) 693-6594
PROJECT SUMMARY

Project Code: 2024-0016454
Project Name: Glade-Whitetop Distribution Circuit B
Project Type: Commercial Development
Project Description: Battery Energy Storage System

Project Location:
The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.60631700000004,-81.55134935184587,14z

Counties: Grayson County, Virginia
ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

TheC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the “Critical habitats” section below for those critical habitats that lie wholly or partially within your project area under this office’s jurisdiction. Please contact the designated FWS office if you have questions.

1. **NOAA Fisheries**, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

**MAMMALS**

<table>
<thead>
<tr>
<th>NAME</th>
<th>STATUS</th>
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<tbody>
<tr>
<td>Indiana Bat <em>Myotis sodalis</em></td>
<td>Endangered</td>
</tr>
<tr>
<td>Northern Long-eared Bat <em>Myotis septentrionalis</em></td>
<td>Endangered</td>
</tr>
<tr>
<td>Tricolored Bat <em>Perimyotis subflavus</em></td>
<td>Proposed</td>
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</table>

**CLAMS**

<table>
<thead>
<tr>
<th>NAME</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Floater <em>Lasigona subviridis</em></td>
<td>Threatened</td>
</tr>
</tbody>
</table>

Species profile: [https://ecos.fws.gov/ecp/species](https://ecos.fws.gov/ecp/species)
There are bald and/or golden eagles in your project area. YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ANY ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES
Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES
Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are bald and/or golden eagles in your project area.
For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

**NAME**

**Bald Eagle** _Haliaeetus leucocephalus_

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

https://ecos.fws.gov/locsprint/40826

**PROBABILITY OF PRESENCE SUMMARY**

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read the supplemental information and specifically the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

**Probability of Presence (\(^\)\)**

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

**Breeding Season (\(\)\)**

Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

**Survey Effort (\(\)\)**

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

**No Data (\(\)\)**

A week is marked as having no data if there were no survey events for that week.

<table>
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<tr>
<th>SPECIES</th>
<th>JAN</th>
<th>FEB</th>
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<th>JUL</th>
<th>AUG</th>
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<tr>
<td>Bald Eagle</td>
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<td>Volunteer</td>
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</tbody>
</table>

Additional information can be found using the following links:

- Eagle Management [https://www.fws.gov/program/eagle-management](https://www.fws.gov/program/eagle-management)
Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

**NAME**

**Bald Eagle Haliaeetus leucocephalus**
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/1626

**Black-billed Cuckoo Coccyzus erythropthalmus**
Breeds May 15 to Oct 10

**Black-capped Chickadee Poecile atricapillus praeclara**
Breeds Apr 10 to Jul 31

---


**MIGRATORY BIRDS**

Certain birds are protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

**NAME**

**Bald Eagle Haliaeetus leucocephalus**
This is a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

**Black-billed Cuckoo Coccyzus erythropthalmus**
Breeds Sep 1 to Aug 31

**Black-capped Chickadee Poecile atricapillus praeclara**
Breeds Apr 10 to Jul 31

---


### NAME

- **Canada Warbler Cardellina canadensis**
  - This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
  - Breeds May 20 to Aug 10
  - https://ecos.fws.gov/ecoregions/9643

- **Cerulean Warbler Dendroica cerulea**
  - This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
  - Breeds Apr 27 to Jul 20

- **Chimney Swift Chaetura pelagica**
  - This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
  - Breeds Mar 15 to Aug 25

- **Golden-winged Warbler Vermivora chrysoptera**
  - This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
  - Breeds May 1 to Jul 20

- **Kentucky Warbler Oporornis formosus**
  - This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
  - Breeds Apr 20 to Aug 20
  - https://ecos.fws.gov/ecoregions/9445

- **Northern Saw-whet Owl Aegolius acadicus acadicus**
  - This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA.
  - Breeds Mar 1 to Jul 31
  - https://ecos.fws.gov/ecoregions/10655

- **Rusty Blackbird Euphagus carolinus**
  - This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA.
  - Breeds elsewhere
  - https://ecos.fws.gov/ecoregions/9478

