U.S. DEPARTMENT OF ENERGY

Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

INDUSTRIAL EFFICIENCY & DECARBONIZATION OFFICE

# Overview of Industrial Efficiency and Decarbonization Research, Development, and Demonstration


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US Department of Energy


Technology Days

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# Building a Net-zero, Clean Energy Future

**The U.S. industrial sector (manufacturing, agriculture, mining, and construction) accounts for:**

**33%** of the nation's primary energy use

**30%** of $CO_2$ emissions

**Anticipated industrial sector energy demand growth of 30% by 2050 may result in a:**

**17%** $CO_2$ emissions increase*

*Energy-Related $CO_2$ Emissions By Sector*

*EIA, *Annual Energy Outlook 2021 with Projections to 2050.*

# Industrial Efficiency and Decarbonization Office (IEDO)

Energy- and Emissions-Intensive Industries

**FY23 = $131M**

**Dr. Paul Majsztrik**

Cross-sector Technologies

**FY23 = $90.5M**

**Isaac Chan**

Technical Assistance and Workforce Development

**FY23 = $45M**

**Anne Hampson**

**$266.5**

Million FY23 Budget

**Dr. Avi Shultz**
Director

**Anne Hampson**
Acting Deputy Director

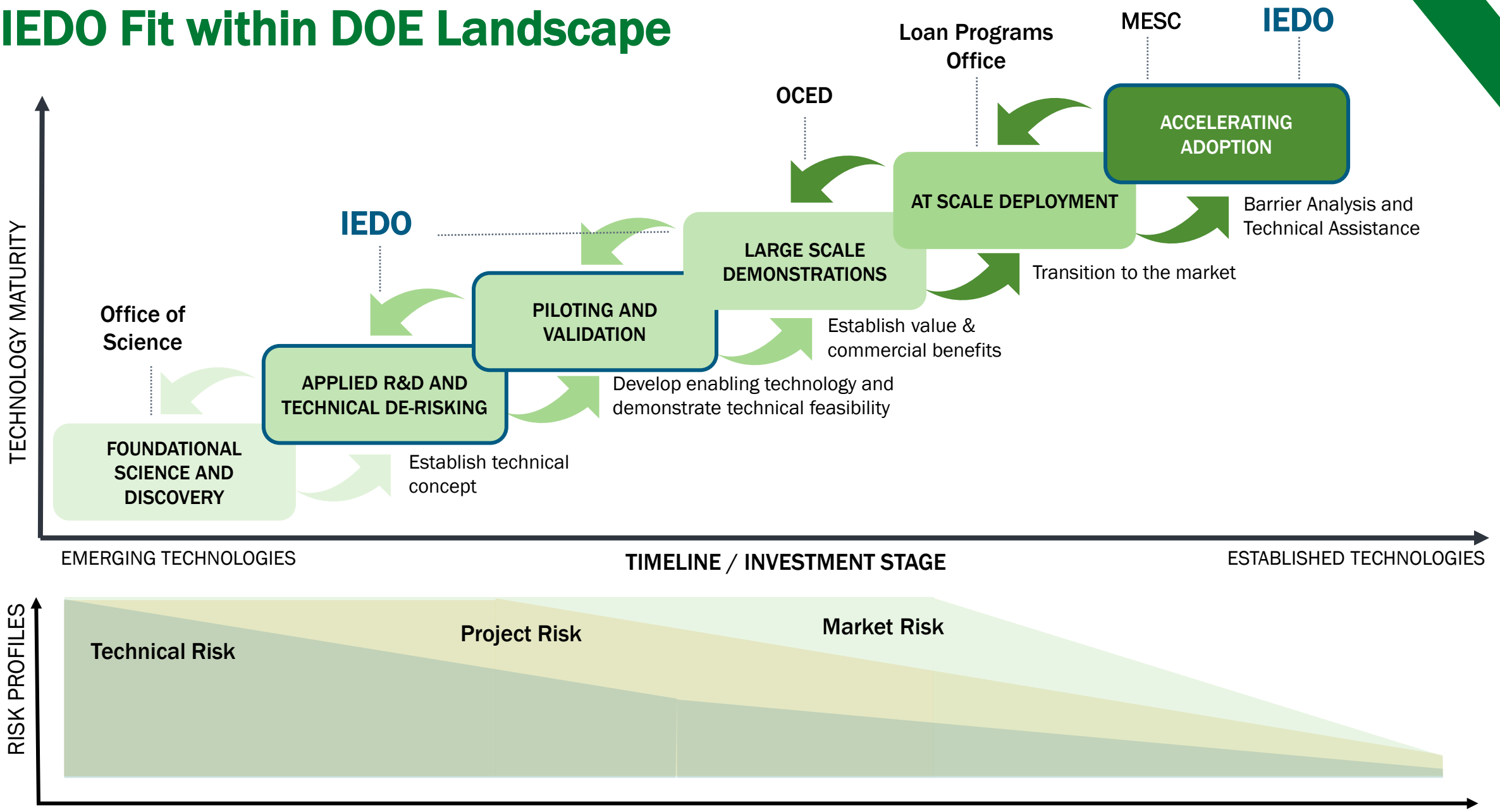
**Joe Cresko**
Chief Engineer

**Lauren Hall**
Operations Supervisor

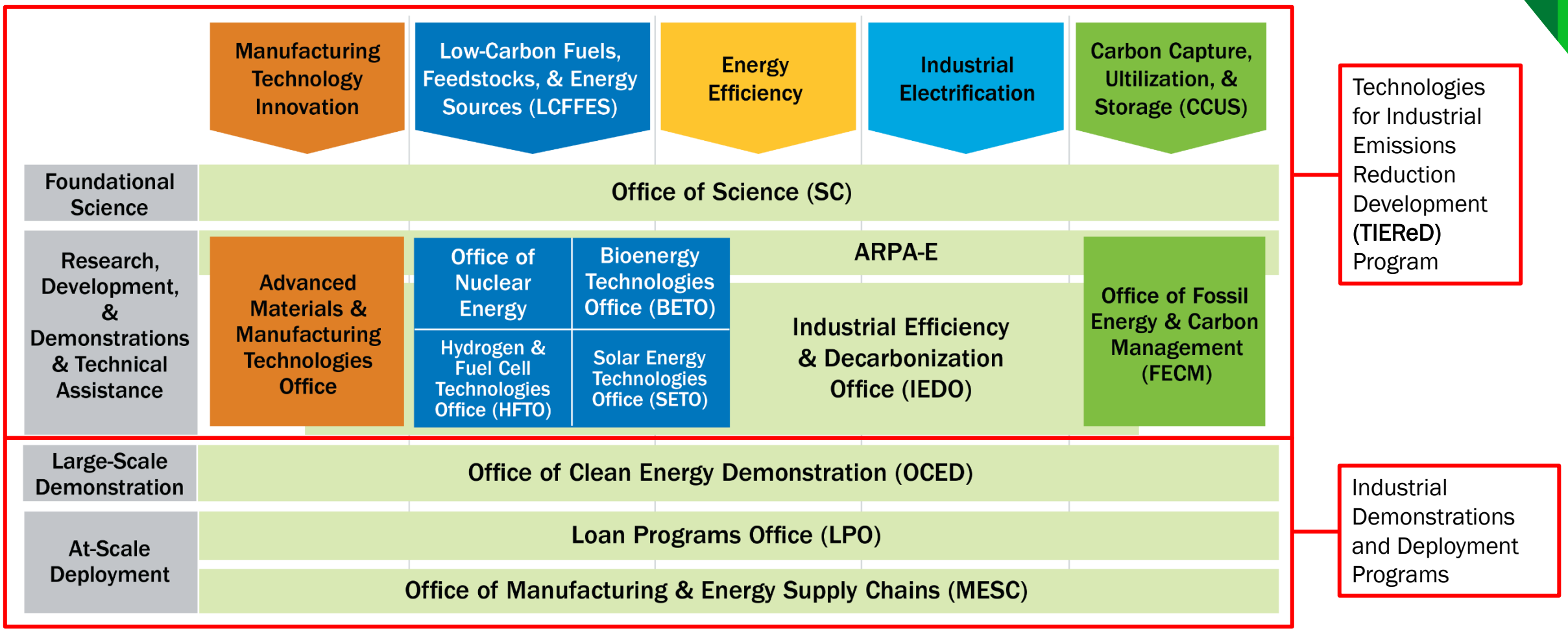
**Ava Coy**
Program Manager
**Technical Project Officers**

