

FINDING OF NO SIGNIFICANT IMPACT

TENNESSEE VALLEY AUTHORITY

SR CANADAVILLE SOLAR

FAYETTE COUNTY, TENNESSEE

The Tennessee Valley Authority (TVA) has entered into a 20-year power purchase agreement (PPA) with SR Canadaville Solar, LLC (SR Canadaville), a wholly owned subsidiary of Silicon Ranch Corporation (SRC) in Fayette County, Tennessee (TN) to purchase the power generated by the proposed SR Canadaville Solar Facility (the Project) in Fayette County, Tennessee, subject to satisfactory completion of all applicable environmental reviews.

The proposed project would generate approximately 16 megawatts (MW) alternating current (AC) and would occupy approximately 157 acres on a 223-acre tract located approximately 0.5 miles southeast of the intersection of SR-196/Chulahoma Road and SR-193/Macon in Fayette County, Tennessee.

While the design is in the process of being finalized, the conceptual plan includes monofacial solar modules (horizontal single axis) comprising approximately 48,207 individual monocrystalline module photovoltaic (PV) panels. Additionally, a new Canadaville 13-kilovolt (kV) solar generation substation would be constructed by SR Canadaville on the project site. Chickasaw Electric Company (CEC) would install two new bays with breakers and switches within the existing Canadaville Substation. CEC would also install a new control building to house control equipment. The existing substation is adjacent to the northwest corner of the subject property connecting at structure 379 on the existing Cordova-Diffie 161 kV transmission line (TL) adjacent to the north side of the subject property. Additionally, TVA would install new telecommunications and protective relaying equipment within the CEC-owned house to be built at the existing Canadaville Substation. CEC would install seven miles of fiber communication line (FCL) to existing TL poles along the existing right-of-way (ROW) for communications purposes.

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 2020, customer demand prompted TVA to release a Request for Proposal (RFP) for renewable energy resources. The resulting PPAs including the SR Canadaville PPA will help TVA meet immediate needs for additional renewable energy-generating capacity in response to customer demands and fulfill the renewable energy goals established in the 2019 IRP. The Proposed Action would increase the solar capacity per the 2019 IRP.

Alternatives

The subject Environmental Assessment (EA) evaluates two alternatives: The No Action Alternative and the Proposed Action Alternative. Under the No Action Alternative, TVA would not purchase power through a 20-year PPA with SR Canadaville. The solar facility would not be constructed and operated by SR Canadaville. Existing conditions would remain unchanged within the project site. The identified land would not be developed into a solar facility, and TVA would rely on other energy sources to meet energy supply needs and to meet TVA's renewable energy goal described in the 2019 IRP.

Under the Proposed Action Alternative, SR Canadaville would construct and operate the proposed 16 MW AC solar facility, as well as its connection to the TVA power system. The solar panels would be mounted on single-axis tracking structures supported by steel pilings and connected with underground cables. A new Canadaville 13- kV solar generation substation would be constructed by SR Canadaville on the project site. The substation would provide 16 MW of generation at the point of interconnection from the project site to the existing Canadaville, Tennessee, 161 kV Substation northwest of the project site. The new substation will include six, three phase transformers and a 13 kV breaker and associated switches for 22.5 MVA of power flow connection. CEC would install two new 13 kV bays with breakers and switches within the existing Canadaville Substation. CEC would also install a new control building to house control equipment. The existing substation is adjacent to the northwest corner of the subject property connecting at structure 379 on the existing Cordova-Diffie 161 kV TL adjacent to the north side of the subject property. Additionally, TVA will install new telecommunications and protective relaying equipment within the CEC-owned house at the existing Canadaville Substation. CEC would install seven miles of FCL to existing TL poles along the existing ROW for communications purposes. Under the PPA, SR Canadaville would fund, build, own, and operating the solar energy facility, substation.

The arrays would contain 82 inverters and approximately 499 13-string trackers and 163 10-string trackers. Buried electrical cables would connect the rows of PV panels to seven 0.25 MW power inverters, each connecting to a pad-mounted 3.00 MVA transformer on site. 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 which includes driving steel piles for the tracker support structures, installing solar panels and electrical connections, and system testing and verification.