- **Wood Thrush Hylocichla mustelina**
  - This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
  - Breeds May 10 to Aug 31
  - https://ecos.fws.gov/ecoregions/9431

### BREEDING SEASON

- Breeds May 20 to Aug 10
- Breeds Apr 27 to Jul 20
- Breeds Mar 15 to Aug 25
- Breeds May 1 to Jul 20
- Breeds Apr 20 to Aug 20
- Breeds Mar 1 to Jul 31
- Breeds elsewhere
- Breeds May 10 to Aug 31

### PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read the supplemental information and specifically the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence ( )
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

**Breeding Season ( )**
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

**Survey Effort (l)**
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

**No Data (—)**
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<td>Bald Eagle</td>
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<td>Golden-winged Woodpecker</td>
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<td>Northern Saw-whet Owl</td>
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</table>
Additional information can be found using the following links:

IPAC USER CONTACT INFORMATION
Agency: American Electric Power
Name: Jared Webb
Address: 40 Franklin St SW
City: Roanoke
State: VA
Zip: 24011
Email: jawebb@aep.com
Phone: 5407395620
Attachment 3

VCRIS Mapping Area

Site 1

Site 2
**EJScreen Community Report**

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

---

**Smyth County, VA**

5 miles Ring Centered at 36.675828, -81.602331
Population: 2,285
Area in square miles: 78.53

---

### COMMUNITY INFORMATION

- **Low income:** 45% of population
- **People of color:** 3% of population
- **Less than high school education:** 14% of population
- **Limited English households:** 0%
- **Unemployment:** 5%
- **Persons with disabilities:** 23% of population
- **Male:** 50% of population
- **Female:** 50% of population
- **Average life expectancy:** 77 years
- **Per capita income:** $22,747
- **Number of households:** 904
- **Owner occupied:** 79%

---

### LANGUAGES SPOKEN AT HOME

<table>
<thead>
<tr>
<th>Language</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>97%</td>
</tr>
<tr>
<td>Spanish</td>
<td>1%</td>
</tr>
<tr>
<td>German or other West Germanic</td>
<td>1%</td>
</tr>
<tr>
<td>Arabic</td>
<td>1%</td>
</tr>
<tr>
<td>Total Non-English</td>
<td>3%</td>
</tr>
</tbody>
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### BREAKDOWN BY RACE

- **White:** 97%
- **Black:** 1%
- **American Indian:** 1%
- **Asian:** 0%
- **Hawaiian/Pacific Islander:** 0%
- **Other race:** 0%
- **Two or more races:** 1%
- **Hispanic:** 0%

---

### BREAKDOWN BY AGE

- **From Ages 1 to 4:** 4%
- **From Ages 1 to 18:** 17%
- **From Ages 18 and up:** 83%
- **From Ages 65 and up:** 24%

---

### LIMITED ENGLISH SPEAKING BREAKDOWN

- **Speak Spanish:** 0%
- **Speak Other Indo-European Languages:** 0%
- **Speak Asian-Pacific Island Languages:** 0%
- **Speak Other Languages:** 0%

---

*Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race. Source: U.S. Census Bureau, American Community Survey (ACS) 2017-2021. Life expectancy data comes from the Centers for Disease Control.*
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

**EJ INDEXES**

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

**SUPPLEMENTAL INDEXES**

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.
### EJScreen Environmental and Socioeconomic Indicators Data

