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

### **POWER PURCHASE AGREEMENT – CUMBERLAND LAND HOLDINGS, LLC**

The Tennessee Valley Authority (TVA) proposes to execute a power purchase agreement (PPA) with Cumberland Land Holdings, LLC—the facility-specific entity affiliated with Silicon Ranch Corporation (SRC)—to purchase the electric power generated by a proposed solar photovoltaic (PV) facility in Limestone County, Alabama, approximately 20 miles northwest of Huntsville. The proposed solar facility, known as “Cumberland Solar Facility”, would have direct current (DC) generating capacity of 20 megawatts (MW). The proposed solar facility would be constructed and operated by Cumberland Land Holdings, LLC.

In addition to entering into a PPA with Cumberland Land Holdings, LLC, TVA would also construct a new pole and switch at the adjacent TVA-owned Ardmore Substation to connect an overhead 44-kilvolt (kV) transmission line extending from the Cumberland Solar Facility to the TVA power system. TVA would also convey a nonexclusive access easement to SRC along an existing access road from County Road 71 (CR71), also known as Mooresville Road, to TVA’s Ardmore Substation.

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 2015 IRP revised the earlier 2011 IRP, reiterating the continued expansion of TVA’s use of renewable energy. The proposed PPA would help meet this need and the Cumberland Solar Facility would provide cost-effective renewable energy consistent with TVA goals.

TVA must decide whether to execute the PPA with Cumberland Land Holdings, LLC. If TVA executes the PPA, Cumberland Land Holdings, LLC would construct and operate the 20 MW solar facility. The potential effects of TVA’s proposed action, including the effects of constructing and operating the solar facility and associated transmission interconnection, 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 Cumberland Land Holdings, LLC. The solar facility and associated transmission interconnection would not be constructed 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 Cumberland Land Holdings, LLC. To fulfill its obligations to provide power under this PPA, Cumberland Land Holdings, LLC would construct and operate a 20-MW DC single-axis tracking PV solar power

facility in Limestone County, Alabama. The entire project output of 15.9-MW AC would be sold to TVA for a 20-year period.

The solar facility project site extends over 155 acres located approximately 3.2 miles southwest of the town Ardmore. The proposed solar facility itself would occupy approximately 140 acres within the 155-acre site. The project site is comprised of four land parcels owned by SRC. The southern portion of the land has been cleared for agricultural purposes with the majority of the site used for timber production. A railroad line owned by CSX Corporation forms the majority of the western property boundary.

The Cumberland Solar Facility would be comprised of a total of approximately 170,220 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. The proposed Project will include a new on-site substation near the existing TVA Ardmore Substation, which will exit the site via an overhead 44-kV line and connect to a new pole with switch constructed and owned by TVA on either TVA-owned Ardmore Substation property or the existing right-of-way. The project site will be secured with a 7-foot-high chain-link fencing with three strands of barbed wired on the top. The main entrance and construction access is provided at an existing gravel road off of County Road 71 that leads to the TVA-owned Ardmore substation. TVA would convey a nonexclusive access easement to SRC along the existing access road. A secondary access is provided at an existing road at Watson Lane. Double-swing gates are provided at Watson Road and at the west and east side of the existing TVA-owned gravel road that bisects the property.

Once construction is completed, the solar facility site would be revegetated with low-growing grasses. Construction activities would take approximately 6 months to complete using a crew of approximately 80 workers at the peak of construction. Work would generally occur 5 days per week from 7 a.m. to 5 p.m. Additional hours could be necessary to make up schedule deficiencies or to complete critical construction activities. Once the facilities are completed, there would be no on-site operators and periodic maintenance would be carried out by temporary workers. 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.

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. Under the Proposed Action, a total of approximately 289 linear feet of jurisdictional surface stream channels would be adversely affected. Approximately 0.07 acre of wetlands and approximately 0.25 acres of one pond would also be permanently affected due to grading associated with panel installation. The solar facility would not be located within the 100 year floodplain. 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 the three streams for stream crossings and grading, one wetland and one pond for grading on the project site. Therefore, the proposed action would be consistent with the requirements of Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands).