Under the Proposed Action Alternative, up to 150 workers would be employed during construction of the solar facility, lasting approximately eight months. Work would generally occur six days a week (Monday through Saturday) from 7:00 am to 6:00 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. TVA would purchase energy generated by the solar panels under a 20-year PPA with SR Canadaville. 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 SR Canadaville Solar Facility EA describes the potential impacts and mitigation of the Proposed Action Alternative in detail. The proposed facility would occupy approximately 157 acres of the 223-acre property to be owned by SRC and leased to SR Canadaville for the project. Construction of the new substation and switch house is adjacent to the existing substation. The approximate seven miles of FCL upgrade would be attached to existing TVA 161-kV TL poles in the existing ROW, so the work performed along the TL would not result in any impacts to the resources describe below. The approximate 1,983 feet of FCL to be buried runs along Amherst Drive, a residential neighborhood road, and within the TVA ROW. The work performed in these areas may have some minor, temporary impacts during construction but would not result in any long-term or permanent adverse impacts to any of the resources described below.

Land Use

No significant impacts to land use are anticipated. Under the Proposed Action Alternative, the proposed solar facility would result in converting the site from undeveloped, forested land to industrial use. However, if the panels were removed and the site decommissioned, the land would be useable for other purposes as the panels do not have a permanent impact on the land use.

Geology, Soils and Prime Farmland

During construction there would be minor direct impacts to geology resulting from placement of the steel piles that support the solar arrays. Due to the small amount of the subsurface disturbances, only minor direct impacts to potential subsurface geological resources are anticipated. Hazards resulting from geological conditions would be minor because the project site is in a relatively stable geologic setting.

Minor disturbance to soils would occur during operation of the Proposed Action Alternative. The creation of new impervious surfaces, in the form of panel footings and the foundations for the inverter stations and substation, would result in a minor increase in stormwater runoff and potentially increase soil erosion. The use of BMPs such as soil erosion and sediment control measures would minimize the potential for increased soil erosion and runoff. 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.

No permanent or irreversible conversion of prime farmland would occur. Currently, there is no active agriculture production on the property. While agricultural production would not be possible where panels are placed on the project site, the Proposed Alternative would implement an integrated vegetation management plan including biological (i.e., managed sheep grazing). This

will allow for some use of the prime farmland on the project site during the operational phase of the project. Thus, the long-term impacts to prime farmlands and soil productivity would be insignificant. Adhering to BMPs during construction and operation of the solar facility, including installing erosion control devices (ECDs) during stockpiling events, would preserve topsoil and limit erosion, resulting in negligible impacts to prime farmland.

Water Resources

Groundwater

No direct adverse impacts are anticipated to groundwater. During construction, hazardous materials would be on site that could potentially contaminate groundwater resources, including petroleum products for fuel and lubrication of construction equipment, hydraulic fluids, and a variety of other chemicals commonly used for general construction projects. A Spill Prevention, Control, and Countermeasure (SPCC) Plan would minimize the potential for leaks or spills from construction equipment and outline procedures and protocols to quickly address potential spills that may occur. 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.

Surface Water and Wetlands

No significant impacts to surface waters or wetlands are anticipated under the Proposed Alternative. No permanent structures associated with the solar facility are proposed within wetlands onsite under the Proposed Action Alternative. Based on the preliminary site layout, direct impacts to four wet water conveyances and one ephemeral channel will be impacted by interior access roads. Based on the Hydrologic Determination from TDEC and Jurisdictional Determination from the USACE, these aquatic features are not jurisdictional and do not require permitting.

Tree removal is proposed within regulated wetland areas. SR Canadaville would clear approximately 102 acres of trees onsite to reduce shading on solar panels. As a result, a total of 3.92 acres of forested and scrub-shrub wetlands would be impacted and converted to emergent wetland habitat. Tree clearing would be conducted per local, state, and federal wetland mandates and BMPs for forestry operations, which ensure no more than minimal impacts to the aquatic environment. SR will obtain required authorizations for tree clearing activities and would comply with permit conditions and compensatory mitigation measures as required.

By implementing appropriate BMPs, impacts to surface waters and aquatic life would be insignificant during construction, and no long-term adverse impacts are anticipated.

Floodplains

No floodplains were identified in the project area; therefore, impacts to floodplains would not occur.

Biological Resources

Vegetation

Under the proposed action, the removal of approximately 102 acres of forested vegetation would be required for the site's development. Considering the large amount of similar vegetation types in the area, both regionally and locally, clearing the existing vegetation would be regarded as minimal and insignificant impacts. 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). Pollinator-friendly seed mix would be placed in designated disturbed areas, which may provide more flowering plants than previously occurred on site. With revegetation of native and noninvasive species, impacts would not be expected to be significant.

Wildlife

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. Upon completion of construction, the site would be revegetated using a mixture of certified weed-free, low-growing native grass seed. Those animals able to use early successional habitats could return to the site upon completion of the project. Approximately 65 acres of habitat is not proposed for development and would be available for wildlife use.

