MESC

OFFICE OF MANUFACTURING AND ENERGY SUPPLY CHAINS

Opportunities in DOE manufacturing programs

SFSA Fall Leadership Meeting

September 2024

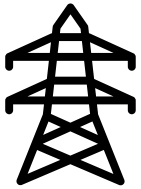
The U.S. clean energy transition relies on steel foundries

Crucial components across technology areas require casted or forged steel, including:

Hydropower

3-4-ton castings for turbine components

Specialized steel for generators and penstocks

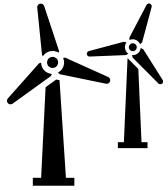


Grid

GOES for transformers

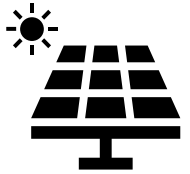
Vehicles & equipment

Non-oriented electrical steel (NOES) for motors



Wind

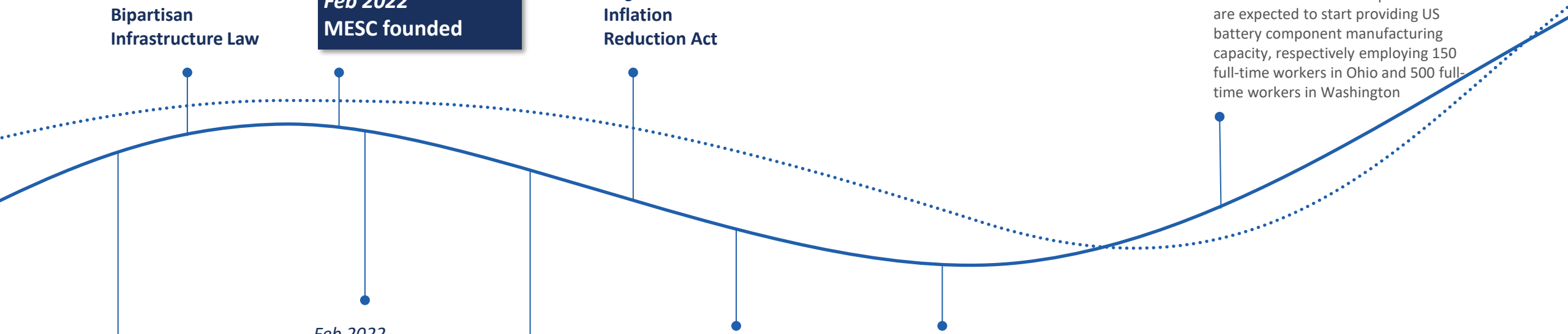
Turbine towers



Solar

Mounting hardware

MESC was founded in 2022 to address these types of vulnerabilities and to strengthen critical clean energy supply chains



Nov 2021
Bipartisan Infrastructure Law

Feb 2022
MESC founded

Aug 2022
Inflation Reduction Act

2024
First MESC factories expected to come online
Cirba Solutions and Group14 are expected to start providing US battery component manufacturing capacity, respectively employing 150 full-time workers in Ohio and 500 full-time workers in Washington

Feb 2021
E.O. 14017
E.O. directing a whole-of-government approach to assessing vulnerabilities in, and strengthening the resilience of, critical supply chains

Feb 2022
Securing America's Clean Energy Supply Chain Report
Report in response to E.O. 14017 outlining the USG's plan to build a secure energy sector industrial base

Jun 2022
Biden invokes DPA
Authorizes DOE to utilize the Defense Production Act to accelerate domestic production of key energy technologies

Oct 2022
First investments announced
MESC selects 20 companies across 12 states, investing $2.8B into the first round of battery manufacturing

Jun 2023
First MESC groundbreaking
Anovion Technologies breaks ground in Georgia on facility supported by MESC investment through BIL funding

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MESC is all about de-risking energy supply chains

VISION

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

MESC'S CORE FUNCTIONS

Manufacturing Investing

Strengthening and securing the energy supply chains America needs for a secure, clean and equitable energy system

Workforce Investing

Supporting workforce skills development by directly funding cutting-edge energy manufacturing training programs

Manufacturing Analytics Backbone

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

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MESC's impacts to-date

$3.9B+ private sector investment catalyzed

8,445 construction and permanent jobs created

38% of investments in energy communities or J40 communities

1000+ students trained annually - and growing quickly

1.3M+ EVs enabled annually

$55M+ in benefits flowing to communities through Community Benefits Plans

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Manufacturing investing: Advanced Energy Manufacturing Grants and Project Credits

The New York Times

Former Coal Towns Get Money for Clean-Energy Factories

An Energy Department program designed to create jobs and manufacturing in communities reliant on fossil fuels is backing projects in West Virginia, Colorado and elsewhere.

