

FINDING OF NO SIGNIFICANT IMPACT
FOR
RARE EARTH ELEMENTS DEMONSTRATION FACILITIES
THE UNIVERSITY OF NORTH DAKOTA
MCLEAN COUNTY AND OLIVER COUNTY
NORTH DAKOTA
AND
GAGE COUNTY
NEBRASKA
DOE/EA-2247

LEAD AGENCY: U.S. Department of Energy
ACTION: Finding of No Significant Impact

SUMMARY:

Pursuant to implementing the procedural provisions of the National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] 4321 et seq.) and Department of Energy (DOE) NEPA implementing regulations (10 CFR 1021), the DOE Office of Fossil Energy and Carbon Management (FECM) completed the Final Environmental Assessment (EA) (DOE/EA-2247) to analyze the potential environmental, cultural, and socioeconomic impacts of funding the University of North Dakota's (UND) proposed rare earth element (REE) demonstration facilities project (the project).

UND would develop two mixed rare earth carbonate (MREC) concentrate production demonstration facilities co-located with existing coal mines; one adjacent to The Falkirk Mining Company near Underwood, McLean County, North Dakota and one adjacent to BNI Coal, Ltd. in Center, Oliver County, North Dakota. The MREC concentrate from both facilities would be transported by trucks and rail service to the existing Rare Earth Salts Separation & Refining (RESS&R) facility in Beatrice, Gage County, Nebraska. At the RESS&R facility, the MREC concentrate would be refined and purified to produce individually separated rare earth oxides or oxides blends and select rare earth metals or alloys. The RESS&R facility may also separate other critical minerals products, such as a cobalt concentrate.

The EA identifies, documents, and evaluates the potential environmental effects of implementing the proposed project. All discussions and findings related to the Proposed Action and the No-Action Alternative are presented in the attached EA and Appendices. The EA is hereby incorporated by reference.

Based on the analysis in the EA, DOE determined that implementing the project would not constitute a major federal action that would significantly affect the quality of the physical, biological, or human environment, within the meaning of NEPA. DOE further determined that there would be beneficial impacts to modernizing of infrastructure, including strengthening critical domestic manufacturing and supply chains. Therefore, the preparation of an Environmental Impact Statement is not required, and DOE is issuing this Finding of No Significant Impact (FONSI).

BACKGROUND:

To address the requirement of the Infrastructure Investment and Jobs Act for a REE demonstration facility, the DOE FECM, in collaboration with the Office of Manufacturing and Energy Supply Chains (MESC), issued a Funding Opportunity Announcement (FOA): DE-FOA-0002618 (FOA 2618) titled BIL - Rare Earth Element Demonstration Facility. FOA 2618 sought applications from academic institutions acting as the Prime Applicant for a Phase I Front-End Engineering Design (FEED) study and a Phase II design, construction, and operation of a first-of-a-kind, domestic, demonstration facility that produces REEs and critical minerals and materials (CMM) from domestic resources that include unconventional and secondary sources, such as acid mine drainage, mine waste, or other deleterious material. Accordingly, a key objective of the REE Demonstration Facility is the extraction, separation, and refining from unconventional feedstock materials to high-purity individual or binary rare earth metals (REM) and/or

CMM. Another of its goals is the upgrading and modernizing of infrastructure, including strengthening critical domestic manufacturing and supply chains.

FOA 2618 sought applications for the establishment of a REE Demonstration Facility as per section 40205 and rare earth minerals security as per section 41003(b). Detailed technical descriptions of the specific Areas of Interest (AOI) are provided in the sections that follow. The FOA invited applications in two different areas of interest:

- AOI 1: AACE Class 3 FEED Study for REE Demonstration Facility
- AOI 2: Completed AACE Class 3 FEED Study Separately Funded for REE Demonstration Facility

This effort focuses on rebuilding the U.S. leadership role in the economically viable, environmentally benign extraction, separation, and processing technologies arena. This supports the generation of sustainable U.S. domestic supply chains for onshore production of REEs and CMM for commercial commodities. This project will also provide environmental benefits using feedstocks derived from acid mine drainage, mine wastes, or other deleterious materials.

