



MESC

OFFICE OF MANUFACTURING AND ENERGY SUPPLY CHAINS

Overview for ITIAC

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Deployment**

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MESC is focused on the "how" of the energy transition



PURPOSE

To deliver the *how* of the energy transition quickly, securely, and equitably



MISSION

MESC serves as the frontline of clean energy capital deployment to accelerate America's transition to a resilient, equitable energy future via **\$20B+ of direct investment** in manufacturing capacity and workforce development.



VISION

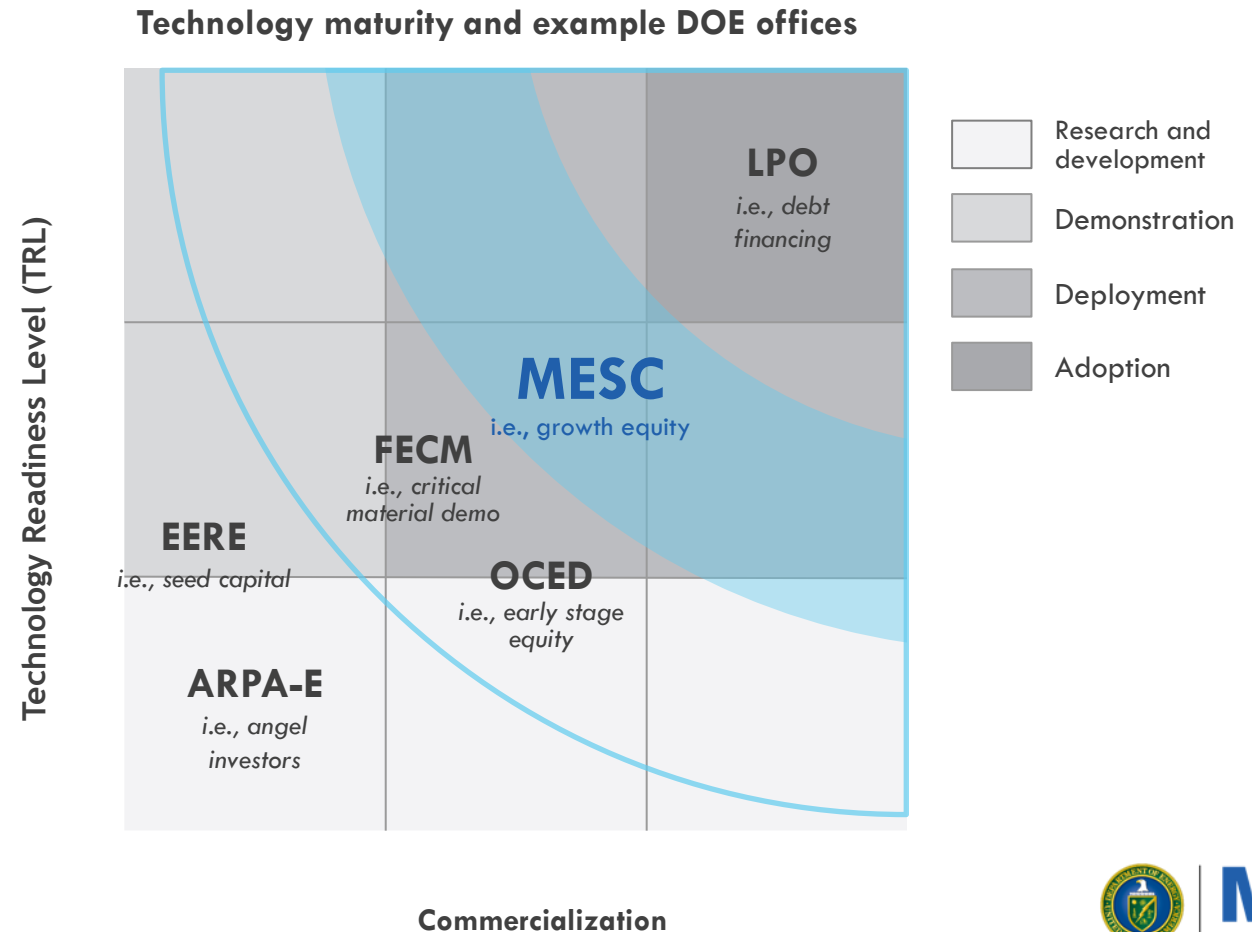
To **eliminate vulnerabilities in US Clean Energy supply chains**, while driving unparalleled social, economic, and environmental impact through our programs & awards

MESC operates in late-stage technology development, driving large-scale deployment of new technologies

The Office of Manufacturing and Energy Supply Chains is working alongside private capital to be a force multiplier to secure American supply chains domestically.

