

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



RECIPIENT: The University of Texas at Austin

STATE: TX

PROJECT TITLE: Scalable Passive Radiative Cooling Roofing Systems for Manufactured Home Retrofitting

Notice of Funding Opportunity Number
DE-FOA-0003158

Procurement Instrument Number
DE-EE0011593

NEPA Control Number
GFO-0011593-001

CID Number
GO11593

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.)

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.

B3.15 Small-scale indoor research and development projects using nanoscale materials

Siting, construction, modification, operation, and decommissioning of facilities for indoor small-scale research and development projects and small-scale pilot projects using nanoscale materials in accordance with applicable requirements (such as engineering, worker safety, procedural, and administrative regulations) necessary to ensure the containment of any hazardous materials. Construction and modification activities would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible).

B5.15 Small-scale renewable energy research and development and pilot projects

Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located 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 University of Texas at Austin (UT Austin) to develop passive radiative cooling (PRC) roofing systems for manufactured homes with degraded roofs and simultaneously reducing their energy consumption.

The proposed activities for this award include outreach, data analysis, computer modeling, design, laboratory research, field testing, laboratory testing, and site monitoring. UT Austin (Austin, TX) would conduct laboratory bench scale experiments and full-scale roof experiments and monitoring using their UTest House, an unoccupied manufactured home used for research purposes. PC Krause and Associates (PCKA; West Lafayette, IN) would develop the PRC film and test sample manufacturing. Oak Ridge National Laboratory (Oak Ridge, TN) would provide consultation with researchers.

Outdoor testing would include installing full-scale prototypes to UTest House including installation of the retractable PRC systems on different roofing types, including metal and shingle. Two adjacent sheds would also receive self-adhesive PRC film. Wind, hail, accelerated aging, and other mechanical impact simulations would be carried out on the PRC film on different roofing types. The PRC system would also be applied to five occupied manufactured homes, along with equipment to measure energy performance. Performance data and occupant feedback would be gathered.

Potential exposure to hazards would include rust removing chemicals and nanoparticles in the PRC films. Mitigation measures would include the use of personal protective equipment, and nanoparticles would be embedded in the PRC

film in order to reduce the risk of inhalation.

DOE has considered the scale, duration, and nature of the proposed activities to determine potential impacts on sensitive resources, including those of an ecological, historical, cultural, and socioeconomic nature, and found no effects that would be expected to result from the proposed project activities.

EERE is aware of the November 12, 2024, decision in *Marin Audubon Society v. FAA*, No. 23-1067 (D.C. Cir. Nov. 12, 2024). To the extent that a court may conclude that the Council on Environmental Quality (CEQ) regulations implementing NEPA are not judicially enforceable or binding on this agency action, EERE has nonetheless elected to follow those regulations at 40 C.F.R. Parts 1500-1508, in addition to DOE's procedures/regulations implementing NEPA at 10 C.F.R. Part 1021, to meet the agency's obligations under NEPA, 42 U.S.C. §§ 4321 et seq.

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:

Building Technologies Office (BTO)
NEPA review completed by Alex Colling on 1/22/2025.

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: _____



Matthew Blevins

NEPA Compliance Officer

Date: 2/21/2025

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 :