#### Pollutants and Sources

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Site Score</th>
<th>1-Year Mean</th>
<th>8-Hour Mean</th>
<th>Annual Mean</th>
<th>均值</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particulate Matter (µg/m³)</td>
<td>6.43</td>
<td>7.53</td>
<td>0</td>
<td>8.08</td>
<td>12</td>
</tr>
<tr>
<td>Ozone (ppb)</td>
<td>57.7</td>
<td>59.1</td>
<td>32</td>
<td>61.6</td>
<td>22</td>
</tr>
<tr>
<td>Diesel Particulate Matter (µg/m³)</td>
<td>0.0488</td>
<td>0.209</td>
<td>0</td>
<td>0.261</td>
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</tr>
<tr>
<td>Air Toxics Cancer Risk* (lifetime risk per million)</td>
<td>20</td>
<td>29</td>
<td>0</td>
<td>25</td>
<td>5</td>
</tr>
<tr>
<td>Air Toxics Respiratory HI*</td>
<td>0.2</td>
<td>0.33</td>
<td>0</td>
<td>0.31</td>
<td>4</td>
</tr>
<tr>
<td>Toxic Releases to Air</td>
<td>18</td>
<td>4,300</td>
<td>12</td>
<td>4,600</td>
<td>11</td>
</tr>
<tr>
<td>Traffic Proximity (daily traffic count/distance to road)</td>
<td>2.1</td>
<td>150</td>
<td>8</td>
<td>210</td>
<td>7</td>
</tr>
<tr>
<td>Lead Paint (% Pro-1960 Housing)</td>
<td>0.26</td>
<td>0.22</td>
<td>67</td>
<td>0.3</td>
<td>54</td>
</tr>
<tr>
<td>Superfund Proximity (site count/km distance)</td>
<td>0.043</td>
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<td>37</td>
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<td>38</td>
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<td>RMP Facility Proximity (facility count/km distance)</td>
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<td>0.21</td>
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<td>0.43</td>
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<tr>
<td>Hazardous Waste Proximity (facility count/km distance)</td>
<td>0.075</td>
<td>0.61</td>
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<td>1.8</td>
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<tr>
<td>Underground Storage Tanks (count/km²)</td>
<td>0.074</td>
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<td>21</td>
<td>3.9</td>
<td>27</td>
</tr>
<tr>
<td>Wastewater Discharge (toxicity-weighted concentration/m²)</td>
<td>2.2E-07</td>
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<td>22</td>
<td>5</td>
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#### Socioeconomic Indicators

<table>
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<tr>
<th>Indicator</th>
<th>Median</th>
<th>25th</th>
<th>75th</th>
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<tbody>
<tr>
<td>Demographic Index</td>
<td>24%</td>
<td>31%</td>
<td>42%</td>
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<tr>
<td>Supplemental Demographic Index</td>
<td>17%</td>
<td>12%</td>
<td>79%</td>
</tr>
<tr>
<td>People of Color</td>
<td>3%</td>
<td>38%</td>
<td>7%</td>
</tr>
<tr>
<td>Low Income</td>
<td>45%</td>
<td>25%</td>
<td>65%</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>5%</td>
<td>5%</td>
<td>65%</td>
</tr>
<tr>
<td>Limited English Speaking Households</td>
<td>0%</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Less Than High School Education</td>
<td>14%</td>
<td>10%</td>
<td>74%</td>
</tr>
<tr>
<td>Under Age 5</td>
<td>4%</td>
<td>6%</td>
<td>46%</td>
</tr>
<tr>
<td>Over Age 64</td>
<td>24%</td>
<td>17%</td>
<td>78%</td>
</tr>
<tr>
<td>Low Life Expectancy</td>
<td>22%</td>
<td>20%</td>
<td>72%</td>
</tr>
</tbody>
</table>

Sites reporting to EPA within defined area:

- Superfund
- Hazardous Waste, Treatment, Storage, and Disposal Facilities
- Water Dischargers
- Air Pollution
- Brownfields
- Toxic Release Inventory
- Other community features within defined area:
  - Schools
  - Hospitals
  - Places of Worship

Other environmental data:

- Air Non-attainment
- Impaired Waters

Selected location contains American Indian Reservation Lands*: No
Selected location contains a "Justice40 (CEJST)* disadvantages community*: Yes
Selected location contains an EPA Area disadvantaged community*: Yes

Report for 5 miles Ring Centered at 36.675828, -81.602331
## EJScreen Environmental and Socioeconomic Indicators Data