PURPOSE AND NEED:

The overall purpose and need for FECM, in collaboration with MESCC, is issuing awards, in whole or in part, with funds appropriated by the Infrastructure Investment and Jobs Act (IIJA). Project Sites were chosen by the Applicants in locations best suited for this type of facility and to be globally competitive.

The IIJA provided appropriations of \$258 million for the design, construction, and operation of an REE Demonstration Facility that demonstrates the extraction, separation, and refining from unconventional feedstock materials to high-purity individual or binary REM and/or CMM.

ALTERNATIVES CONSIDERED:

PROPOSED ACTION

NEPA requires DOE to assess the range of reasonable alternatives to the Proposed Action. Because DOE has been instructed by Congress on how to use this funding, DOE does not have the authority to use these funds for any purpose other than REE demonstration facility projects. DOE can only choose to fund or not fund any of the projects applying under a competitive FOA. DOE's proposed action/purpose is to provide funding, and the only available alternative is not funding the proposed project. Alternatives to the proposed project include any other project that meets the goals and objectives of the same FOA. Applicants to DOE's FOAs are assessed for environmental effects, and the results of those assessments are provided to the selecting official prior to selection, in accordance with 10 CFR Part 1021.216. There is one other project from the West Virginia University (WVU) currently completing the NEPA process for Phase II of the REE demonstration facility funding. DOE will analyze effects of the WVU project separately and did not discuss further for purposes of the EA. DOE's consideration of reasonable alternatives to UND's project under NEPA is therefore limited to the No Action Alternative.

NO-ACTION ALTERNATIVE

Under the No Action Alternative, DOE would not provide funding to UND's proposed project. For this analysis, DOE assumes that UND would not pursue alternative funding and would not construct the project. Therefore, extraction, separation and refining from unconventional feedstock materials to high purity individual or binary REM and/or CMM may not occur. Current operations at the RESS&R facility would continue.

ENVIRONMENTAL CONSEQUENCES:

The EA described the Proposed Action and its potential effects on multiple resource areas due to the construction and operation of the facilities. The resource areas assessed in the EA to determine the nature, extent, and significance of effects consisted of land use and recreation; cultural resources, including Native American interests; water resources, including wetlands, groundwater, and surface

water; air quality; greenhouse gases; noise; transportation; aesthetic and visual resources; biological resources; socioeconomics; health and safety; waste Management; geology and soils.

The resources evaluated for the RESS&R facility consisted of air quality; greenhouse gases; transportation; socioeconomics; health and safety; and waste management. The scope of work at the RESS&R facility is limited to the installation of equipment within an existing building. Effects on the following resources are not anticipated to be significant and, therefore, are not included in the scope of the EA: land use and recreation; cultural resources; water resources; noise, aesthetic, and visual resources; biological resources; soils; geology; prime farmland.

The EA examined the specific resource areas with both qualitative and, where applicable, quantitative information to concisely describe the nature and characteristics of the resource that the Proposed Action and No Action Alternative may affect, as well as the potential direct and indirect effects on that resource given proposed avoidance and minimization measures. A conclusion regarding the significance of effects was provided for each resource area. A review of the present and reasonably foreseeable federal and nonfederal actions that may contribute to a cumulative effect when added to the effects of the Proposed Action was included. The effects of past actions were reviewed and are included as part of the affected environment to establish the current condition of the resource (the baseline condition) the Proposed Action may affect.

Based on the analysis contained in this EA, DOE determined that the construction and operation of the project would not have significant adverse impacts, either individually or cumulatively, on the physical biological, or human environments. Implementation of the project would result in short-term and long-term negligible to minor adverse impacts, which are described in the following paragraphs. Under the No-Action Alternative, the project would not likely occur, and there would be no change or beneficial impacts incurred from current conditions.

LAND USE AND RECREATION

Construction of the Underwood MREC facility and the Center MREC facility would have no effect on recreational activities due to its location within the existing industrial property.

The project would not result in a change in current zoning at either location. The land use effects from the Underwood MREC facility and the Center MREC facility would be minor. Construction of the Underwood MREC facility would require the relocation of the reclamation soil piles and stormwater management ponds. The Proposed Action would fill one stormwater management pond, create one new stormwater pond south of the injection well facility, and expand two of the existing stormwater ponds to accommodate the new impervious surface. Construction of the aboveground facilities and the injection well would include the use of temporary laydown areas. Following construction, the contractor(s) would restore laydown areas to original conditions. All aboveground facilities, including the tailings and reclaim water pipelines would be on Minnkota or BNI properties. Following construction, the contractor(s) would restore laydown areas to original conditions.

