

Finding of No Significant Impact

**Bluegrass Plains Solar Generating Facility
Fayette County, Kentucky**



**U.S. Department of Agriculture
Rural Utilities Service (RUS)**

East Kentucky Power Cooperative, Inc.

**Prepared by:
Environmental and Historic Preservation Division
Rural Utilities Service**

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A. INTRODUCTION

East Kentucky Power Cooperative, Inc. (EKPC) plans to submit a financing request to the U.S. Department of Agriculture (USDA), Rural Utilities Service (RUS) to construct and operate the proposed Bluegrass Plains Solar Generating Facility (Project) in Fayette County, Kentucky. RUS is considering this financing request. Prior to taking a federal action (i.e., providing this financing assistance), RUS is required to complete an environmental impact analysis in accordance with the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. §§ 4231–4347), the Council on Environmental Quality’s (CEQ) regulations for implementing NEPA (40 CFR Parts 1500-1508), and Rural Development’s (RD’s) NEPA implementing regulations, Environmental Policies and Procedures (7 CFR Part 1970).

After completing an independent analysis of an environmental report prepared by EKPC and its consultant, RUS concurred with its scope and content. In accordance with 7 CFR § 1970.102, RUS adopted the report and issued it as the Agency’s Environmental Assessment (EA) for the Project. RUS finds that the EA is consistent with federal regulations and meets the standards for an adequate assessment. EKPC published a newspaper notice, announcing the availability of the EA for public review, in accordance with 7 CFR § 1970.102. In addition, RUS considers the Project an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA), 16 USC 470(f), and its implementing regulation, “Protection of Historic Properties” (36 CFR Part 800).

B. PROJECT DESCRIPTION AND PURPOSE/NEED

EKPC is proposing to construct the 40-megawatt alternating current photovoltaic (PV), Bluegrass Plains Solar Generating Facility on approximately 403 acres located in eastern Fayette County, Kentucky. The new facility would be sited between US Highway 60 and Interstate 64, and to the north and east of the existing EKPC Avon 138 kilovolt (kV) Transmission Substation, which is located at 5481 Winchester Road, Lexington, Kentucky, 40509.

The USDA’s purpose and need is to either approve or deny EKPC’s application for financing. The USDA’s RUS administers programs that provide infrastructure improvements to rural communities. Specifically, the RUS Electric Program provides loans and loan guarantees to finance the construction or improvement of electric distribution, transmission, and generation facilities in rural areas (USDA 2018b). Financial assistance can include direct loans, guaranteed loans, and grants in order to accomplish program objectives. The Project and borrower meet the eligibility requirements to receive the loan through RUS, as established by the Rural Electrification Act of 1936 and pursuant to 7 CFR Chapter XVIII.

In addition, the Inflation Reduction Act (IRA; Public Law 117–169; Aug. 16, 2022) provided funding to assist rural electric cooperatives in boosting resilience, reliability, and affordability. The IRA’s Powering Affordable Clean Energy (PACE) program made available \$1 billion in funding to eligible applicants, including electric cooperatives, to help make clean, affordable, and reliable energy accessible to rural Americans. EKPC has submitted an application for Project funding under the PACE program. The proposed solar Project, along with several others being planned by EKPC, would result in significant carbon dioxide (CO₂) reductions throughout Kentucky.

EKPC’s purpose and need for this Project is to contribute significantly to its Sustainability Plan goals of CO₂ reductions and commitment to adding new renewable energy sources to its generation

portfolio, while transitioning to a clean energy future. Construction of the proposed project would enable EKPC to generate and distribute clean, renewable PV solar energy to the existing electrical grid. The proposed location will allow EKPC to tie into its existing transmission network via a short generation tie line connected to the existing EKPC Avon Substation.

C. ALTERNATIVES EVALUTED

C.1 No Action Alternative

Under the “No Action” alternative, RUS would not provide funding for the Project, and the site would not be developed for a solar facility. Potential impacts associated with Project activities (i.e., construction, operation and maintenance, and decommissioning) would not occur, and PV solar energy would not be transmitted to the electrical grid. The anticipated generation from this renewable energy source would not be available, and EKPC would have to seek alternative electric generation sources to meet anticipated needs. The Project site would continue as previously disturbed agricultural land. The no-action alternative does not meet the purpose and need of the Project as it would not result in the generation and transmission of a clean source of renewable energy; however, the no-action alternative is presented as a point of comparison to the Project.

