

PMC-ND  
(1.08.09.13)

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

**RECIPIENT:** NREL & V-Grid Energy Systems**STATE:** CA

**PROJECT TITLE:** Design an Integrated Solids Handling System to Maximize Syngas Process Reliability - Demonstration; Tracking No. 19-011b

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
	DE-AC36-08GO28308	NREL-19-011b	GO28308

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:

**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.

**A11 Technical advice and assistance to organizations** Technical advice and planning assistance to international, national, state, and local organizations.

**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.)

Rationale for determination:

The U.S. Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) proposes to partner with Wonderful Renewable Energy (WRE) and Idaho National Laboratory (INL) to develop a general method for designing preprocessing, handling, and feeding systems for biomass feedstocks.

The purpose of the proposed project is to design a conveyance and feeder system that would deliver almond and pistachio shells and wood byproducts to a syngas furnace for electricity production. The project consists of three main tasks: (1) determine parameters for feedstock handling and preprocessing; (2) design and build a conveyance and feeding system; and (3) a demonstration action, wherein the biomass conveyance and feeder system would be integrated into a syngas furnace to produce syngas at the WRE plant in Lost Hills, California. DOE previously categorically excluded Tasks 1 and 2 from further NEPA review and required additional review of Task 3 when sufficient information was available to complete a meaningful review. This NEPA review applies to Task 3, the proposed demonstration activities.

In Task 3, NREL, in partnership with WRE and INL, is proposing to enter into a subcontract with V-Grid Energy Systems, Inc. (V-Grid) to design (at scale) an integrated solids handling system to maximize the process reliability of converting almond and pistachio waste to electricity. Activities would include detailed feedstock property measurements, iterative computational modeling, and bench-scale testing to design systems for preprocessing, handling, and reactor in-feed. This integrated solid handling system would be scaled up and constructed to work in combination with an existing V-Grid portable gasifier, as a single portable unit. The portable unit would be towed to the WRE facility in Visalia, California and tested in a 500-hour run at using almond and pistachio waste as feedstock.

NREL would provide technical guidance and document the feeding system performance and conduct physical and chemical characterization of selected grab samples.

As a result of the proposed activities, workers could be exposed to various physical hazards. Existing subcontractor corporate health and safety policies and procedures would be followed including employee training, proper protective equipment, engineering controls, and monitoring. OSHA standards would be followed. No physical modifications would be needed at the existing WRE facilities and no ground disturbing activities are anticipated. During the 500-hour demonstration, run over the course of 6-months, any emissions released into the environment are expected to be at de minimis levels within the scope of surrounding air quality in the San Joaquin Valley. V-Grid would secure any required air quality permits required to temporarily operate the system. Char, produced by the gasification process, would be consumed during the demonstration or disposed of by V-Grid according to appropriate waste handling procedures.

Project activities analyzed in this NEPA review would not affect cultural resources, threatened or endangered species, wetlands, floodplains, or prime farmlands and no permits would be required. The proposed project would not involve ground disturbance. All research activities would occur indoors, in existing laboratories and facilities that perform such work. No new equipment or infrastructure would be needed to support the experiments. No change in the use, mission, or operation of existing facilities would result from the proposed project. Potential direct impacts include a de minimis increase in particulate matter reducing air quality and an increase in noise above ambient conditions. No indirect impacts are anticipated.

## NEPA PROVISION

DOE has made a final NEPA determination.

## 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:

 Electronically  
Signed By: Kristin Kerwin

NEPA Compliance Officer

Date: 12/3/2020

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