

FINDING OF NO SIGNIFICANT IMPACT TENNESSEE VALLEY AUTHORITY

LOGAN COUNTY SOLAR LOGAN COUNTY, KENTUCKY

Tennessee Valley Authority (TVA) entered into a power purchase agreement (PPA) with Russellville Solar LLC (Russellville Solar), a wholly owned subsidiary of Silicon Ranch Corporation (SRC), on January 8, 2021, to purchase the electric power generated by a proposed solar photovoltaic (PV) facility in Logan County, Kentucky, subject to satisfactory completion of all applicable environmental reviews. The solar facility, known as Logan County Solar, would be owned by SRC and operated by Russellville Solar. The facility would have an installed capacity of 173 megawatts (MWs) alternating current (AC) and may include a battery energy storage system (BESS) of 30 MW capacity. The solar facility would connect to TVA's adjacent existing Springfield-Logan Aluminum 161-kilovolt (kV) transmission line (TL). To interconnect to TVA's existing electrical grid, Russellville Solar would build the Russellville Solar 161-kV substation (also called the Project substation), and TVA would build the Cave Springs 161-kV switching station (also called the Project switching station) in the northeastern portion of the solar facility site. Under the terms of the PPA, TVA would purchase the electric output from the solar facility for a term of 20 years, 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. The 2019 Integrated Resource Plan (IRP) identified the various resources that TVA intends to use to meet the energy needs of the TVA region over the 20-year planning period while achieving TVA's objectives to deliver reliable, low-cost, and cleaner energy while reducing environmental impacts. The 2019 IRP anticipates growth of solar in all scenarios analyzed, with most scenarios anticipating 5,000-8,000 MW AC and one anticipating up to 14,000 MW AC (TVA 2019). Customer demand for cleaner energy prompted TVA to release a request for proposal (RFP) for renewable energy resources, the 2020 Renewable RFP. In response to this RFP, TVA received multiple proposals from solar developers, including Russellville Solar. The resulting PPAs, including the Russellville Solar PPA, will help TVA meet immediate needs for additional renewable generating capacity in response to customer demand, and help fulfill the renewable energy goals established in the 2019 IRP (TVA 2019). The Proposed Action would provide cost-effective renewable energy consistent with the IRP and TVA goals.

The potential effects of the Proposed Action are described in an environmental assessment (EA) 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 purchase the power generated by

the Project, and the proposed solar PV facility in Logan County would not be constructed. Existing conditions (e.g., land use, natural resources, visual resources, physical resources, and socioeconomics) in the Project area would not change as a result of the Proposed Action; however, the Project site could be affected by other future developments. TVA would continue to rely on other sources of generation as described in the 2019 IRP (TVA 2019) to ensure an adequate energy supply and to meet its goals for increased renewable energy and low greenhouse gas (GHG)-emitting generation.

Under the Proposed Action Alternative, Russellville Solar would construct and operate a 173-MW AC single-axis tracking PV solar power facility and possibly a 30-MW AC BESS on a 1,569-acre site located approximately two miles southwest of the city of Russellville in Logan County. TVA would connect the facility to TVA's adjacent existing Springfield-Logan Aluminum 161-kV TL via a proposed substation and switching station in the northeastern portion of the solar facility site and purchase the facility's energy output under a 20-year PPA with Russellville Solar. The placement of the facility components would avoid and minimize impacts to environmental resources, including cultural resources, to the maximum extent possible. The proposed Project and associated interconnection components would occupy approximately 1,100 acres of the 1,569-acre Project site. TVA would also install fiber-optic overhead ground wire (OPGW) along approximately 2,500 feet of the existing Springfield-Logan Aluminum 161-kV TL, to connect existing OPGW at Structure 175 to Structure 173, where the TL meets the Project site.

