Document Type: EA-Administrative Record
Index Field: Finding of No Significant Impact (FONSI)
Project Name: SR McKellar Solar
Project Number: 2020-29

FINDING OF NO SIGNIFICANT IMPACT

TENNESSEE VALLEY AUTHORITY

SR MCKELLAR SOLAR

MADISON COUNTY, TENNESSEE

The Tennessee Valley Authority (TVA) has entered into a 15-year power purchase agreement (PPA) with SR McKellar, LLC (SR McKellar), a wholly owned subsidiary of Silicon Ranch Corporation (SRC), to purchase the power generated by the proposed SR McKellar Solar Facility (the Project) in Madison County, Tennessee.

The proposed project would generate approximately 70 megawatts (MW) alternating current (AC) and would occupy approximately 428 acres on a 942-acre tract south of James Lawrence Road, north and south of Denmark Jackson Road and Womack Lane in Jackson, Madison County, Tennessee. While the design is in the process of being finalized, the conceptual plan includes monofacial solar modules (horizontal single axis) comprising approximately 213,600 individual photovoltaic (PV) panels. The Proposed Action alternative would include an approximate 0.75-mile long 34.5-kilvolt (kV) overhead transmission line, connecting the project to the existing Jackson Energy Authority (JEA), McKellar, Tennessee 161-kV Switching Station. TVA would purchase the electric output from the solar facility for an initial term of 15 years according to the PPA, subject to satisfactory completion of all applicable environmental reviews.

TVA produces or obtains electricity from a diverse portfolio of energy sources, including solar, hydroelectric, wind, biomass, fossil fuel, and nuclear. In June 2019, TVA released the final 2019 IRP and the associated Environmental Impact Statement (EIS) that provides further direction on how TVA will deliver clean, reliable, and affordable energy in the Valley over the next 20 years, and the associated EIS describes the natural, cultural and socioeconomic impacts associated with the IRP. The 2019 IRP recommends solar expansion and anticipates growth in all scenarios analyzed, with most scenarios anticipating 5,000-8,000 MW and one anticipating up to 14,000 MW by 2038.

In 2019, customer demand prompted TVA to release a Request for Proposal (RFP) for renewable energy resources. The resulting PPAs, including the SR McKellar PPA, will help TVA meet immediate needs for additional renewable generating capacity in response to customer demands and fulfill the cost-effective and renewable energy goals established in the 2019 IRP.

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 Project under the 15-year PPA with SR McKellar. SR McKellar would not construct or operate the Project and existing conditions (physical resources, visual and natural resources, socioeconomics and land use) in the Project Area (942 acres) would remain unchanged. TVA would continue to rely on other sources of generation described in the 2019 IRP to ensure an adequate energy supply and to meet its goals for increased renewable energy and low greenhouse gas-emitting generation.

Under the Proposed Action Alternative, SR McKellar would construct and operate the proposed 70 MW AC solar facility comprising approximately 213,600 individual multiple thin-film PV module solar panels on single-axis tracking structures supported by steel pilings and connected with underground cables arranged over roughly 428 acres of the 942-acre area. The PV panels would be installed in parallel north-south rows and arranged to avoid streams, wetlands and other protected resources.

Buried electrical cables would connect the rows of PV panels to 1,500V power inverters, each connecting to the single pad-mounted 4.4 MVA transformer on site. The buried cables would continue from this transformer to the point of interconnection. Site preparation would involve surveying and staking, removal of tall vegetation and small trees, light grading and clearing, installation of security fencing, installation of erosion control Best Management Practices (BMPs), and preparation of construction laydown areas prior to solar array assembly and construction. Assembly includes tracker support structures installed on driven piles, installation of solar panels and electrical connections followed by system testing and verification. Site sedimentation basins would be shallow and, to the extent feasible, utilize the existing terrain without requiring extensive excavation.