Share full article 243

Advanced Energy Manufacturing and Recycling Grants

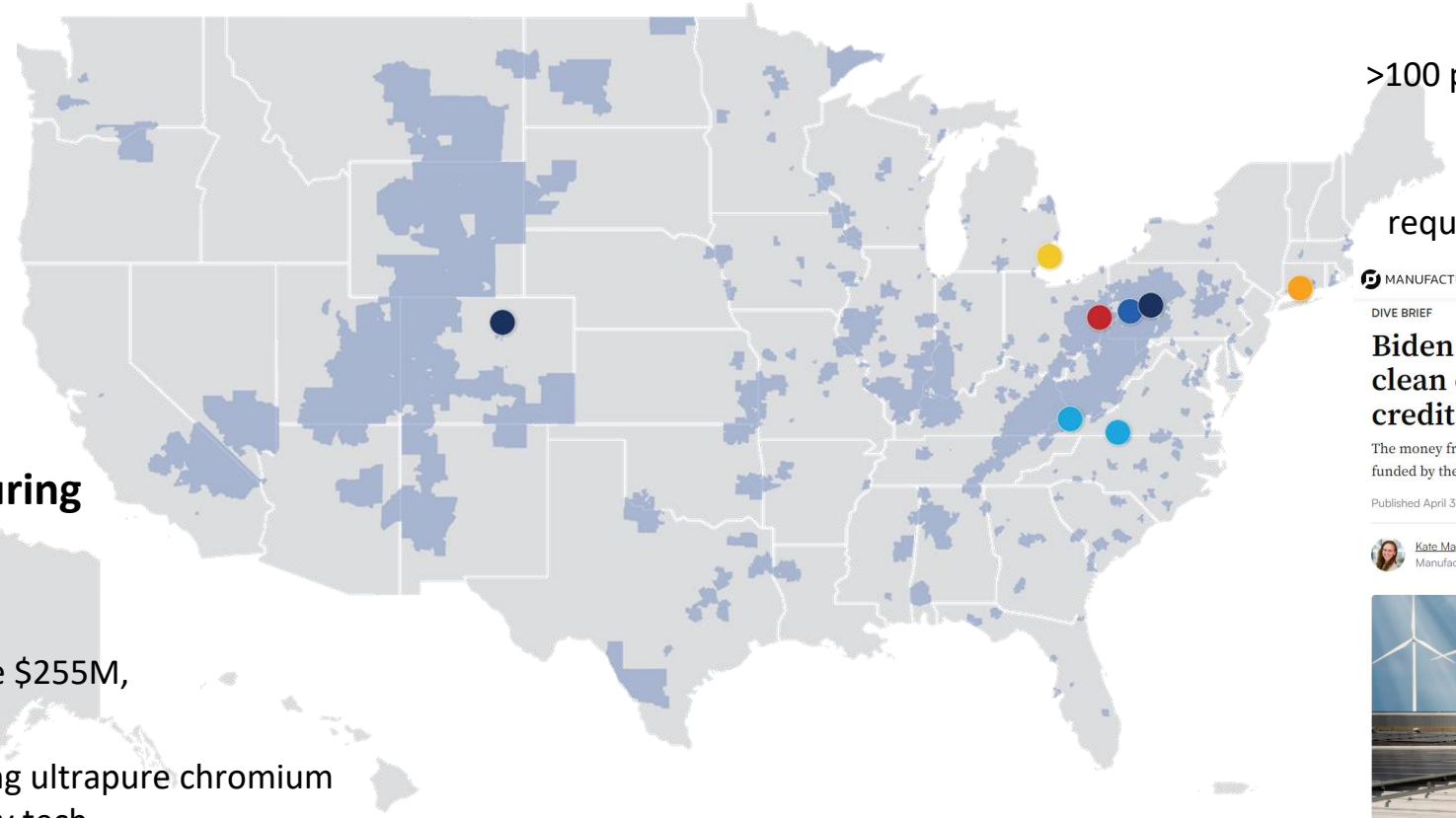
$750M for *Energy Communities*

6 projects selected to date, to receive $255M, second round under review

Example: Boston Metal (WV) is making ultrapure chromium for green steel and other clean energy tech

