

Finding of No Significant Impact

**Northern Bobwhite Solar Generating Facility
Marion 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 Northern Bobwhite Solar Generating Facility (Project) in Marion 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 96-megawatt alternating current photovoltaic (PV) Northern Bobwhite Solar Generating Facility roughly two miles north of the city of Lebanon, Kentucky. The limits of disturbance for the Project would impact up to 635 acres. The new facility would be installed on properties generally located to the east of Kentucky Highway 55, north of US Highway 68, west of Kentucky Highway 1195, and south of the Marion/Washington County line.

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 intends to apply 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 Marion County 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 180,000 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 161-kilovolt (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 700 to 1,000 foot 161-kV generation transmission interconnect line (Gen-Tie Line) at EKPC’s existing Marion County Substation.

The Project would be situated on private land that has been leased under agreement with EKPC. Project power would be supplied to the existing electrical transmission system at the EKPC Marion County Substation. The lease agreements are structured for a base 20-year term with up to four additional consecutive five-year terms. Project operations are anticipated to start in 2025 once all approvals and construction are complete. Production for the Project is estimated at 208,850 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 40-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 Marion County 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 635-acre project area to be converted, 184.8 acres are considered Prime and Unique Farmland and 202.7 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 58, as based on a scale of 0 to 100 points. The percentage of farmland in Marion County having the same or higher value as the proposed project site is 44.95%, and the percentage of farmland in the county to be converted because of the proposed action is 0.37%. The Farmland Conversion Impact Rating form (AD-1006) indicates the project site has a total LESA value of 134 out of 260, which is considered minimal. Based on this minimal impact, it is expected the proposed project would not have significant impacts on farmland soils in the region.

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 Marion County from the Kentucky Flood Hazard Portal. The FIRM data indicates that the entire Project site is classified as Zone X, indicating minimal flood hazard. The 100-year flood plain (Zone AE) associated with Cartwright Creek is located adjacent to the southwest of the project site, but no designated floodplains are located within the Project area.

D.3 Wetlands

Six jurisdictional palustrine emergent wetlands (PEM) were delineated within the study area. The wetland delineation report was submitted to the U.S. Army Corps of Engineers (USACE) with a request for an Approved Jurisdictional Determination (AJD) on December 16, 2020. An AJD is on file with the USACE Louisville District office. The proposed action will not have any direct or indirect effects to wetlands within the area of influence. The preliminary layout for the Project avoided onsite wetlands and jurisdictional waters. There will be no alteration of the single PEM wetland within the Project boundary (Wetland W-E) as the facility design calls for it to be spanned

by the overhead Gen-Tie line with no ground-disturbing activity. All other identified wetlands lie beyond any land-disturbing activity and will also not be impacted by the Project.

D.4 Water Resources

The Project area lies within the area delineated in 2020. An analysis of the delineation data using geographic information system (GIS) computer software identified 26 stream features within, or directly adjacent to the 635-acre Project area. These include three perennial streams (2,725 linear feet), 15 intermittent streams (21,283 linear feet), and 11 ephemeral streams (1,930 linear feet). In addition, one open water pond (P-26) is located within the 635-acre Project LOD and six open water ponds are located directly adjacent to the Project LOD, totaling 4.6 acres, each of which were considered jurisdictional in the AJD by the USACE.

The project would be designed to maintain a 25-ft buffer from all jurisdictional WOTUS for installation of the solar panels and ancillary equipment. The preliminary design includes 11 stream crossings for access roads, seven of which cross intermittent and four that crosses an ephemeral stream. Each of these stream crossings will be culverted to maintain stream hydrology, and culverts will have a minimum invert burial depth to maintain ecological function. Unavoidable impacts associated with these stream crossings are eligible for coverage under USACE NWP 51 (Land-Based Renewable Energy Generation Facilities) and the associated KDOW General 401 Water Quality Certification (WQC).

Normal downstream flows will be maintained at each stream crossing, and materials will be placed in a manner so as not to be eroded by high flows. The Project Stormwater Pollution Prevention Plan (SWPPP) will include the use of BMPs to minimize potential water quality degradation of streams within the action area and downstream from construction related activities. The BMPs will be inspected as required by the stormwater construction permit to ensure they are functioning effectively. After construction activities have ended, all disturbed areas will be seeded and covered and all BMPs will be removed once the areas are stabilized and revegetated. By initiating these measures, the proposed action is not anticipated to have any adverse impacts on water quality or aquatic resources.

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 pasture/grassland uplands, forested uplands, and agricultural fields. 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. Stream crossings will be constructed in compliance with all applicable permit conditions to allow for movement of aquatic species and maintain the integrity of affected aquatic habitat and upland species that may utilize its resources.

While operations of the solar facility itself will have negligible effects on biological resources, the required perimeter fencing will likely impact existing movement of wildlife through the area.

However, given the extensive area of similar habitat in Marion County and Washington County to the immediate north of the Project site, these potential impacts are believed 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 2020, 2022, 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 June 7, 2024 that the Project "may affect but is not likely to adversely affect" the gray bat, Indiana bat, northern long-eared bat, clubshell, fanshell, orangefoot pimpleback, pink mucket, rabbitsfoot, and ring pink. EKPC has committed to restrict tree clearing during the non-volant time period (May 15 – July 31). 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 978-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 Cultural Resource Analysts, Inc. (CRA) 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, and the Osage Nation. The SHPO responded on May 13, 2024 and concurred with the recommended no adverse effect finding for the project. The Osage Nation responded on May 10, 2024, and offered no objection to 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 grazing, crop land, and farm structures 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 236,809 metric tons of CO_{2-e} annually. Using EPA's GHG Equivalencies Calculator (EPA, 2024), this would be the equivalent of an additional 56,361 gasoline-powered vehicles on the road for one year or the average annual energy usage by 46,736 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. The northeast component of the Project falls within a portion of Census Tract 9707 which has a relatively high low-income population compared to the rest of the county and state. However, the lack of significant impacts from the Project and proposed mitigation measures suggest that this community is unlikely to have disproportionate and adverse human health or environmental impacts. The community outreach activities that have taken place have provided accessible, relevant information on the Project, during which no concerns were expressed by the public. The low-cost clean energy source would provide a benefit to low-income households. As a result, the action will not have any disproportionate effects on minority or low-income populations in the area.

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. Worst-case construction sound levels at the nearest residence off Horan Lane are expected to range from 64 to 87 dBA with multiple pieces of equipment operating simultaneously, which is equivalent to a noisy restaurant, or a hairdryer,

blender, or power tool. The increase in construction noise levels will occur during the 12 to 18-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 expected daytime sound level at nearby sensitive receptors is 33 dBA or less at all 65 sensitive receptors evaluated. A sound level of 35 dBA is comparable to a quiet suburban nighttime environment. 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 Lebanon Enterprise* October 30, 2024 and November 6, 2024. A copy of the EA was available for public review at: <https://www.rd.usda.gov/resources/environmental-studies/assessment/northern-bobwhite-solar-project>. The 14-day comment period ended on November 13, 2024. RUS received one comment during the comment period from a representative of the Kentucky Resources Council on November 4, 2024, after the online RUS link to the EA was incorrectly printed in the public notice by the newspaper. RUS responded on the same day with the correct link, and no further comments were received from the Kentucky Resources Council.

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
Assistant Administrator
Electric Programs
Rural Utilities Service

Contact information

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