C.2 Proposed Action

The Proposed Action would include the installation of roughly 88,000 state-of-the-art PV solar panels mounted on single-axis tracking systems supported by steel piles. When operating, the solar panels will move to track the sun from east to west over the course of the day. Project components would include up-to-15-foot-tall PV solar tracking panels, associated ground-mounted racking structures, access roads, inverters, medium voltage transformers, buried electrical collection cabling, a step-up transformer, a short 138-kV transmission tie line, security fencing, laydown areas, and an operations and maintenance building. The Project step-up substation would include a circuit breaker, generator step-up transformer, and equipment required for relay/protection, SCADA, telecommunication, and metering. The step-up substation will be connected to the point of interconnection via an approximately 150 foot 138-kV generation transmission interconnect line (Gen-Tie Line) at EKPC’s existing Avon Substation.

The Project would be situated on private land purchased by EKPC from willing sellers. Project power would be supplied to the existing electrical transmission system at the EKPC Avon Substation. The Project is expected to operate for the design life of the facility, which is estimated to be 30 years. Project construction activities are anticipated to start in 2025 once all approvals are complete, with operation anticipated by 2027. Electrical production for the Project is estimated at 77,948 megawatt-hours (MWh) annually, assuming a 30-year mid-point project life with 0.5 percent annual degradation in generating efficiency. If the Project is not redeveloped with modern equipment at the end of its anticipated 30-year life, it will be decommissioned and removed from the site. Decommissioning would remove all Project-related infrastructure and restore the Project area to its original condition, allowing its future use for agriculture.

C.3 Alternatives Eliminated from Further Consideration

The current Project location was selected due to its proximity to the EKPC-owned Avon Substation, secured position in the regional transmission organization PJM’s transmission study queue, and because other key site selection criteria were met. As such, only the current Project

location was carried forward for detailed analysis, and no other off-site locations were considered as part of this environmental assessment.

D. SUMMARY OF ENVIRONMENTAL EFFECTS

The project analyses prepared for the EA did not identify any significant adverse effects to land use and important farmland, floodplains, wetlands, water resources, biological resources, threatened and endangered species, cultural resources and historic properties, aesthetics, air quality, socio-economic impact and environmental justice, noise, transportation, or human health and safety. In accordance with the requirements of 7 CFR § 1970.104(b), a summary of anticipated impacts on the human environment is provided below, including any mitigation measures deemed necessary to avoid or minimize impacts. EKPC is responsible for implementing these measures.

D.1 Land Use and Important Farmland

Land use within the Project area will change from agricultural to solar power generation. The Natural Resource Conservation Service (NRCS) Soil Scientist provided the results of the Farmland Protection Policy Act (FPPA) site assessment for the proposed project. Of the 403-acre project area to be converted, 216.8 acres are considered Prime and Unique Farmland and 98.9 acres are considered Statewide Important or Local Important Farmland.

According to the FPPA data provided by the NRCS, the proposed project site has a relative Land Evaluation and Site Assessment (LESA) value of 91, as based on a scale of 0 to 100 points. The percentage of farmland in Fayette County having the same or higher value as the proposed project site is 38.51%, and the percentage of farmland in the county to be converted because of the proposed action is 0.20%, which is considered minimal. The Farmland Conversion Impact Rating form (AD-1006) indicates the project site has a total LESA value of 171 out of 260. Implementation of the Proposed Action will result in the conversion of farmland to non-agricultural use over the life of the Project. However, EKPC will implement measures to minimize effects to farmland for potential future use, including minimization of erosion and sedimentation, preservation of topsoil, and revegetating with low growing grasses and herbaceous vegetation. Furthermore, if the Project is not redeveloped with modern equipment at the end of its design life, the Project would be decommissioned and the land could be returned to agricultural uses.

There are no formally classified lands within or adjacent to the Project; therefore, no impacts to formally classified lands will occur.

D.2 Floodplains

EKPC personnel acquired the Flood Insurance Rate Map (FIRM) data for Fayette County from the Kentucky Flood Hazard Portal. The Project area does not overlap with a 500-year floodplain, 100-year floodplain or 100-year floodway; therefore, no effects to the floodplain will occur as a result of the Project.