All DOE and MESC investments follow a data-driven approach, building on modeling, mapping, and analysis foundational from MESC experts.

MESC is supporting workforce through direct funding of cutting-edge energy manufacturing programs at universities, community college, and trade-schools to proven entry-level and mid-career support.



MESC's investment activities are underpinned by robust analytical modeling

MESC's Core Functions

Manufacturing Investing

Strengthening and securing supply chains needed to modernize the nation's energy infrastructure, while supporting a clean and equitable energy transition

Workforce Investing

Supporting workforce education and training through the direct funding of cutting-edge energy manufacturing programs

Manufacturing Analytics Backbone

Robust modeling to guide and support DOE strategy and investments, private sector collaborative investments, and policy recommendations to broader USG

Our **strategic investment in critical materials, workforce, and essential manufacturing** enables DOE's other major project offices (OCED, GDO, etc.) by **de-risking the supply chains** for transmission, hydrogen, carbon capture, and other emerging clean technology projects.



Manufacturing and Workforce Deployment Office

Manufacturing Investments



Advanced Energy Manufacturing and Recycling Grants (BIL 40209): \$750M for Small and Medium Manufacturers in coal communities to requip facilities to reduce GHG emissions or reequip them for clean energy manufacturing; Round 2 in 2024



State Manufacturing Leadership Program (BIL 40534): \$50M for state-level efforts to accelerate the deployment of smart manufacturing tech and access to high-performance computing (\$22M & 12 states – Round 1)

Workforce Deployment & Technical Assistance



Industrial Assessment Centers (IAC) Program (base): Long-running program, operates 37 university centers that train energy-savvy engineers while providing no-cost energy technical assistance to SMMs



IAC Expansion (BIL 40521): \$150M to expand IACs to skilled trades training (e.g., community colleges, technical schools, apprenticeships) and strengthen IAC innovation via Centers of Excellence, expand assessments to include decarbonization focus & resiliency



IAC Implementation Grants (BIL 40521): \$400M for SMMs to implement the facility improvements recommended by IACs and others

Advanced Industrial Decarbonization



Industrial Technologies Joint Strategy: Chair the DOE-wide effort to identify decarbonization challenges in key industrial sectors (e.g., metals, chemicals) to inform programs like 48C and develop a joint strategy; coordinate work across DOE



Overview: Advanced Energy Manufacturing and Recycling Grant Program

Appropriations of \$750 million over FYs 22-26

Grants to small- and medium-sized manufacturing firms

- Gross annual sales of less than \$100 million
- Fewer than 500 employees at the plant site of the manufacturing firm; and
- Annual energy bills that total more than \$100,000, less than \$2.5 million