**Mattie Gainer**
Strategic Communications Lead

# IEDO Fit within DOE Landscape



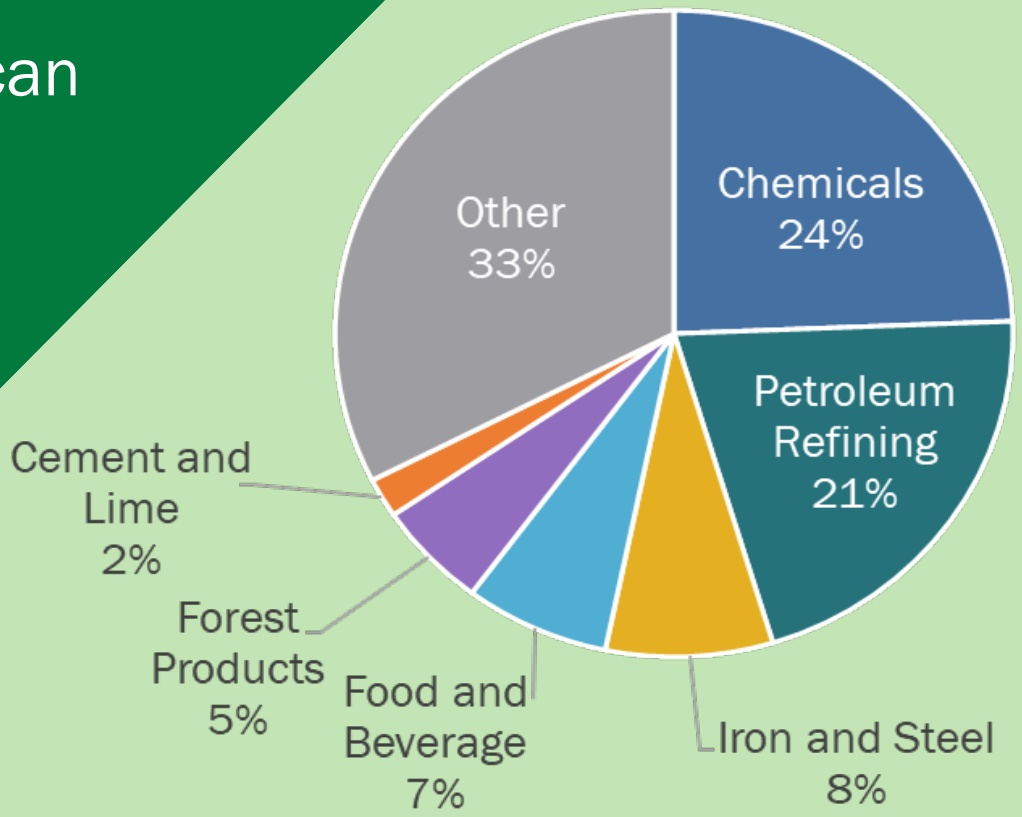
# DOE Offices Share a Common Strategic Framework




www.energy.gov/industrial-technology

# IEDO's Research & Development Strategy

IEDO invests in both **sector-specific** technology solutions and **cross-cutting** technologies that can be applied across the industrial sector.




U.S. Manufacturing Energy-related $CO_2$ Emissions by Sector, 2020: 1124 MMT $CO_2$. Source: 2021 EIA AEO

# Energy- and Emission-Intensive Industries

**IRON & STEEL**
1,469 TBtu
100 MMT $CO_2e$

**CHEMICALS**
(including production of low-carbon fuels)
4,842 Tbtu
332 MMT $CO_2e$

**FOOD & BEVERAGE**
1,935 TBtu
96 MMT $CO_2e$

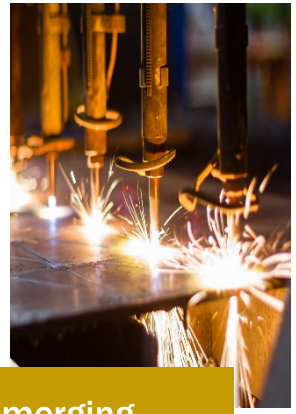
**FOREST PRODUCTS**
2,883 TBtu
80 MMT $CO_2e$

**CEMENT & CONCRETE**
367 TBtu
66 MMT $CO_2e$

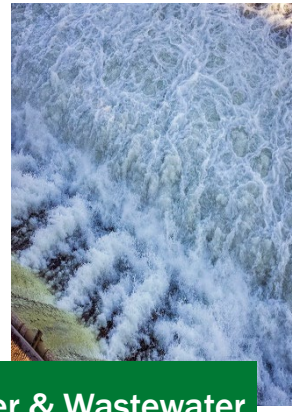
# Cross-Sector Technologies

Thermal Processes & Systems

Low-Carbon Fuels, Feedstocks, & Energy Sources



Emerging Efficiency



Water & Wastewater Treatment

# 2024 IEDO EEII FOA

*The Energy- and Emissions-Intensive Industries (EEII) funding opportunity will invest up to **$83M** applied RD&D to decrease emissions from* hard-to-decarbonize industrial sectors, which represent roughly 30 percent of total U.S. carbon emissions