D.3 Wetlands

A formal wetland determination was conducted for the Project in 2023. The study limits for the wetland delineation included the 403-acre project area, where 1.14 acres of wetland (0.71 acre of palustrine forested wetland and 0.44 acre of palustrine emergent wetland) were mapped within the wetland delineation study limits. EKPC has committed to avoiding wetland impacts. As such, the final Project footprint will be configured to avoid wetlands with a 50-foot buffer, and no direct

(permanent or temporary) impacts to wetlands will occur as a result of construction or operation of the solar development. Therefore, no reasonably foreseeable adverse direct or indirect effects to wetlands will occur as a result of the Proposed Action.

D.4 Water Resources

The Project area lies within the area delineated in 2023. An analysis of the delineation data using geographic information system (GIS) computer software identified 35 stream features within the 403-acre Project area. Eight of these stream segments identified during the field investigation were determined to be intermittent or perennial and met the current Waters of the U.S. (WOTUS) criteria. The remaining 27 stream segments were determined to be ephemeral streams with no jurisdiction under the current WOTUS rules.

No arrays or access roads will cross or occur within 50-feet of jurisdictional surface waters as a result of the Proposed Action. Stormwater runoff that could occur during construction activities has the potential to contribute sediments and pollutants to streams immediately adjacent to or downstream of the Project area. However, construction activities will include implementation of Best Management Practices (BMPs) to avoid potential impacts to streams resulting from stormwater runoff. In addition, EKPC will implement a Storm Water Pollution Prevention Plan (SWPPP) in compliance with state and local permit requirements to ensure that all ground disturbance is stabilized to prevent erosion and sedimentation into streams. Following construction, disturbed areas will be restored per the SWPPP and permit requirements. Given the avoidance measures implemented during Project design, and the implementation of BMPs and the SWPPP, no reasonably foreseeable adverse direct or indirect effects to surface water will occur as a result of the Proposed Action.

D.5 Biological Resources – General Fish and Wildlife

The Project site is primarily composed of farmland and small areas of forested habitat. Dominant ecological communities consist of cultivated cropland and roughly 65 acres of woodlands, although the forested areas are heavily infested with invasive plant species, e.g., bush honeysuckle and winter creeper. Construction activities and noise may temporarily displace wildlife resources on the site. Incidental injury and mortality from construction of the Project may occur to slow-moving or burrowing species, such as small mammals, reptiles, and amphibians that may be unable to quickly move away from the active construction area. Tree clearing activity will remove a portion of the available forested habitat and displace birds and other tree dwelling animal species onsite. However, this habitat is widespread in the adjacent properties and throughout the county. No wetland or stream impacts would occur, minimizing potential impacts to aquatic species.

Security fencing placed around the perimeter of the site will limit the use of the Project area by larger terrestrial species such as white-tailed deer causing most individuals to avoid the area or choose alternate travel corridors. However, travel corridors for these species will remain along streams and grassed buffers found immediately adjacent to the Project area. Maintenance activities, including vegetation management, may have an effect on common wildlife species; however, impacts to these species are anticipated to be minor.

D.6 Biological Resources – Threatened & Endangered Species

Information obtained from the USFWS Information for Planning and Consultation (IPaC) Official Species List identified 11 federally listed species known to occur or having the potential to occur

in this region of the state. Field surveys were conducted in 2023 and 2024 to determine the presence or probable absence of these species in the proposed project area. After reviewing the information provided in a Biological Assessment letter, the U.S. Fish and Wildlife Service concurred with EKPC's findings and effects determinations in a letter dated August 30, 2024 that the Project "may affect but is not likely to adversely affect" the gray bat, Indiana bat, northern long-eared bat, clubshell, fanshell, longsolid, rabbitsfoot, and short's bladderpod. The USFWS further agreed that the proposed project is "not likely to jeopardize" the continued existence of the tricolored bat. The lack of mussel habitat precludes any adverse effects to the salamander mussel.

No impacts to eagles are expected given their absence at the Project site. The proposed project is not within the principle migratory route for the experimental population of whooping crane. Therefore, construction and operation of the proposed project is not expected to cause significant adverse impacts to federally protected birds or eagles.

The monarch butterfly was also identified as a candidate species through the IPaC database search. Construction of the project may cause the loss of some monarch eggs or caterpillars and small-scale temporary impacts to suitable milkweed or nectar plant habitat. The proposed project may affect individuals of this species but it is not likely to cause a trend toward federal listing. To help mitigate project impacts, an approximately two-acre area will be planted with a mix of low growing native grasses and wildflowers to provide habitat for pollinators, specifically monarchs.

