



U.S. Department of Energy Categorical Exclusion Determination Form

Submit by E-mail

Proposed Action Title: 24M Technologies, Inc. -- Next-Generation Lithium Metal Anode Cells for EVs and Electric Aviation

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): CA; MA; NC; NY; PA

Proposed Action Description:

Funding will support the project team's research and development activities to develop and deploy batteries incorporating 24M's SemiSolid cathode alongside unique Lithium Electrode Sub-Assembly technology to deliver superior power and improved energy density. Specifically, the project team will (1) prepare for commercial scale up of battery production capacity by down-selecting materials and defining design criteria; (2) scale up cell manufacturing on automated manufacturing line; (3) construct and operate pilot line; and (4) validate cells in end-use applications. If successful, the project team will develop, test, and deploy new batteries with improved energy density (320 Wh/kg), improved cost efficiency (<70 \$/kWh), and scalability. Additionally, the team will develop a design for electric aviation applications that provides high-power (>1.5 kW/kg) and high energy density (450 Wh/kg).

Project activities will be conducted at existing facilities (See Attachment A) designed for the applicable activities. Project tasks will be conducted in accordance with established safety and materials/waste management protocols and pursuant to applicable Federal, State, and local regulatory requirements. No modifications will be made to existing facilities to accommodate the proposed work. Subrecipient, Sepion Technologies, Inc., has not obtained all necessary permits and approvals applicable to proposed actions and is prohibited from commencing applicable project work before (1) obtaining the necessary permits and approvals and (2) providing written assurances to ARPA-E of the same.

Categorical Exclusion(s) Applied:

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: /s/ William Bierbower (Approved via Email)

Date Determined: 12/07/2021

Attachment A: Project Locations (24M Technologies, Inc. -- Next-Generation Lithium Metal Anode Cells for EVs and Electric Aviation)

Project Team Member	Location
24M Technologies, Inc.	Cambridge & Billerica, MA
Albemarle Corporation	Kings Mountain, NC
BAE Systems	Endicott, NY
Carnegie Mellon University	Pittsburgh, PA
Sepion Technologies, Inc.	Emeryville, CA
Lawrence Berkeley National Laboratory	Berkeley, CA