

Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

Solar Energy Technologies Office

Michele Boyd, Program Manager, Strategic Analysis and Institutional Support

Solar Energy Technologies Office



Executive Order on Climate and Equity

- Establishes the Administration's climate goals: A carbon-free electricity sector by 2035 and a decarbonized economy by 2050.
- Establishes the Justice40 Initiative: Sets a goal that 40 percent of the overall benefits of certain Federal Investments (including clean energy and energy efficiency) are to flow to disadvantaged communities.
- Prioritizes climate in foreign policy and national security.
- Requires a government-wide approach to climate
- Requires the Federal agencies to use authorities, public lands/waters, and financial programs to catalyze clean energy deployment
- Proposes a Civilian Climate Corps Initiative



Administration Priorities COVID Plan

BRIEFING ROOM

Executive Order on Tackling the Climate Crisis at Home and Abroad

JANUARY 27, 2021 • PRESIDENTIAL ACTIONS

The United States and the world face a profound climate crisis. We have a narrow moment to pursue action at home and abroad in order to avoid the most catastrophic impacts of that crisis and to seize the opportunity that tackling climate change presents. Domestic action must go hand in hand with United States international leadership, aimed at significantly enhancing global action. Together, we must listen to science and meet the moment.

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Solar Energy Technologies Office (SETO) Overview

MISSION

We accelerate the **advancement** and **deployment of solar technology** in support of an **equitable** transition to a **decarbonized economy no later than 2050**, starting with a decarbonized power sector by 2035.

WHAT WE DO

Drive innovation in technology and soft cost reduction to make solar affordable and accessible for all Americans Enable solar to support the reliability, resilience, and security of the grid

Support job growth, manufacturing, and the circular economy in a wide range of applications

DOE Org Chart



SETO Program Areas



CONCENTRATING SOLAR-THERMAL POWER



BALANCE OF SYSTEMS/ SOFT COST REDUCTION



SYSTEMS INTEGRATION



MANUFACTURING AND COMPETITIVENESS



DOE Solar Office Funds 400+ Active Projects

Projects and partners in 42 states plus the District of Columbia

33% of projects led by national labs







35% of projects led by businesses, non-profits, and state and local government



SETO MYPP Goals for 2025

• SETO 2021 Multi-Year Program Plan, released Spring 2021, explains the purpose and the priorities of the office, sets goals for solar energy for 2025, and explains how we will accelerate progress toward these goals

Low-cost electricity

Lowering the cost of electricity from PV and CSP

Reliable electricity

Supporting the reliability of the power system Enhancing the resilience and security of the grid

Rapid deployment

Growing the U.S. solar industry Reducing the life cycle impacts of solar energy Opening new markets Ensuring that solar energy benefits all

Energy beyond electricity

Reducing industrial emissions using solar thermal technology Finding the best ways to make solar fuels

Contractment of ENERGY Contros of ENERGY EFFICIENCY & RENEWABLE ENERGY	Solar Energy Technologies Office Multi-Year Program Plan
	May 2021

Solar Futures Study

PURPOSE

- Comprehensive review of the potential role of solar in decarbonizing the electricity grid by 2035 and the energy system by 2050.
 - Addresses other large trends and activities across the U.S. economy that are necessary to achieve a zerocarbon energy system.
 - Builds analytical foundations to guide the next decade of solar research.

SCOPE

• Chapters cover future scenarios, technology advances, equity, grid integration, cross-sector interactions, supply chain, and environmental impacts.







Types of SETO Funding

- Funding Opportunity Announcements
 - Cooperative agreement requires awardees to meet project milestones in order to continue receiving funding, unlike a grant
- Small Business Innovation Research (SBIR)
 - SBIR recipients can work with a research institution.
- Small Business Technology Transfer (STTR)
 - STTR requires the small business to partner with a research institution, which must conduct at least 30% of the work.
 - The principal investigator (PI) can be employed either by the small business or the research institution.
- Prizes
 - American-Made Prize (<u>https://americanmadechallenges.org/</u>)
 - Solar District Cup (<u>https://www.herox.com/SolarDistrictCup</u>)
- Technical Assistance RFPs
 - Through DOE or the National Labs



Open FY22 FOA: Renewables Advancing Community Energy Resilience (RACER)

A \$25 million funding program for projects that enable communities to utilize solar and solarplus-storage to prevent disruptions in power caused by extreme weather and other events, and to rapidly restore electricity if it goes down.

Topic Area 1: Innovative Community-Based Energy Resilience Planning

Projects will develop energy resilience planning frameworks at the community level through robust multistakeholder participation and collaboration.

Topic Area 2: Automation Strategies for Rapid Energy Restoration

Projects will develop and demonstrate sensors and communication technologies that enable identification of available distributed energy resources to re-energize the distribution system after an extreme weather event.