Priority to firms that are minority-owned

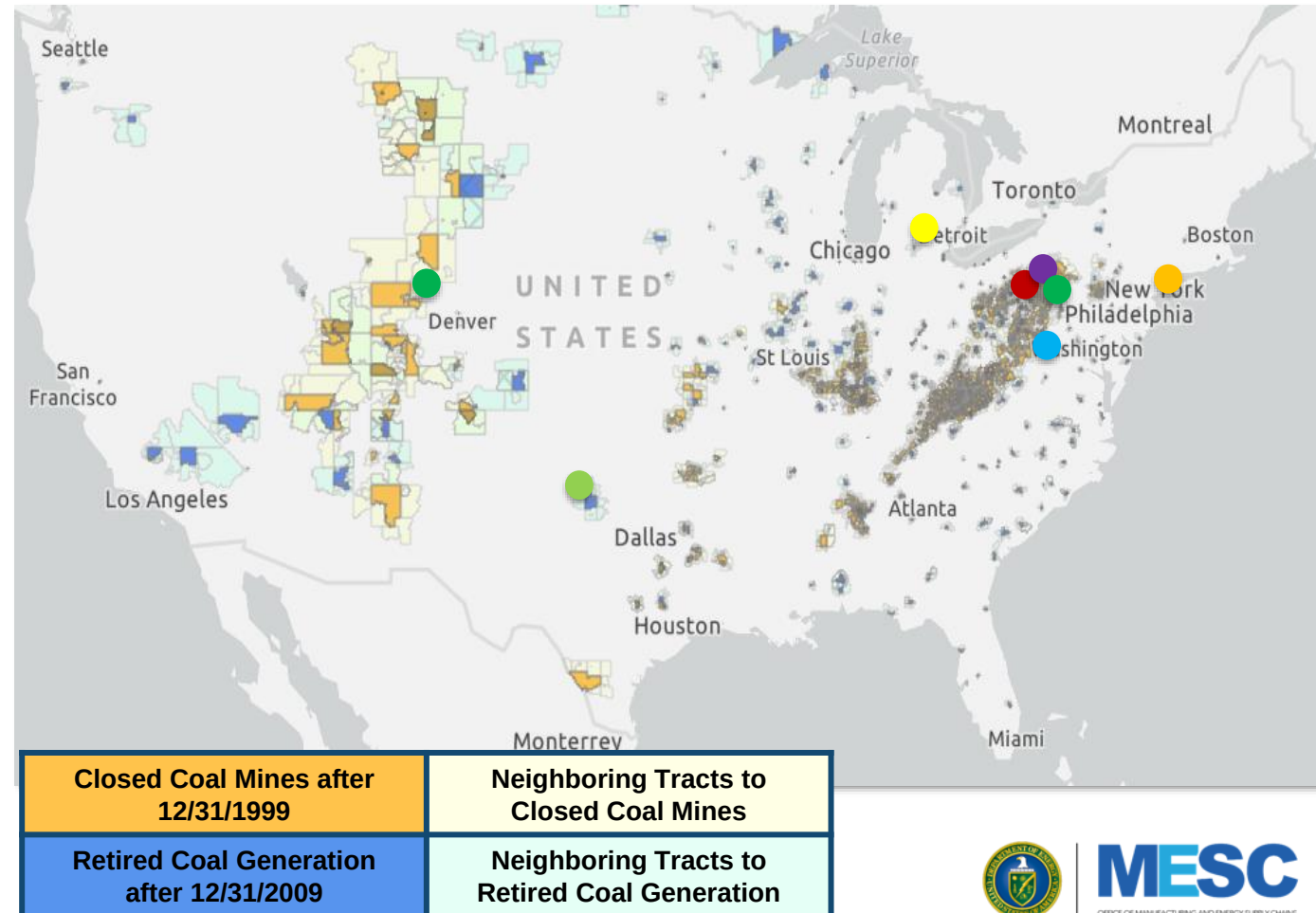
Projects in communities that have experienced coal mine or coal-fired power plant unit closures



Advanced Energy Manufacturing and Recycling Grants Program Selections

Round 1: 7 Projects, \$275M in Federal Funds

Organization	Description	Federal \$
 Boston Metal	Critical Materials: Ultrapure chromium metal, alloys & parts for clean power, fuel cells & green steel	\$50 million
 CorePower Magnetics, Inc	Critical Materials: Melting and casting of advanced magnetic amorphous alloys for transformers and motors	\$20 million
 FastCAP Systems d/b/a Nanoramic Laboratories	Grid/Stationary Storage: Lithium Iron Phosphate (LFP) Battery Electrodes	\$47.5 million
 MP Assets Corporation	EV Battery Components: Lithium-Ion Separators	\$100 million
 Alpen High Performance Products, Inc.	Energy Conservation: Ultra-thin, triple and quad-pane insulated glass units (IGUS) for windows	\$5.8 million
 LuxWall Inc	Energy Conservation: Vacuum insulated glass (VIG) window units	\$31.7 million
 Carter Wind Turbines, LLC	Onshore Wind: Mid-Sized 300 kW turbines	\$20 million



DE-FOA-0003294
Advanced Energy Manufacturing and Recycling Grant Program (Section 40209)

ANTICIPATED SCHEDULE:

FOA Issue Date:	3/8/24
Submission Deadline for Concept Papers:	4/8/24 5:00pm EST
Submission Deadline for Full Applications:	6/24/24 5:00pm EST
Anticipated Timeframe for DOE Selection Notifications:	November 2024
Anticipated Timeframe for Award Negotiations:	November 2024



40209 Round 2: Areas of Interest

Area of Interest 1



Advanced Energy Manufacturing & Recycling Projects

Projects to establish new, or re-equip or expand, an existing manufacturing or recycling facility for the production or recycling, as applicable, of advanced energy property.