Threatened and Endangered Species

Two federally listed mammals, the Indiana bat and the northern long-eared bat, were identified as potentially present within the project area. Approximately 102 acres of trees are proposed for clearing. Of this, approximately 58 acres were determined to be potential suitable roosting habitat for these bat species. BMPs would be used around all streams and wetlands not proposed for impact to minimize potential impacts to bat foraging habitats. Mist net surveys following Phase 2 Presence/Absence survey guidelines from the USFWS Indiana Bat Survey Guidelines resulted in no capture of either species. On May 9, 2022, in Section 7 consultation under the Endangered Species Act, the USFWS concurred with TVA's determination that proposed actions "may affect but are not likely to adversely affect" the Indiana bat and northern long-eared bat.

One insect, the monarch butterfly, is federally listed as a candidate species that was not observed but could potentially be present in the project area. Due to the limited amount of suitable habitat that currently occurs on the site, the proposed action would not jeopardize the continued existence of the monarch butterfly.

Visual Resources

Temporary, minor direct impacts on visual resources would be anticipated during the construction phase due to increased traffic and alteration of the project site. During the project's operational phase, some of the project would be visible from nearby roads and highways. Revegetation, both

planting and natural regrowth would decrease visual impacts. SR Canadaville would maintain existing landscape buffers where possible. If additional buffers are required by Fayette County, SR Canadaville would install landscape buffers along the project site boundary to minimize visual impacts from the proposed solar facility.

The glint and glare analysis considered the potential for glare impacts on Nelson Airfield (TN99) and Pegasus Filed Airport (7TN4) approach paths, persons living in nearby residences and traveling along roads in the project area. The Solar Glare Hazard Analysis Tool (SGHAT) results do not predict glare occurrences for either airport or nearby development.

Noise

The Proposed Action Alternative would result in short-term noise production related to construction activities. Construction equipment typically results in a maximum noise level within the range of 80-90 dBA, dropping to 71-81 dBA at 300 feet and 50-60 dBA at 1,000 feet. Nearby residents could experience elevated noise levels caused by construction equipment. However, 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 would be the loudest and occur intermittently during daylight hours. Other construction-related noise such as delivery trucks, dump trucks, water trucks, service trucks, bulldozers, chain saws, bush hogs, and other large mowers for tree clearing would remain under 65 dBA for nearby residences. Project operations and maintenance activities would result in noise periodically; however, noise from maintenance activities would be similar to existing noises surrounding the site and would be minimal to negligible. Noise generated from the new Canadaville solar substation is anticipated to be minimal, resulting in insignificant noise to area residences.

Air Quality

Under the Proposed Action Alternative, minor impacts to air quality would occur during the construction of the solar facility. Only minimal air impacts would be expected, as construction might result in localized dust and fumes from equipment. The construction would involve using diesel-powered machinery and thereby create small amounts of airborne dust and debris. Internal combustion engines' emissions associated with diesel fuels would generate local emissions, including carbon monoxide, nitric oxide, and sulfur dioxide during construction (an increase of GHG during construction). Also, during clearing, trees may be burned and result in a minor increase in GHG emissions. The impacts on air quality would be minimal and short-term.

The operation of the solar facility would result in minimal impacts due to maintenance activities such as facility inspections and periodic mowing. However, a minor reduction in new GHG emissions is expected as the carbon dioxide-free power generated by the solar facility would reduce the need for power that would otherwise be generated in part by fossil fuels. This reduction would result in minor beneficial impacts to air quality.

Cultural Resources

The Proposed Action Alternative would not adversely affect listed or potentially eligible National Register of Historic Places sites where the panels are installed or along the TL upgrades.

Solid and Hazardous Wastes

Phase I ESA reported hazardous materials are not likely to be encountered during construction. Thus, no impacts are likely to arise from implementing the Proposed Action Alternative. 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 applicable federal, state, and local regulatory requirements. Impacts during system operation would be negligible. No adverse effects due to waste generation are anticipated with the use of BMPs.

Upon expiration of the 20-year PPA or an amended or alternative PPA for the sale of power after the 20-year period, SR Canadaville would develop a decommissioning plan to document the recycling and/or disposal of solar facility components in accordance with applicable local, state, and federal laws and regulations. Impacts from the generation of hazardous waste during the construction and operation of the proposed facility would be insignificant.

Public and Occupational Health and Safety

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. Under the Proposed Action Alternative, workers on the project site would have an increased safety risk during construction. However, standard construction site practice includes the establishment and maintenance of health and safety plans to comply with Occupational Safety and Health Administration (OSHA) regulations. A Spill Prevention Control and Countermeasure (SPCC) plan would be developed and implemented to minimize the potential of a spill and to provide detailed instructions for onsite personnel on how to contain and clean up any potential spills.

