

## **FINDING OF NO SIGNIFICANT IMPACT TENNESSEE VALLEY AUTHORITY**

### **POWER PURCHASE AGREEMENT – SR MILLINGTON SOLAR**

The Tennessee Valley Authority (TVA) proposes to execute a power purchase agreement (PPA) with SR Millington, LLC—the facility-specific entity affiliated with Silicon Ranch Corporation (SRC)—to purchase the electric power generated by a proposed solar photovoltaic (PV) facility near Millington, Shelby County, Tennessee. The proposed solar facility known as “Millington Solar Facility”, would have direct current (DC) generating capacity of 68.5 megawatts (MW) with an alternating current (AC) output of 53 MW. The proposed solar facility would be constructed and operated by SR Millington, LLC.

In addition to entering into a PPA with SR Millington, LLC, TVA would also construct a 5-mile long 161-kilvolt (kV) transmission line connection to the solar facility. The proposed project would also provide energy security to the adjacent U.S. Navy Naval Support Activity (NSA) Mid-South facility via a new 12.47-kV distribution line that would be paid for and constructed by SR Millington, LLC to connect from the new on-site substation to the NSA Mid-South facility network. The Navy’s use of this renewable energy would support its 1 GW Initiative – an initiative named for the amount of energy generation capacity to be produced by 2020 on or near Navy installations.

TVA produces or obtains electricity from a diverse portfolio of energy sources including nuclear, fossil, hydro, solar, wind, and biomass. In 2011, TVA completed an Integrated Resource Plan (IRP) and associated environmental impact statement that identified the resources TVA would use to meet the energy needs of the TVA region over the 20-year planning period. Cost-effective renewable energy, including energy generated by solar PV, is one of the energy resources recommended in the IRP. The recently-completed 2015 IRP reiterated the continued expansion of TVA’s use of renewable energy. The proposed PPA would help meet this need and the Millington Solar Facility would provide cost-effective renewable energy consistent with TVA goals.

TVA must decide whether to execute the PPA with SR Millington, LLC. If TVA executes the PPA, SR Millington, LLC would construct and operate the 68.5 MW solar facility. The potential effects of TVA’s proposed action, including the effects of constructing and operating the solar facility and associated transmission interconnections, 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 execute the PPA with SR Millington, LLC and the solar facility, including the portion of the project site within the naval leased land and associated transmission interconnections, would not be constructed and operated and TVA would rely on other sources of generation to meet its renewable energy goals.

Under the Proposed Action Alternative, TVA would execute the 20-year PPA with SR Millington, LLC. To fulfill its obligations to provide power under this PPA, SR Millington, LLC would

construct and operate a 68.5-MW DC single-axis tracking PV solar power facility in Shelby County, Tennessee. The 68.5-MW DC output generated by the solar facility will be converted to 53 MW AC output for use by the electrical network. The entire project AC output (53 MW AC of 68.5 MW DC), including the naval portion, would be sold to TVA for a 20 year period and would interconnect to TVA's existing Shelby-Drummonds 161-kV transmission line.

The solar facility project site extends over 438 acres located approximately 2 miles northeast of downtown Millington. The proposed solar facility itself would occupy approximately 390 acres within the 438-acre site. The project site is comprised of portions of three contiguous land parcels, approximately 352 acres, 14 acres, and 72 acres, respectively. The 352-acre and 14-acre tracts were previously owned by Millington Industrial Development Board and were sold to SRC. The SRC-owned tracts are predominantly fallow pastureland with some small forested areas along the western project site boundary and in the northeastern corner. The 72-acre parcel is owned by the U.S. Navy and being leased to SRC for the Project. The leased land is predominantly developed land with some fallow pastureland and a small portion of undeveloped forest along the southwestern boundary.

The Millington Solar Facility would be comprised of a total of approximately 600,000 PV panels (modules), each capable of producing approximately 117.5 watts, and mounted together in arrays. Each block would consist of the PV arrays and a power conversion station (PCS), or inverter station on concrete pads. 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 several strings of modules and feed an inverter via cables placed in excavated trenches approximately 3 feet deep and 1 to 4 feet wide. A new 161-kV substation would be constructed and located on the project site at the corner of Kerrville Rosemark Road and Bethuel Road. The new substation would be 150 feet wide by 170 feet long and would be surrounded by a 6-foot-tall chain link fence with 3 strands of barb wire totaling 1 foot on top. The substation would have lighting controlled by a switch. Lights would normally remain off unless personnel were present and the perimeter of the solar facility would be secured by a 7-foot-tall fence.

