

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



**RECIPIENT:** City of St. Cloud, MN

**STATE:** MN

**PROJECT TITLE :** Cost Effective Integration of Green Hydrogen Production into the Resource Recovery and Renewable Energy Management Systems of Water Resource Recovery Facilities

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0002855	DE-EE0010996	GFO-0010996-001	GO10996

**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.)

**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.

**B5.16 Solar photovoltaic systems**

The installation, modification, operation, and removal of commercially available solar photovoltaic systems located on a building or other structure (such as rooftop, parking lot or facility, and mounted to signage, lighting, gates, or fences), or if located on land, generally comprising less than 10 acres within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to the City of St. Cloud, MN for the design, development, installation, field testing, and full-scale implementation of a water electrolyzer that will produce green hydrogen, green oxygen, and thermal energy for an existing water resource recovery facility (WRRF.) Generating these products onsite could offset process energy that typically would have been generated by fossil fuel combustion, thereby reducing emissions at the WRRF. The project would also involve exploring potential customers for the clean hydrogen produced.

Award activities would be completed over three Budget Periods (BPs,) with a Go/No Go Decision Point between the BPs. This NEPA determination applies to all three BPs.

Proposed project activities by location are:

St. Cloud NEW Recovery Facility, St. Cloud, MN

- Installation and operation of electrolyzer equipment and associated solar array expansion. Data collection for hydrogen production, oxygen production, and waste heat recovery.

Colorado School of Mines, Golden, CO

- Analysis of electrolyzer data and development of energy and cost model.

Carollo Engineers, Inc., Broomfield, CO

- Design of electrolyzer installation, engineering services during construction, start-up support. Analysis of energy management, and hydrogen, oxygen, and thermal energy production.

Carollo Engineers, Inc., St. Paul, MN

- Design of electrolyzer installation, engineering services during construction, start-up support. Analysis of energy management, and hydrogen, oxygen, and thermal energy production.

The proposed equipment would be installed on the campus of the municipal WRRF in St. Cloud, MN (St. Cloud NEW Recovery Facility.) Installation sites are in previously disturbed/cleared areas on the facility campus, and existing roads would be used to access the project locations. A concrete pad with an area of less than 1800 sq. ft. would be formed for the electrolyzer equipment installation adjacent to the facility. Expansion of the facility's solar array would include installation of a 1-megawatt solar array and approximately 924 ft. of trenching to connect conduit from the new solar array to the existing main service meter. The new solar array would be located to the south and east of the existing array, with a total area (including solar panels and open grass within preliminary fence design) of approximately 249,015 sq. ft. Materials generated from excavation activities would be incorporated into the facility campus landscaping.

As part of the electrolyzer equipment installation, small diameter oxygen piping would be routed into the facility's blower building and connected to existing aeration and heating loop piping. A small non-hazardous waste stream of approximately 1.5 gallon per minute will be generated and discharged to the facility's influent, which discharges to the Mississippi River after treatment. No hydrogen piping would enter any existing buildings. There would be no changes to the use, mission, or operations of the existing facility and no additional permits, licenses, or authorizations would be required.

The project involves the generation of hydrogen and oxygen gas at the St. Cloud NEW Recovery Facility only. Safety training would be conducted, and monitoring equipment for both gases would be installed as required. For public and worker protection, all portions of the system containing hydrogen would be designed to Class I, Division 1, Group B standards and surrounding enclosures designed to Class I, Division 2, Group B standards.

DOE has considered the scale, duration, and nature of proposed activities to determine potential impacts on resources, including those of an ecological, historical, cultural, and socioeconomic nature. DOE does not anticipate impacts on these resources which would be considered significant or require DOE to consult with other agencies or stakeholders.

## **NEPA PROVISION**

DOE has made a final NEPA determination.

Notes:

Industrial Efficiency & Decarbonization Office (IEDO)  
NEPA review completed by Melissa Parker, 01/16/24

## **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:  \_\_\_\_\_ Date: 1/16/2024  
NEPA Compliance Officer

**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: \_\_\_\_\_ Date: \_\_\_\_\_  
Field Office Manager