

PMC-EF2a

(2.04.02)

**U.S. DEPARTMENT OF ENERGY  
EERE PROJECT MANAGEMENT CENTER  
NEPA DETERMINATION**



RECIPIENT: H2Pump LLC

STATE: NY

**PROJECT TITLE :** Hydrogen Recycling System Demonstration

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
	DE-EE0006091	GFO-0006091-001	

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, 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.)
- B1.31 Installation or relocation of machinery and equipment** Installation or relocation and operation of machinery and equipment (including, but not limited to, laboratory equipment, electronic hardware, manufacturing machinery, maintenance equipment, and health and safety equipment), provided that uses of the installed or relocated items are consistent with the general missions of the receiving structure. Covered actions include modifications to an existing building, within or contiguous to a previously disturbed or developed area, that are necessary for equipment installation and relocation. Such modifications would not appreciably increase the footprint or height of the existing building or have the potential to cause significant changes to the type and magnitude of environmental impacts.
- B5.1 Actions to conserve energy or water** (a) Actions to conserve energy or water, demonstrate potential energy or water conservation, and promote energy efficiency that would not have the potential to cause significant changes in the indoor or outdoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, manufacturers, and designers), organizations (such as utilities), and governments (such as state, local, and tribal). Covered actions include, but are not limited to weatherization (such as insulation and replacing windows and doors); programmed lowering of thermostat settings; placement of timers on hot water heaters; installation or replacement of energy efficient lighting, low-flow plumbing fixtures (such as faucets, toilets, and showerheads), heating, ventilation, and air conditioning systems, and appliances; installation of drip-irrigation systems; improvements in generator efficiency and appliance efficiency ratings; efficiency improvements for vehicles and transportation (such as fleet changeout); power storage (such as flywheels and batteries, generally less than 10 megawatt equivalent); transportation management systems (such as traffic signal control systems, car navigation, speed cameras, and automatic plate number recognition); development of energy-efficient manufacturing, industrial, or building practices; and small-scale energy efficiency and conservation research and development and small-scale pilot projects. Covered actions include building renovations or new structures, provided that they occur in a previously disturbed or developed area. Covered actions could involve commercial, residential, agricultural, academic, institutional, or industrial sectors. Covered actions do not include rulemakings, standard-settings, or proposed DOE legislation, except for those actions listed in B5.1(b) of this appendix. (b) Covered actions include rulemakings that establish energy conservation standards for consumer products and industrial equipment, provided that the actions would not: (1) have the potential to cause a significant change in manufacturing infrastructure (such as construction of new manufacturing plants with considerable associated ground disturbance); (2) involve significant unresolved conflicts concerning alternative uses of available resources (such as rare or limited raw materials); (3) have the potential to result in a significant increase in the disposal of materials posing significant risks to human health and the environment (such as RCRA hazardous wastes); or (4) have the potential to cause a significant increase in energy consumption in a state or region.

**Rational for determination:**

The U.S. Department of Energy (DOE) is proposing to provide federal funding to H2Pump LLC to demonstrate the company's latest Hydrogen Recycling System (HRS-100) by installing and analyzing the operation of eight prototype 100 kg/day systems in five real world customer locations. The HRS-100 system utilizes an electrochemical approach that can recover up to 90% of the hydrogen from industrial waste streams. DOE funding would be used for installation, commissioning, reporting, operation, maintenance and data collection that would be analyzed by NREL.

The proposed installation sites include:

- Ulbrich Stainless Steel and Special Metals Inc, 1 Dudley Ave, Wallingford, CT 06492 (2 HRS-100 Systems)
- Pall Corporation, 3643 State Route 281, Cortland, New York 13045 (1 HRS-100 System)
- Rome Strip Steel, 530 Henry St., Rome, New York 13442-0189 (2 HRS-100 Systems)
- College of Nanoscale Science and Engineering (CNSE), University at Albany, 257 Fuller Road, Albany, NY 12203 (2 HRS-100 Systems)

The fifth proposed location has not been identified and the installation of the eighth HRS-100 system cannot be reviewed under this NEPA determination.

Each system would be installed inside an existing building. At the heat treating facilities (Ulbrich, Pall, Rome Strip Steel) the HRS-100 units would be installed with either a bell type furnace or a continuous flat/humpback type furnace. At the semiconductor facility (CNSE) the HRS-100 units would be installed in the sub-fab part of the facility that houses all of the abatement equipment.

All identified sites currently operate with required permits and no additional permits are anticipated. All applicable codes and standards including OSHA are in place. Each site has its hydrogen delivered by truck and does not produce hydrogen onsite. No chemical, liquid effluent or hazardous waste would be produced. There would be no clearing, excavation or dredging required. No criteria pollutants would be emitted and there are no anticipated noise concerns or public issues. Resources including threatened or endangered species, wetlands, floodplains and cultural resources would not be adversely affected as they are not known to occur at the proposed locations.

Based on the review of project information and the above analysis, DOE has determined that the installation of seven HRS-100 systems at four identified locations would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined the proposed installation is consistent with actions contained in DOE categorical exclusions A9 "information gathering," B1.31 "installation or relocation of machinery and equipment," and B5.1 "actions to conserve energy," 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:

Installation of one HRS-100 system at the unidentified location

This restriction does not preclude you from:

Installation of seven HRS-100 systems at:

- Ulbrich Stainless Steel and Special Metals Inc, 1 Dudley Ave, Wallingford, CT 06492 (2 HRS-100 Systems)
- Pall Corporation, 3643 State Route 281, Cortland, New York 13045 (1 HRS-100 System)
- Rome Strip Steel, 530 Henry St., Rome, New York 13442-0189 (2 HRS-100 Systems)
- College of Nanoscale Science and Engineering (CNSE), University at Albany, 257 Fuller Road, Albany, NY 12203 (2 HRS-100 Systems)

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 :

Kelly Daigle 1/22/2013  
DOE funding: \$499,908

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

NEPA Compliance Officer Signature: \_\_\_\_\_

NEPA Compliance Officer

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

1/24/2013

**FIELD OFFICE MANAGER DETERMINATION**