The solar facility site would be prepared by surveying, staking, and installing six-foot-tall chain-link security fencing topped with three strands of barbed wire around the Project site. Entrances to the solar facility would be protected by locked, double-swing gates. Construction assembly areas (laydown areas) would be established for worker assembly, safety briefings, vehicle parking, and material storage during construction. In accordance with TVA requirements, minimum 50-foot buffers surrounding wetlands and intermittent and perennial streams and minimum 100-foot buffers surrounding five sinkhole fissures/karst features would be established as avoidance measures prior to any clearing, grubbing, grading, or utility line installation activities conducted by the construction contractor. The buffered areas would be marked and protected by silt fences and sediment traps in strategic drainage areas, and other erosion prevention and sediment control best management practices (BMPs) would be implemented, as detailed in the site-specific Storm Water Pollution Prevention Plan (SWPPP).

Following the initial site preparation activities, site access roads would be constructed, tall vegetation, including trees, would be removed, and light grading would be conducted. Solar array assembly and construction activities include driving steel piles for the tracker support structures and installation of tracker structures and solar panels. The Project substation, possible BESS, and an operations and maintenance building would be constructed. The initial electrical connections to the TVA transmission system would be by a temporary connection tap on the Springfield-Logan Aluminum 161-kV TL, followed by the later construction of the TVA Cave Springs 161-kV switching station. Construction would be sequenced to minimize the time that bare soil on the disturbed areas is exposed.

Construction activities would take approximately 14 to 18 months to complete using a crew of up to 450 workers sourced locally to the greatest extent possible. Work would generally occur six days a week (Monday to Saturday) during daylight hours. Night-time construction could be necessary to make up schedule deficiencies or to complete critical construction activities. These activities would require installation and use of downward-facing, timer- and/or motion-activated lighting. Once construction is completed, the Project Site would be revegetated using a mixture of certified weed-free, low-growing native and/or noninvasive grass and herb seeds containing species that would tend to attract pollinators and would be used as sheep fodder during operations. Project components, including blocks of solar panels and inverters, substation, switching station, possible BESS, access roads, and electrical cabling, would be enclosed by chain-link security fencing. Vegetative buffer composed of a double row of eight-foot-tall trees would be planted in a staggered pattern around the perimeter of the site where existing natural buffers are not sufficient in shielding views of the facility and the buffer has not been waived by landowners having at least 1,000 continuous feet of property adjacent to the Project site. A screen would be attached to the security fence for additional visual buffering.

During operations, the Project may require small groups of workers to be on site occasionally to manage the facility and conduct regular inspections, maintenance, and repairs, as well as shepherds to manage an on-site sheep herd. The sheep would be used to maintain low-growing vegetation, to prevent shading of the PV panels, on most of the fenced solar facility. The sheep would be bred and sold to regional farmers as registered seedstock for breeding or as market lambs. Facility maintenance activities would include fence repair, vegetation control, and periodic array inspection, repairs, and maintenance performed by up to four full-time, on-site staff. The facility would have permanent, downward-facing, timer- and/or motion-activated lighting and an on-site operations and maintenance building with water and sewer service.

The TVA-preferred alternative for fulfilling its purpose and need is the Proposed Action Alternative. The Proposed Action Alternative would generate renewable energy for TVA and its customers with only minor direct and indirect environmental impacts due to the implementation of BMPs and minimization and mitigation efforts. The Project would also result in some beneficial effects. Implementation of the Project would help TVA meet renewable energy goals and would help TVA meet customer-driven energy demands on the TVA system.

Impacts Assessment

The potential impacts of the Proposed Action Alternative are described in detail in the subject EA. Approximately 1,100 acres (70 percent) of the 1,569-acre Project site would be cleared and/or graded for the solar facility. These changes would cause minor adverse impacts to geology and soils due to minor, localized increases in erosion and sedimentation. Construction activities would cause short-term impacts to air quality, utilities, and visual aesthetics and temporary increases in noise and traffic. Impacts to air quality are anticipated due to short-term, minor increases in vehicle emissions and fugitive dust suspension. Heightened noise during construction would primarily result from pile driving activities during daylight hours for an approximate six-month period.

There may be brief local utility outages as the solar facility is brought on-line. The additional electric system modifications to existing TVA substations may also require a temporary electric

service outage of the Springfield-Logan Aluminum 161-kV TL for at least a few days. If this or other outages on the TVA system are required, TVA would work with the local power company, Pennyrite Rural Electric Cooperative Corporation (PRECC), to provide alternative means of providing electrical service to the area in order to avoid service interruptions. TVA would also make an effort to perform these outages at low-impact times, such as overnight, in order to maintain power service to PRECC. With the implementation of federal and state requirements and BMPs, impacts to waste management and public and occupational health and safety during the life of the Project would be minor to negligible.

