

FINDING OF NO SIGNIFICANT IMPACT

TENNESSEE VALLEY AUTHORITY

GOLDEN TRIANGLE I SOLAR AND BATTERY ENERGY STORAGE SYSTEM PROJECT

LOWNDES COUNTY, MISSISSIPPI

The Tennessee Valley Authority (TVA) has entered into a power purchase agreement (PPA) with MS Solar 5, LLC (referred to herein as “MS Solar 5”), to purchase the power and environmental attributes generated by the proposed Golden Triangle I Solar and Battery Energy Storage System (BESS) Facility (Solar Facility) in Lowndes County, Mississippi, subject to the satisfactory completion of applicable environmental reviews. The Golden Triangle Solar and BESS Project (the Project) would include a Solar Facility, which would be constructed and operated by MS Solar 5 and include up to approximately 200 megawatts (MW) of alternating current (AC) generating capacity with a 50 MW AC – 200-megawatt hour (MWh) BESS, a new Golden Triangle Substation, and a new permanent switching station at TVA’s existing Artesia Substation. Under the terms of the conditional PPA between TVA and MS Solar 5, dated December 23, 2019, TVA would purchase the electric output and environmental attributes generated by the Solar Facility for an initial term of 20 years, subject to satisfactory completion of all applicable environmental requirements.

TVA produces or obtains electricity from a diverse portfolio of energy sources, including solar, hydroelectric, wind, biomass, fossil fuel, and nuclear. In 2019, TVA completed an Integrated Resource Plan (IRP) and associated Environmental Impact Statement (EIS) that identified the resources that TVA intends to use to meet the energy needs of the TVA region over the 20-year planning period while achieving TVA’s objectives to deliver reliable, low-cost, and clean energy while reducing environmental impacts. The IRP reinforced the need for continued expansion of renewable energy generating capacity, including the addition of between 1,500 and 8,000 MW AC of solar capacity by 2028 and up to 14,000 MW AC by 2038.

In 2019, customer demand prompted TVA to release a Request for Proposal (RFP) for renewable energy resources. The PPAs that resulted from this RFP will help TVA meet immediate needs for additional renewable generating capacity and fulfill the renewable energy goals established in the IRP. The Proposed Action would provide cost-effective renewable energy consistent with the IRP and TVA goals. The potential effects of TVA’s proposed action, including the effects of constructing and operating the Solar Facility and associated TL upgrades, are described in an environmental assessment (EA) which is incorporated herein by reference.

Alternatives

The subject EA evaluates two alternatives: the No Action Alternative and the Proposed Action Alternative. Under the No Action Alternative, TVA would not purchase the power generated by the proposed Solar Facility under the 20-year PPA with MS Solar 5 and would rely on other sources of generation to meet its renewable energy goals.

Under the Proposed Action Alternative, MS Solar 5 would construct and operate the proposed Solar Facility and TVA would purchase renewable energy under the 20-year PPA with MS Solar 5. The Solar Facility would occupy portions of an area of approximately 4,150 acres of a Project Site consisting of 29 individual parcels of predominantly agricultural land. The Project Site, which includes the solar array footprints, collection lines, access roads, Golden Triangle Substation, and Artesia Switching Station, is just east of Artesia, Mississippi. The Solar Facility would consist of multiple parallel rows of photovoltaic (PV) panels on single-axis tracking structures, along with direct current (DC) and AC inverters and transformers. Site preparation is generally required prior to construction of the Solar Facility and assembly of the solar arrays. Site preparation typically includes: surveying and staking; removal of vegetation/trimming tree branches; light grading, clearing, and grubbing; installation of security fencing around components near one another and not separated by public roads; erosion prevention and sediment control Best Management Practices (BMPs); and preparation of construction laydown areas. Solar array assembly and construction includes driving steel piles into the ground for the tracker support structures, installation of solar panels, and electrical connections and testing/verification. Construction materials would be transported by truck and/or rail to the Project Site, where materials would be staged, assembled, and moved into place. Temporary construction laydown areas for materials, equipment, and parking would be required within the Project Site. With the exception of fence repair, vegetation control, and periodic array inspection, repairs, and maintenance, the Solar Facility would have relatively little human activity during operation.

TVA would construct the Artesia 161-kV Switching Station (Switching Station) adjacent to its existing Artesia Substation, resulting in an approximately 5,000-foot-long gen-tie line. No new modifications to the existing TVA transmission line (TL) would be required.

TVA's preferred alternative is the Proposed Action Alternative. This alternative would fulfill the purpose and need for the action by providing TVA and its customers with additional renewable generating capacity with minor direct and indirect impacts.