The solar project is not anticipated to cause electromagnetic interference levels such that there will be impacts on nearby residents. SRC intends to design, construct, and operate the electrical systems of the proposed solar project using standard industry practices with sufficient setbacks to reduce or eliminate electromagnetic frequency and interference exposure to adjacent property owners.

Transportation

No long-term or permanent impacts to transportation are anticipated from the proposed project. Traffic flow around the work site would be heaviest at the beginning of the workday, at lunch, and at the end of the workday resulting in minor temporary impacts. Should traffic flow be a problem for local developments, SR Canadaville would consider staggered work shifts to space out the flow of traffic to and from the project site.

Socioeconomics and Environmental Justice

Construction of the proposed facility could have short-term beneficial economic impacts due to the purchase of materials, equipment, and services and a temporary increase in employment, income, and population. Operations would result in positive, long-term impacts to economics, employment, and population in Fayette County and the local region as a result of permanent job

creation and increase in the local tax base. While minority and low-income populations are prominent in the vicinity of the solar facility, the overall Project impacts would primarily occur during the eight-month construction period and would be minor, and off-site adverse impacts would be negligible. As such, no disproportionately high or adverse direct or indirect impacts on minority or low-income populations due to human health or environmental effects are expected to result from the Proposed Action. In addition, the Project would have minor beneficial impacts to employment and income levels in the local region that could provide additional opportunities to nearby environmental justice populations.

No impacts to socioeconomics or environmental justice would occur from the proposed facility. While minority and low-income populations are prominent in the vicinity of the solar facility, the overall Project impacts would primarily occur during the eight-month construction period and would be minor, and off-site adverse impacts would be negligible. As such, no disproportionately high or adverse direct or indirect impacts on minority or low-income populations due to human health or environmental effects are expected to result from the Proposed Action. The minority population ratio for the state is similar to that of the project site vicinity. While median household income is not through EJSCREEN, it is likely that the median household income within one mile of the project site is slightly above the median Fayette County household income.

Cumulative Impacts

Based on the information above, the proposed Canadaville Solar Facility project is unlikely to result in significant cumulative impacts to the resources described above. The Tennessee DOT 2020-2023 Tennessee Transportation Improvement Plan (TDOT, 2019) was reviewed for potential present and future actions within the vicinity of the project site. While no projects in the vicinity of the proposed solar facility were identified, a Somerville Beltline two-lane bypass (STIP 2024010) is identified in the 25-Year Plan to connect highways southwest of Somerville.

Review of website records of Fayette County, Tennessee, government, and Chamber of Commerce; City Governments of Piperton and Rossville, and Towns of Somerville and Collierville, there are no known recent or planned state and local projects in the project site vicinity.

Based on TVA's website, one solar farm (Yum Yum Solar Facility) in Fayette County and an upgrade to the existing Freeport 161-kV TL (in neighboring Shelby County) projects are planned. These projects have been studied for potential impacts, and environmental clearances have been issued. Within Fayette County, two solar farms are currently operating and selling power through PPAs with TVA: the 20-MW Wildberry Solar Center, near Moscow, and the 2.7-MW DC Somerville Solar facility in Somerville. No cumulative impacts would be anticipated from these current and proposed TVA projects. The proposed Canadaville solar facility is a separate and independent utility from the Yum Yum Solar Facility and the Wildberry Solar Center.

Public and Intergovernmental Review

SR Canadaville announced the proposed SR Canadaville Solar project through various means, providing opportunity for public comment. Federal, state, and local agencies interested federally recognized Native American Indian 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 of the draft EA, a total of four responses from the public and TDEC were received. The comments and responses are included as Appendix A of the EA.

Mitigation Measures

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

- Maintain existing landscape and aquatic resource buffers. If Fayette County requires additional buffers, SR Canadaville would install landscape buffers along the project site boundary to minimize visual impacts from the proposed solar facility.
- 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 and compliance with Spill Prevention, Control, and Countermeasures (SPCC) to reduce the potential for adverse impacts to groundwater.
- Design of the final layout would minimize direct and indirect impacts on aquatic features. Comply with the conditions of the TDEC Section 401 and USACE 404 of the CWA (33 U.S.C. § 1251 et seq.) permits, as applicable, including any required compensatory mitigation.
- Should traffic flow be a problem for local developments, SRC would consider staggering work shifts to space out traffic flow to and from the project site. Such a mitigation measure would minimize potential adverse impacts to traffic and transportation to less than significant levels.
- Any manual tree cutting in wetlands will leave the stumps in place to preserve hydric soils.

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 Canadaville would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.



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07/19/2022

Date Signed