

FINDING OF NO SIGNIFICANT IMPACT TENNESSEE VALLEY AUTHORITY

VONORE BATTERY ENERGY STORAGE SYSTEM AND ASSOCIATED SUBSTATION

The Tennessee Valley Authority’s (TVA) 2019 Integrated Resource Plan (IRP) is a long-term plan that provides general direction on how TVA can best meet future demand for power. It generally describes how TVA will provide low-cost, reliable and clean electricity; support environmental stewardship; and foster economic development in the Tennessee Valley for the next 20 years. Various IRPs have been issued through the years. The 2019 IRP identified the demonstration of battery storage as a near-term implementation action that would allow TVA to evaluate how such storage can be integrated into its power operations. The 2019 IRP set an energy storage goal to add up to 2,400 megawatts (MW) of storage by 2028 and up to 5,300 MW by 2038. To assist in achieving the energy storage goal set forth in the 2019 IRP, TVA is looking to add renewable energy capacity and solutions to its generating and transmission asset portfolio. Therefore, TVA proposes to construct a Battery Energy Storage System (BESS) as a pilot study project. As low carbon resources such as wind, solar, and nuclear, become a more significant portion of TVA’s generation portfolio, a BESS pilot project would inform how TVA can best take advantage of battery storage technology to enhance the functionality and resiliency of the power system. The implementation and installation of the BESS pilot project would also provide the surrounding area increased power reliability, while allowing TVA to learn how to best leverage battery storage for the grid of the future. TVA anticipates multiple energy storage projects across the Valley would be needed to integrate renewables into the TVA generation and transmission system.

The proposed action is the subject of an environmental assessment (EA) prepared by TVA, which is incorporated by reference. The EA addresses the construction, operation, and maintenance of the proposed BESS facility.

Alternatives

The subject EA evaluates two alternatives: the No Action Alternative and the proposed Action Alternative. Under the No Action alternative, TVA would not construct the proposed BESS pilot project facility and substation at the Vonore location in Monroe County, Tennessee. In addition, the all dielectric self-supporting (ADSS) fiber line would not be installed in Blount County. As a result, TVA would not be able to demonstrate the BESS technology. TVA would also not be able to evaluate how to incorporate battery storage technology to reduce the uncertainty and increase the reliability of renewable energy generation. Additionally, under the No Action Alternative, the proposed project surrounding area would not be provided with an increased power reliability.

TVA has committed in the 2019 IRP to implementing a demonstration BESS project and set goals for adding energy storage to the TVA transmission system to offset the uncertainty of solar and wind energy that could be needed during peak customer demand or as an emergency power source. Consequently, this alternative would not satisfy the project purpose and need and, therefore, is not considered a viable or reasonable alternative. It does, however, provide a benchmark for comparing the environmental impacts of implementation of the proposed Action Alternative.

Under the proposed Action Alternative, TVA would construct the BESS facility which would be capable of generating 20 MW with a storage capacity of 40 MW hours (MWhrs) and would be located west of State Highway 72 in Vonore, Tennessee in Monroe County. The proposed 15-acre pilot study site would require an approximate 10-acre slab-on-grade pad for the BESS, its attendant features, and an associated new Vonore 69-kilovolt (kV) Substation. The BESS would be comprised of twelve containers to house the lithium-ion batteries. Each container would be 40-feet-long by 10-feet-wide and 8-feet in height. Proposed BESS attendant features would include 6 inverters, 3 transformers, at least 12 meters, and other necessary operational features. The proposed onsite 69-kV substation would consist of a transformer, numerous breakers, at least 12 power quality meters, a Supervisory Control and Data Acquisition remote terminal unit, relays, alarms, capacitor-controlled voltage transformer, switch house, and other equipment. Access to the BESS would be directly from Highway 72 near transmission line Structure 109. To connect the BESS and associated substation to TVA's transmission system, a loop connection point would be installed on the existing Loudon-Tellico Reservoir Development Agency 69-kV Transmission Line. Direct transfer trip and transfer trip work would occur at the TVA Loudon 161-kV Substation.

Additionally, TVA would install roughly 0.4-mile of new ADSS fiber cable from Structures 53 to 55 on the Fort Loudon to Alcoa No. 1 161-kV transmission line (L5184), roughly one mile east of the town of Friendsville, in Blount County, Tennessee. New poles between Structures 53 to 55 would be installed, and the ADSS fiber line would be placed on overhead poles by bucket trucks. TVA would utilize temporary access roads, existing access roads, and/or driveways within existing rights-of-way for the installation of the ADSS fiber cables.

TVA's preferred alternative is proposed Action Alternative. This alternative would meet the purpose of the project and would further promote TVA's need to provide low-cost, reliable and clean electricity; support environmental stewardship; and foster economic development in the Tennessee Valley for the next 20 years.