Impacts Assessment

The potential impacts of the proposed action are described in detail in the EA. Implementation of the proposed action would change the land use of the proposed Solar Facility site from predominantly agricultural to industrial. Adjacent land uses are similar with few nearby residents. Most of the site is classified as prime farmland. While the construction and operation of the Solar Facility would remove the site from agricultural production, there would be little long-term impact on the soil productivity and the impacts on soils would be offset by the beneficial effects to soil health with the use of native and noninvasive vegetation.

Impacts to groundwater, due to the use of a potential new water well during operation of Solar Facility, would be minimal. Direct impacts to federally jurisdictional surface water features due to access road bridges and/or culverts would be authorized under the U.S. Army Corps of Engineers (USACE) Nationwide Permits (NWP) 3 and/or 14. Jurisdictional wetlands would be avoided entirely at the Solar Facility, with only minor indirect impacts from soil erosion and sedimentation during construction. Existing vegetative buffers would be maintained along streams and wetlands, and BMPs would be used during all construction and maintenance activities in accordance with permit requirements. Impacts to water quality, streams, wetlands, and aquatic life would be minor and insignificant, consistent with the requirements of Executive Order 11990 (Protection of Wetlands). Impacts to floodplains are unavoidable, as approximately 25 percent of the Project Site would be located within designated floodplain areas. The Project layout has been designed to minimize the number of PV panels installed within floodplains with high base flood elevations, and the Golden Triangle Substation would not be located within the

100-year floodplain; however, MS Solar 5 is obtaining the appropriate design and elevation certificates from the Lowndes County Floodplain Administrator. The Artesia Switching Station would be located outside of the 100-year floodplain. Consistent with Executive Order 11988 (Floodplain Management), the installation of underground electric lines and fencing are considered to be repetitive actions in the 100-year floodplain, which would result in minor impacts.¹

Most of the proposed Solar Facility site is cropland and clearing of mature trees would occur on only 150 acres of upland forested areas. No uncommon or rare plant or animal communities are present on the site, and the impacts to vegetation and wildlife would be minor. Habitat at the Project Site would be improved for small mammals, songbirds, reptiles and amphibians, and pollinating insects through introduction of native vegetation.

Review of the TVA Regional Natural Heritage database and the U.S. Fish and Wildlife Service Information for Planning and Consultation (IPaC) website identified three species listed as federally endangered, threatened, candidate, or delisted and monitored under the Endangered Species Act (ESA) that have the potential to occur within the project area in Lowndes County, Mississippi. These species include one plant (Price's potato-bean), one bird (wood stork), and one mammal (northern long-eared bat [NLEB]) that have the potential to occur within Lowndes County based on historic range, proximity to known occurrence records, biological characteristics, and/or physiographic characteristics. No habitat for federally listed aquatic organisms are present within the proposed action area. No federally designated critical habitats for these species are present within or adjacent to the project action area; therefore, no adverse modification of critical habitats would occur.

Additional species-specific botanical surveys were performed by a qualified botanist from Mississippi State University on October 7, 2020. Supplemental findings are documented in Appendix C. No individual Price's potato-bean were observed during field surveys; however, potential habitat for the species was observed within the survey area. Potential habitat for the species occurs in ravine areas that would not be developed during project construction or operation; thus, the project would have no effect on Price's potato-bean. Suitable roosting habitat for the wood stork does not exist within the survey area for the project. However, suitable foraging habitat may be present near open water and large, inundated wetlands. The project footprint includes wetland areas (totaling approximately 569.6 acres). Proposed panel layouts would avoid any impacts on wetlands. There are also large aquaculture/fish farms both north and south of the project that may attract foraging wood storks. The project would not affect fish farms or large open waters outside the immediate project limits. Therefore, TVA has determined there would be no effects to wood storks or wood stork habitat resulting from implementation of the proposed action. Phase 1 Bat Habitat Assessments were conducted from March 3-April 8, and April 20-23, 2020, using the 2019 and 2020 Range-Wide Indiana Bat Summer Survey Guidelines as a surrogate protocol for determining presence/absence of the federally threatened NLEB. No caves, mines, buildings, bridges, or potential winter roosting structures were identified during field surveys of the project footprint. Suitable summer roosting habitat for the NLEB was observed within forested areas at the project site, and suitable foraging habitat was observed within the perennial stream corridors, fence rows, wetlands, and forests throughout the project site. The project footprint includes wetland areas, 4 perennial streams, and 4 intermittent streams, some of which may provide suitable foraging habitat and sources of drinking water for bats. Wetlands and streams would be avoided to the greatest extent practicable. Best Management Practices would be used around these bodies of water,

¹ Tennessee Valley Authority (TVA). 1981. *Class Review of Repetitive Actions in 100-Year Floodplain*. Federal Register. Vol. 46, No. 76 (22845 – 22846). 21 April 1981.