Subtopics include:

- Decarbonizing chemicals
- Decarbonizing iron and steel
- Decarbonizing food and beverage products
- Decarbonizing building and infrastructure materials (cement and concrete, asphalt, and glass
- Decarbonizing forest products
- Industrial Pre-FEED studies (with FECM and HFTO)

Concept papers due March 19, 2024
**www.energy.gov/eere/iedo/iedo-fy24-energy-and-emissions-intensive-industries-foa**

# Technical Assistance and Workforce Development

**Technical Assistance**: Partners with and enables industry to accelerate the adoption of technologies, programs, and best practices that improve efficiency and decarbonization.
**Workforce Development:** Promotes the development of a diverse mix of new workers and upskills existing workers for the industrial jobs of today and the future.

Public /private partnerships to help industrial organizations set and achieve energy intensity reduction goals

Education and training for the current and future manufacturing workforce

No-cost tools and resources for manufacturers to reduce GHG emissions and improve energy efficiency and competitiveness

End-user support, stakeholder engagement, and technical services for the industrial sector

PROGRAMS INCLUDE: ONSITE ENERGY | BETTER PLANTS | ENERGY MANAGEMENT | WORKFORCE DEVELOPMENT

BETTER CLIMATE CHALLENGE

50001 READY
SEP 50001

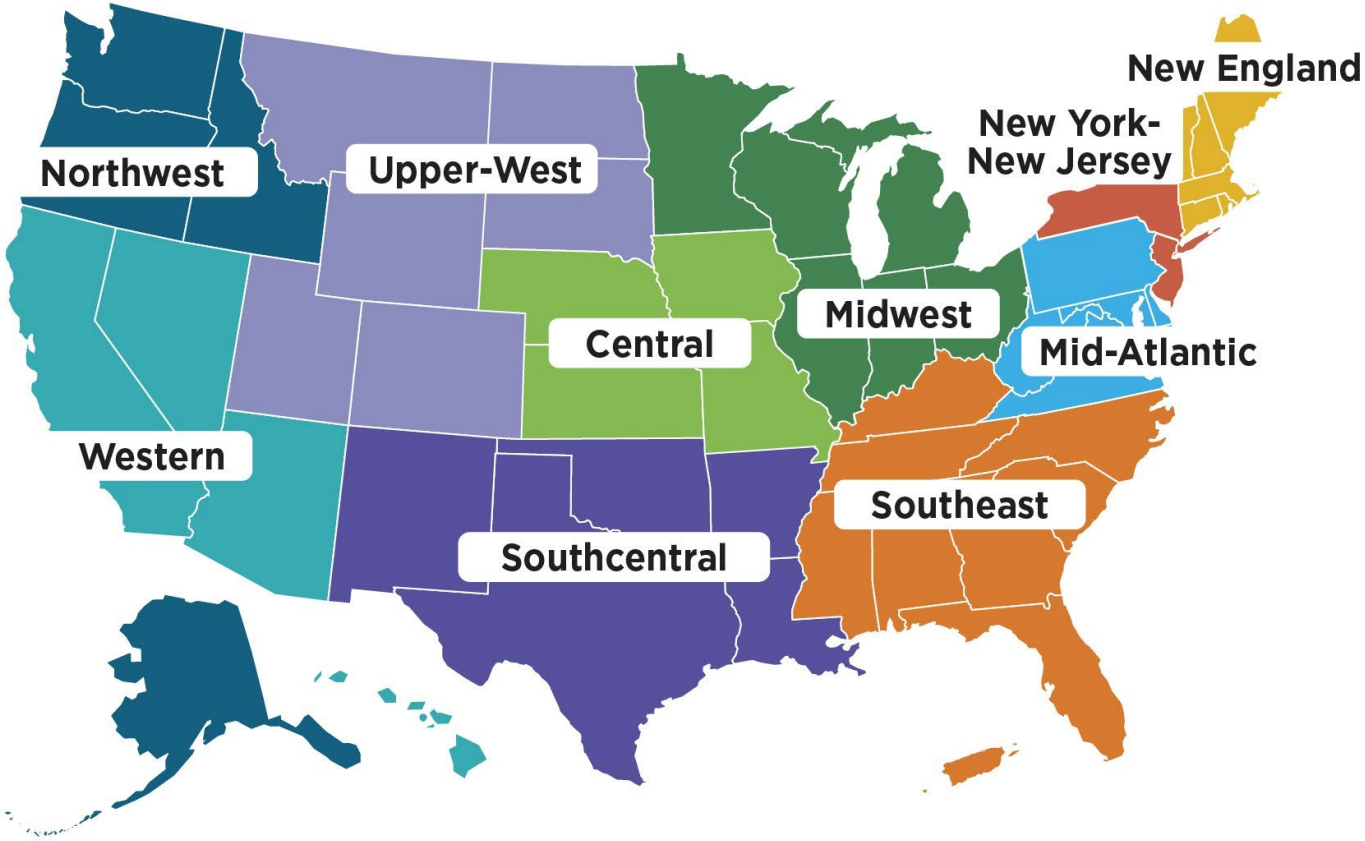