Impacts Assessment

The potential impacts of the proposed action are described in detail in the EA. Implementation of the proposed action would have minor adverse impacts on land use, as the project site would change from undeveloped and agricultural to industrial. The surrounding area is largely agricultural, undeveloped, residential, and industrial, which would not be changed by the proposed project's land use. Minor adverse impacts related to groundwater, geology, and soils would occur as a result of the site grading and construction. The minor loss of prime farmland within the BESS and new substation footprint (less than one acre) is negligible when compared to the amount of land designated as prime farmland within the surrounding region. Therefore, impacts to prime farmland would be minor. Negligible impacts to geology and soils would occur within the proposed ADSS fiber line installation corridor during the installation of the poles and the ADSS fiber lines. Although prime farmland soils were documented within the ADSS fiber line installation corridor, these areas would not be considered as prime farmland due to their location within a maintained TVA transmission right-of-way.

Construction-related activities would result in minor and short-term impacts to air quality and climate change. With the use of best management practices (BMPs) impacts would be minimal, temporary, and localized; and would not be anticipated to result in any violation of applicable ambient air quality standards or impact regional air quality. Once operational, the BESS would allow for storage of green energy production for long-term use, which would result in a beneficial effect on climate change.

Direct impacts to surface water features and wetlands would be avoided, with only the potential for minor indirect impacts from soil erosion and sedimentation during construction. BMPs would be used during all construction and maintenance activities in accordance with standard operational procedures and any permit requirements. Impacts to water quality, streams, wetlands, aquatic life, and floodplains would be minor and insignificant, consistent with the requirements of Executive Order 11990 (Protection of Wetlands) and Executive Order 11988 (Floodplain Management), respectively.

No uncommon or rare plant or animal communities are present within the proposed project action areas, and the impacts to vegetation and wildlife would be insignificant. No plants or animals protected under the Endangered Species Act, or habitat suitable for these listed species are present on these sites; therefore, the requirements under Section 7 of that Act have been met. No state-listed protected species would be significantly affected.

Construction vehicles and equipment visible during construction activities would have a minor visual impact over the temporary construction period. A minor permanent impact would occur due to tree removal, and construction of the BESS and associated substation. To minimize the visual effect, TVA would plant a vegetative screen that would not impact security and operational requirements along the perimeter of the BESS and associated substation facility that is visible to the public. Therefore, implementation of the proposed Action Alternative would result in only a minor overall change in visual quality.

Noise would be localized and temporary, and no receptor would be exposed to significant noise levels for an extended period of time. Further, construction activities would be conducted during daylight hours only, when ambient noise levels are often higher, and most individuals are less sensitive to noise. Thus, noise-related impacts resulting from implementation of the proposed action are anticipated to be temporary and minor for both the proposed BESS pilot study project area, as well as the proposed ADSS fiber line installation project area.

No archaeological or architectural/historic resources eligible for inclusion on the National Register of Historic Places occur on or in the immediate vicinity of the proposed action areas. TVA has determined that there would be no effects on historic properties and the Tennessee State Historic Preservation Office concurred with this determination.

Minor beneficial socioeconomic impacts during construction and operation would occur. No long-term impacts to community services are anticipated and there would be no disproportionate impacts to low-income or minority communities in the area.

Traffic would be temporarily disrupted during the transformer, containers, and battery delivery. However, this disruption would be temporary and minor with appropriate traffic control measures.

Workers in the proposed project areas would have an increased safety risk associated with the construction activities. However, because construction work has known hazards, standard practice is for contractors to establish and maintain health and safety plans in compliance with OSHA regulations. Such health and safety plans emphasize BMPs for site safety management to minimize potential risks to workers. No public health or safety hazards would be anticipated as a result of operations. Overall, impacts to public health and safety in association with implementation of the proposed action would be considered temporary and minor.

The replacement of the batteries and ultimate decommissioning of the site would produce solid and hazardous waste in need of disposal. With the implementation of BMPs and compliance with the Solid and Hazardous Waste Rules and Regulations of the State (TDEC DSWM, Rule 0400, Chapters 11 and 12, respectively), as well as the appropriate waste disposal requirements, no significant impacts associated with solid and/or hazardous waste are anticipated.

Public and Intergovernmental Review

A draft of the EA was issued for public and agency review. TVA has consulted with the State Historic Preservation Office and federally recognized Native American tribes on the potential effects to historic properties.

TVA received comments on the draft EA from one federal agency, one state agency, one firm, and four residents. Comments can be found in Appendix A of the Final EA. Comments received on the draft EA have been addressed in the final EA.

Mitigation

The following non-routine measures would be applied during the construction, operation, and maintenance of the proposed Vonore BESS, transmission lines, and access roads to reduce the potential for adverse environmental effects. Monroe County, Tennessee is currently under APHIS quarantine. As such, any soil, baled hay or straw, plants and sod with roots and soil attached, soil-moving equipment or other "Regulated Articles" as defined by USDA should be in compliance with APHIS Quarantine Regulations. To offset the adverse visual effect, TVA would plant a vegetative screen that would not impact security and operational requirements along the perimeter of the BESS and associated substation facility that is visual to the public.

Conclusion and Findings

Based on the findings listed above and the analyses in the EA, we conclude that the proposed action of constructing, operating, and maintaining the BESS facility, associated substation, and ADSS fiber line upgrade would not be a major federal action significantly affecting the environment. This finding of no significant impacts is contingent upon adherence to the mitigation measures described above. Accordingly, an environmental impact statement is not required.



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Date Signed