<table>
<thead>
<tr>
<th>Indicator</th>
<th>County Value</th>
<th>State Average</th>
<th>State Percentile</th>
<th>US Average</th>
<th>US Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Life Expectancy</td>
<td>22%</td>
<td>20%</td>
<td>72</td>
<td>20%</td>
<td>72</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>8</td>
<td>5.5</td>
<td>86</td>
<td>6.1</td>
<td>83</td>
</tr>
<tr>
<td>Asthma</td>
<td>10</td>
<td>9.6</td>
<td>66</td>
<td>10</td>
<td>55</td>
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<tr>
<td>Cancer</td>
<td>7.5</td>
<td>6.1</td>
<td>82</td>
<td>6.1</td>
<td>82</td>
</tr>
<tr>
<td>Persons with Disabilities</td>
<td>21.1%</td>
<td>12.5%</td>
<td>89</td>
<td>13.4%</td>
<td>88</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicator</th>
<th>County Value</th>
<th>State Average</th>
<th>State Percentile</th>
<th>US Average</th>
<th>US Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood Risk</td>
<td>29%</td>
<td>9%</td>
<td>94</td>
<td>12%</td>
<td>91</td>
</tr>
<tr>
<td>Wildfire Risk</td>
<td>0%</td>
<td>2%</td>
<td>0</td>
<td>14%</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicator</th>
<th>County Value</th>
<th>State Average</th>
<th>State Percentile</th>
<th>US Average</th>
<th>US Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadband Internet</td>
<td>29%</td>
<td>13%</td>
<td>86</td>
<td>14%</td>
<td>87</td>
</tr>
<tr>
<td>Lack of Health Insurance</td>
<td>8%</td>
<td>8%</td>
<td>59</td>
<td>9%</td>
<td>58</td>
</tr>
<tr>
<td>Housing Burden</td>
<td>No</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Transportation Access</td>
<td>Yes</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Food Desert</td>
<td>Yes</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Footnotes

Report for 5 miles Ring Centered at 36.675828, -81.602331
EJSscreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Grayson County, VA

5 miles Ring Centered at 36.606278,-81.551492
Population: 1,060
Area in square miles: 78.53

COMMUNITY INFORMATION

- Low income: 44 percent
- People of color: 6 percent
- Less than high school education: 19 percent
- Limited English households: 0 percent

- Unemployment: 4 percent
- Persons with disabilities: 24 percent
- Male: 53 percent
- Female: 47 percent

- Average life expectancy: 77 years
- Per capita income: $24,950
- Number of households: 509
- Owner occupied: 63 percent

BREAKDOWN BY RACE

- White: 94%
- Black: 2%
- American Indian: 0%
- Asian: 0%
- Hawaiian/Pacific Islander: 0%
- Other race: 0%
- Two or more races: 2%
- Hispanic: 2%

BREAKDOWN BY AGE

- From Ages 1 to 4: 2%
- From Ages 5 to 18: 11%
- From Ages 19 and up: 65%
- From Ages 65 and up: 36%

LIMITED ENGLISH SPEAKING BREAKDOWN

- Speak Spanish: 0%
- Speak Other Indo-European Languages: 0%
- Speak Asian-Pacific Island Languages: 0%
- Speak Other Languages: 0%

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race. Source: U.S. Census Bureau: American Community Survey (ACS) 2017-2021. Life expectancy data comes from the Centers for Disease Control.
Environmental Justice & Supplemental Indexes

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EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for 5 miles Ring Centered at 36.606278, -81.551492
**EJScreen Environmental and Socioeconomic Indicators Data**

