PMC-ND

(1.08.09.13)

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

RECIPIENT: University of Texas at Dallas **STATE:** TX

PROJECT TITLE : Non-Evaporative Drying of Porous Materials Using Thermo-Responsive Polymer/Felt Composites

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002553	DE-EE0010200	GFO-0010200-001	GO10200

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 the University of Texas at Dallas to develop a non-evaporative drying process of porous materials, specifically for pulp and paper. 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.

Project participants would design, optimize, and develop thermo-responsive polymer/felt composites that effectively absorb and desorb water from paper. The most promising polymers would be used to create a conveyor belt composite and tested in a paper machine for water extraction. Water would be absorbed into the conveyor belt and then controllably removed from the belt as a liquid via low-grade heat. This conveyor belt would be integrated with a state-of-the-art drying machine and tested for effectiveness.

Proposed project activities by location are listed below:

University of Texas at Dallas – Richardson, TX
• Design and fabrication of thermo-responsive polymer/felt composites
• Techno-economic analysis

Western Michigan University – Kalamazoo, MI
• Modeling, system design, and integration of thermo-responsive conveyor belt into existing pilot paper drying machine for pilot-scale paper drying testing

National Renewable Energy Laboratory – Golden, CO
• Create thermo-responsive polymer/felt composites and conveyor belts, modeling, and techno-economic analysis

No changes in the use, mission, or operation of existing facilities would be required as part of this project and no additional permits would be required in order to conduct any of the work activities. Project activities would involve the use and handling of various hazardous materials, including metals and industrial solvents. Any risks associated with the handling of these materials would be mitigated through adherence to established health and safety policies and procedures which would include 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. The University of Texas at Dallas and its project partners would observe all applicable Federal, state, and local health, safety, and environmental regulations.

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.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Advanced Manufacturing Office
Review completed by Shaina Aguilar on 8/3/22.

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: 8/3/2022

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