Area of Interest 2

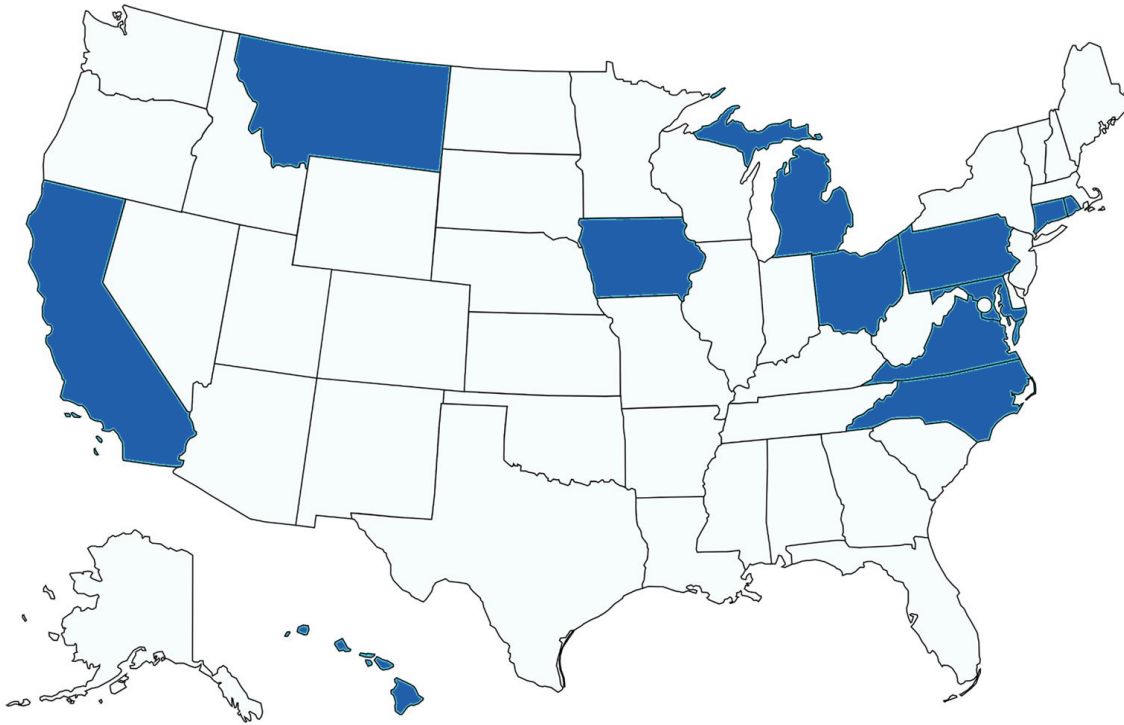


Industrial Decarbonization Projects

- **Re-equip an existing industrial or manufacturing facility with equipment designed to substantially reduce the greenhouse gas emissions of that facility** substantially below the greenhouse gas emissions under the applicant's current best practices, that achieve the goals as defined in the FOA through the installation of industrial technology.
- **Establish a new, or re-equip, or expand, an existing manufacturing or recycling facility that produces materials that result in substantially lower carbon intensity** compared to an appropriate industry benchmark and are not derived from a primary feedstock of palm fatty acid distillates or fossil fuels including coal, natural gas, and petroleum.

State Manufacturing Leadership Program

Grants to support new or expanded **State-run Programs** that support **small- and medium-sized manufacturers** to access **smart manufacturing technologies** and **high-performance computing resources**



[12 states selected in September 2023](#)
[Stay tuned for future funding in 2024!](#)

Programs Supporting:

- 12 Smart Manufacturing
- 4 High Performance Computing

Program Breakdown

- 9 New Programs
- 3 Expansions of Existing Programs

Project partners include:

- Manufacturing USA institutes/satellites
- NIST–MEPS
- Industrial Assessment Centers
- Community Colleges/Networks
- Minority, Women, or Veteran-Serving Orgs
- Unions
- Historically Black Colleges / Universities

Anticipated Program Impact:

>\$450M	Economic Impact for SMMs
3,500	SMMs receiving TA or project scoping
1,200	Smart manufacturing assessments
280	Direct financial assistance subawards to SMMs

IAC program to date: IACs have strengthened manufacturers for >45 years

- **Overview:** IACs train the next generation of energy-savvy engineers and energy management workers, and provide no-cost, in-depth energy assessments and technical assistance to small and medium-sized manufacturers (SMMs)
- **Network:** IACs operate 37 Centers at ~\$15M annually
- **Track Record:** IACs have conducted over 20,000 assessments and provided nearly 150,000 recommendations to small/medium manufacturers
- **Impact:**
 - IACs typically identify >\$150,000 in potential annual savings opportunities for every manufacturer assessed
 - IAC graduates are 2.5x more likely to work in energy than their academic peers

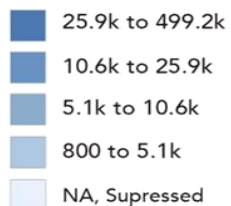


Overview: Industrial Assessment Center (IAC) Expansion

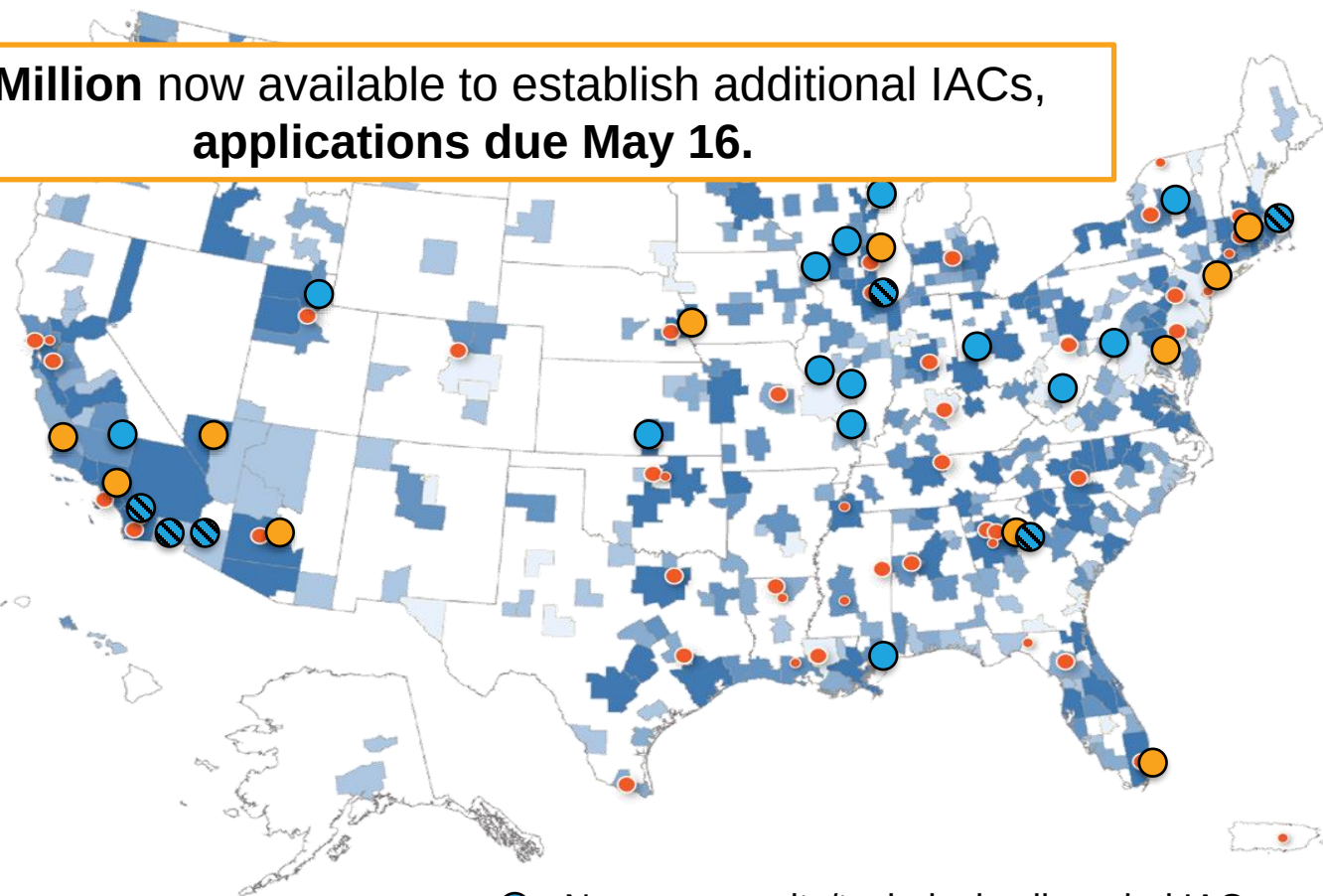
\$24 Million now available to establish additional IACs,
applications due May 16.