Once construction is completed, the solar facility site would be revegetated with low-growing grasses. Construction would last approximately 15 months and require between 150 and 200 people working on site for variable durations. Once the facilities are completed, there would be no on-site operators and periodic maintenance would be carried out by workers based outside the project area. Maintenance activities would include mowing the facilities to prevent vegetation from growing tall enough to shade the solar modules or otherwise interfere with their operation. Small areas of the facility may require limited use of herbicides to maintain vegetation. Maintenance would not include panel washing because the rainfall in this region is usually sufficient to keep surfaces of the panels clean and maintain their energy production at adequate levels.

Under the Proposed Action, TVA would use standard practices to construct a new, approximately 5-mile-long 161-kV transmission line (Shelby - Millington Solar 161-kV Transmission Line) between the existing TVA line—located approximately 3 miles northeast of the Millington Solar Facility site and approximately 0.5 mile north of Mudville Road—and a new 161-kV Millington Solar Facility substation constructed by SR Millington, LLC. From the Millington Solar Facility's substation on Bethuel Road, the preferred route of the new transmission line would parallel Center College Road for approximately 0.75 mile and then continue approximately 1.25 miles through predominantly crop and pastureland. The route would then turn north approximately 2.5 miles to the existing Shelby-Drummonds 161-kV Transmission Line, which connects to the Shelby 500-kV Substation, approximately 0.5 mile

north of Mudville Road. The proposed transmission line would be single circuit supported by steel poles and constructed on a 100-foot wide ROW.

SR Millington, LLC would also construct a new, approximately 2-mile-long 12.47-kV distribution line connecting the Project substation to the NSA Mid-South facility's switching station located on Singleton Avenue approximately 0.25 mile south of Navy Road. The proposed distribution line would be composed of wooden poles and be constructed within an existing 50-foot-wide corridor. From the on-site substation, the new distribution line would continue south approximately 0.85 mile along Bethuel Road to Navy Road, parallel the north side of Navy Road for approximately 0.5 mile, and then cross Navy Road underground and continue southwest approximately 0.25 mile around military housing and terminate at Singleton Avenue at the Mid-South's East Switching Station.

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 undeveloped farmland to rural industrial. However, this would have little effect on the future land use of adjacent tracts. While the construction and operation of the solar facility would remove this area from potential future agricultural production, there would be little long-term impact on the soil productivity and the impacts on prime farmland would not be significant.

Because of the relatively shallow depth of trenching, impacts to groundwater are not expected. Water resources on the solar facility site are located in the northwest and central section of the project site. During the facility design process, care was taken to avoid streams and wetlands; however, complete avoidance is not feasible and there is no practicable alternative to impacting one stream and three wetlands as a result of construction and operation of the solar facility. The total area of permanent wetland impacts would equal 0.001 acre. Minor temporary stream impacts to one stream will result (approximately 0.00002 acre) from trench excavation associated with the placement of buried electrical cables. Support structures for the proposed transmission line were sited to avoid fill within wetlands. However, the woody vegetation comprising 1.66 acre of forested wetland and 0.33 acre of scrub-shrub wetland habitat would be cleared to accommodate conductor spans. Therefore, permanent conversion of the forested and scrub-shrub wetland acreage (1.99 acres) to emergent, wet-meadow habitat would take place. The solar facility would not be located within the 100 year floodplain and the proposed transmission line would span a portion of the Big Creek and Casper Creek floodplains. Transmission lines are considered to be repetitive actions and are allowable provided floodplain impacts are minimized. TVA would construct the transmission line in accordance with the TVA subclass review for transmission line location in floodplains and standard BMPs would be used during construction. Therefore, the proposed action would be consistent with the requirements of Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands).

