

Opportunity Title: Industrial Decarbonization Office Fellowship: U.S. Department of Energy

Opportunity Reference Code: DOE-EERE-STP-IEDO-2024-1101

Organization U.S. Department of Energy (DOE)

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How to Apply To apply click on *Apply* at the bottom of this page.

Cohort 1 closes January 15, 2024 (applications submitted before this date will be eligible for consideration to participate in this cohort)

Cohort 2 closes on August 15, 2024 (applications submitted between January 16, 2024 and August 15, 2024 will be eligible for consideration to participate in this cohort)

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Application Deadline 8/15/2024 11:59:00 PM Eastern Time Zone

Description The U.S. Department of Energy (DOE), Office of Energy Efficiency and Renewable Energy's (EERE) Science, Technology, and Policy (STP) Program serves as a next step in the educational and professional development of scientists and engineers by providing opportunities to participate in policy-related projects in Washington, D.C. Participants will become part of a group of highly-trained scientists and engineers with the education, background, and experience to be part of the workforce that supports the DOE's mission in the future.

The Industrial Efficiency and Decarbonization Office (IEDO) is part of the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy. With 30% of primary energy-related emissions attributable to the industrial sector, IEDO plays an important role in supporting the reduction of U.S. CO2 emissions by 50% by 2030 (compared to 2005 levels) and achieving net-zero carbon emissions by 2050.


IEDO's mission is to accelerate the innovation and adoption of cost-effective technologies aimed at eliminating industrial greenhouse gas emissions. As an office, IEDO provides the planning, management, and direction necessary for a balanced national program of research, development, demonstration, technical assistance, and workforce development across the industrial sector. The office currently works across three subprograms that have unique Fellowship opportunities, in addition to cross-cutting general Fellowship opportunities:


- **Energy- and Emissions-Intensive Industries (EEII):** Fellows in this pillar will support the research, development, and demonstration (RD&D) of a wide range of technologies that dramatically reduce energy use and emissions from energy-intensive industries, such as chemicals, iron and steel, food and beverage, cement, and paper and forest products. Fellow candidates are particularly sought to engage in:


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- o **Forest Products** – Fellows will play an important role in developing strategies to decarbonize the pulp and paper industry in the United States and will partner with manufacturers, universities, and National Laboratories across the pulp and paper industry, as well as potential international collaboration. Opportunities to engage with technology to decarbonize other forest products (e.g., wood drying) will also be available.

- o **Food & Beverage** – Fellows will partner with IEDO staff to develop a balanced and impactful RD&D portfolio focused on significant energy savings and reduction of greenhouse gas emissions across the diverse segments of the Food and Beverage Industry (e.g. traditional and alternative proteins, seeds and grains, fruits and vegetables, dairy and baking products, and many others).

- o **Cement and Concrete** – Fellows will help to identify and develop low-carbon solutions for the cement and concrete sector. Focus areas include recycling and circularity, alternative supplementary cementing materials (SCMs), new and alternative binders and new manufacturing processes. Efforts will be aimed at accelerating deployment by analyzing technical and market challenges and opportunities.

- **Cross-Sector Technologies (CST):** Fellows in this pillar will help develop technology solutions that address emissions across a broad range of industries. Focus areas include decarbonization of process heating, utilization of low carbon fuels and energy sources, emerging efficiency technologies, water and wastewater treatment, and grid integration technologies to support the growing industrial sector electricity demand driven by data centers and industrial electrification. Fellow candidates are particularly sought to engage in:

- o **Industrial Energy Systems** – Under guidance of a mentor, Fellows will focus on programs that enable the industrial sector to cost-effectively deploy decarbonized energy systems. Areas of interest include grid integration technologies, combined heat and power (CHP), distributed power generation and energy storage solutions, and electrification technologies including energy-intensive process furnaces and industrial heat pumps.

- **Technical Assistance & Workforce Development (TAWD):** Fellows in this pillar will help IEDO develop partnerships with, and deliver technical assistance to, industry to increase the adoption of energy efficiency, decarbonization technologies, energy management programs, and water/waste reduction technologies and practices across the industrial sector. This pillar also supports workforce training and upskilling activities that prepare existing workers and attract a diverse mix of workers to the industrial jobs of the future. Fellow candidates are particularly sought to engage in:

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o **Social and Behavioral Science** – Fellows will focus on social and behavioral science research projects that identify and analyze barriers, gaps, and opportunities relevant to accelerating the uptake of industrial efficiency and decarbonization technologies and practices. Topic areas include (but are not limited to) siting of infrastructure for industrial decarbonization, workforce issues related to industrial transitions, environmental justice considerations in industrial decarbonization, and community engagement in industrial projects.

- **Strategic Communications** – Fellow candidates are particularly sought to collaborate with IEDO’s communications and stakeholder engagement team, engaged across the technical subprograms, to help identify key audiences, messages, and strategies for reaching a wide variety of IEDO stakeholders—from industry and academia to inter-governmental partners to media. This opportunity will have a strong emphasis on technical writing and the use of multimedia for effective storytelling.