<table>
<thead>
<tr>
<th>Pollutant Source</th>
<th>Hazard Index</th>
<th>Supplemental Hazard Index</th>
<th>People of Color</th>
<th>Low Income</th>
<th>Unemployment Rate</th>
<th>Limited English Speaking Households</th>
<th>Less Than High School Education</th>
<th>Under Age 5</th>
<th>Over Age 64</th>
<th>Low Life Expectancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particulate Matter (µg/m³)</td>
<td>6.35</td>
<td>7.53</td>
<td>0</td>
<td>8.08</td>
<td>11</td>
<td>25%</td>
<td>12%</td>
<td>13%</td>
<td>36%</td>
<td>21%</td>
</tr>
<tr>
<td>Ozone (ppb)</td>
<td>57.7</td>
<td>59.1</td>
<td>31</td>
<td>61.6</td>
<td>22</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Diesel Particulate Matter (µg/m³)</td>
<td>0.0459</td>
<td>0.209</td>
<td>0</td>
<td>0.261</td>
<td>3</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
</tr>
<tr>
<td>Air Toxics Cancer Risk* (lifetime risk per million)</td>
<td>20</td>
<td>29</td>
<td>0</td>
<td>25</td>
<td>5</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Air Toxics Respiratory HI**</td>
<td>0.2</td>
<td>0.33</td>
<td>0</td>
<td>0.31</td>
<td>4</td>
<td>0.61</td>
<td>0.61</td>
<td>0.61</td>
<td>0.61</td>
<td>0.61</td>
</tr>
<tr>
<td>Toxic Releases to Air</td>
<td>6.3</td>
<td>4.300</td>
<td>6</td>
<td>4.600</td>
<td>7</td>
<td>0.12</td>
<td>1.9</td>
<td>2.4</td>
<td>3.9</td>
<td>2.4</td>
</tr>
<tr>
<td>Traffic Proximity (daily traffic count/distance to road)</td>
<td>0.35</td>
<td>150</td>
<td>1</td>
<td>210</td>
<td>1</td>
<td>0.39</td>
<td>0.22</td>
<td>0.79</td>
<td>0.3</td>
<td>0.79</td>
</tr>
<tr>
<td>Lead Paint (% Pre-1960 Housing)</td>
<td>0.39</td>
<td>0.22</td>
<td>79</td>
<td>0.3</td>
<td>65</td>
<td>0.038</td>
<td>0.11</td>
<td>0.31</td>
<td>0.03</td>
<td>0.31</td>
</tr>
<tr>
<td>Superfund Proximity (site count/km distance)</td>
<td>0.038</td>
<td>0.21</td>
<td>2</td>
<td>0.43</td>
<td>4</td>
<td>0.031</td>
<td>0.21</td>
<td>0.19</td>
<td>0.24</td>
<td>0.24</td>
</tr>
<tr>
<td>RMP Facility Proximity (facility count/km distance)</td>
<td>0.061</td>
<td>0.61</td>
<td>13</td>
<td>1.9</td>
<td>12</td>
<td>0.12</td>
<td>1.9</td>
<td>2.4</td>
<td>3.9</td>
<td>2.4</td>
</tr>
<tr>
<td>Hazardous Waste Proximity (facility count/km distance)</td>
<td>0.061</td>
<td>0.61</td>
<td>13</td>
<td>1.9</td>
<td>12</td>
<td>0.12</td>
<td>1.9</td>
<td>2.4</td>
<td>3.9</td>
<td>2.4</td>
</tr>
<tr>
<td>Underground Storage Tanks (count/km²)</td>
<td>0.12</td>
<td>1.9</td>
<td>24</td>
<td>3.9</td>
<td>29</td>
<td>3.5E-06</td>
<td>7.2</td>
<td>19</td>
<td>22</td>
<td>12</td>
</tr>
<tr>
<td>Wastewater Discharge (toxicity-weighted concentration/m distance)</td>
<td>3.5E-06</td>
<td>7.2</td>
<td>19</td>
<td>22</td>
<td>12</td>
<td>35%</td>
<td>31%</td>
<td>35%</td>
<td>31%</td>
<td>35%</td>
</tr>
</tbody>
</table>

*S: These particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the Air Toxics Data Update here provides basic estimates of health risks over geographic areas of the country, not definitive risk to specific individuals or locations. Underproxy and hazard/risk from the Air Toxics Data Update are reported to one significant figure and any additional significant figures are due to rounding. More information on the Air Toxics Data Update can be found at [http://www.epa.gov/airtoxics/dataupdate].