Manufacturing
Employment, 2021



Source: BEA



- New community/technical college-led IAC
- New union-led IAC
- New Minority-Serving Institution IAC
- Existing 4-year university-based IAC

- **MESC announced 17 new IACs end of 2023** at community/technical colleges and union training programs – many operating in several states
- **These selectees will receive ~\$32M** to train clean energy and manufacturing workers and strengthen manufacturers (e.g., via energy audits)
- **Selectees will train at least 3000 professionals** – with a strong focus on students from, and manufacturers in, historically underserved communities

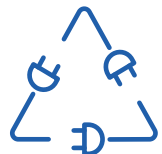


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Overview: IAC Implementation Grants



\$80M in funding available in the first year (\$400 million available until expended)



Grants awards of up to **\$300,000 per project per manufacturer**, at a 50% cost share¹;
Criteria: 50% impact/feasibility; 25% financial need + cost share; 25% community benefits



Eligibility exclusively for **small- and medium-sized manufacturing firms**,² and water and wastewater treatment facilities



To **address energy assessment recommendations** by IACs, DOE Combined Heat and Power/Onsite Energy Technical Assistance Partnerships, or other third-party assessors deemed equivalent by DOE

1. 50% cost share means that the applicant must cover at least 50% of the project cost. So, for instance, if an implementation project or projects costs \$100k, DOE can make a \$50k grant. Because \$300k is the maximum grant size per entity, applicants will need to cover 100% of costs over \$600k.

2. Small and medium-sized manufacturer (an entity that engages in the mechanical, physical, or chemical transformation of materials, substances, or components; or, a water or wastewater treatment facility) is a firm with: gross annual sales of less than \$100M, fewer than 500 employees at the plant site, and annual energy bills of \$100,000 - \$3,500,000. **If the manufacturer/facility is an individual LLC that pays separate taxes from the parent company, then eligibility is based on the LLC.**



A blue-tinted photograph of a robotic arm in a factory, positioned on a production line. The background shows industrial structures and other equipment.

Additional Key Programs

48C Investment Tax Credit
Extended Product Systems



48C Investment Tax Credit - What is 48C?



What

- Investment tax credit (ITC) expanded by IRA with \$10 billion for (1) clean energy manufacturing & recycling, (2) critical materials, and (3) industrial GHG emissions reduction projects
- Projects receive 30% ITC (or 6% if prevailing wage and apprenticeship requirements not met)
- At least 40% of the total \$10 billion will be allocated to projects in communities with closed coal plants known as “energy communities”

Eligible Entities

- Clean energy manufacturers & recyclers; critical materials processors, refiners, & recyclers; industrial facilities planning GHG emissions reduction projects

Why

- 48C will play a critical role in creating high-quality jobs, reducing industrial emissions, and increasing domestic production of critical clean energy products and materials

Legend

-  Scope defined by ARRA in 2009
-  Scope added by IRA

Clean Energy Manufacturing and Recycling

- Re-equip, expand, or establish Industrial or manufacturing facility for production or recycling of clean energy and energy efficiency technologies

Critical Materials Processing, Refining, and Recycling

- Re-equip, expand, or establish an industrial facility to process, refine, or recycle critical materials (50 USGS minerals + DOE critical materials)

Industrial GHG Emissions Reductions

- Re-equips industrial or manufacturing facility to reduce greenhouse gas emissions by at least 20%

Extended Product System Rebate Program

- **Rebates for variable speed motors and their control systems, \$10 million available in total.**
- Rebates equal the motor horsepower + control horsepower multiplied by \$25.
- Entities may apply for as many systems as qualify, receiving up to \$25,000 per calendar year.
- There are two distinct classes of eligible entities for the EPS program.
 - The first includes entities that purchased a qualifying EPS and completed its installation between October 1, 2021, and September 30, 2023.
 - The second includes owners of equipment that was redesigned to newly incorporate an EPS if that upgrade was completed between January 1, 2021, and December 31, 2022.



Please contact the program manager, Benjamin Carlson (benjamin.carlson@hq.doe.gov) for more information, materials, and for scheduling virtual or in-person briefings and Q&A.

The application portal is live at <https://doerebates.my.site.com/rebates/s/> or via the QR code here.

