

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



RECIPIENT: Glass Manufacturing Industry Council

STATE: OH

PROJECT TITLE : Glass Consortium: Advanced Electric Melting to Decarbonize Commercial Glass

| | | | |
|--|--------------------------------------|----------------------------|-------------------|
| Funding Opportunity Announcement Number | Procurement Instrument Number | NEPA Control Number | CID Number |
| DE-FOA-0002997 | DE-EE0011193 | GFO-0011193-001 | GO11193 |

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.)

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.

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 funding to the Glass Manufacturing Industry Council (GMIC) for the decarbonization of commercial glass using advanced electric melting.

Award activities at CelSian in Toledo, Ohio include creating lab scale samples, computational fluid dynamics (CFD) modeling, lab experiments, and design. Chemical analysis of glass samples for composition, bubbles and other defects would occur at the Pacific Northwest National Laboratory (PNNL) in Richland, Washington. Computer/CFD modeling of glass furnace performance would occur at the Toledo Engineering Company in Toledo, Ohio. The use of existing power application tools to analyze power frequencies and furnace firing angles would occur at RoMan Manufacturing in Wyoming, Michigan.

This project would involve the use and handling of materials, including glass and raw materials. The majority of these materials are minimally hazardous, although crystalline silica has an intrinsic respiration hazard. All handling would occur in a laboratory setting and project contractors both trained in and committed to proper hazardous material handling and disposal practices would be employed for the project. Project work under this award would also involve working with molten glass under electric current and its associated risk. This testing would be performed at CelSian's laboratory and would following company procedures, as well as occupational and environmental safety procedures outlined by the University of Toledo. This project would be managed in accordance with federal, state, and local environmental regulations. Contractors have required health and safety practices in place and would implement any additional practices required to minimize any health and safety risks to employees or the public, in compliance with all existing health and safety regulations.

Project emissions at the CelSian facility would be typical of those that arise from melting glass, which include carbon

dioxide, sulfur oxides, particulates, and carbon monoxide. Emissions involving these same compounds would also be generated/released from the PNNL, but to a lesser degree. No emissions would be generated or released at the remaining project locations. All emissions are expected to be negligible and the two subject project facilities where emissions would be generated and released occur within USEPA Attainment Areas.

The CelSian team would modify an existing, and currently unused laboratory space in the University of Toledo technology incubator as part of the project. CelSian would install glass melting equipment in this currently vacant laboratory and modify the current ventilation to properly exhaust hot gases that would be generated. The activity would be completed under supervision of environmental health and safety coordinators from the University of Toledo, using their approved contractors. This effort would not change the mission of the site.

There is no ground disturbance or outdoor equipment proposed as part of this project. None of the project activities require applying for new or modified permits, licenses, or authorizations.

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.

Any work proposed to be conducted at a federal facility may be subject to additional NEPA review by the cognizant federal official and must meet the applicable health and safety requirements of the facility.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Industrial Efficiency & Decarbonization Office
NEPA review completed by Chris Akios, 06/25/2024

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: 6/26/2024
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: _____
Field Office Manager

Date: _____