Sites reporting to EPA within defined area:
- Superfund ............................................... 0
- Hazardous Waste, Treatment, Storage, and Disposal Facilities .......................... 0
- Water Dischargers .................................... 0
- Air Pollution .......................................... 2
- Brownfields .......................................... 1
- Toxic Release Inventory .............................. 0

Other community features within defined area:
- Schools ................................................. 0
- Hospitals ............................................. 0
- Places of Worship .................................... 22

Other environmental data:
- Air Non-attainment ................................... No
- Impaired Waters ...................................... Yes

Report for 5 miles Ring Centered at 36.606278, -81.551492

Selected location contains American Indian Reservation Lands* ........................................... No
Selected location contains a "Justice40 (CEJST)" disadvantaged community ......................... Yes
Selected location contains an EPA Ira disadvantaged community ...................................... Yes
# EJScreen Environmental and Socioeconomic Indicators Data

## Table 1: EJScreen Environmental and Socioeconomic Indicators Data

<table>
<thead>
<tr>
<th>Indicator</th>
<th>State Value</th>
<th>State Percentile</th>
<th>US Average</th>
<th>US Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Life Expectancy</td>
<td>21%</td>
<td>20%</td>
<td>20%</td>
<td>61</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>9.2</td>
<td>5.5</td>
<td>96</td>
<td>6.1</td>
</tr>
<tr>
<td>Asthma</td>
<td>9.6</td>
<td>62</td>
<td>17.3%</td>
<td>46</td>
</tr>
<tr>
<td>Cancer</td>
<td>8.2</td>
<td>6.1</td>
<td>89</td>
<td>6.1</td>
</tr>
<tr>
<td>Persons with Disabilities</td>
<td>17.3%</td>
<td>12.6%</td>
<td>79</td>
<td>13.4%</td>
</tr>
</tbody>
</table>

## Table 2: EJScreen Environmental and Socioeconomic Indicators Data

<table>
<thead>
<tr>
<th>Indicator</th>
<th>State Value</th>
<th>State Percentile</th>
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<th>US Percentile</th>
</tr>
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<tbody>
<tr>
<td>Flood Risk</td>
<td>35%</td>
<td>9%</td>
<td>96</td>
<td>12%</td>
</tr>
<tr>
<td>Wildfire Risk</td>
<td>0%</td>
<td>2%</td>
<td>0</td>
<td>14%</td>
</tr>
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## Table 3: EJScreen Environmental and Socioeconomic Indicators Data

<table>
<thead>
<tr>
<th>Indicator</th>
<th>State Value</th>
<th>State Percentile</th>
<th>US Average</th>
<th>US Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadband Internet</td>
<td>29%</td>
<td>13%</td>
<td>87</td>
<td>14%</td>
</tr>
<tr>
<td>Lack of Health Insurance</td>
<td>10%</td>
<td>8%</td>
<td>69</td>
<td>9%</td>
</tr>
<tr>
<td>Housing Burden</td>
<td>No</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Transportation Access</td>
<td>Yes</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Food Desert</td>
<td>Yes</td>
<td>N/A</td>
<td>N/A</td>
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</tr>
</tbody>
</table>

Footnotes

Report for 5 miles Ring Centered at 36.606278, -81.551492
### Capital Expenditures for APCo Virginia

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Local Share</th>
<th>State Share</th>
<th>Total Local</th>
<th>Total Federal</th>
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</thead>
<tbody>
<tr>
<td>Non- textual</td>
<td>23,355.05</td>
<td>13,722.49</td>
<td>37,077.54</td>
<td>28,026.95</td>
</tr>
<tr>
<td>Textual</td>
<td>23,355.05</td>
<td>13,722.49</td>
<td>37,077.54</td>
<td>28,026.95</td>
</tr>
</tbody>
</table>