Potential future opportunities if funding is available

Energy Communities census tracts and Advanced Energy Manufacturing selections



Qualifying Advanced Energy Project Tax Credits (48C)

$10B tax credit for investments in advanced energy projects, 40% for *Energy Communities*

>100 projects allocated $4B to date second round under review

Accelerating many industries requiring steel casting and forging

MANUFACTURINGDIVE Deep Dive Opinion Library Events Press Releases Topics

DIVE BRIEF

Biden administration awards $4B in clean energy manufacturing tax credits

The money from the 48C credit spans 35 states and is part of a slate of tax incentives funded by the Inflation Reduction Act.

Published April 3, 2024

Kate Magill
Manufacturing Lead Editor

Manufacturing Investment: State Manufacturing Leadership Program

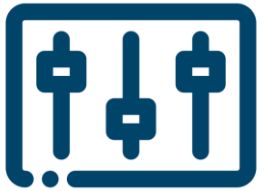
Smart Manufacturing: the use of emerging and advanced technologies to increase the efficiency of traditional manufacturing processes, resulting in fully-integrated, collaborative manufacturing systems that respond in real time.

Sensors

Controllers

Digital Prototyping

Network Hardware



Machine Learning

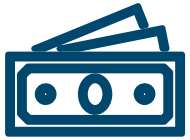
Additive Manufacturing

High-Performance Computing (HPC): the use of supercomputers, sophisticated models, and/or large data sets to study and solve complex scientific and technological challenges.

Safer design testing

Faster error detection

Fewer rejected parts



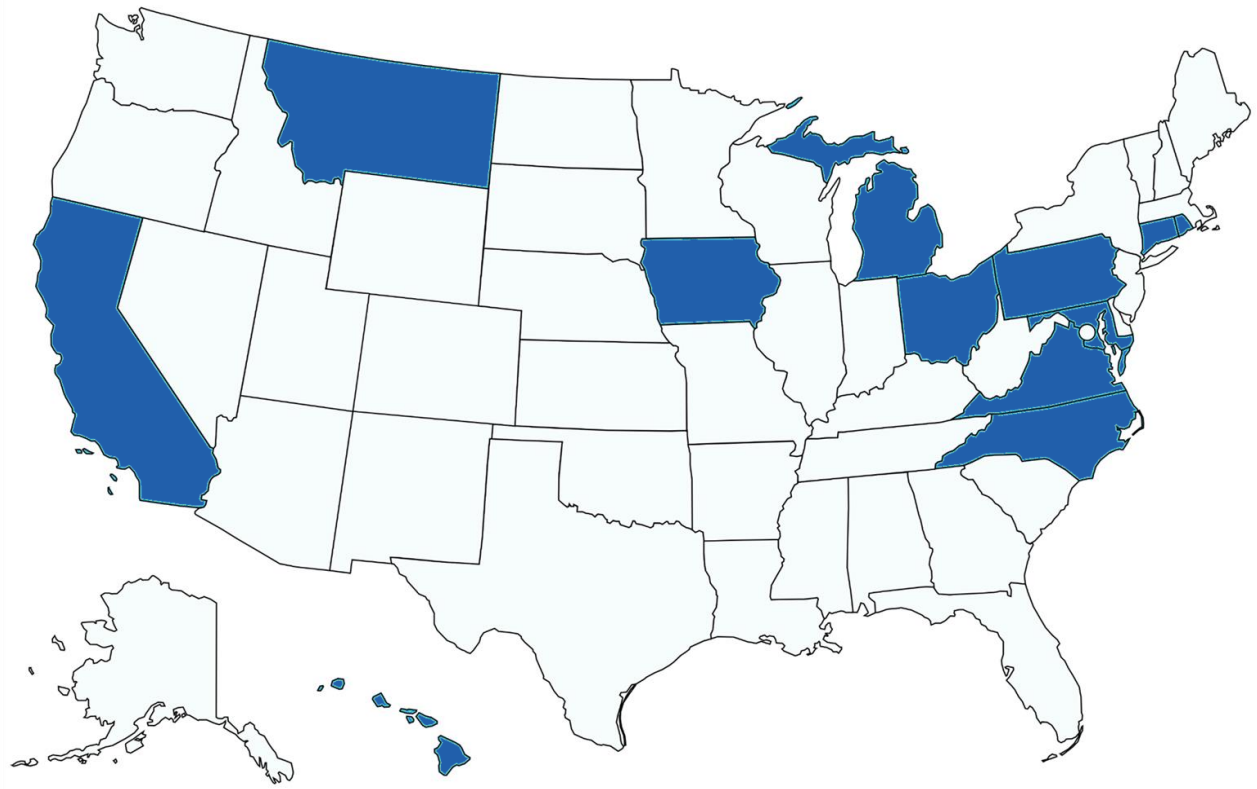
Lower product costs

Greater competitiveness

State Manufacturing Leadership Program: Round 1 Selections

12 Projects, 12 States, $22M in Federal Funds

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**



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 Training & Assessment Centers
- Community Colleges / Networks
- Minority, Women, or Veteran-Serving Orgs
- Unions
- Historically Black Colleges and Universities

Anticipated Program Impact:	
>$450M	Economic Impact for manufacturers
3,500	SMMs receiving TA or project scoping
1,200	Smart manufacturing assessments
280	Financial assistance subawards to manufacturers

Workforce Investing: The Industrial Training and Assessment Centers (ITAC) Program Has a Two-Part Vision

1. A **skilled clean energy & manufacturing workforce** that represents the diversity of America

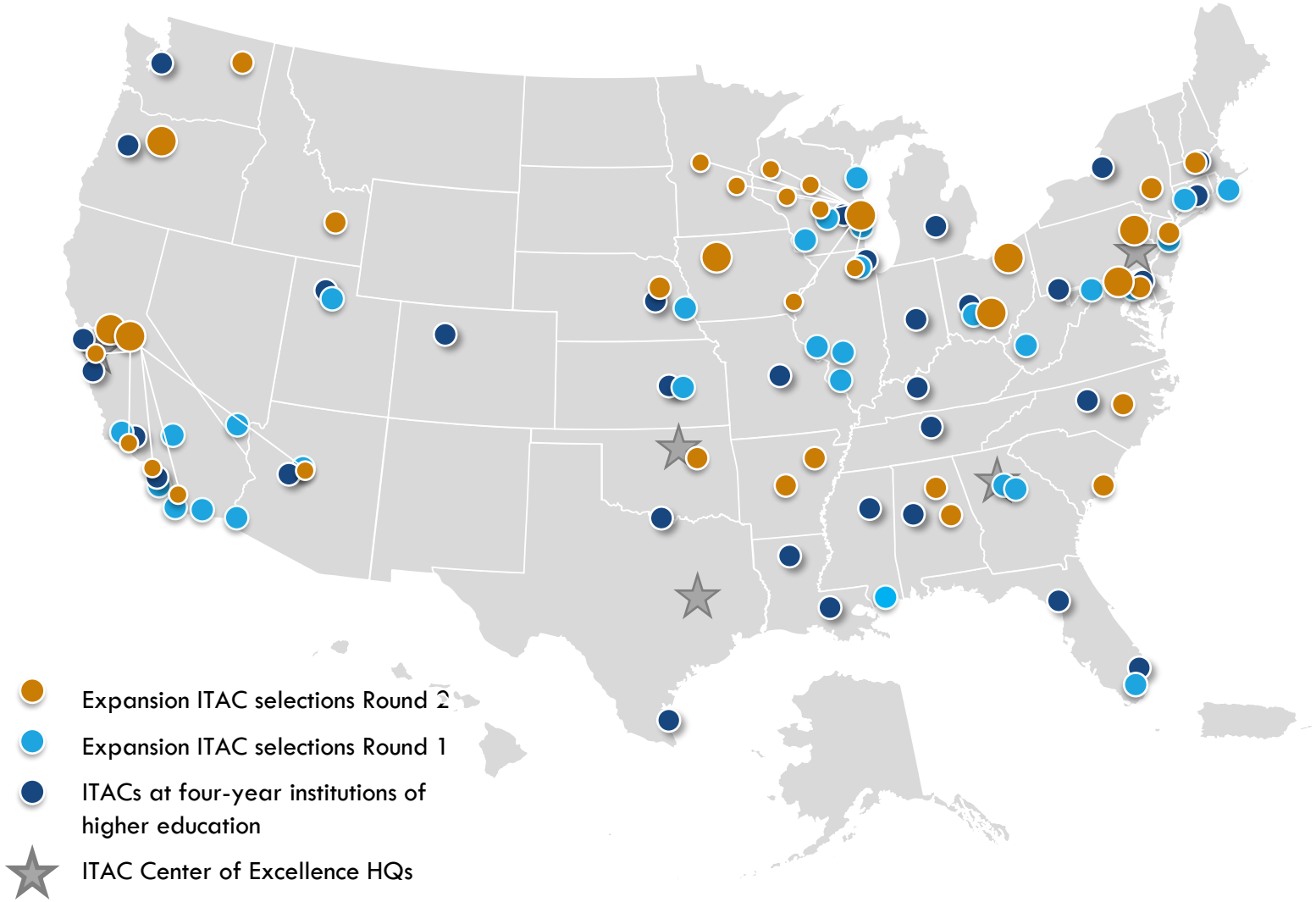
2. A **reinvigorated manufacturing base** prepared to lead the global clean energy transition

The traditional ITAC program has strengthened manufacturers for over 45 years

- **Overview:** ITACs 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)
- **"Base" Network:** 36 university-based ITACs operate around the country, funded on a bipartisan basis at ~$15M annually
- **Track Record:** ITACs have conducted over 21,000 assessments at manufacturers of all kinds (all of NAICS 31-33, plus water treatment plants)
- **Impact:**
  - ITACs typically identify >$150,000 in potential annual savings opportunities for every manufacturer assessed
  - ITAC graduates are 2.5x more likely to work in energy than their closest academic peers

The Bipartisan Infrastructure Law allocated $550M to expand the program in several ways

The national network of ITACs



The ITAC expansion has 3 core elements:

1. **New ITACs at community colleges, trade schools, and unions** to strengthen hiring pipelines for high-quality manufacturing jobs and provide more services to small and midsized manufacturers (SMMs)

2. **Five regional Centers of Excellence and a national Clearinghouse** to support the network and help it reach more SMMs

3. **Up to $400M in grants for SMMs** to implement energy-saving and productivity-enhancing upgrades

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MESC recently announced $24M in new ITAC projects

Department of Energy

Biden-Harris Administration Announces $24 Million to Further Expand America's Clean Energy Workforce and Enhance Manufacturing Efficiency

JULY 29, 2024

Energy.gov >

Biden-Harris Administration Announces $24 Million to Further Expand America's Manufacturing Efficiency

Supported by the Investing in America Agenda, 21 Projects Acro Opportunities, Strengthen Union Labor, and Help Small Busi

WASHINGTON, D.C. — In support of the Biden-Harris Admir , the U.S. Department of Energy (DOE) today announced million from the Bipartisan Infrastructure Law to bolster t workforce training programs – with a focus on jobs that d union training programs, community colleges, and

WISCONSIN PUBLIC RADIO

ENERGY, HIGHER EDUCATION, MANUFACTURING, NEWS

UW-Milwaukee leading effort to train workers for green jobs that support manufacturing

UW-Milwaukee will assist 9 community colleges in Wisconsin, Minnesota, Iowa and Illinois to establish training centers

BY JOE SCHULZ • AUGUST 15, 2024

Listen

University of Wisconsin-Milwaukee. *Gretchen Brown/WPR*

WHYY NEWS CLIMATE DESK

Bucks County Community College receives $2M for clean energy job training

Students will work with the college's existing network of more than 170 small- and medium-sized companies to help them cut costs and reduce carbon emissions.