# Onsite Energy Program

The U.S. Department of Energy's (DOE) Onsite Energy Program provides technical assistance, market analysis, and best practices to help industrial facilities and other large energy users increase the adoption of onsite clean energy technologies.

**battery storage | combined heat and power | district energy | geothermal | industrial heat pumps | renewable fuels | solar PV | solar thermal | thermal storage | wind**

# Onsite Energy Technical Assistance Partnerships

## U.S. DEPARTMENT OF ENERGY

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# Diversity, Equity, Inclusion, and Accessibility (DEIA) Focus

**We seek to create a workforce that reflects the diversity of Americans and ensures that all Americans benefit from a decarbonized industrial sector.**

Increasing **Diversity** in Partnerships, Applicant FOA pool, and FOA Reviewers

Using **Inclusive** Language to welcome broader participation in funding opportunities

Identifying **Equity**-related barriers that impact communities

Expanding **Accessibility** for Disadvantaged Communities (DACs), including through community-based stakeholder engagement

IEDO is committed to empowering diverse communities and amplifying best practices for DEIA internally and externally.

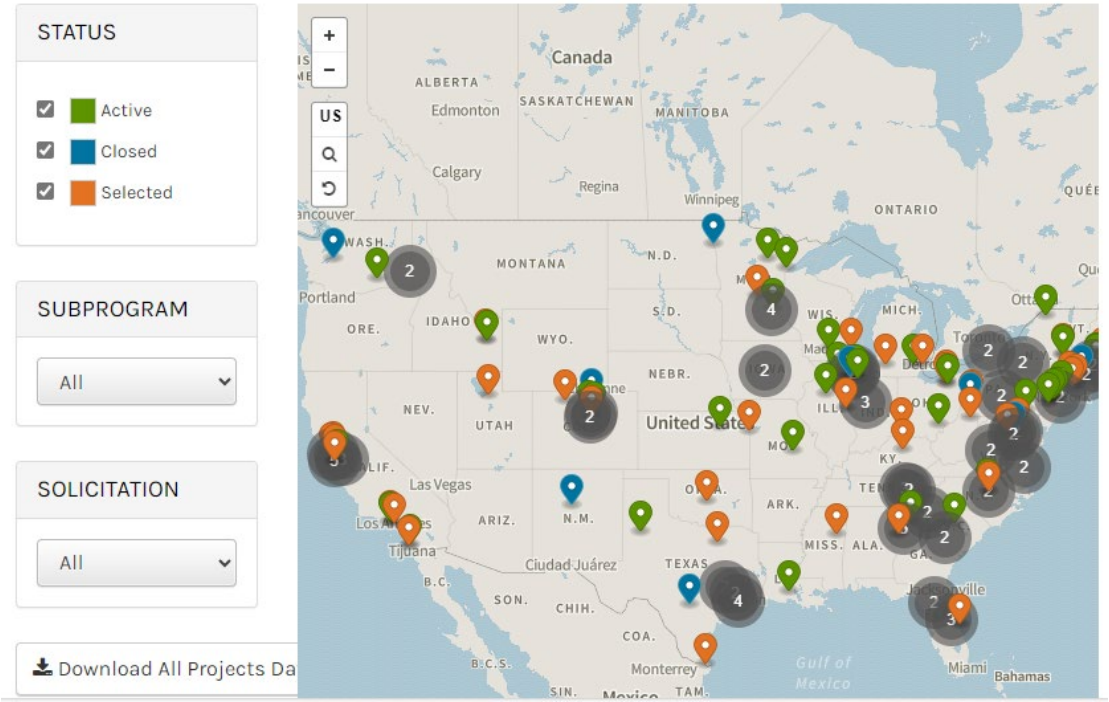
# Thank You!

Subscribe to our newsletter "**The Production Line**" to get the latest information on:

- Announcements
- Funding opportunities
- Events
- Tool and resources
- And more!

www.energy.gov/eere/iedo/subscribe-iedo-newsletter

## IEDO Project Database

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