CULTURAL RESOURCES

A Class III cultural resources inventory has been conducted for the Underwood and Center MREC facilities. A finding of No Historic Properties Affected is recommended for the proposed project. This recommendation was submitted to the State Historic Preservation Office for concurrence on October 16, 2024. The ND State SHPO concurred with DOE's determination by letter dated March 28, 2025 which is located in Appendix B of the EA.

WATER RESOURCES

Underwood MREC Facility

The construction footprint for the Underwood facility is not expected to affect wetlands. No wetlands were delineated in the Proposed Action footprint prior to mining. Best management practices (BMPs) would be implemented in and adjacent to the construction zone to minimize effects from stormwater runoff. Indirect

effects to wetlands may include increased flow from dewatered stormwater basins. The dewatering will likely follow existing drainage routes. If discharge rates are not controlled, there may be potential for erosion and increased sedimentation further downstream.

Construction of the Underwood MREC facility does not require fill or excavation of surface water features. The Underwood MREC facility would be on land previously used for mineral processing and have constructed stormwater basins to capture runoff. Stormwater basins were constructed to control runoff for the 10-year, 24-hour storm event. A new National Pollution Discharge Elimination System (NPDES) permit would be obtained prior to constructing and operating the facility.

The haul roads used to transport the mined lignite and waste material are not expected to change because of the Proposed Action. Therefore, there would be no additional effects to surface waters from the haul roads.

The Underwood MREC facility would use existing groundwater sources and make-up water from the Missouri River for dust suppression and for processing. Wastewater produced during processing would use an underground injection system and not discharge to surface waters. The Underwood MREC facility would not affect groundwater during construction; however, at full capacity, would generate an estimated 775 gpm of non-hazardous wastewater for disposal via injection wells during operations.

The proposed Class I injection wells would be designed, constructed, and operated in accordance with applicable state and federal regulations to protect the existing underground source of drinking water (USDW) in the vicinity of the Underwood MREC facility. The proposed injection wells would be constructed with multiple casing strings cemented to ground surface to provide multiple barriers against vertical migration of injected wastewater. The thick, low permeability confining unit will serve to isolate the injected wastewater within the injection interval (the Inyan Kara Formation). The annular space around the innermost injection tubing would be filled with fluid, pressurized, and continuously monitored to demonstrate mechanical integrity of the injection wells.

Center MREC Facility

Construction of the Center MREC facility would not occur within wetlands. The contractor would implement BMPs to limit construction stormwater runoff to the constructed channel where cooling water discharges to the lake. The final engineering design would incorporate permanent stormwater management. The Center MREC facility would construct a sedimentation basin in the southeast corner of the site boundary to capture and treat runoff. The basin would use the same design criteria as described for the Underwood MREC facility.

The Center MREC facility would not fill or excavate surface waters in the permanent or temporary construction footprint. The new facility would be adjacent to Nelson Lake, near the outflow channel for the cooling water return from Milton R. Young Station (MRY). A construction stormwater pollution prevention plan (SWPPP) would be developed to control stormwater runoff from disturbed areas.

The Center MREC facility would not affect groundwater during construction; however, at full capacity, would generate an estimated 508 gpm of non-hazardous wastewater for disposal via injection wells during operation. Ground disturbance activities or operations are not expected to interact with the fluvial glacial aquifer present near Nelson Lake. The Center MREC facility proposes the use of Class I injection wells for managing their process wastewaters.

The proposed Class I injection wells would be designed, constructed, and operated in accordance with applicable state and federal regulations to protect USDWs in the vicinity of the Center MREC facility. The proposed injection wells would be constructed with multiple casing strings cemented to the ground surface to provide multiple barriers against vertical migration of injected wastewater. The thick, low permeability confining unit will serve to isolate the injected wastewater within the injection interval (the Inyan Kara Formation). The annular space around the innermost injection tubing would be filled with fluid,

pressurized, and continuously monitored to continuously demonstrate the mechanical integrity of the injection well(s).

