



National Environmental Policy Act (NEPA) Determination Categorical Exclusion

Recipient: Xcel Energy, Inc. (Xcel)

State: Colorado, Minnesota

Project Title: Multiday Iron-Air Demonstration (MIND) Project

Funding Opportunity Announcement Number: DE-FOA-0002867

Award Number: DE-CD0000029

OCED NEPA Control Number: OCED-0000029-002-CX

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

CATEGORICAL EXCLUSION APPENDIX, NUMBER, AND DESCRIPTION:

B4.14 Construction and Operation of Electrochemical-Battery or Flywheel Energy Storage Systems:

Construction, operation, upgrade, or decommissioning of an electro-chemical battery or flywheel energy storage system within a previously disturbed or developed area or within a small (as discussed at 10 CFR 1021.410(g)(2)) area contiguous to a previously disturbed or developed area Covered actions would be in accordance with applicable requirements (such as land use and zoning requirements) in the proposed project area and the integral elements listed at the start of appendix B of this part, and would incorporate appropriate safety standards (including the current National Fire Protection Association 855, Standard for the Installation of Stationary Energy Storage Systems), design and construction standards, control technologies, and best management practices.

B4.12 Construction of Powerlines: Construction of electric powerlines approximately 10 miles in length or less, or approximately 20 miles in length or less within previously disturbed or developed powerline or pipeline rights-of-way.

Rationale for Determination:

OCED is proposing to provide funding to Xcel Energy (Xcel) in support of its Multiday Iron Air Demonstration (MIND) Project. Xcel's MIND Project, in collaboration with its technology provider, Form Energy, would deploy two (2) 10 megawatt, 100-hour long-duration energy storage (LDES) battery systems at two of its existing coal plants planned for retirement in Colorado (Comanche Generating Plant) and Minnesota (Sherco Generating Plant). Each site will use an iron-air battery energy storage solution.

The Comanche Generating Plant (Comanche), located in Pueblo, Colorado, has been in operation since 1973 and is scheduled to be retired in 2030. The proposed site would be located on approximately 10 acres within the 695-acre Comanche Generating Plant property boundary and would consist of the following:

- Up to five (5) power blocks, each consisting of approximately 64 enclosures, and each enclosure containing approximately 6 battery modules. Each module comprises a stack of approximately 50 battery cells
- An overhead transmission line of approximately 1,000 feet that would interconnect with an existing, adjacent substation
- Installation of a water line with a length of approximately 1,500 feet from the plant water treatment plant to the project site, and
- Installation of a water demineralization skid, if necessary.

The Sherco Generating Plant (Sherco) has been in operation since 1976 and is scheduled to be retired in 2025. The proposed site would be located on approximately 10 acres within the 3,896-acre Sherco property boundary and would consist of the following:

- Up to five (5) power blocks, each consisting of approximately 64 enclosures, and each enclosure containing approximately 6 battery modules. Each module comprises a stack of approximately 50 battery cells
- Approximately 1.4 miles of underground feeder and interconnection powerlines to connect the project to an Xcel Energy solar installation that is currently under construction and independent of the proposed project
- An overhead transmission line of approximately 1,000 feet that would interconnect with an existing, adjacent substation
- A water demineralization skid
- Stormwater detention/retention
- Installation of a water line with a length of approximately 1,500 feet from an existing on-site water treatment plant to the LDES project site
- Onsite rerouting of an underground water line and sewer line connecting the existing plant to the city sewer system, and
- A temporary laydown and storage area within the project site that will ultimately be used for parking upon completion of construction.

Land Use

Comanche

The project would be located within a 695-acre, existing industrial lot and was previously used as a laydown yard and parking area. The previously disturbed 10-acre project site currently consists of sparse scrub vegetation. The overhead transmission line would extend from the project site, crossing a gravel parking lot to connect to an existing substation. There would be minimal ground disturbance associated with the overhead power line and no vegetation would be impacted. The proposed underground water line would extend approximately 1,500 feet from an existing water treatment plant to the project site. The water line would be approximately 6 to 8 feet below grade.