IEDO is seeking talented and passionate Fellows interested in supporting technical, programmatic, strategic, and policy efforts aimed at decarbonizing the industrial sector. Fellows will collaborate closely with IEDO staff—including several former Fellows—and will develop a broad understanding of the potential of new technologies and current barriers to technology deployment across all of IEDO’s subprograms. This involves tracking the impact of the RD&D portfolio in IEDO and assessing gaps or opportunity areas for future investments. **This Fellowship will last one year, with the opportunity to renew for additional years (up to 5 total) at the discretion of the sponsoring office. Fellows will be placed in a “home” sub-program based on their interests and IEDO’s office needs, and will have the opportunity to learn how to:**

- Identify key technology opportunities and contribute to development and execution of IEDO, EERE, and DOE-level strategies.
- Draft funding opportunity announcements and other investment solicitations (e.g. lab calls, prizes, etc.) as well as communication materials to achieve RD&D and policy goals.
- Review and provide input on technical reports, analysis, research proposals, and other technical documents.
- Prepare and present briefings to upper management, external offices, and at conferences.
- Collaborate with other DOE programs and offices, participating in office-wide or interoffice initiatives, task forces, or tech teams (e.g., Industrial Heat Energy Earthshot, Energy Storage Grand Challenge).
- Interface with technical, policy, and business leaders from academia, national labs, the private sector, and other government agencies (e.g. through interagency working groups).
- Plan workshops, webinars, and other stakeholder events or initiatives (e.g. Big Ideas competition, Industrial Heat Shot Summit).

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Under the guidance of a mentor, learning opportunities include:

- Utilizing scientific expertise to engage decision-makers in the areas of energy efficiency policy, planning, research, development, and communication for energy efficiency and decarbonization.
- Analyzing technical needs and opportunities, and the potential impacts of program and policy decisions.
- Providing input for analysis and strategic planning on industrial decarbonization.
- Assessing the potential for commercial deployment of next-generation industrial technologies focused on efficiency and decarbonization.
- Evaluating approaches to achieve practical minimum energy requirements and minimum lifecycle energy for new technologies.
- Acting as a technical resource for IEDO applied research and development projects.
- Engaging with industry, research, academic, and other government stakeholders to define areas of need for decarbonization of the industrial sector.

Through these activities, Fellows will help establish and nurture the critical link between DOE decision-makers and other scientific professionals to support public policy.

Appointment Start Date

Exact start dates will be determined at the time of selection and in coordination with the selected applicant. Applications are reviewed after the listed deadlines and appointments will be offered as qualified candidates are identified over the course of the application review period.

Qualifications · Be a U.S. Citizen or Lawful Permanent Resident.

· Be currently pursuing, or have completed requirements for, a Bachelor's, Master's or Doctoral Degree.

An ideal applicant will have superior academic performance and publication record, strong analytical, research and communication (oral and written) skills and demonstrated capacity for creative thinking, a strong technical background and expertise in an energy-technology-related field, and be interested in being part of a multi-disciplinary, fast-paced environment, focused on energy technology research and development. Qualified candidates will have a strong technical background in an engineering field or applicable physical science (e.g., materials, chemistry). Some industrial experience is desirable.

Location

Washington, D.C.

Participant Benefits

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Selected candidates will receive a competitive stipend. Stipend rates are determined by DOE officials, and are based on the candidate's academic and professional background. Candidates will also be eligible to receive a stipend supplement to offset the cost of health insurance premiums and relocation of up to \$5,000. A travel and research allowance of \$10,000 will also be available to participants for each appointment year.

Nature of the Appointment

The participant will not enter into an employee/employer relationship with ORISE, ORAU, DOE, or any other office or agency. Instead, the participant will be affiliated with ORISE for the administration of the appointment through the ORISE letter of appointment and Terms of Appointment.

For more information on the EERE Office of Industrial Efficiency and Decarbonization please visit: <https://www.energy.gov/eere/iedo/industrial-efficiency-decarbonization-office>.

Questions? Email us at DOE-RPP@orise.ora.gov with reference code DOE-EERE-STP-IEDO-2023-2002 for this opportunity in the subject line of your email.

A completed application consists of:

- Profile Information
- Application Questions (*goals, experiences, and skills relevant to the opportunity*)
- Transcript(s) - An unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. Selected candidate may be required to provide proof of completion of the degree before the appointment can start.
- A current resume/CV
- One Letter of recommendation - While a letter of recommendation is not required to be considered, applicants are required to provide contact information for one recommendation in order to submit the application. Applicants are encouraged to request a letter of recommendation before submission as this may help reviewers have a better understanding of the applicant's qualifications and interests. The letter of recommendation must be submitted on your behalf before selections are completed and offers are made.

CV must include the following:

- Applicant Information
- Education History. List all institutions from which you received or expect to receive a degree, beginning with current or most recent institution. Include the name of the academic institution, degree awarded or expected, date of awarded or expected degree, and academic discipline.
- Work and Research Experience. List all work and research experiences beginning with current or most recent. Include the name of the employer, location, position held, and time period involved.
- Leadership Experience. List experiences (e.g., work, civic, volunteer,

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research) that demonstrate your leadership skills. Detail your role, type of experience, organization, location, and duration.

- **Honors and Awards.** List in chronological order (most recent first) any awards or public recognitions. Include the name of awarding institution, title of the award or honor, and date of award or honor.
- **Publications.** List publications in the following order: 1) referee journals; 2) books; 3) published proceedings; 4) non-refereed articles; and 5) patents. Citations must include a) authors; b) year of publication; c) title; d) full name of journal; e) volume number; and f) page number(s).

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree.
- **Discipline(s):**
 - **Chemistry and Materials Sciences** ([12](#))
 - **Communications and Graphics Design** ([1](#))
 - **Computer, Information, and Data Sciences** ([7](#))
 - **Earth and Geosciences** ([21](#))
 - **Engineering** ([22](#))
 - **Environmental and Marine Sciences** ([10](#))
 - **Life Health and Medical Sciences** ([15](#))
 - **Mathematics and Statistics** ([11](#))
 - **Physics** ([16](#))
 - **Science & Engineering-related** ([2](#))
 - **Social and Behavioral Sciences** ([16](#))
- **Age:** Must be 18 years of age