

PMC-ND  
(1.08.09.13)

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



**RECIPIENT:** Colorado School of Mines

**STATE:** CO

**PROJECT TITLE:** Accelerated Discovery of Solar Thermochemical Hydrogen Production Materials via High-Throughput Computational and Experimental Methods

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0001647	DE-EE0008087	GFO-0008087-002	GO8087

**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 federal funding to Colorado School of Mines (CSM) for the development of solar thermochemical hydrogen production (STCH) materials to meet DOE cost and efficiency goals. Project work would occur within existing laboratories at CSM and collaboration is expected to occur with the HydroGEN Energy Materials Network National Laboratory consortium. Only BP1 was originally negotiated and was reviewed by GFO-0008087-001 in June 2017. There was a Go/No Go decision point after BP1 that was passed so this NEPA review is for the remaining project activities in BP2 and BP3.

BP2 and 3 would continue the work initiated in BP1 on new advanced STCH oxide materials including computational data analysis, combinatorial thin-film deposition and experimentation, and bulk material screening experiments. Additional materials characterization of known STCH may be performed to support and inform computational and combinatorial efforts. Project work would occur in existing facilities/laboratories designed for this type of work that would utilize standard laboratory equipment; therefore no modifications, new permits, additional licenses and/or authorizations would be necessary. No ground disturbing activities, no changes in operation of existing facilities, and no installation of equipment outdoors would occur at any of the facilities involved in the project. Project work would involve the use and handling of various hazardous materials, including metal oxide precursors and industrial solvents. Each of the facilities utilizing hazardous materials would follow the proper procedures for the handling and disposal of those materials in accordance with each of the facility's existing environmental health and safety plans and procedures as well as all federal, state, and local environmental regulations. Additional policies and procedures would be implemented as necessary if new health and safety risks are identified. Other non-hazardous wastes would be disposed of in accordance with established guidelines at each facility. DOE does not anticipate any impacts to resources of concern due to the proposed activities of the project.

**NEPA PROVISION**

DOE has made a final NEPA determination.

Notes:

Fuel Cell Technologies Office

This NEPA determination does not require a tailored NEPA provision.

#### 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

NEPA Compliance Officer

Date: 3/5/2019

#### 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: \_\_\_\_\_

Field Office Manager

Date: \_\_\_\_\_