The energy produced from the 70 MW AC site would be sold to TVA via an approximately 0.75-mile long, new 34.5 kV line (with 50-feet maintained easement) from the project to the existing JEA McKellar, Tennessee 161-kV Switching Substation. Construction would include clearing, minor grading at the pole locations, auguring pole locations, set poles and installing hardware, and stringing the conductor and fiber optic line. As part of this project, TVA would complete transmission upgrades within the existing footprint of the McKellar, Tennessee 161-kV Switching Station. JEA would install the bus work, breaker, and transformer.

Under the Proposed Action Alternative, 275-300 workers would be employed during construction of the solar facility, lasting approximately 12 months. Work would generally occur six (6) days a week (Monday through Saturday) from 7:00 am to 5:00 pm. Additional hours could be necessary to make up schedule deficiencies or to complete critical construction activities. Once construction is complete, staff presence at the site would be minimal. The Proposed Action Alternative would implement an integrated vegetation management plan, including biological (i.e., managed sheep grazing), mechanical and chemical controls as needed. Traditional trimming and mowing would be performed periodically (about four times per year) to maintain vegetation.

The preferred alternative for fulfilling the TVA purpose and need is the Proposed Action Alternative. Renewable energy would be generated for TVA and its customers with only minor direct and indirect environmental impacts due to the implementation of BMPs and minimization and mitigation efforts with the Proposed Action Alternative. Additionally, beneficial effects, such as meeting renewable energy goals and future energy demands on the TVA system would result from this development.

Impacts Assessment

The McKellar Solar Facility EA describes the potential impacts and mitigation of the Proposed Action Alternative in detail. The proposed facility would occupy approximately 428 acres of the roughly 942-acre property to be owned by SRC and leased to SR McKellar for the project. The development of the solar facility would result in the conversion of the site from agricultural to industrial use. A small portion of the agricultural land in the area would be altered with project development resulting in minor direct and indirect adverse impacts to area land use. During

construction there would be minor direct impacts to geology and soils resulting from minor to minimal increases of erosion and sedimentation. Best management practices would be required and utilized during construction to prevent erosion and runoff and those to reduce pollutants in stormwater discharges from the site.

Following construction, implementation of soil stabilization and vegetation management measures would reduce the potential for erosion impacts during site operations. While in operation, adverse impacts to soils would be offset by beneficial effects of vegetation management. Minor impacts to prime farmland are anticipated; no permanent or irreversible conversion of farmland would occur. While agricultural production would cease on the project site, long-term impacts to prime farmlands and soil productivity on the site would be insignificant, and the site could be readily returned to agricultural production should the solar farm be decommissioned.

No direct adverse impacts are anticipated to groundwater, and minor beneficial indirect impacts to groundwater due to reduction in fertilizer and pesticide agricultural use for the duration of the project would be expected. Appropriate BMPs would be followed, and all proposed project activities would be conducted in a manner to ensure waste materials are contained and the introduction of pollution materials to the receiving waters would be minimized. Further, no significant impacts on floodplains and their natural and beneficial values are anticipated. Minor indirect impacts to water resources could occur from stormwater runoff during construction.

Minor direct impacts to surface waters, specifically forested wetlands are anticipated from non-mechanical tree removal. No grading or ground disturbance is proposed within wetland areas. Three (3) minor direct impacts to streams on-site would be required to accommodate the proposed access roads associated with the solar facility. These impacts would be subject to the terms and conditions of a general Aquatic Resource Alteration Permit (ARAP) from the Tennessee Department of Environment and Conservation (TDEC) pursuant to Section 401 of the Clean Water Act (CWA), and a U.S. Army Corps of Engineers (USACE) Nationwide Permit (NWP) pursuant to Section 404 of the CWA (33 U.S.C. § 1251 et seq.). With implementation of appropriate BMPs, impacts to surface waters and aquatic life would be insignificant during construction and no long-term adverse impacts are anticipated. Tree clearing under the proposed Action Alternative would be conducted in accordance with local, state, and federal wetland mandates and best management practices for forestry operations, which ensure no more than minimal impacts to the aquatic environment.

