U.S. Department of Energy
Categorical Exclusion Determination Form

Submit by E-mail

Proposed Action Title: (0670-7096) Harvard University - Novel Slippery Coatings for Extreme Energy-Savings Associated with Fluid Handling in Oil Pipelines and Water Circulation Systems

Program or Field Office: Advanced Research Projects Agency - Energy (ARPA-E)

Location(s) (City/County/State): Boston, MA; State College, PA

Proposed Action Description:

Funding will support efforts to develop a novel slippery coating technology that may have many different potential energy applications, including improving the energy efficiency and flow of pipeline transport and water circulation systems, and protecting photovoltaic arrays from dust. Project tasks will be conducted in two phases. In Phase I, the project team will conduct technical and economic studies to determine the appropriate applications for the coating technology, including evaluation of four key technical areas: (1) drag reduction, (2) fouling, (3) dust, and (4) ice. In Phase II, the project team will develop and test the coating on selected materials, both at the lab-scale and in a relevant operational environment.

This determination covers Phase I project tasks only. Phase I includes all activities performed during the first two quarters identified in Attachment 3 to the Award. All Phase I project tasks will be conducted in dedicated university laboratory, testing, and office facilities at Harvard Medical School (Boston, MA) and Pennsylvania State University (State College, PA) in accordance with established safety and materials/waste management protocols, and pursuant to applicable Federal, State, and local regulatory requirements.

Before proceeding to Phase II of the project, Harvard must submit an updated Environmental Impact Questionnaire for review by the ARPA-E NEPA Compliance Officer. In addition, the ARPA-E NEPA Compliance Officer must issue a new NEPA determination before the project team may initiate Phase II project tasks.

Categorical Exclusion(s) Applied:

A9 - Information gathering, analysis, and dissemination

B3.6 - Small-scale research and development, laboratory operations, and pilot projects

For the complete DOE National Environmental Policy Act regulations regarding categorical exclusions, including the full text of each categorical exclusion, see Subpart D of 10 CFR Part 1021.

Regulatory Requirements in 10 CFR 1021.410(b): (See full text in regulation)

☑ The proposal 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 proposal that may affect the significance of the environmental effects of the proposal.

☑ The proposal 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.

Based on my review of the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1B), I have determined that the proposed action fits within the specified class(es) of action, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

NEPA Compliance Officer: Date Determined: 04/01/2013