Sherco

Construction at the Sherco site would temporarily impact approximately 32 acres within the Sherco Generating Station. This includes construction workspace for the 10-acre site, underground feeder line, and water line. The temporary workspace also includes a parking and laydown area. The site currently consists of open grassland, scrub/shrub cover, and cultivated cropland. After construction, the site would be classified as industrial cover, with the sparse scrub converted to gravel and paved surfaces to support project facilities, access roads, and parking. The right-of-way associated with the underground feeder and interconnect lines would become developed open space.

Cultural Resources

Comanche

OCED initiated Section 106 consultation for the Comanche site on July 25, 2024. The Colorado State Historic Preservation Officer (SHPO) concurred with OCED's finding of no historic properties affected on July 31, 2024. OCED received comments from the Northern Arapaho Tribe Tribal Historic Preservation Officer indicating that they did not have enough information to consult on the presence or absence of cultural resources since there has not been a Class III cultural resources assessment completed within the area of potential effect. As a result, Xcel conducted pedestrian cultural resource surveys at the Comanche site and OCED commenced consultation. Consultation concluded on October 15, 2024. No additional comments were received. Xcel would comply with its Unanticipated Discoveries Plan should any cultural items be located during construction.

Sherco

OCED initiated Section 106 consultation on July 25, 2024. On September 30, 2024, the Minnesota SHPO concurred with OCED's finding of no historic properties affected.

Water Use and Quality

No wetlands or waterbodies were identified within the project area at the Comanche and Sherco sites. Xcel does not anticipate encountering groundwater during installation of foundations or underground piping at either site. Because there are no anticipated impacts on wetlands or waterbodies, no permits or consultation with the U.S. Army Corps of Engineers is required. Xcel would implement its Stormwater Pollution Prevention Plan to ensure there would be no impact to water sources during operation of the project.

Vegetation and Wildlife

The U.S. Fish and Wildlife's Information for Planning and Consultation (IPaC) system was used to obtain an official species list for the Comanche and Sherco sites.

Comanche

Federally Listed Species

The gray wolf (endangered), Eastern black rail (threatened), greenback cutthroat trout (threatened), and monarch butterfly (candidate species) were identified as potentially occurring in the project region. Based on the limited size of the project area and lack of suitable habitat, DOE has determined there

would be no effect to the gray wolf, eastern black rail, or greenback cutthroat trout. Further, OCED does not anticipate adverse effects to the monarch butterfly. No critical habitat exists at the project site.

State Listed Species

No state-listed species or critical habitat was identified within the Comanche project area.

Sherco

Federally Listed Species

The whooping crane (endangered), northern Long-eared bat (endangered) and the tricolored bat (proposed endangered) were identified by IPaC as species that have the potential to occur in the project region. Based on the lack of suitable habitat present within the project area, DOE has determined there would be no effect to the whooping crane, northern long-eared bat, or tricolored bat.

State Listed Species

State-listed species that would potentially be impacted by construction of the project include the loggerhead shrike, Blanding's turtle, and monarch butterfly. There is suitable habitat within the project area for each of these species.

The project site is within the breeding range of the loggerhead shrike, contains suitable nesting and foraging habitat for this species, and the species has been observed near the site. Based on the limited project area and relative abundance of suitable habitat in the area and within the state, OCED does not anticipate adverse effects to the loggerhead shrike. In its April 18, 2023 consultation letter, the Minnesota Department of Natural Resources (MDNR) recommended that tree/shrub removal be avoided during the loggerhead shrike breeding season (April 1- July 31). Xcel would comply with this recommendation.