Connect With MESC

energy.gov/mesc



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Office of Manufacturing and Energy Supply Chains, U.S. Department of Energy



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Department of Energy: Opportunities for Manufacturers



Industrial Assessments & Implementation Grants

- **Small & Medium Sized Manufacturers (SMMs) may be eligible NOW for a free energy assessment** through one of 37 university Industrial Assessment Centers.
- **\$400M available to SMMs to implement recommendations from eligible assessments.** Open solicitation – quarterly reviews.
- Grant awards of **up to \$300,000 per project per quarter** with >50% cost share



[Implementation Grant Program](#)



Advanced Energy Manufacturing and Recycling Grants

- \$750M for **SMMs to reduce GHG emissions (>20%) or reequip or build factories** for clean energy manufacturing
- Supported projects **must be in or adjacent to census tracts where coal mines or coal-fired power plants have closed** since December 31, 1999
- Round 1 Closed ~\$275M for 7 projects (up to \$100M awards; >50% cost share); **Round 2 \$425M anticipated release Coming Soon!**



[Round 1 Recap Webinar Recording](#)



48C Investment Tax Credit

- Competitively-awarded **up to 30% Investment Tax Credit (ITC)** expanded with \$10B in 2022; \$4B released in Round 1 in 2023 through IRS.
- Eligible projects **(1) clean energy manufacturing & recycling, (2) critical materials, and (3) industrial GHG emissions reduction projects**
- **\$6B for Round 2 coming in 2024;** ~40% of credits will be allocated to projects in energy communities



[48C Program](#)

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Department of Energy: Opportunities for Manufacturers



Extended Product Systems Rebate

- **\$10 Million in rebates for variable speed motors and their control systems**
- Rebates equal the motor horsepower + control horsepower multiplied by \$25.
- Entities may apply for as many systems as qualify, receiving **up to \$25,000 per calendar year**.
- Contact benjamin.carlson@hq.doe.gov for more information



[Rebate Application Portal](#)



Onsite Energy Technical Assistance Partnerships (TAPs)

- **10 regional TAP entities** around the country conducted >1000 technical screenings over the past 5 years
- Partner with manufacturers to identify cost effective & resilient ways to deploy combined heat & power (CHP) and other onsite energy
- **Provide free technical assistance** for industrial facilities and other large energy users



[Onsite Energy TAPs](#)

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Getting a Qualified Assessment

Option 1: Industrial Assessment Centers (IACs)

Receive a no-cost comprehensive assessment from one of 37 IACs located at four year-universities around the country. To locate the closest IAC and apply, visit: <https://www.energy.gov/mesc/locations-industrial-assessment-centers>



Option 2: Onsite Energy Technical Assistance Partnerships (TAPs)

Receive a no-cost screening assessment for onsite clean energy technology deployment from one of 10 regional TAPs. To locate the closest Onsite Energy TAP and apply, visit: <https://betterbuildingsolutioncenter.energy.gov/onsite-energy/taps>



Option 3: Third-Party Assessors

Receive an assessment* from a third-party assessor qualified as "IAC-equivalent:"

- Alternative Energy Systems Consulting, Inc.
- Cascade Energy
- CLEAResult
- eSai LLC
- Go Sustainable Energy, LLC
- Michaels Energy
- New York State Energy Research and Development Authority
- North Carolina Advanced Energy Corporation
- PennTAP - Pennsylvania Technical Assistance Program
- Utah DEU StepWise Program



*DOE cannot guarantee that third-party assessments will be free

IAC Implementation Grants Program Process

Working through a
“Partnership
Intermediary”
enables a much
more **streamlined**
grant process

1

Receive a Free Qualified Assessment

Manufacturer reaches out to qualified assessors (e.g., IACs, CHP/Onsite Energy TAPs, or other third-party* qualified assessor) to receive an energy assessment



2

Apply for Grant Funding

Manufacturer applies for IAC Implementation Grant funding to implement project recommendations from qualified assessments



3

Review of Application for Grant Funding

DOE reviews application for grant funding



4

Get Selected for an Award

DOE selects manufacturer's application and works with manufacturer to finalize award size and sign award documents



5

Receive Grant Funding

Manufacturer begins implementation of projects and submits invoice(s) of incurred costs to DOE to receive grant funding