AIR QUALITY

Air emissions would result from the construction and operation of the Underwood and Center MREC facilities. During construction, air emissions would primarily consist of emissions from construction equipment and include criteria pollutants with exception for Pb. Dust generated from earth disturbing activities also gives rise to particulate matter. Emissions from construction vehicles would be minimized by using modern equipment with lower emissions ratings. If construction activities generate problematic dust levels, construction-related practices to control fugitive dust may be employed. Adverse effects on the surrounding environment are expected to be negligible due to the temporary disturbance during construction and the intermittent nature of the emission- and dust-producing construction phases.

The Underwood and Center MREC facilities operations would generate emissions of NO_x, VOCs, SO₂, CO, PM₁₀ and PM_{2.5}, HAPs, GHGs.

Any new emissions in the airshed that are subject to the Clean Air Act (CAA) permitting would have to comply with CAA regulations. Due to the location of the Underwood MREC facility and existing air quality conditions, the amount of anticipated air emissions, the baghouse controls that would be implemented during operation, and meeting applicable emission standards, effects on air quality because of the MREC facilities would not be significant.

GREENHOUSE GASES

Greenhouse Gas (GHG) emissions during construction and operation of the Underwood and Center MREC facilities is anticipated to be minimal. Identified GHG emissions associated with the construction and operation of the MREC facilities consist of direct emissions generated from combustion sources (e.g., stationary, and mobile on- and off-road sources) and land use change. Indirect emissions associated with the construction and operation of the MREC facilities include the GHG emissions associated with electrical consumption and transportation.

In Addition, the Proposed Action includes the purchase, installation, and operation of the equipment within the existing RESS&R facility. GHG emissions would result from the construction and operation of the equipment at the RESS&R facility. Identified GHG emissions associated with the construction and operation of the consist of direct emissions generated from combustion sources (e.g., mobile on- and off-road sources). Indirect emissions associated with the construction and operation of the Proposed Action include the GHG emissions associated with electrical consumption.

NOISE

Noise effects at the Underwood and Center MREC facilities are likely to be minimal as the area already includes similar, related industrial activity. Construction may result in short-term increases in noise level in the immediate area, with indirect effects associated with the additional activity on surrounding roads and in the broader community. These effects are expected to be like normal new construction activity, both temporary and with limited overall effect.

Once the Underwood MREC and the Center MREC facilities are in operation, increases in noise levels may occur in the immediate area of the facility, while at increasing distances the increase is expected to become indistinguishable from existing industrial activities. Tailings hauling would occur over existing haul routes, with effects expected to blend with existing haulage and yield minimal change to overall effects. Pumped tailings disposal will limit the potential for any noise associated with that process. Limited mobile equipment operations at the tailing's impoundment areas would blend with equipment activity already occurring in the mine area.

TRANSPORTATION

The project would result in an increase in traffic during construction and operation of the project. Moreover, no parking spaces would be eliminated by the project, no temporary road closures or detours

would be required during either the construction or operation of the project, and there would be no impacts to public transit. They would be accessing to/from the project site in shifts which further minimizes impacts to traffic. Therefore, while there would be an incremental increase in overall traffic, no adverse cumulative effects on the region's overall transportation network are anticipated as a result of the project.

AESTHETIC AND VISUAL RESOURCES

Construction of the Underwood MREC and Center MREC facilities would introduce additional permanent structures to the existing environment; however, the new features would align with the surrounding industrial development. Both facilities would be below the tallest structures in their surrounding areas but would be visible to landowners and community residents who live and travel nearby.

BIOLOGICAL RESOURCES AND THREATENED AND ENDANGERED SPECIES

The project would result in minor direct, indirect impacts on general biological resources. The impacts are limited due to the lack of natural habitat, current and planned land use, distance from potential wildlife habitat, and proximity to industrial activities and active agriculture, the Underwood and Center MREC facilities are anticipated to have little to no disturbance to wildlife and effects to biological resources would not be significant.

