

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** University of California, Los Angeles**STATE:** CA

PROJECT TITLE: Energy Where it Matters: Delivering Heat to the Membrane/Water Interface for Enhanced Thermal Desalination

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001778	DE-EE0008391	GFO-0008391-001	GO8391

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 the University of California, Los Angeles (UCLA) for the design, development, fabrication, and testing (at the lab-scale and in the field) of thermally and electrically conducting membrane distillation membranes and systems for the treatment of high salinity wastewater generated from oil and gas production activities. The design, development, fabrication and lab testing would take place at UCLA and at Colorado School of Mines (CSM) in Golden, CO. Field testing would occur at Membrane PRO Services, LLC, an industrial water treatment facility located in Wasco, CA and a techno-economic evaluation of the desalination process would occur at the National Renewable Energy Lab (NREL) in Golden, CO. This NEPA determination is only for Budget Period (BP) 1 and 2 tasks and subtasks as identified in the Statement of Project Objectives. Additional information is needed regarding field testing prior to completing the NEPA review for BP3. As such, all tasks associated with BP3 will require further NEPA review once additional information is available.

Project activities occurring at NREL and a portion of those at CSM would be limited to computer modeling and analytical activities. The remainder of the activities at CSM and those occurring at UCLA would involve laboratory scale fabrication, characterization, and testing of membranes and water quality. Project work would occur within existing dedicated laboratories designed for this type of work and would utilize standard equipment; therefore no modifications, new permits, additional licenses and/or authorizations would be necessary. No ground disturbing activities, no changes in operation of existing facilities, and no installation of equipment outdoors would occur for project activities.

The project would involve the use of carbon nanotubes, which would be deposited onto porous supports and cross-linked in lace with supporting polymers. These materials pose an inhalation risk while in powder form so all work with nanotube powders would be done in a chemical fume hood equipped with a sash that prevents the release of the powders into the room. Furthermore, lab workers would wear appropriate personal protective equipment, including a respirator, when handling nanotube powder. Disposal would be by sealing powders in plastic waste containers that

would be handled by university waste disposal services. DOE does not anticipate any impacts to resources of concern due to the proposed activities in BP1 and BP2.

Any work proposed to be conducted at a DOE laboratory may be subject to additional NEPA review by the cognizant DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

Based on the review of the proposal, DOE has determined that tasks within BP1 and BP2 fit 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. Tasks and subtasks within BP1 and BP2 are excluded from further NEPA review.

NEPA PROVISION

DOE has made a conditional NEPA determination for this award, and funding for certain tasks under this award is contingent upon the final NEPA determination.

Insert the following language in the award:

You are restricted from taking any action using federal funds, which would have an adverse affect on the environment or limit the choice of reasonable alternatives prior to DOE/NNSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:

[Budget Period 3 tasks and subtasks](#)

This restriction does not preclude you from:

[Budget Period 1 tasks and subtasks](#)

[Budget Period 2 tasks and subtasks](#)

If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

Insert the following language in the award:

You are required to:

Any work proposed to be conducted at a DOE laboratory may be subject to additional NEPA review by the cognizant DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

Note to Specialist :

[Solar Energy Technologies Office](#)

[This NEPA determination requires a tailored NEPA provision.](#)

[NEPA review completed by Casey Strickland 08/20/2018](#)

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:

 [Kristin Kerwin](#)

NEPA Compliance Officer

Date: [8/20/2018](#)

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: _____
Field Office Manager

Date: _____