U.S. Department of Energy
Categorical Exclusion Determination Form

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Proposed Action Title: Solicitation on Topics Informing New Program Areas Targeted Topic R: Lowering CO2: Models to Optimize Train Infrastructure, Vehicles, and Energy Storage LOCOMOTIVES (FOA No. DE-FOA-0001953) and LOCOMOTIVES SBIR/STIR (FOA No. DE-FOA-0001954)

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): IL; VA; OR; PA; NC; CA; CO; TX

Proposed Action Description:

The LOCOMOTIVES Program seeks to develop validated planning and simulation tools that are able to model the deployment of a wide range of new propulsion and energy storage (ES) technologies in the Class 1 rail freight sector and that determine associated lifecycle GHG emissions and levelized cost of Mt-km values over various time scales. LOCOMOTIVES teams will (1) develop comprehensive, route-by-route models; and (2) reduced-scope models. ARPA-E envisions one or more models will be made publicly available at the conclusion of work to support the cost-benefit analysis of fleet GHG emission decarbonization. If successful, LOCOMOTIVES planning tools will enable analyses that ensure ES development for rail freight ultimately addresses the techno-logistical issues required for decarbonizing rail freight, and will inform priorities in ES development and deployment.

The LOCOMOTIVES Program is composed of 4 small-scale research and development projects that will be conducted by universities, a non-profit entity, for-profit entities, and federal laboratories. This Determination covers the 4 projects (listed in Attachment A). The proposed project activities under these awards are limited exclusively to intellectual, academic, or analytical activities. The project teams will not conduct physical experiments, prototype fabrication, demonstration projects, or similar activities under these awards. The projects do not involve any extraordinary circumstances that may affect the significance of the environmental effects of the projects. This assessment was based on a review of the proposed scope of work and the potential environmental impacts of each project.

Categorical Exclusion(s) Applied:

A9 - Information gathering, analysis, and dissemination

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: GEOFFREY GOODE Digitally signed by GEOFFREY GOODE Date: 2021.07.09 09:20:41 -04'00'

Date Determined:

(This form will be locked for editing upon signature)