The U.S. Fish and Wildlife Service (USFWS) determination key identified that the Underwood MREC facility would have "no effect" to the Dakota skipper and Rufa Red Knot due to the lack of available habitat. It was determined that the Center MREC facility would have "no effect" to the Dakota skipper and whooping crane due to the lack of available habitat. It was also determined that the Underwood MREC facility "is not likely to adversely affect" the whooping crane and piping plover due to the lack of suitable habitat and abundance of similar habitat within the surrounding area. At the Center MREC facility it was determined that it was "is not likely to adversely affect" northern long-eared bat, piping plover, and rufa red knot due to the presence of suitable habitat and abundance of similar habitat within the surrounding area. The DOE requested USFWS concurrence with the threatened and endangered species determinations. USFWS concurred with the species determinations in accordance with Section 7(c) of the Endangered Species Act (ESA), as amended, 16 U.S.C 1531 et seq.

SOCIOECONOMICS

Construction and operation of the Underwood MREC, Center MREC, and RESS&R facilities would bring new socioeconomic activity to McLean, Oliver, and Gage Counties. The construction period of both facilities is estimated to last two years. Because construction requires a specialized workforce, most construction contractors and workers would temporarily relocate. During this time there would be an influx of construction workers, electricians, welders, laborers, and carpenters in both areas. Length of employment for workers would vary depending on skill and specialty of work need. There are expected to be 120 to 150 persons employed at each facility during construction. It is anticipated that much of the workforce will come from outside the region, due to the specialized nature of the work. There would be work available to local construction workers who have specialized experience and more for more general activities, such as such as clearing, grading, and earthwork.

A temporary increase in business for gas stations, convenience stores, restaurants, hotels, campgrounds, and retail shops in Underwood and other communities in the area during the construction is anticipated. Other business effects would be to services that are directly related to the construction of the Underwood MREC facility (fuel, building supplies, mechanics, etc.). Because of the workforce temporarily relocating, there would be short-term and minimal effects on housing for varying periods of time. Housing could consist of hotels, crew camps, RV camps, or more permanent rentals. During construction the local county and city governments could have short and/or long-term benefits from sales tax revenue collected. During operation of the Proposed Action only minimal property taxes would be collected.

During operation of the Underwood MREC and Center MREC facilities there would be an estimated 50-60 full time, permanent employees at each facility. There would be an estimated 10-20 full time, permanent employees at the RESS&R facility. There is potential for additional local services to occur during

Proposed Action operations due to maintenance and repair, or during operation for scheduled outages and maintenance. These new staffing opportunities provide minimal new growth in the area, which would not result in a noticeable increase. Therefore, overall socioeconomic effects are minimal.

HEALTH AND SAFETY

Construction and operation of the MREC facilities would result in the potential for health and safety effects to the personnel associated with construction, operations, and decommissioning, adjacent facilities employees, and members of the public.

The construction site would be managed to reduce risks to the public, who would not be allowed to enter any construction areas within the MREC facilities areas. The highest risk to the public would be increased traffic volume on the roadways near or adjacent to the MREC facilities due to commuting construction workers and equipment and materials transportation. These effects would be both temporary during construction and minimal during long-term daily operation of the MREC facilities. Based on these measures, it is not anticipated that the MREC facilities would create additional demands on human health services or the safety of the local community.

Construction personnel would receive training in areas relevant to construction and their job requirements including Hazard Communication/Right-to-Know, Hazardous Materials Management/Chemical Hygiene, Job Safety Assessment, and Hazardous and Solid Waste Management. Construction and operations personnel would use personal protective equipment appropriate for their work activities in accordance with applicable safety requirements. The MREC facilities would have eye wash stations and emergency showers for response to chemical exposure and from handling of other hazardous materials.

Construction and operation of the Proposed Action would result in the potential for health and safety effects to the personnel associated with construction and operations of the existing RESS&R facility. Potential health and safety effects to construction and operations personnel would include workplace (occupational) injuries during construction, operation, operation for mechanical and electrical equipment; fall hazards; vehicle accidents; dust hazards and potential occupational exposure to hazardous materials from transport, storage, and use of process chemicals (including diesel fuel, gasoline, lubricating oils, hydraulic fluid, paints, solvents, or other corrosive, flammable, or toxic chemicals). RESS&R could continue to operate their facility following their existing health and safety requirement. The Proposed Action would not result in a change in the health and safety practices at the RESS&R facility.