Topic Area 3: Innovative Solutions to Increase the Resilience and Hardening of PV Power Plants

Projects will advance new approaches to PV system hardening by using novel sensors, communications strategies, and data analytics to increase generation-side hardware resilience and minimize damage during events.

Topic Areas 1 and 2 require community-based stakeholders as project partners. To facilitate the formation of teams, SETO is providing a Teaming Partner List for interested parties that do not want to be the Prime Applicant.

Mandatory Concept Papers are due by 5:00pm ET on May 26, 2022

For more information: <u>https://bit.ly/38Qehwx</u>

White House Guidebook to the Bipartisan Infrastructure Law

- The Bipartisan Infrastructure Law (Infrastructure Investment and Jobs Act) provides \$1.2T in federal funds
- White House Guidebook identifies potential recipients of BIL funding
 - Search for "universities" and "higher education"
- New DOE Office of Clean Energy Demonstrations (OCED) is being established.
 - BIL-funded demonstration programs are being led by technology offices until OCED is sufficiently staffed, e.g., SETO is leading the clean energy on mine land provision

https://www.whitehouse.gov/wp-content/uploads/2022/01/BUILDING-A-BETTER-AMERICA_FINAL.pdf



A GUIDEBOOK TO THE BIPARTISAN INFRASTRUCTURE LAW FOR STATE, LOCAL, TRIBAL, AND TERRITORIAL GOVERNMENTS, AND OTHER PARTNERS



Diversity, Equity, and Inclusion in EERE Funding Opportunities

Applicants must submit a Diversity, Equity, and Inclusion Plan that describes:

- Equity Impacts:
 - The impacts of the proposed project on underserved communities, including social and environmental impacts.
- Benefits:
 - The overall benefits of the proposed project, if funded, to underserved communities; and
 - How diversity, equity, and inclusion objectives will be incorporated in the project.

Merit Criterion 4: Diversity, Equity, and Inclusion (10%) involves consideration of the following factors:

- The quality and manner in which the measures incorporate diversity, equity and inclusion goals in the project; and
- Extent to which the project benefits underserved communities.

SAMPLE Approaches to DEI plans

Diversity of Project Execution Teams	 Include researchers from groups underrepresented in STEM or from Minority Serving Institutions as PI, co-PI, and/or other senior personnel Include a diversity of disciplines on the project team (e.g., commercialization specialists, techno-societal integration specialists) Include mentoring programs for underrepresented groups within the project
Diversity of Input in Research Design	 Integrate input from end users of the technology into the project design Plan charettes with diverse disciplines and demographics in the project design
Diversity in Geographic Extent of Impact	 Develop technologies that are likely to have disproportionate benefit in disadvantaged communities (e.g., community ownership); Include disadvantaged communities in pilot programs and demonstrations Build a diverse outreach strategy into the project

Getting Involved: Become an EERE Application Reviewer

I want to register as:



I want to apply to current or future Funding Opportunity Announcements.

am a subject matter expert and would like to be considered to review incoming funding applications

DOE Employee

I am a federal DOE employee or contractor and will be a user of the system as a part of my job.

Areas of Expertise



- Go to the <u>EERE Funding Opportunity</u> <u>Exchange</u> website.
- Under "Registration," select the "Reviewer" button.
- Under "Reviewers Registration," complete all four sections:
 - General Information--Provide your contact information, resume, and answer a few questions about your background.
 - Account Information Create your account username and password.
 - Areas of Expertise
 - Under Areas of Expertise, Select "Other-Functional"
 - Under "Functional Area(s) of Expertise" select one of the following areas:
 - Education and Experience
- Check the box to certify that the information provided is accurate and complete.
- Select the "Complete Reviewer Registration" button.

ORISE Science & Technology Policy Fellowship

Develop leadership skills in science and technology policy by designing and implementing national research and development (R&D) programs

Strategic Areas:

- Photovoltaic technologies
- Concentrating solar-thermal power technologies
- Grid systems integration technologies
- Behavioral science, strategic analysis, and technical assistance
- Manufacturing and technology transfer
- Environmental justice and stakeholder engagement
- Communications and outreach

Eligibility:

Open to physical, natural, and social scientists, engineers, and entrepreneurs with bachelor's, master's, or doctoral degrees, and established professionals with post-degree experience. Must be a U.S. citizen or have Permanent Resident (Green Card) status.

Benefits: • One-year appointment, renewable for a second year Competitive stipend Mentorship from DOE officials Travel allowance Health insurance supplement Relocation expenses Applications are accepted on a rolling basis with

two annual review dates: January 15 | June 15

VISIT: bit.ly/SETO-Fellowships • EMAIL: DOE-RPP@orau.org

SETO Newsletter – Stay in Touch

• The SETO newsletter highlights the key activities, events, funding opportunities, and publications that the solar program has funded.