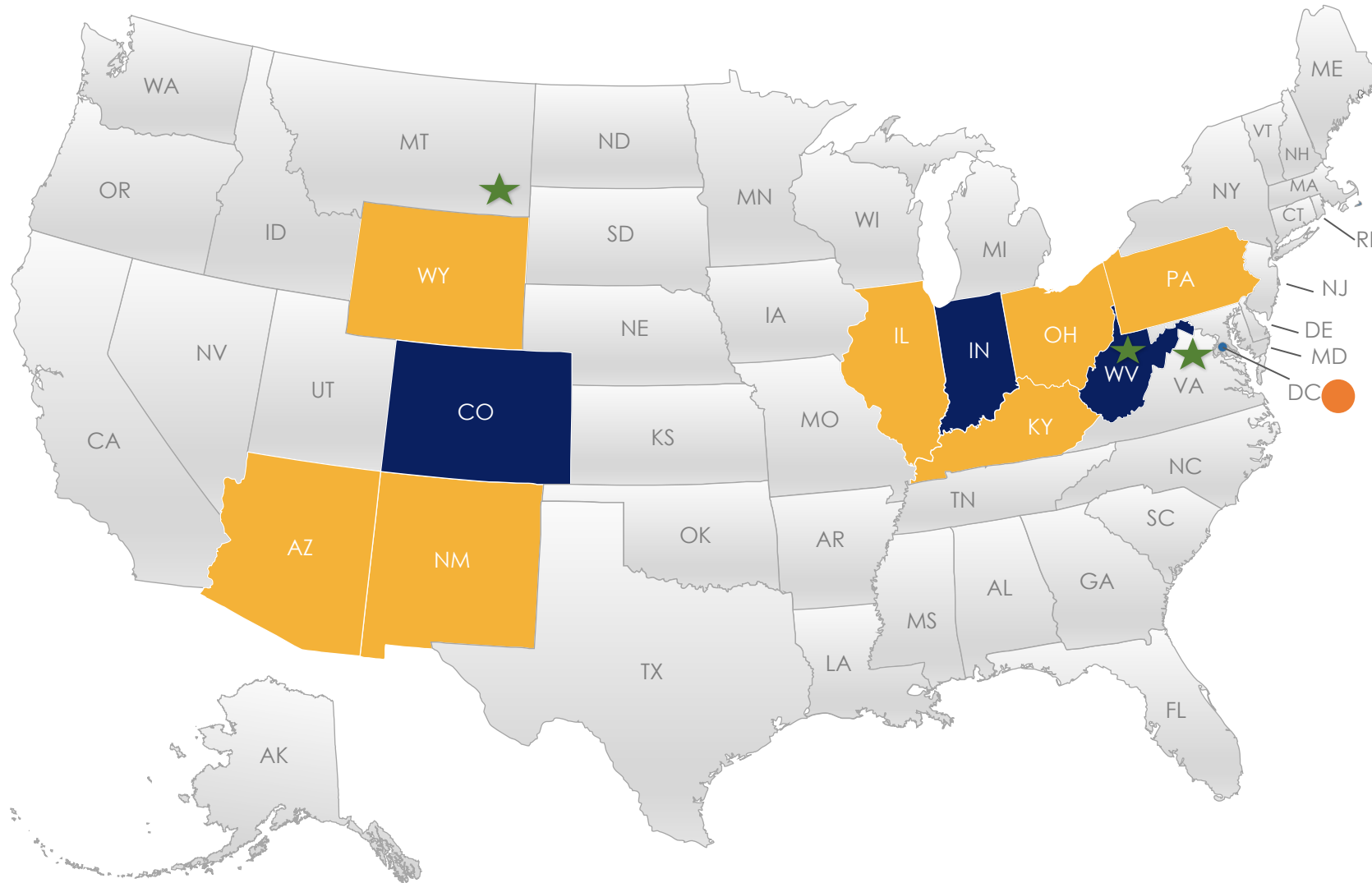
To learn more about the grants program, including FAQs and how to apply, visit
<https://www.energywerx.org/opportunities/iacimplementationgrants>

*DOE cannot guarantee that third-party assessments will be free



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IWG 48C Engagement Events



■ Targets for 48C Regional Workshops

- March 21: Intermountain West
Denver, CO
- March 26: Central
Appalachia Charleston, WV
- April 16 or 17: Illinois Coal Basin
Evansville, IN

■ Engagement via Rapid Response Teams

- Four Corners
- Kentucky
- Illinois
- Pennsylvania
- Wyoming
- Ohio

★ Planned IWG RRTs

- Southeast Montana
- Virginia
- West Virginia

● Other Proposed Events

- IWG Anniversary Event
- Ad-hoc Events

**pending consultation with partners*

For More Information

Please submit any programmatic questions to
48CQuestions@hq.doe.gov.

Additional information on 48C program, including a
recent webinar, is available at
<http://www.energy.gov/infrastructure/48C>



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