Direct impact to vegetation would occur during clearing up to approximately 306.4 acres of trees and other tall vegetation within the project site proposed for development. With revegetation of native and noninvasive species, impacts would not be expected to be significant. Silt fences, sedimentation basins, and other appropriate controls would be used, as needed, to minimize exposure of soil and to prevent eroded soil from leaving the work area. Disturbed areas would be seeded post-construction using a mixture of certified weed-free, low-growing native grass seed obtained from a reputable seed dealer and in compliance with the requirements established by the local office of the Natural Resources Conservation Service (NRCS). Flowering seed mix will be placed in designated areas onsite, not to interfere with the panel layout and modules to support pollinator habitat.

Displacement of wildlife would occur during clearing and construction. Immobile species would be directly impacted; this is lessened by proposed clearing and construction outside of

breeding/nesting or winter hibernation periods. Due to the amount of similarly suitable habitat in areas immediately adjacent to the project site, populations of common wildlife species likely would not be impacted significantly by the proposed actions. Significant impacts to migratory birds are not anticipated with avoidance of breeding season during vegetation removal. During operation, minor impacts to common wildlife species would be expected due to the presence of project components and increased activity. The federally listed Indiana bat and northern long-eared bat would have potential loss of summer roosting habitat. With the minimization measures proposed, TVA determined the impacts are not expected to be significant. Consultation under Section 7 of the Endangered Species Act (ESA) was performed with the United States Fish and Wildlife Service (USFWS) on March 9, 2021, with an update to the project plan provided on April 8, 2021 proposing 309 acres of clearing. Concurrence was received on April 13, 2021, on the condition that tree removal must occur between August 1 and March 31. Since consultation, the landscape buffers required by the Board of Zoning Appeals were considered, reducing the proposed tree clearing. Based on the proposed scope, 306.4 acres are proposed for clearing.

Temporary, minor direct impacts on visual resources would be anticipated during the construction phase due to increased traffic and alteration of the project site. While the views from surrounding properties may be slightly affected, the overall appearance of the solar panels would blend in with the nearby airport and industrial and commercial facilities. Vegetative buffers are proposed to provide screening and minimize visual impacts.

The noise resulting from construction activities would include minor temporary direct impacts. Intermittent elevated noise levels caused by construction equipment could be experienced by nearby residents, but construction noise would be of short duration, and likely not exceed the 71-81 dBA noise level at nearby houses for prolonged periods. The construction work associated with pile driving will be the loudest and occur intermittently during daylight hours. Other construction-related noise will remain under 65 dBA for nearby residences. Work would generally occur six (6) days per week (Monday through Saturday) from 7 am to 5 pm. Project operations and maintenance activities would result in noise periodically; however, noise from maintenance activities would be similar to existing noises surrounding the project site and would be minimal to negligible.

Minor direct impacts to air quality would occur during construction activities from operation of equipment. Emissions associated with diesel fuels by internal combustion engines would generate local emissions, including carbon monoxide, nitric oxide, and sulfur dioxide during construction (an increase of GHG during construction). No negative impacts to air quality are anticipated as a result of operation of the solar facility. Temporary impacts to GHG emissions expected during construction would be negligible. Offsetting beneficial effects would also occur due to the power generated by the solar facility, offsetting power that would otherwise be generated by the combustion of fossil fuels.

The development of the solar facility would have no adverse effects on any cultural resources listed or recommended for listing in the National Register of Historic Places (NRHP). The solar facility would avoid the five (5) recommended NRHP undetermined sites by establishing a 20-meter buffer around each site, as agreed upon by SR McKellar and TVA. The Tennessee State Historic Preservation Office concurred with this determination. Accordingly, the requirements of Section 106 of the National Historic Preservation Act have been met.