The Blanding's turtle is a state-listed semi-aquatic freshwater turtle that inhabits wetlands. While there are no wetlands directly within the project area, nearby wetland complexes provide suitable habitat. Based on the relative abundance of suitable habitat within the areas adjacent to the Sherco Generating Plant and the lack of wetlands onsite, OCED does not anticipate adverse effects to the Blanding's turtle . The MDNR recommends that the Blanding's turtle flyer be given to all contractors in the area to avoid take. Contractors must be made aware of that the turtles may be present in the area and should move them away from imminent danger. In addition, Blanding's turtle observations must be reported to MDNR. Xcel would comply with these recommendations.

Habitat for the monarch butterfly, a candidate federal species, includes milkweeds and native prairies. Vegetative surveys identified the presence of milkweed within the 10-acre project site. Milkweed is abundant in areas adjacent to the project site. OCED does not anticipate adverse effects to the monarch butterfly.

In addition to species-specific measures, the MDNR also recommended wildlife-friendly erosion control measures, such as erosion control blankets, be used instead of "bio-netting" or plastic-containing types to limit wildlife impacts. MDNR recommended that facility lighting be shielded and face downward. Lighting should also limit LED blue light hues, which have been known to be harmful to birds, insects,

and other animals. Xcel would comply with the MDNR's recommendations to limit impacts to wildlife, birds, and insects.

Migratory Birds

While habitat for migratory birds exist within the general project area, no suitable habitat exists within the area of impact for the project site. OCED does not anticipate adverse effects to migratory birds.

Air Quality

Construction emissions would be generated by activities that include, but are not limited to clearing, grading, and construction vehicle operation. Emissions of criteria pollutants include volatile organic compounds (VOC), carbon monoxide (CO), nitrogen oxides (NO_x), and sulfur dioxide (SO₂). Greenhouse gas pollutants that would be emitted during construction include carbon dioxide (CO₂) and methane (CH₄). Construction emissions are identified in the table below. Emissions are presented in tons per year (tpy). These emissions are temporary and would subside to pre-construction levels once construction is complete.

Construction Activity	VOC	CO	NO_x	SO₂	PM₁₀	CO₂	CH₄
Comanche	0.40	2.55	2.39	2.99	0.05	1,010.17	0.01
Sherco	0.33	2.11	1.94	2.79	0.09	964.19	0.02

Operational air emissions associated with the both the Comanche and Sherco sites would be limited to water vapor, hydrogen and oxygen. Operation of the project would not result in emissions of criteria pollutants. Emissions associated with operation of the project would be minimal and would replace the coal-fired emissions associated with the retired plant. All emissions would be allowable under the current Title V permit for each facility.

Conclusion

Construction and operation of the MIND Project would result in minimal adverse impacts on environmental resources. All project activities, as described above, are categorically excluded from further NEPA review. The National Historic Preservation Act Section 106 consultation process and conclusions is described in the rationale above.

Consultations (Section 106 NHPA, Section 7 ESA, etc.):

The National Historic Preservation Act Section 106 consultation process and conclusions is described in the rationale above.

☒ The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not:

- (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders;

(2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities;

(3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases;

(4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B (4) of 10 CFR Part 1021, Subpart D, Appendix B;

(5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B (5) of 10 CFR Part 1021, Subpart D, Appendix B.

☒ There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal. The proposed action has not been segmented to meet the definition of a categorical exclusion.

☒ This proposal is not connected to other actions with potentially significant impacts (40 CFR 1501.9(e)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.1(g)(3)) and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

☐ DOE has determined that work to be carried out outside of the United States, its territories and possessions is exempt from further review pursuant to Section 5.1.1 of the DOE Final Guidelines for Implementation of Executive Order 12114; "Environmental Effects Abroad of Major Federal Actions."

☒ The proposed action is categorically excluded from further NEPA review.

☐ A portion of the proposed action is categorically excluded from further NEPA review.

Notes: Construction of the MIND Project cannot begin until OCED has confirmed receipt of all necessary pre-construction permits and approvals.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

OCED NEPA Compliance Officer Signature:

Date: