

PMC-ND

(1.08.09.13)

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

**RECIPIENT:**Emrgy Hydro, LLC.**STATE:** GA**PROJECT TITLE**  
: Magnetic Gears: The Key to Robust, Cost-Effective Hydropower Drivetrains

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0001286	DE-EE0007249	GFO-0007249-001	

**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 (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 gathering, analysis, and 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 (DOE) is proposing to provide federal funding to Emrgy Hydro, LLC. to advance the research and development of the magnetic gear specifically for implementation and market readiness in low-impact hydropower.

The proposed project would consist of two Budget Periods (BP). There would be a Go/No-Go decision after completion of BP 1.

BP 1 activities would include analysis of the candidate gear through a series of studies for optimum scale, speed, torques, ratios, production cost, and power/efficiency curves, and design of the selected prototype gear, including analyses for bearing/shaft selection, structural integrity, electromagnetic forces, sealing/housing, manufacturability, and maintainability. This NEPA review is limited to BP 1 tasks which would involve desktop research, computer modeling and design and analysis activities. All BP 1 activities would occur at the existing Ricardo Detroit Technical Center in Van Buren Township, Michigan.

BP 2 activities would include fabrication and testing of the prototype gear. Fabrication and laboratory testing would occur at the Ricardo Detroit Technical Center in Van Buren Township, Michigan. Field testing would involve the partial retrofit of an existing hydroelectric power facility or water treatment facility. As the location of the field testing is yet to be determined, a meaningful NEPA review cannot be completed for BP 2 activities. Therefore, BP 2 activities are prohibited until additional NEPA review for those activities has been completed.

Based on review of the project information and the above analysis, DOE has determined that BP 1 activities would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined BP 1 activities are consistent with actions contained in DOE categorical exclusions A9 "information gathering, analysis and dissemination" and are 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:

Budget Period 2 – Prototype Procurement, Build, and Test

This restriction does not preclude you from:

Budget Period 1 - Scaling Analysis, Candidate Selection, & Detailed Design for Prototype

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.

Insert the following language in the award:

You are required to:

The Recipient is required to submit a new EQ-1 for BP 2 activities prior to beginning work on those activities.

Note to Specialist :

Wind and Water Power Technologies Office

This NEPA determination requires a tailored NEPA provision.

Review completed by Logan Sholar on 12/18/2015

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

NEPA Compliance Officer Signature:



Signed By: Kristin Kerwin

NEPA Compliance Officer

Date: 12/22/2015

**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.

**BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :**

Field Office Manager's Signature:

Field Office Manager

Date: