

PMC-ND

(1.08.09.13)

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

**RECIPIENT:**GreenBlu, Inc.**STATE:** NJ

PROJECT TITLE: High Efficiency, Zero Liquid Discharge, MultipleEffect Adsorption Distillation

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001778	DE-EE0008395	GFO-0008395-001	

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), 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 federal funding to GreenBlu, Inc. for the design, development, fabrication and laboratory testing of an adsorption distillation prototype and its components. The project would be completed over three budget periods (BP). This NEPA determination reviewed is to review all BP 1-3 task and subtasks as identified in the project's Statement of Project Objectives.

Project activities would include: stakeholder engagement; project management and reporting; data analysis; modeling; design and development of a prototype adsorbent production method; fabrication of adsorbent modules; design and testing of components including necessary pumps, piping and instrumentation; testing of an assembled integrated system; development and testing of remote control and monitoring software; final fabrication and assembly of components, verification, testing and measurement of components and the prototype distiller over a wide operational range to determine operational parameters; and completion of a conceptual design and testing of a Zero Liquid Discharge crystallizer. An accelerometer would be used to shock test adsorbent modules. Testing of components, prototype distiller, Zero Liquid Discharge crystallizer and final distiller would occur in existing laboratory facilities located in an industrial park (GreenBlue Headquarters, Hamilton NJ).

The project would involve the use, machining, and handling of various hazardous materials including metals and flammable solvents, and would also utilize non-hazardous materials including graphite, silica gel, and calcium chloride. All such handling would occur in existing laboratory facilities located in an industrial park. No change in the use, mission, or operation of existing facilities would result from any of the proposed project activities. Corporate health and safety policies and procedures would be followed. Personal protective equipment including use of masks, gloves and goggles would be used during laboratory operations. Small amounts of solvents would volatilize during use, but would be covered to minimize evaporation. Small amounts of sulfuric acid would vaporize if graphite is expanded onsite but it would be captured using a water filter. All flammable and hazardous materials would be managed and disposed of in accordance with applicable federal, state, and local environmental regulations. Graphite nanosheets are used in the adsorbent but are not considered hazardous and would be disposed of as solid

waste.

Based on the review of the proposal, DOE has determined the proposal fits within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410(2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. This proposal is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved. If the Recipient moves forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of a final NEPA decision, the Recipient is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share.

Note to Specialist :

Solar Energy Technologies Office
This NEPA determination does not require a tailored NEPA determination.
NEPA review completed by Lori Gray, 8/14/2018

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Casey Strickland Date: 8/15/2018
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

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

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