

FINDING OF NO SIGNIFICANT IMPACT TENNESSEE VALLEY AUTHORITY

POWER PURCHASE AGREEMENT – SR INNOVATION SOLAR PHOTOVOLTAIC FACILITY

The Tennessee Valley Authority (TVA) proposes to execute a 20-year power purchase agreement (PPA) with SR Innovation, LLC (SR Innovation), the facility-specific entity affiliated with Silicon Ranch Corporation (SRC), to purchase the electric power generated by a proposed solar photovoltaic (PV) facility in Memphis, Shelby County, Tennessee. The proposed solar facility, known herein as the “SR Innovation solar facility,” would have direct current (DC) generating capacity of 2 megawatts (MW) with an alternating current (AC) output of 1.4 MW. The SR Innovation solar facility would be constructed and operated by SR Innovation. The SR Innovation solar facility would connect to the existing Memphis Light Gas and Water (MLGW)-owned overhead 12.47-kilovolt (kV) powerline along the southern boundary of the facility site. SR Innovation is developing the Project in partnership with Nike, Inc. (Nike), MLGW, and TVA to support Nike’s mission to source 100 percent renewable energy by 2025.

In its 2011 Integrated Resource Plan (IRP) TVA established the goal of increasing its renewable energy generating capacity by 1,500 to 2,500 MW by 2020. TVA established the Renewable Standard Offer program and the Solar Solutions Initiatives (SSI) pilot as two means of meeting this goal. TVA’s 2015 IRP reinforced the continued expansion of renewable energy generating capacity, including the addition of between 175 and 800 MW AC of solar capacity by 2023. The SSI pilot was redesigned to allow for greater Local Power Company (LPC) involvement and more LPC-directed projects. The resulting pilot was named Distributed Solar Solutions (DSS). Under the DSS pilot, TVA purchases energy at established terms and conditions (the “standard offer”) from operators of qualifying renewable energy-generating facilities. Qualifying facilities must be new, must be located within the TVA power service area, and must generate electricity from specific technologies or fuels. Solar PV generation is one of the qualifying technologies. The proposed PPA for the SR Innovation solar facility would be executed through the DSS program and would help TVA meet its need and goal for additional renewable generating capacity. The SR Innovation solar facility would also assist Nike in meeting its renewable energy goals by 2025.

TVA must decide whether to execute the 20-year PPA with SR Innovation. If TVA executes the PPA, SR Innovation would construct and operate the 2-MW DC solar facility. The potential effects of TVA’s proposed action, including the effects of constructing and operating the solar facility and interconnecting with an existing MLGW 12.47-kV powerline, are described in an environmental assessment (EA), the results of which are 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 execute the 20-year PPA with SR Innovation, and the solar facility would not be constructed or operated by SR Innovation. Existing conditions on the facility site and vicinity would likely remain unchanged, at least in the near-term, and field and forestry management practices maintained by the current property owner, Belz

Enterprises, would likely continue. TVA would continue to rely on other sources of generation described in the 2015 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, TVA would execute the 20-year PPA with SR Innovation. To fulfill its obligations under the PPA, SR Innovation would construct and operate the 2-MW DC SR Innovation single-axis tracking PV solar power facility located approximately 10 miles northeast of downtown Memphis in Shelby County, Tennessee. The 2-MW DC electrical generation would be converted to 1.4-MW AC output for use by the electrical network. The entire AC output (1.4 MW AC of 2 MW DC) would be sold to TVA for a 20-year period and would interconnect to an existing MLGW 12.47-kV overhead powerline.

The SR Innovation solar facility would be constructed on a 45-acre tract that is a partially forested and partially open-field tract, herein called the “facility site.” The 45-acre facility site is part of a 132-acre parcel owned by Belz Enterprises and is composed of 31 acres that would be owned by SRC and leased to SR Innovation, LLC, and one partial parcel totaling 14 acres that would remain owned by Belz Enterprises. Approximately 6.6 acres of the 45-acre facility site have been cleared of trees and are now vegetated in grasses and herbaceous plants, while the remaining 38.6 acres are forested and currently maintained through forestry management practices. Developed portions of the solar facility would occupy 11.2 acres of the facility site. Another 19.4 acres of the facility site would be cleared of trees and maintained as native grass.

The SR Innovation solar facility would be composed of approximately 5,454 PV panels, each capable of producing approximately 360 watts, mounted together in arrays. The arrays would connect to a total of 28 1,500V power inverters, and one 2.00-mega volt amp best transformer. The PV modules would be electrically connected in series (called a “string”) by wire harnesses that conduct DC electricity to combiner boxes. Each combiner box would collect power from a total of 202 strings of modules and feed a power conversion station via cables placed in excavated trenches. The trenches would be approximately 4.7 feet deep and 2 feet wide. The AC current from each individual inverter would be transformed into the AC collection voltage, typically 25 kV. The underground voltage collection circuits would deliver AC electricity from the single transformer to a proposed on-site power pole connecting to the existing MLGW powerline.

Construction of the SR Innovation solar facility would require initial site preparation (i.e., 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). Solar array assembly and construction would occur next and would involve driving steel piles for the tracker support structures, installation of solar panels and electrical connections, and system testing and verification. 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 United States Department of Agriculture’s Natural Resource Conservation Service. Construction activities would take approximately 4 months to complete using a maximum crew of 40 to 50 people, about 80 percent of which would likely derive from the local workforce. The facility would not be staffed during operation; however, inspection and maintenance would be required biannually and in the case of equipment failures. At these times, up to 4 people would be on site for up to 4 days. Maintenance activities, which may be contracted locally, would include

mowing to prevent vegetative shading of the solar panels and, if needed, application of spot herbicides to control invasive weed outbreak. As the region receives ample precipitation, manual panel washing is not anticipated unless a specific issue is identified.

The TVA-preferred alternative for fulfilling its purpose and need is the Proposed Action Alternative. The Proposed Action Alternative would produce renewable energy for TVA and its customers with only minor environmental impacts, some environmental benefits, and would help meet TVA's renewable energy goals. The Proposed Action Alternative would also assist Nike in meeting its renewable energy goals by 2025.

IMPACTS ASSESSMENT

The potential impacts of the Proposed Action Alternative are described in detail in the EA. Construction activities would cause temporary increases in noise and traffic and affects to air quality and visual resources. Heightened noise during construction would primarily result from pile driving activities during daylight hours for an approximate 1-month period. Approximately 68 percent (30.6 acres) of land on the facility site would be cleared and/or lightly graded to prevent shading and create a relatively level ground surface. These changes would cause minor adverse impacts to geology and soils due to slight, localized increases in erosion and sedimentation. The completed solar facility would change land use of the 45-acre facility site from undeveloped to industrial and, thereby, expand industrial land uses where these practices are zoned but not presently occurring. Visual impacts during operation of the solar facility would be moderate in the immediate vicinity but minimal on a larger scale, due to variation of the visual attributes of the vicinity.

Because of the implementation of BMPs, impacts to groundwater are not expected. Steps taken in designing the site layout have avoided harm to streams and minimized harm to wetlands. The construction and operation of the SR Innovation solar facility would permanently affect 0.0005 acre of one wetland for a road crossing on the facility site. The excavation of one trench for buried cables would temporarily affect 0.0005 acre of the same wetland in a location likely overlapping with the permanently disturbed wetland acreage. There is no practicable alternative to avoiding these minor wetland impacts, as the wetland is oriented east-west and positioned between the solar panels and the point of on-site electrical interconnection along the southern boundary of the facility site. In addition to these geographical factors, locating the panels more southerly would allow for more substantial vegetative buffering of the solar facility from Point Church Road and would shorten the distance to the point of interconnection and, therefore, help prevent power loss with increasing line distance. This action is consistent with the requirements of Executive Order 11990, Protection of Wetlands. Because it would be located outside the 100-year floodplain, the Proposed Action would also be consistent with the requirements of Executive Order 11988, Floodplain Management, and would have no direct or indirect impacts on floodplains and their natural and beneficial values.