The solar facility site would be composed of approximately 90 acres of trees or forested land and approximately 300 acres of fallow pasture. The majority of the proposed transmission line is routed through agricultural fields and pastures (54 acres) and forest fragments (6 acres). While construction and operation of the solar facility and associated transmission line would displace some of the wildlife present, the impacts to vegetation and wildlife would be insignificant. The proposed project would result in direct impacts to vegetation due to the clearing of approximately 96 acres total of forest. Suitable forested summer roosting habitat for Indiana

bats and northern long-eared bats was identified within the proposed solar facility area, and only two snags suitable for these roosting bats were identified along the 4.9-mile transmission route. Presence/Absence Surveys were conducted at the solar facility site that resulted in no captures of any bats. Therefore it was determined that removal of this habitat may affect but is not likely to adversely affect these bat species. In a letter of concurrence, dated November 2, 2017, the USF&WS concurred with TVA's "not likely to adversely affect" finding for those bat species. No direct impacts to rare, threatened, or endangered species are anticipated from the construction and operation of the proposed solar facility or associated transmission interconnections.

No archaeological sites listed or eligible for listing in the National Register of Historic Places (NRHP) were identified within the solar facility or transmission line Areas of Potential Effect (APE). The architectural survey of the APE of the proposed solar facility site identified six NRHP-eligible circa 1940s military houses. TVA determined that the current vegetative buffer and golf course would serve as screening and would have no visual effect on these historic properties. The architectural survey of the APE for the transmission line identified 21 previously recorded resources including SY-32723/Paw Paw Block Farm and five associated buildings (SY-32313, 32314, 32316, 32317 and 32318) that continue to be eligible for the NRHP. Although TVA finds that the proposed undertaking would result in an effect on Paw Paw Block Farm, that effect would not be adverse. The Tennessee State Historic Preservation Office concurs with this determination.

Construction activities would result in minor and short-term impacts to air quality, hazardous and solid waste, and public health and safety. Overall, visual impacts during the operation phase of the Project would be moderate in the immediate vicinity of the solar facility, but minimal on a larger scale due to a combination of changes to the visual attributes of the area and sparsely populated immediate area. Minor, temporary adverse impacts to the ambient noise environment are expected for residents near the project area (solar facility and transmission line construction). However, construction noise would be of short duration and restricted to normal weekday work hours. Consequently, anticipated noise levels would be insignificant.

Due to the project area's proximity to the city of Millington, possible minor traffic impacts along Navy Road through the city of Millington could occur as workers could potentially commute from downtown Millington. However, the proposed workforce would consist of a maximum of 200 employees for only part of the construction period; therefore, the addition of these vehicles to the existing traffic on Navy Road would be considered minor.

The proposed action would result in beneficial impacts to electrical services at the NSA Mid-South facility due to the backup energy supply, as well as 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 facility would result in a small, long-term beneficial effect. There would be no disproportionate adverse effects on minority or low-income populations.

### **Public and Intergovernmental Review**

The proposed solar farm project was presented at a public event on April 27, 2016, as well as a public meeting at Millington Town Hall on March 10, 2017. TVA held an open house in Millington on September 15, 2016, for the proposed Shelby – Millington Solar 161 kV Transmission Line. TVA used local news outlets and notices placed in local newspapers to notify other interested members of the public of the open house. A 30-day public review and comment period was held following the open house, during which TVA accepted public comments on the alternative transmission line routes and other issues. At the conclusion of the comment period, TVA considered additional information and developed a preferred route which was announced to the

public in April 2017. Letters were sent to affected property owners and elected officials, and information was provided to the public through TVA's website. TVA also released the draft EA for a two week public and agency review period in November 2017. No comments were received on the draft EA. TVA has coordinated with the U.S. Fish and Wildlife Service on the potential effects to endangered and threatened species and consulted with the State Historic Preservation Office and federally recognized Native American tribes on the potential effects to historic properties.

### **Mitigation**

SR Millington, LLC and TVA would implement appropriate best management practices (BMPs), including those required by permits, during construction and operation of the facilities. To mitigate the proposed impacts to waters of the U.S., SR Millington, LLC proposes to purchase mitigation credits from the Tennessee Wildlife Federation (TWF) in-lieu fee program at a 2:1 ratio for project impacts. Should traffic flow be a problem, SR Millington, LLC would consider staggered work shifts to space out the flow of traffic to and from the project site. SR Millington, LLC would also consider posting a flag person during the heavy commute periods to manage traffic flow and to prioritize access for local residents, if determined needed.

### **Conclusion and Findings**

Based upon the analyses documented in the EA, TVA concludes that its proposed action of executing the PPA with SR Millington, LLC for the Millington Solar Project and the subsequent construction and operation of the solar generating facility and the transmission interconnection by TVA, 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