WASTE MANAGEMENT

Construction of the MREC facilities would generate non-hazardous waste such as construction debris and scrap metal. Waste such as spent solvents and used oils resulting from construction activities may also be generated. Waste, both hazardous and non-hazardous, would be managed pursuant to federal and state environmental regulations.

Waste streams would be profiled and either sent offsite to be disposed of by properly licensed disposal providers or disposed of in the MRY landfill in accordance with the landfill's permits. Hazardous waste would not be expected from any of the new waste streams, but if a waste was determined to be hazardous it would be disposed of in accordance with state and federal regulations.

The Proposed Action at the RESS&R facility could generate non-hazardous waste, spent solvents, and used oils. Waste, both hazardous and non-hazardous, would continue to be managed pursuant to federal and state environmental regulations. Therefore, no new waste management effects associated with the Proposed Action at the RESS&R facility are anticipated.

GEOLOGY

The project would have minor impacts on geology. The Underwood MREC and Center MREC facility each would include an injection well pad with two to three injection wells for disposal of non-hazardous wastewater. At the Underwood MREC facility an estimated 838 gpm of non-hazardous wastewater would be injected below the ground surface, and at the Center MREC facility an estimated 651 gpm of non-

hazardous wastewater would be injected below the ground surface. An approved injection well permit from the North Dakota Department of Mineral Resources would be received prior to injection. The Williston Basin has been identified as an ideal injection and no effects to geologic resources are anticipated.

SOILS

The project would have minor impacts on soil. Construction activities would result in a temporary and permanent effects to soils within the Underwood MREC and Center MREC facilities footprints.

Construction activities at the Underwood MREC facility would take place in an agricultural setting, adjacent to land previously disturbed for coal mining and the active Falkirk Mine. There is no prime farmland present with the Underwood MREC construction limits. Therefore, the Farmland Protection Policy Act (FPPA) would not apply to the Proposed Action at the Underwood MREC facility. No effects to agricultural commodity production in the surrounding area is anticipated.

Construction activities at the Center MREC facility would take place in a predominantly industrial setting, adjacent to the active BNI Coal mine. Consultation with the U.S. Department of Agriculture – Natural Resources Conservation Services (USDA-NRCS) indicates that the USDA-NRCS considers a portion of the Proposed Action area to be prime farmland and the FPPA would apply Approximately 0.32 acres of prime farmland and approximately 36.3 acres of farmland of statewide importance is with the Proposed Action area.

PUBLIC AVAILABILITY:

DOE encourages public participation in the NEPA process. The Draft EA was released for public review and comment. The public was invited to provide oral, written, or e-mail comments on the Draft EA to DOE during the comment period, which occurred from August 15, 2024, to September 14, 2024. Copies of the Draft EA were distributed to cognizant Federal and State agencies and Tribal Nations (on August 15, 2024), the Beatrice Public Library, Center-Oliver Library, and Underwood Public Library. A notice was published in the Beatrice Daily Sun newspaper in the State of Nebraska and the Hazen Star, Center Republican, and Bismark Tribune in the State of North Dakota. The Draft EA was also made available on the NETL website at <https://netl.doe.gov/node/6939>.

A total of two (2) comments from two (2) entities were received during the comment period. A response was received from the North Dakota's State Historic Preservation Office stating that the project would require a Class III cultural Resources Survey. A second response was received from the North Dakota Department of Environmental Quality, who identified permit requirements for the proposed project.

No other comments were provided by other agencies, Native American Tribes, non-governmental organizations, or the public.

MITIGATION REQUIREMENTS:

No additional mitigation measures beyond those contained in permits obtained or to be obtained by the project from the appropriate authorities is required.

FOR FURTHER INFORMATION ON THE DOE NEPA PROCESS CONTACT:

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DETERMINATION:

Based on this EA, DOE has determined that providing cooperative agreement funding to UND to construct the Underwood and Center MREC facilities and equipment installation at the RESS&R facility will not have a significant effect on the human environment. The preparation of an environmental impact statement is, therefore, not required, and DOE will be issuing a Finding of No Significant Impact.

Copies of the Final EA and this FONSI are available at DOE's National Energy Technology Laboratory's website at: <https://netl.doe.gov/node/6939>. The EA and the FONSI are also available at DOE's website at <https://www.energy.gov/nepa/doe-environmental-assessment>.

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Date