

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION**



RECIPIENT: Niron Magnetics, Inc.

STATE: MN

PROJECT TITLE : Variable Flux Field Intensifying Motors Using Iron Nitride Permanent Magnets

Notice of Funding Opportunity Number
DE-FOA-0003155

Procurement Instrument Number
DE-EE0011722

NEPA Control Number
GFO-0011722-001

CID Number
GO11722

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:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

B3.6 Small-scale research and development, laboratory operations, and pilot projects

Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Niron Magnetics, Inc (Niron) to design, fabricate, assemble, and test iron nitride (FeN) permanent magnet–based electric motors and associated control systems.

The motor assembly design and fabrication would occur at Niron’s research and manufacturing laboratories in Minneapolis, MN. Analytical/modeling and laboratory support would occur at the Illinois Institute of Technology’s motor laboratory, in Chicago, IL. Motor testing would occur at the Oak Ridge National Laboratory in Oak Ridge, TN. Control software and simulation model development as well as the testing of motor hardware would occur at Michigan Center Drive System Design in Farmington Hills, MI. Motor technology development, motor prototyping, and end-of-line testing of motor assemblies would occur at Alvier Mechatronics, Aktiebolag in Helsingborg, Sweden.

Project-related hazards would include the use of shop equipment and tools (e.g., moving parts, pinch points, cutting surfaces) during fabrication and assembly operations. There may also be electrical hazards associated with integration and checkout of inverter/controller hardware, instrumentation, and powered bench testing. Ergonomic and material-handling hazards from lifting, positioning, and fixturing heavy or awkward components (e.g., housings, rotors/stators, fixtures, power electronics enclosures) may occur during the course of the project. Potential exposure to nuisance dust/particulates, sharp edges during routine machining/finishing and handling of metallic components (e.g., laminations, fasteners, structural parts), and thermal hazards from heat components may also occur as part of project operations. Hazardous materials would be managed in accordance with federal, state, and local environmental regulations and all existing environmental, health, and safety policies and procedures that would be followed, including employee training, proper protective equipment, engineering controls, monitoring, and internal assessments. Additional policies and procedures would be implemented as necessary as new health and safety risks are identified.

All work would be performed in existing facilities. No ground disturbances activities and no changes to the equipment or mission at the existing facilities would occur as part of this award. None of the project activities are expected to require applying for new or modified permits, licenses, or authorizations.

DOE has considered the scale, duration, and nature of proposed activities to determine potential impacts on resources, including those of an ecological, historical, cultural, and socioeconomic nature. DOE does not anticipate impacts on these resources that would be considered significant or require DOE to consult with other agencies or stakeholders.

Any work proposed to be conducted at a federal facility may be subject to additional NEPA review by the cognizant federal official and must meet the applicable health and safety requirements of the facility.

DOE has made a final NEPA determination.

Notes:

Advanced Materials & Manufacturing Technologies Office
NEPA review completed by Chris Akios, 03/16/2026

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposal fits within a class of actions that is listed in Appendix B to 10 CFR Part 1021 or Appendix B and C of DOE’s NEPA Implementing Procedures (June 30, 2025). To fit within the classes of actions listed in Appendix B to 10CFR Part 1021, or Appendix B of DOE’s NEPA Implementing Procedures, a proposal must satisfy the conditions that are integral elements of the classes of actions in Appendix B of both 10 CFR Part 1021 and DOE’s NEPA Implementing Procedures.

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.

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.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  NEPA Compliance Officer Date: 3/16/2026

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
- Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____
Field Office Manager