Minor adverse impacts due to solid and hazardous waste would be anticipated from development of the solar facility. Construction waste generated during construction activities would be directed to local landfills. Hazardous wastes would be handled, stored, and disposed of in accordance with the Stormwater Pollution Prevention Plan (SWPPP). Applicable federal, state, and local regulatory requirements concerning disposal of solid waste and hazardous waste would be followed. Impacts during system operation would be negligible through implementation of a recycling program. No adverse effects to waste management are anticipated with the use of BMPs. If the facility would be decommissioned following the 15-year PPA, SR McKellar would perform decommissioning of the site according to the Decommissioning Plan submitted to and accepted by Madison County. To the extent possible, waste would be recycled, and impacts would be minimized. The majority of the decommissioned equipment and materials would be recycled. Further, portions of the panels that could be recycled, including steel, glass, and aluminum would be recycled. Materials that could not be recycled would be disposed of at an approved facility in accordance with applicable federal, state and local regulatory requirements.

No adverse effects to public and occupational health and safety are anticipated during construction with the use of BMPs. No public health or safety hazards are anticipated from operation of the solar facility.

The construction of the facility would be expected to cause minor temporary adverse impacts to the existing transportation infrastructure. Should traffic flow be a problem for local residences, churches, and school, SR McKellar would consider staggered work shifts to space out the flow of traffic to and from the project site. No direct or indirect impacts to transportation are anticipated during operation of the solar facility.

Minor beneficial direct, indirect, and cumulative impacts are anticipated to socioeconomic resources during construction, operation and maintenance activities by creation of local jobs and potential for expansion of future solar energy systems into the region. While there is what would potentially be considered a low-income population near the project site, the overall impacts of the solar facility, most of which would occur during the short construction period, would be minor. No disproportionately adverse impacts are anticipated to minority or low-income populations during the construction and operation of this facility.

Public and Intergovernmental Review

SR McKellar announced the proposed SR McKellar Solar project through various means, providing opportunity for public comment.

Federal, state and local agencies, interested federally recognized Native American Tribes, elected officials, and other stakeholders were sent notification announcing the availability of the draft EA for review and comment for a 30-day period.

During the 30-day public review and comment period for the draft EA, a total of four (4) responses were received from the public and interested agencies and organizations. The comments and responses are included as Appendix A of the EA. Comments requiring any revisions are referenced in the Final EA.

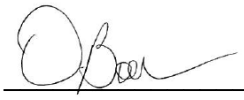
Mitigation Measures

SR McKellar would implement the following minimization and mitigation measures in relation to resources potentially affected by the proposed project:

- Comply with the terms of the SWPPP prepared as part of the NPDES permitting process and implement other routine BMPs, such as non-mechanical tree removal within surface waters and buffers, placement of silt fences and sediment traps along buffer edges, and proper vehicle maintenance to reduce the potential for adverse impacts to groundwater.
- Design of the final layout would minimize direct impacts to aquatic features.
- Comply with the terms and conditions of a general ARAP from TDEC pursuant to Section 401 of the CWA and a USACE NWP pursuant to Section 404 of the CWA (33 U.S.C. § 1251 et seq.), as applicable.
- Limit tree clearing from August 1st to March 31st to avoid adverse impact to federally listed bat species in accordance with commitments outlined in the ESA Section 7(a)(2) consultation with USFWS.
- A letter agreement is in place between SR McKellar and TVA to avoid identified cultural resources and the associated 20-meter buffers around these areas on the site during construction and through operation of the proposed solar facility.
- Should traffic flow be a problem for local residences, churches, and schools, SR McKellar would consider staggered work shifts to space out the flow of traffic to and from the project site. Use of such mitigation measure would minimize potential adverse impacts to traffic and transportation to less than significant levels.

Conclusions and Findings

Based upon the analyses documented in the EA, TVA concludes that the Proposed Action Alternative of the construction and operation of the solar generating facility and TVA's purchase of the electric output pursuant to the PPA with SR McKellar would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.



05/19/2021

Dawn Booker
Manager
NEPA Program
Federally Mandated Environmental Compliance

Date Signed