### Towns as a Result of Capital Expenditures Activities - APCo Virginia

<table>
<thead>
<tr>
<th>Region Type</th>
<th>Sub-County Share</th>
<th>State Share</th>
<th>Total Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non- textual</td>
<td>23,355.05</td>
<td>13,722.49</td>
<td>37,077.54</td>
</tr>
<tr>
<td>Textual</td>
<td>23,355.05</td>
<td>13,722.49</td>
<td>37,077.54</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Region Type</th>
<th>Sub-County Share</th>
<th>State Share</th>
<th>Total Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non- textual</td>
<td>23,355.05</td>
<td>13,722.49</td>
<td>37,077.54</td>
</tr>
<tr>
<td>Textual</td>
<td>23,355.05</td>
<td>13,722.49</td>
<td>37,077.54</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Region Type</th>
<th>Sub-County Share</th>
<th>State Share</th>
<th>Total Share</th>
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<td>Non- textual</td>
<td>23,355.05</td>
<td>13,722.49</td>
<td>37,077.54</td>
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<tr>
<td>Textual</td>
<td>23,355.05</td>
<td>13,722.49</td>
<td>37,077.54</td>
</tr>
</tbody>
</table>

### Summary

- Total capital expenditure: $37,077,54
- Total federal contribution: $28,026,95
- Total state contribution: $13,722,49
- Total local contribution: $23,355,05
January 18, 2024

ELECTRICAL UPGRADES IN YOUR AREA
Name
Address
City, State Zip

Subject: Glade-Whitetop Battery Energy Storage Project Announcement

Dear Neighbor,

You are receiving this letter because you own property or live in the area where Appalachian Power representatives plan to upgrade the local power grid in Smyth and Grayson counties. The Glade-Whitetop Battery Energy Storage Project involves building two battery energy storage facilities and upgrading electric distribution lines in the area by replacing structures and/or wires.

These facilities provide an additional power source for area customers and reduce stress on the electric system during periods of high electric demand. The local distribution circuits in the area experience frequent power outages. The batteries serve as back-up power sources during outages to reduce the number of customers impacted and the outage duration.

Appalachian Power representatives plan to file the project for approval with the Virginia State Corporation Commission this month and expect a response this summer. Project team members plan to provide project updates to you as the project progresses.

Please review the enclosed fact sheet or visit AppalachianPower.com/Glade-Whitetop for more information.

Sincerely,

Nicole Hodges
Outreach Specialist
833-313-3743
Apco_Outreach@aep.com
GLADE-WHITETOP BATTERY ENERGY STORAGE PROJECT

Appalachian Power representatives plan upgrades to the electric system in Smyth and Grayson counties. The Glade-Whitetop Battery Energy Storage Project involves building two electric battery energy storage facilities and upgrading electric distribution lines in the area.

**WHAT**
The project involves:
- Building a battery energy storage facility in Smyth County
- Building a battery energy storage facility in Grayson County
- Upgrading electric distribution lines in the area by replacing structures and/or wires
- Filing for project approval from the Virginia State Corporation Commission (SCC)

**WHY**
These facilities provide an additional power source for area customers and reduce stress on the electric system during periods of high electric demand.

The local distribution circuits in the area also experience frequent power outages. The batteries serve as back-up power sources during outages to reduce the number of customers impacted and the outage duration.

**WHERE**
The battery storage facility in Smyth County will be located off Laurel Valley Road.

The battery storage facility in Grayson County will be located off Highlands Parkway/US Route 58.

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**PROJECT SCHEDULE**

<table>
<thead>
<tr>
<th>Event</th>
<th>2024</th>
<th>2025</th>
</tr>
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<tbody>
<tr>
<td>PROJECT ANNOUNCEMENT</td>
<td></td>
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<tr>
<td>January 2024</td>
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<tr>
<td>FILE APPLICATION TO THE VIRGINIA STATE CORPORATION COMMISSION (SCC)</td>
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<tr>
<td>January 2024</td>
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<tr>
<td>ANTICIPATED APPROVAL FROM THE SCC</td>
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<tr>
<td>Summer 2024</td>
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</table>

*Construction timeline to be determined following approval from the Virginia State Corporation Commission. Landowners can expect to receive more information about next steps and a construction schedule at a later date.*
**TYPICAL FACILITIES**

The battery energy storage facility sites will include a fenced approximate 100x100 foot gravel area with battery storage containers and electrical equipment.

*Picture is an example of a battery energy storage site and does not represent final design. Exact size, height and arrangement of each battery energy storage facility may vary.*