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



RECIPIENT: Humboldt State University Sponsored Programs Foundation

STATE: CA

**PROJECT TITLE :** Waste to Wisdom: Utilizing forest residues for the production of bioenergy and biobased products

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
	DE-EE0006297	GFO-0006297-002	GO6297

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), 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 Humboldt State University Sponsored Programs Foundation (HSU) to research the production of bioenergy and bio-based products through the utilization of forest residues (defined as the biomass material remaining in forests that have been harvested for timber) using different biomass conversion technologies (BCTs) and optimized biomass operations logistics. HSU would conduct field-based experiments to develop innovative tools and systems that improve the economics, accessibility, and production of quality feedstock from forest residues; develop and test field-deployable BCTs to evaluate the economic feasibility of commercialization of BCTs for the production of biochar, torrefied pellets, and briquettes; and perform macro- and micro-economic and life cycle analyses to quantify the life cycle economic and environmental benefits of utilizing forest residues with BCTs for the production of bioenergy and bioproducts.

DOE completed a previous NEPA review for subtasks defined in Tasks 1, 2, 3, and 4 (GFO-0006297-001 CX A9, B3.6, B3.8 and B3.11 12/20/2013) which included project management, feedstock development, and biofuels and bio-based product development and analysis. This NEPA determination applies only to Subtask 3.2-Testing and Field Deployment (of biochar production equipment).

Activities included in Subtask 3.2 would consist of onsite testing (pre-field deployment) of a biochar production and handling unit as well as field testing of the same equipment. For onsite testing, the unit would be located at Colorado Biochar Resources at 1035 E. Northern Ave., Pueblo, CO 81006 which is in an industrially-zoned area. For field testing, the unit would initially be located at the Branscomb Mill site (Branscomb, CA 95417) roughly 30 miles from the privately-owned Usal Redwood Forest in Mendocino County, CA and then move to existing timber-processing sites within the Usal Redwood Forest. The initial field testing site would occupy one to two acres of a 100 acre, previously-disturbed and cleared area historically used as a sawmill. The unit would then be moved to smaller, previously-used areas to minimize transportation of biomass. The biochar production unit would be 18 feet long by nine feet high by six feet wide and would potentially be housed in a temporary, open-sided rain shelter. The biochar production unit would be in operation for approximately 200, eight hour days over the course of the proposed project with each eight hour day of operation resulting in the production of 0.75 tons of biochar. At this rate and duration, approximately 600 bone dry tons (BDT) would be converted to 150 tons of biochar. Feedstock would be sourced locally from the ongoing timber harvest operation that is regulated by the CEQA-compliant Timber Harvest Plan (THP 1-12-102 MEN) for the Usal Redwood Forest. The feedstock would be decked until it is chipped just prior to processing. The biochar product would be stored in 55 gallon steel drums until it cools, then dumped into super sacks and accumulated until there is a full truckload. The proposed project sites would have a fire mitigation plan in place which would include a 2500 gallon



water tank, a fire hose and pump; a nonflammable surface area for the landing of the biochar production unit; and fire tools onsite for the operator.

Truck traffic would consist of one to two and half truckloads of feedstock per month and one truckload of biochar every two weeks. The project proponents have obtained a Mendocino County Air Quality Management District Authority to Construct permit (2000-5-36-13-53) for operation of the biochar production unit in the Usal Redwood Forest. No other permits are required for operation of the biochar unit. Noise-generating activities would be conducted at an established industrial (non-residential) site or at a timber operations site. Noise levels would not exceed those produced by existing industrial and forestry operations at these locations.

In Mendocino County threatened or endangered species listed in the timber harvest plan for the site where the work would take place include Marbled murrelet, American peregrine falcon, Bald eagle, Northern spotted owl, Coho salmon, Steelhead, Chinook salmon, Pacific fisher, Humboldt milk vetch, Leafy reed grass, Coast lily, North coast semaphore grass. The proposed projects activities would occur only in previously-disturbed areas directly adjacent to existing road ways at which recent timber-harvesting processes have taken place and would be temporary in nature. Therefore, the proposed project is not expected to adversely affect threatened or endangered species.

Based on review of the project information and the above analysis, DOE has determined that Subtask 3.2 activities would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined the proposed project is consistent with actions contained in DOE categorical exclusion A9 "information gathering, data analysis and computer modeling," B3.6 "small-scale research and development, laboratory operations and pilot projects," and is categorically excluded from further NEPA review.

**NEPA PROVISION**

DOE has made a conditional NEPA determination for this award, and funding for certain tasks under this award is contingent upon the final NEPA determination.

Insert the following language in the award:

You are restricted from taking any action using federal funds, which would have an adverse affect on the environment or limit the choice of reasonable alternatives prior to DOE/NNSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:

- Subtask 3.4 - Scale up unit, and field deployment and testing
- Subtask 3.6 - Operate a briquetting unit
- Subtask 4.6 - Evaluate impacts on forest soils

This restriction does not preclude you from:

Subtask 3.2 - Testing and field deployment

If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

Note to Specialist :

Review completed by Logan Sholar on 7/3/14.

This NEPA Determination requires a tailored NEPA provision.

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature: \_\_\_\_\_  \_\_\_\_\_ Date: 7/7/2014

Electronically Signed By: Kristin Kerwin  
NEPA Compliance Officer

**FIELD OFFICE MANAGER DETERMINATION**

Field Office Manager review required

**NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:**

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.