D.7 Cultural Resources and Historic Properties

In coordination with the Kentucky Heritage Council (KHC), State Historic Preservation Office (SHPO), EKPC established an area of potential effect (APE) where assessment of project-related impacts to cultural resources would be undertaken. The APE for this project was established to include a 403-acre archaeology survey area where project ground disturbances are anticipated, as well as a 0.25-mile radius around the proposed solar array to encompass potential direct visual effects. This does not include any federal or tribal lands as defined pursuant to 36 CFR § 800.16(x).

EKPC contracted Stantec to perform a Phase 1 archaeological survey and cultural historic survey within the identified APEs. Based on the findings of the two reports, RUS submitted a recommended finding of no adverse effect in accordance with 36 CFR § 800.5(b) to the SHPO, the Cherokee Nation, the Eastern Band of Cherokee Indians, the Eastern Shawnee Tribe of Oklahoma, and the Osage Nation. On the recommendation of the SHPO, the RUS also sent their findings and supporting documentation to the Lexington-Fayette Urban County Government Historic Preservation Office and the Blue Grass Trust on September 9, 2024. In response to SHPO requests for clarification, Stantec submitted revised reports on September 17, 2024. The SHPO responded on October 17, 2024 and concurred with the recommended finding of no adverse effect for the project. The Cherokee Nation responded on September 6, 2024 and offered no objection to the project. The Lexington Historic Preservation Officer responded on September 23, 2024 and concurred with the recommended finding of no adverse effect for the project. No other responses were received by RUS within the 30-day comment period. In accordance with 36 CFR § 800.5(c)(1), RUS concluded the Section 106 review process and proceeded based on the recommended finding of no adverse effect to historic properties for the project.

D.8 Aesthetics

The Project is a passive use of the land consisting of rack-mounted solar panels and ancillary equipment. As such, the visual characteristics of the Project area would change from cultivated cropland to solar panel arrays. Rack-mounted solar panels are generally less than 15 feet in height at their highest tilt. With topography consisting of rolling hills and valleys, and with many roadways located within the valleys, large portions of the Project site are in areas that will not be visible from roadways or residences. The Project will incorporate vegetative buffers where the project is visible from residences or roadways, thus there would be no significant impacts on aesthetics resulting from the proposed action.

D.9 Air Quality and Greenhouse Gases

The primary Project impact to air quality and climate would occur from traffic and dust-based emissions (criteria air pollutants and greenhouse gases [GHGs]) generated by construction activities. However, these impacts would be limited in scale based on the localized area where construction would occur, the limited number of vehicles and equipment, and would be temporary in duration. EKPC's implementation of a SWPPP and erosion control plan would further reduce particulate matter emissions.

Operational activities are anticipated to generate negligible, long-term criteria air pollutant and GHG emissions associated with intermittent and short-duration vehicle or equipment operation. Additionally, long-term, the Project will help reduce criteria air pollutant and GHG emissions by providing a local source of renewable energy to the grid. The net benefit of GHG reduction from the proposed Project as opposed to the current coal and natural gas fossil fuel generation resources would be approximately 88,383 metric tons of CO_{2-e} annually. Using EPA's GHG Equivalencies Calculator (EPA, 2024), this would be the equivalent of an additional 21,035 gasoline-powered vehicles on the road for one year or the average annual electricity usage of 17,443 households.

D.10 Socio-Economic Impact Assessment/Environmental Justice

The Project will not be located within any high-density residential areas or minority-dominated area. No adverse effects to minority or low-income populations are expected as a result of the Proposed Action and no adverse effects were identified during development of this environmental assessment that will disproportionately impact minority or low-income populations. In addition, the Project is not taking place within a census tract block group identified as an Environmental Justice (EJ) community. EKPC is not aware of any job losses that will occur as a result of the Project. Therefore, no long-term or negative socioeconomic or EJ effects are anticipated as a result of the Project.

D.11 Noise

Construction of the proposed action will have a temporary impact on noise levels in the area of influence during construction. Noise will be generated by vehicles, machinery, and equipment used to construct access roads and laydown areas, as well as during the placement of solar panels and ancillary equipment. A construction sound analysis was completed considering impact pile driving and other typical construction equipment. The loudest predicted sound levels during construction would be from pile driving, with resulting levels at noise sensitive receptors (e.g., residences) expected to range from approximately 45 to 67 A-weighted decibel (dBA), which would be comparable to a passenger car at 65 miles per hour (25 feet), or large store air-

conditioning unit (20 feet). The increase in construction noise levels will occur during the roughly 12-month construction period.