Some long-term habitat loss would occur due to the clearing of 26.3 currently forested acres on the facility site. However, no direct adverse effects to federally listed species are expected, and only minor indirect effects to federally listed bat species, if present on the facility site, may occur due to minor loss of low quality roosting and foraging habitat and minor impacts to water resources. While potential minor direct effects to the state-listed barn owl may occur due to minor

breeding and foraging habitat loss, no adverse effects to the area population of the barn owl are expected.

No cultural resources listed or eligible for listing in the National Register of Historic Places (NRHP) were identified during background research or field surveys of the archaeological and historic architectural areas of potential effects (APEs). Given the extensive survey completed for SR Innovation, the potential for unidentified cultural resources in the Project APEs is considered very low, and any that may exist in the archaeological APE would likely be heavily disturbed, low-density artifact scatters ineligible for listing in the NRHP. TVA and the Tennessee State Historic Preservation Office concur with the recommendation in the cultural resources survey report that no historic properties would be affected by the construction and operation of the proposed solar facility. TVA received no objections from federally recognized Indian tribes on the Proposed Action Alternative.

Construction of the proposed facility could have minor beneficial indirect impacts to population and short-term employment and income levels in Shelby County and the City of Memphis. Overall, socioeconomic impacts for the operation of the proposed solar facility would be positive and long-term, if small relative to the total economy of the region. While minority and low-income populations are prominent in the vicinity of the solar facility, the impacts would primarily occur during the short, approximate 4-month construction period, and would be minor and indirect, and impacts to surrounding properties would be negligible. Consequently, there would be no disproportionately adverse impacts to minority and low-income populations resulting from the Proposed Action.

PUBLIC AND INTERGOVERNMENTAL REVIEW

In developing the project, SR Innovation closely coordinated with Nike and Belz Enterprises and consulted with the City of Memphis regarding zoning limitations. The City and SR Innovation determined that the property is currently zoned for solar development, and no special use permit is required. The proposed SR Innovation solar facility was also announced in several press releases and local news articles beginning in May 2017. The announcements focused on informing the public that MLGW was awarded a solar project through TVA's DSS pilot program and that SR Innovation would fund, build, own, and operate the planned 2-MW solar facility to be located at Nike's North American Logistic Campus in the Frayser area of Memphis.

Public and agency involvement also included publication of the draft EA for a 14-day public and agency review and comment period. The public comment period was facilitated by a TVA website with information about the Project (see <https://www.tva.com/Environment/Environmental-Stewardship/Environmental-Reviews/Memphis-Solar-Project>). TVA notified appropriate local, state, and federal agencies and federally recognized tribes of the draft EA's availability and entered into consultations with those agencies and tribes to assess particular impacts. Agency and tribal concurrence with relevant EA findings was received and no public comments were received on the draft EA.

MITIGATION

To address adverse impacts, SR Innovation would implement minimization and mitigation measures in relation to potentially affected resources, including such measures required by permits as described in detail in the EA. Tree buffers on the eastern, western, and northern boundaries of the facility site would minimize visual effects and effects from land use changes in the vicinity. Silt fencing would be installed along the perimeter of the cleared area and soil cut-and-fill quantities would be balanced to help alleviate the transportation of soils and sediments off-site during construction. SR innovation would comply with the terms of the site-specific Storm Water Pollution Prevention Plan coordinated with the Tennessee Department of Environment and Conservation and implement other routine BMPs, such as nonmechanical tree removal within surface water buffers, placement of silt fence and sediment traps along buffer edges, and proper vehicle maintenance, to reduce the potential for adverse impacts to groundwater. SR Innovation would also consider staggering work shifts and posting a flag person during construction to manage heavy traffic flow.

CONCLUSIONS AND FINDINGS

Based upon the analyses documented in the EA, TVA concludes that the Proposed Action Alternative of executing the PPA with SR Innovation, LLC and the subsequent construction and operation of the solar generating facility would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.



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Date Signed