Approximately 20 percent of the project site is agricultural and was used in the past for growing annual crops. Approximately 31 percent of the project site is forested and undeveloped and approximately 44 percent of the project site was recently timbered. While construction and operation of the solar facility 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 49 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. In May 2016, HDR, SRC's consultant, coordinated the assessment of impacts of the project with the U.S. Fish and Wildlife Service (FWS). In a reply dated May 25, 2016, the FWS concurred that proposed actions may affect, but are not likely to adversely affect the Indiana bat and the northern long-eared bat. TVA later consulted with FWS on January 5, 2018. In a reply dated January 12, 2018, FWS concurred that the proposed actions may affect, but are not likely to adversely affect the Indiana bat and northern long-eared bat. This concurrence was based on the condition that tree removal must occur between October 15 and March 31. No direct impacts to other rare, threatened, or endangered species are anticipated from the construction and operation of the proposed solar facility or associated transmission interconnections.

No archaeological or historic architectural sites listed or eligible for listing in the National Register of Historic Places were identified within the solar facility Areas of Potential Effect. TVA has consulted with the Alabama State Historic Preservation Office (SHPO) and federally recognized Indian tribes on TVA's determination that no historic properties would be affected. The Alabama SHPO, Cherokee Nation, Muscogee (Creek) Nation, and United Keetoowah Band of Cherokee Indians in Oklahoma concur 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. 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 town of Ardmore, possible minor traffic impacts along County Road 71 through the town of Ardmore could occur as workers could potentially commute from Ardmore. However, the proposed workforce would consist of a maximum of approximately 80 employees for only part of the construction period; therefore, the addition of these vehicles to the existing traffic on County Road 71 would be considered minor.

Construction of the proposed facility could have minor beneficial indirect impacts to population and short-term employment and income levels in Limestone County and the nearby town of Ardmore and city of Athens. Because the facility would not receive a tax abatement, minor increases in property and business tax payments would be expected. Operations of the solar facility would have a small positive impact on employment in Limestone County due to a temporary workforce of six to eight employees. Overall, socioeconomic impacts for the operation of the proposed solar facility would be positive over the long-term, but any such impact would be small relative to the total economy of the region. There would be no disproportionate adverse effects on minority or low-income populations.

### **Public and Intergovernmental Review**

TVA released the draft EA for a 30-day public and agency review from December 22, 2017, through January 21, 2018. TVA received four comments on the draft EA. Comments received and TVA's responses can be found in Appendix E of the final EA. As stated above, TVA coordinated with the FWS on the potential effects to endangered and threatened species and consulted with the Alabama SHPO and federally recognized Native American tribes.

### **Mitigation**

Cumberland Land Holdings, LLC and TVA would implement appropriate best management practices (BMPs), including those required by permits, during construction and operation of the facility. Tree removal would occur during winter months (between October 15 and March 31) to avoid impacts to roosting northern long-eared bats and Indiana bats. Impacts to streams and wetlands would be cumulatively mitigated in accordance with the requirements of a Section 404 permit issued by the USACE and a Section 401 certification issued by the State of Alabama. Should traffic flow be a problem, Cumberland Land Holdings, LLC would consider staggered work shifts to space out the flow of traffic to and from the project site. Cumberland Land Holdings, LLC would also post a flag person during the heavy commute periods to manage traffic flow and to prioritize access for local residents, if determined to be necessary.

### **Conclusion and Findings**

Based upon the analyses documented in the EA, TVA concludes that its proposed action of executing the PPA with Cumberland Land Holdings, LLC for the Cumberland Solar Project, providing the subsequent connection for the 44-kV overhead transmission line, and granting of a nonexclusive access easement to SRC 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