The main sources of sound emissions from the Project operations will be the solar inverter stations and a substation transformer located in the Project substation. The highest predicted sound level is 43 dBA at a cemetery located within the Project boundary. It was included as a noise sensitive receptor in the acoustic modeling analysis to be mindful of the significance of a quiet environment. Besides the cemetery, the highest predicted sound level at a noise sensitive receptor is 40 dBA, see noise receptor locations. A sound level of 43 dBA is comparable to a quiet rural residential area with no activity. Nighttime operation will result in lower sound emissions as power will not be generated and therefore the solar inverters and substation transformer will be in stand-by mode with minimal sound produced.

D.12 Transportation

The traffic study assumed there would be no changes to the existing road system. The study concluded that the segments of these highways where the traffic counts were obtained would continue to operate at an acceptable Level of Service during the morning and afternoon peak hours during the construction period. It concluded that project construction would not adversely affect local traffic operations. Traffic effects during the operational period would be limited to vehicles used by up to three full-time employees working normal 40-hour work weeks and commuting schedules. Although some work may be conducted at night, both the normal schedules and potential night work were considered to have negligible impact to traffic or infrastructure.

D.13 Human Health and Safety

A Phase I Environmental Site Assessment conducted for the Project found no recognized environmental conditions that could pose potential safety issues with hazardous wastes or petroleum products. During construction, contractors will comply with all federal, state, and Occupational Safety and Health Administration (OSHA) regulations. Workers would also adhere to all state, local, and federal Personal Protection Equipment (PPE) safety rules (i.e., protective clothing, eyewear, and ear protection), and standard OSHA recommended BMPs for safety will be implemented. Compliance with regulations and standard manufacturers' protocols for storage, transportation, and use of any hazardous construction-related materials will be followed. Security fencing will remain in place throughout construction and operation of the Project. The public will not be allowed to enter the facility.

E. PUBLIC AND AGENCY INVOLVEMENT

A local newspaper advertisement announcing the availability of the EA was published in *The Lexington Herald* for three consecutive days, November 6-8, 2024. The EA was available for public review at: <https://www.rd.usda.gov/resources/environmental-studies/assessment/bluegrass-plains-solar-generating-facility>. The 14-day comment period ended on November 20, 2024. RUS did not receive any comments during the comment period.

F. FINDING OF NO SIGNIFICANT IMPACT

Based on the EA, RUS has concluded that the Project will have no significant effects to land use and important farmland, floodplains, wetlands, water resources, biological resources, aesthetics, air quality, socio-economic impact and environmental justice, noise, transportation, or human

health and safety. The Project will have no adverse effects on historic properties listed or eligible for listing on the National Register of Historic Places and is not likely to adversely affect federally listed species or designated critical habitat. The Project will not disproportionately affect minority or low-income populations.

In accordance with the National Environmental Policy Act, as amended, the Council on Environmental Quality Regulations, and RD's Environmental Policies and Procedures, RUS has determined that the environmental impacts of the Project have been adequately addressed and that no significant impacts to the quality of the human environment will result from construction and operation of the Project. Any final action by RUS related to the Project will be subject to, and contingent upon, compliance with all relevant federal and state environmental laws and regulations. Because RUS's action will not result in significant impacts to the quality of the human environment, RUS will not prepare an Environmental Impact Statement for its potential federal action associated with the Project.

G. LOAN REVIEW AND RIGHT OF ADMINISTRATIVE REVIEW

This FONSI is not a decision on a loan application and therefore not an approval of the expenditure of federal funds. Issuance of the FONSI and its notice concludes RUS's environmental review process. The ultimate decision on loan approval depends upon the conclusion of this environmental review process, in addition to financial and engineering reviews. Issuance of the FONSI and publication of notice will allow for these reviews to proceed. The decision to provide financial assistance is also subject to the availability of loan funds for the designated purpose in RUS's budget. There are no provisions to appeal this FONSI or the agency's other environmental determinations. Legal challenges to the FONSI may be filed in Federal District Court under the Administrative Procedures Act.

H. APPROVAL

This Finding of No Significant Impact is effective upon signature.

Dated:

CHRISTOPHER A. McLEAN
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Contact information

For additional information on this FONSI and EA, email: RUSPublicComments@usda.gov.