

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



RECIPIENT: Amprius, Inc. dba Amprius Technologies, Inc.

STATE: CA

PROJECT TITLE : High Throughput Source-less Plasma Deposition of Structured Silicon Anodes for Lithium-Ion Batteries

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002553	DE-EE0010224	GFO-0010224-001	GO10224

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:

**A9
Information
gathering,
analysis, and
dissemination**

Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)

**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 funding to Amprius Inc to design, develop, fabricate, install, qualify, optimize, and demonstrate a source-less plasma technology for the mass production of nanowire-based silicon anodes. The project would be completed over two Budget Periods (BPs) with a Go/No-Go decision point between each BP. This NEPA determination is applicable to both BPs.

After tool design, a capacity coupled plasma manufacturing system setup would be selected, customized, installed, and qualified. It would be capable of a high rate of silicon deposition. The silicon deposition hardware and process would be further developed and optimized. Anodes produced by source-less plasma would be assembled into full cells and evaluated for performance.

The majority of project activities would occur at Amprius Technologies Inc. in Fremont, CA. The design of foil support, frames, and handling would occur at Jacobs Engineering Group Inc. in Appleton, WI. Part fabrication activities (metal cutting/machining) would be done at existing machine shops, not yet identified.

At Amprius, physical modifications of existing facilities would be required for the installation of the capacitively coupled plasma equipment. This would include wall penetrations and connections to input gases (silane, nitrogen, argon, and hydrogen), process cooling water, exhaust ducts, and power. These facilities already exist in the location within the building and the work involves connections to this infrastructure. This would require permitting from the municipal building and fire departments. Permits would be obtained prior to conducting these modifications.

Project activities would involve the use and handling of various hazardous materials, including silane gas and battery electrolyte. Any risks associated with the handling of these materials would be mitigated through adherence to established health and safety policies and procedures, including employee training, the use of personal protective equipment, engineering controls, monitoring, and internal assessments. All waste products would be disposed of by licensed waste management service providers. Amprius and its project partners would observe all applicable Federal, state, and local health, safety, and environmental regulations.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Advanced Manufacturing Office
Review completed by Shaina Aguilar on 8/16/22.

FOR CATEGORICAL EXCLUSION DETERMINATIONS

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 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), 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.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Electronically Signed By: Casey Strickland Date: 8/16/2022
NEPA Compliance Officer

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