With the implementation of BMPs, no significant impacts to groundwater and floodplains are expected. Steps taken in designing the site layout have avoided impacts to wetlands to the extent practicable. TVA would implement mitigation measures to minimize adverse impacts on floodplains and their natural and beneficial values. Therefore, the Proposed Action would be consistent with the requirements of Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands). Complete avoidance of surface water was not feasible, and the construction and operation of the Project would permanently affect approximately 16 linear feet of one non-jurisdictional intermittent stream and approximately 0.01 acre of one non-jurisdictional emergent linear wetland. If a Groundwater Protection Plan (GPP) is determined to be necessary for the proposed project under 401 KAR 5:037, then the Project would comply with all requirements in the GPP and any additional requirements determined to be necessary by the KDEP Division of Water.

Some long-term habitat loss would occur due to the clearing of approximately 93 acres of forest on the Project site and conversion to diverse, managed grassland. These changes would result in effects to common wildlife. Approximately 72 of the 93 acres proposed for tree removal offer moderate- and high-quality bat foraging and roosting habitat. Due to the lack of impacts to potential hibernacula, distance from known records, and no captures of federally listed bat species during presence/absence surveys, TVA determined that the Proposed Action may affect but is not likely to adversely affect federally listed bat species. Consultation under Section 7 of the Endangered Species Act was conducted with the United States Fish and Wildlife Service (USFWS). USFWS concurred with TVA determinations in a letter dated June 6, 2022. The Project would not affect other federally listed endangered or threatened species and would result in minor and insignificant impacts to state-listed species and migratory birds.

TVA determined that the Project would have no adverse effects on any cultural resources listed or determined eligible for listing in the National Register of Historic Places. Pursuant to the National Historic Preservation Act, TVA consulted with the Kentucky Heritage Council (KHC) and interested federally recognized Indian tribes regarding its determination. TVA also consulted with federally recognized Indian tribes regarding properties of religious or cultural importance to their tribe. The Cherokee Nation responded and had no objections to the Project. On December 20, 2022, KHC concurred that the Project as currently proposed would not adversely affect any historic properties.

Construction of the proposed facility would 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 Logan County and the local region as a result of permanent job creation and increase in the local tax base. While no identified concentrations of minority or low-income populations occur in the vicinity of the solar facility, the Project impacts, as described in the subject EA, would primarily occur during the 18-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 environmental justice 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 benefit nearby environmental justice populations.

The Project would result in minor, temporary direct impacts to land use due to the conversion of the Project site from agricultural and forest to industrial during construction. Long-term, minor beneficial impacts are anticipated due to the use of the Project site as sheep pasture. With decommissioning of the Project, removal of Project components, and site reclamation, the Project site could return to other agricultural, including cropland, uses. Visual impacts during operations of the solar facility would be negligible to minor due to the visibility of relatively small portions of the Project elements with the planting of vegetative buffer and the placement of fence screen around the perimeter of site, where existing natural buffers are not sufficient and the buffer has not been waived by landowners. Noise impacts would be minor to moderate during construction, particular during the six-month period when pile driving would occur, but minimal to negligible during operations due to the distance of noise receptors from noise-producing Project components. Minor impacts to air quality would occur during construction, primarily as a result of an increase in vehicular emissions in the vicinity, and no to minimal negative impacts to air quality or GHG emissions would occur during operations. Offsetting beneficial effects to GHG emissions would occur during operations, as the emissions-free power generated by the solar facility would help reduce the need for new power that would otherwise be generated, at least in part, by the combustion of fossil fuels.

Public and Agency Review

Russellville Solar hosted two community meetings, in July and December 2021, to discuss the Project at the Logan County Cooperative Extension Office in Russellville. Shared Project details during both meetings included the Project site acreage and anticipated disturbance footprint, key components of the Project, the electrical output, an explanation of the ongoing NEPA process, and the potential economic benefits to the local community. Maps showing the Project site location and the preliminary design, as well as computer renderings of the Project were on display for the public to view. The December meeting presented computer renderings of the Project from major residential receptor areas surrounding the Project site.

On April 4, 2022, TVA issued the draft subject EA for public and agency review and comment. TVA notified the public of the availability of the draft EA via an advertisement in the *News Democrat-Leader*, a local newspaper published in Russellville. TVA also notified appropriate local, state, and federal agencies and federally recognized tribes of the availability of the draft EA and posted the draft EA on its webpage (www.tva.gov/nepa) with information about how to submit

comments. During the 30-day public review and comment period of the draft EA, a total of 15 comment submissions were received from individuals, organizations, and agencies.

Mitigation

To address adverse impacts associated with the Proposed Action, Russellville Solar and TVA 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. To minimize adverse impacts on natural and beneficial floodplain values, construction and maintenance activities would occur during dry periods as much as possible; construction would adhere to the TVA subclass review criteria for TL location in floodplains; disposal of excavated material and depositing of deconstruction debris would be done outside the 100-year floodway; and construction and access road improvements would be conducted such that upstream flood elevations would not increase by more than one foot. To reduce noise impacts, construction would primarily occur during daylight hours. Russellville Solar would implement a variety of plans and BMPs for site safety management to minimize risks to public and occupational health and safety and to ensure proper handling of any chemicals or hazardous materials stored and utilized on site. Russellville Solar would comply with the terms of the site-specific SWPPP coordinated with the Kentucky Department of Environmental Protection Division of Water and implement other routine BMPs to protect water resources, such as use of 50-foot buffer zones surrounding intermittent and perennial streams and wetlands, non-mechanical 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 surface water and groundwater. Silt fencing would also be installed around areas cleared of vegetation, and efforts would be made to balance soil cut-and-fill quantities to help alleviate the transportation of soils and sediments off-site during construction. If substantial traffic congestion occurs during construction, Russellville Solar would minimize these effects by implementing staggered work shifts during daylight hours. The Project would also implement mitigation measures identified in a traffic impact study, if needed in relation to a Kentucky Transportation Cabinet Encroachment Permit.

During tree removal, BMPs would be used around bodies of water, minimizing sedimentation and changes to hydrology. No construction would occur within 100-feet around the five onsite sinkhole fissures/karst features that may provide bat roosting habitat. Impacts to birds would be minimized by implementing Avian Power Line Interaction Committee guidelines during design and construction of TL system upgrades. Following grading, the Project Site would be revegetated with native and/or noninvasive vegetation, including plants attractive to pollinators, to reintroduce habitat, limit the spread of invasive species consistent with Executive Order 13112 (Invasive Species), and further support on-site soils. In right-of-way areas, only USEPA-registered and TVA-approved herbicides would be used, where needed, and in accordance with label directions designed in part to restrict applications near receiving waters and to prevent unacceptable aquatic impacts in areas requiring chemical treatment. Downward facing and timer- and/or motion-activated lighting would be installed to minimize effects to land use and visual resources and to limit attracting wildlife, particularly migratory birds and bats, and Project personnel would be instructed on wildlife resource protection measures to further minimize impacts to biological resources. Four buildings proposed for removal would be demolished between October 15 and March 31 to avoid impacts to potentially roosting bats. To minimize long-term Project effects to

visual resources and to NRHP-eligible aboveground cultural resources, the Project would install vegetative buffer along the security fence perimeter, where existing natural buffers are not sufficient and the buffer has not been waived by landowners. The Project would also install vegetative buffer around the historic architectural resource known as the Brown House (LO 245). The Project would also maintain a 250-foot solar-panel setback and a 65-foot ground-disturbance avoidance buffer around known cemeteries and gravesites on the Project site. The Project would also exclude eight archaeological sites identified within the Project site from development or disturbance, in accordance with an Avoidance Agreement between TVA and Russellville Solar.

Conclusions and Findings

Based upon the analyses documented in the EA, TVA concludes that the Proposed Action Alternative of construction and operations of the solar generating facility and TVA's purchase of the electric output pursuant to the PPA with Russellville Solar, with implementation of the mitigation measures summarized above and described in detail in the EA, 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

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