

PMC-ND
(1.08.09.13)

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

**RECIPIENT:** Solectria Renewables, LLC**STATE:** MA

PROJECT TITLE: THE BREKTRIA 500 - A BREAKTHROUGH IN TECHNOLOGY AND POWER DENSITY FOR A 500kW UTILITY-SCALE STRING INVERTER

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002243	EE0009328	GFO-0009328-001	

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.)

B5.15 Small-scale renewable energy research and development and pilot projects

Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to Yaskawa Solectria Solar (Yaskawa) to develop a 500 kW utility-scale string inverter device. Prototype inverter devices would be developed and tested, both in laboratory and outdoor settings. The project would be completed over three Budget Periods (BPs), with a Go/No-Go Decision Point in between each BP.

Project work to be performed during BP1 would focus on the development of a laboratory scale 125 kW inverter and a 500 kW prototype inverter (alpha prototype). Proposed project activities would include component and firmware development, component fabrication, equipment characterization, and component assembly.

BP2 work would consist of device testing and development of a 500 kW prototype inverter (beta prototype). Operational and stress testing would be performed at the component and device levels. The alpha prototype would be used as the basis for device optimization in developing the beta prototype design.

BP3 work would center on product readiness development. Processes and procedures relating to future commercial manufacturing would be developed. Proposed project activities during this BP would include device assembly specifications development, circuit board fabrication, component testing, completion of circuit board certifications, rack design development, fabrication of the beta prototype inverter, and field testing of the beta prototype inverter. Circuit board fabrication would be performed by a third-party manufacturer. Approximately 10 – 20 circuit boards would be manufactured.

Yaskawa would coordinate all project activities. All project work would be performed indoors, at purpose-built laboratory facilities, except for field testing to be performed as part of BP3. This work would be performed at an outdoor testing site. Prototype fabrication and assembly would be performed at the Yaskawa America manufacturing facility in Buffalo Grove, IL. Stress and performance testing would be performed at Yaskawa's laboratory facilities in Lawrence, MA. Component enclosure testing may be performed at Yaskawa's laboratory facilities in Oak Creek, WI.

Additional design/operation of inverter power circuit boards and firmware development would be performed by project partner BREK Electronics at its laboratory facilities in Englewood, CO.

Field testing of a prototype inverter device would be performed as part of BP3. Site selection has not yet occurred for the installation and testing of the device. However, installation and testing would occur within the bounds of a dedicated solar PV testing facility that routinely performs these activities as part of its regular course of business. Installation work would consist solely of equipment modifications. An inverter prototype would be integrated into existing solar PV equipment. No facility modifications or ground-breaking activities (e.g. trenching/digging) would be required.

Because outdoor testing would be performed at a dedicated testing facility and no ground disturbance would be required, DOE has determined that there would be no potential for adverse impacts to sensitive resources at any selected location.

Project work would involve the use and handling of industrial chemicals (e.g. liquid nitrogen) and powered equipment. All such handling would be performed in controlled laboratory environments. To mitigate potential hazards Yaskawa and its project partners would adhere to established corporate health and safety policies and procedures. Protocols would include personnel training, the use of personal protective equipment, engineering controls, monitoring, and internal assessments.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

The NEPA determination does not apply to ground disturbing activities. If any ground disturbance is required, the Recipient shall notify their DOE Contracting Officer prior to initiating any such activities and DOE will determine whether additional NEPA review is required. The recipient should not initiate ground disturbing activities until they are notified by DOE that such activities are authorized.

Notes:

Solar Energy Technologies Office
This NEPA determination requires a tailored NEPA Provision.
NEPA review completed by Jonathan Hartman, 01/14/2021

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: Kristin Kerwin

NEPA Compliance Officer

Date: 1/20/2021

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: _____

Field Office Manager

Date: _____