

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** Arkema Inc.**STATE:** PA

PROJECT TITLE: Roll-to-Roll Manufacturing of Low Cost and Safer Lithium Ion Batteries

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001980	DE-EE0009106	GFO-0009106-001	

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 Arkema, Inc., for the development, fabrication, and manufacture of low cost and safer lithium ion batteries using a water-based poly vinylidene fluoride (PVDF) binder and composite in-situ separator (CIS). The project would be completed over three Budget Periods (BPs). BP1 activities would work to optimize the properties of the conductive carbon, alumina, lithium-nickel-manganese-cobalt-oxide (NMC), and water-based PVDF binder in coin cells. BP2 efforts would be concentrated on developing optimized water-based slurries for casting cathode, anode, and CIS. BP3 would then focus on casting optimization, calendaring of electrodes, and CIS on continuous roll-to-roll manufacturing equipment. This NEPA determination is applicable to all three BPs.

Proposed project activities by location are listed below:

Arkema Inc. - King of Prussia, PA

- Synthesis of water-based binder, formulate electrodes, slurry preparations, coating, fabricate electrodes, and construct CIS with testing and evaluation

Oak Ridge National Laboratory - Oak Ridge TN

- Slurry preparations, coating and fabrication of water-based electrodes and CIS, with testing and performance evaluation

A123 System, Research Center - Waltham, MA

- Slurry preparations, coating and fabrication of water-based electrodes, CIS, building, testing, and performance evaluation of the cells.

Cabot Corporation, Research Center - Billerica, MA

- Synthesize water compatible carbon and active materials, prepare aqueous slurry, cast and test electrodes with analytical characterization

The project would involve the use and handling of hazardous materials, including metal oxides, nano-scale carbon, alumina, and solvents. The nanomaterial would be incorporated into other compounds, encapsulating the nanomaterial. Handling of hazard materials would take place in a laboratory setting with personal protection

equipment, engineering controls including fume hoods and glove boxes. All hazardous materials would be managed in accordance with federal, state and local environmental regulations.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Advanced Manufacturing Office
This NEPA determination does not require a tailored NEPA Provision
NEPA review completed by Diana Heyder, 6/3/2020

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:  Casey Strickland Date: 6/4/2020
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