minimizing sedimentation, and avoiding changes to hydrology. Forest fragments and forested edges in the project footprint offer additional suitable foraging habitat for NLEBs. Up to 150 acres of suitable summer roosting habitat for NLEBs may be removed. There are no known records documenting the presence of NLEB from within Lowndes County, Mississippi. No known hibernacula or maternity roosts occur within five miles of the project site. All tree removal would occur outside of the time when NLEB pups would be present in maternity roosts (June 1 - July 31). Therefore, TVA has determined that while removal of suitable roosting habitat could have indirect adverse effects on NLEB and result in 'incidental take' as defined in the ESA, this 'incidental take' is excepted from ESA Section 9 Take Prohibitions. Based on the USFWS' online Northern Long-Eared Bat 4(d) rule determination key accessed on November 11, 2020 (see verification letter attached, Consultation Code: 04EM1000-2021-TA-0157), this project may affect NLEB and may rely on the Service's January 5, 2016, Programmatic Biological Opinion (PBO) on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions to fulfill its Section 7(a)(2) consultation obligation. The USFWS concurred with this determination. Accordingly, the requirements of Section 7 of the Endangered Species Act have been met.

No archaeological or architectural/historic resources eligible for inclusion on the National Register of Historic Places would be impacted by the Project. TVA has determined that there would be no adverse effects on historic properties, and the Mississippi Department of Archives and History and tribes concurred with this determination. Accordingly, the requirements of Section 106 of the National Historic Preservation Act have been met.

Construction activities would result in minor and short-term impacts to air quality and transportation. Once operational, the Solar Facility would generate beneficial impacts to air quality and greenhouse gas emissions, by offsetting power that would otherwise be generated in part by fossil fuel combustion, that would more than offset the short-term emissions from construction equipment during the construction phase. Few sensitive noise receptors occur near the proposed Solar Facility, and any noise impacts would be minor and short-term. After commercial operation of the Solar Facility, if there are locations near inverters where noise levels exceed 55 A-weighted decibel (dBA), MS Solar 5 would install sound buffers (walls, fences with screening, or vegetation) in order to minimize the noise levels from operating equipment. Overall visual impacts would be insignificant due to the low profile of the proposed Solar Facility, visual obstructions around part of its perimeter, and limited viewing locations accessible to the public. Installation of natural or man-made visual screening to minimize these impacts is being evaluated to address moderate adverse impacts to the viewshed from residential structures along the eastern town limits of Artesia, which is in the immediate Project vicinity.

Construction, operation and decommissioning of the proposed action would result in the generation of hazardous and nonhazardous solid waste in the form of construction debris, grading spoils, packaging materials, and general construction waste. Every effort would be made to minimize the amount of waste generated during and after construction of the Project.

The proposed action would result in beneficial, socioeconomic impacts during construction due to the short-term increase in employment and purchase of materials, equipment, and services. The increase in the local property tax base resulting from the construction of the facilities would result in a small, long-term, beneficial effect. There would be no disproportionate adverse effects on minority or low-income populations, as no minority or low-income populations have been identified in the potentially affected area.

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 did not receive comments on the draft EA from any federal or state representative, nor any individuals.

Mitigation

MS Solar 5 would use routine best management practices such as dust suppression, erosion controls, and maintenance of buffers to minimize impacts to air and water resources. Other mitigation measures would include preservation of topsoil during construction, and revegetation with native and/or noninvasive vegetation to reintroduce habitat, reduce erosion, and limit the spread of invasive species and utilize pollinator vegetation where possible.


MS Solar 5 would coordinate with the homeowners, construction contractors, and the array layout designers to determine the most suitable type of buffer to be used in each location where the visual environment for residents has undergone a long-term change due to the Project. For residences that are within 500 feet of an inverter, a pre-construction sound study including an ambient survey would be conducted to quantify the existing ambient environment. After the project reaches commercial operation, MS Solar 5 would measure the sound levels at residential property lines and identify any equipment that generates a day-night average (Ldn) sound level that exceeds 55 dBA at the property line. If there are locations where noise levels exceed that threshold, MS Solar 5 would install sound buffers (walls, fences with screening, or vegetation) in order to minimize the noise levels from operating equipment.

Tree removal would be prohibited during the NLEB pup season (June 1 – July 31) in order to mitigate for the potential presence of roosting NLEB pups during the summer.

If traffic flow were to become a problem, MS Solar 5 would consider implementation of staggered work shifts during construction and a flag person along the roadside during heavy commute times to manage the flow of traffic near the Project Site.

Conclusion and Findings

Based upon the analyses documented in the EA, TVA concludes that its proposed action of executing the PPA with MS Solar 5, LLC, and the subsequent construction and operation of the Solar Facility and BESS by MS Solar 5, would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.



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02/23/2022

Date Signed