By Emily Neil - August 4, 2024

Listen 1:02

Mitch Engleka, 28, manufacturing engineer (right) and Nick Ball, a manufacturing technician (left), inspect a mold that creates latches to secure the spare tire on a Dodge Durango at Southco in Concordville, Pa.(Kimberly Paynter/WHYY)

This story is part of the WHYY News Climate Desk, bringing you news and solutions for our changing region.

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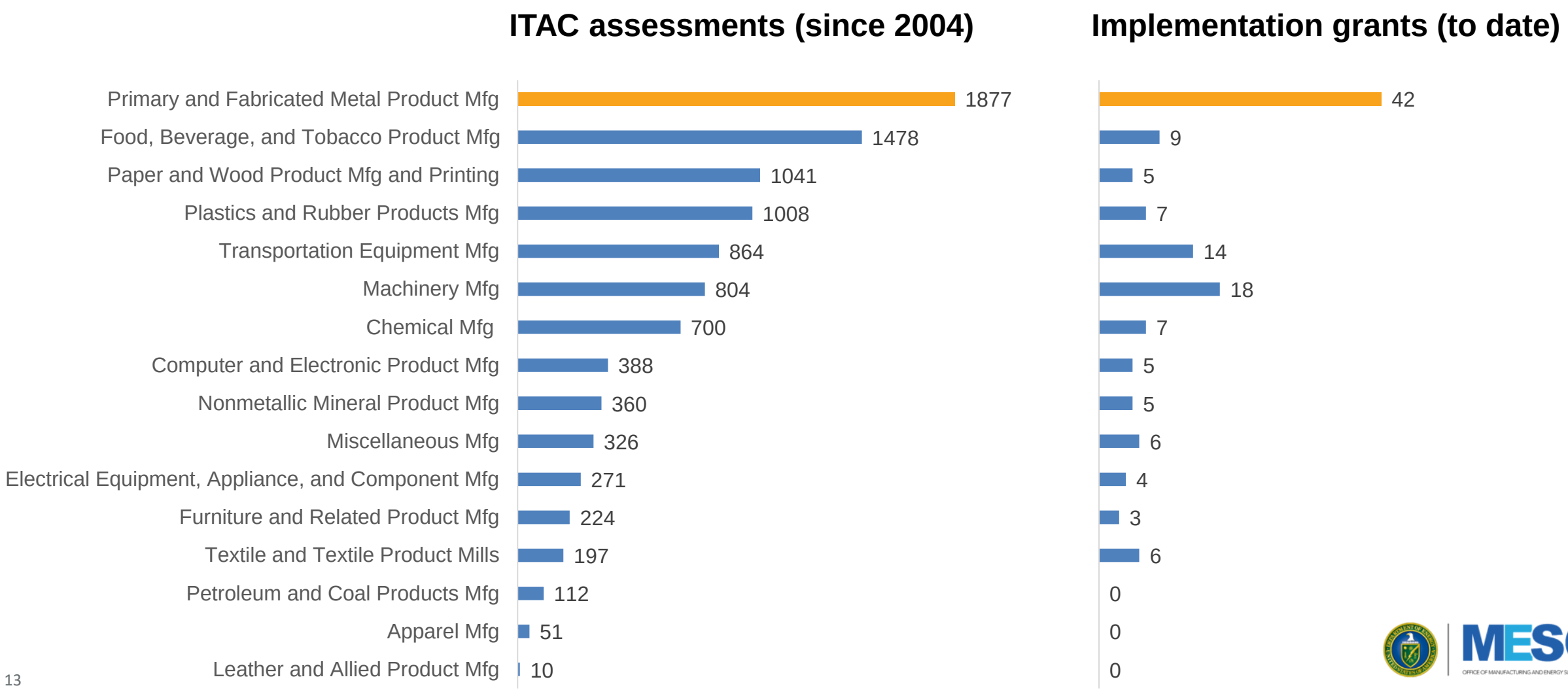
Steel foundries and similar manufacturers are the largest beneficiaries of the ITAC program to date



There are several opportunities for SFSA members to engage with the ITAC Program

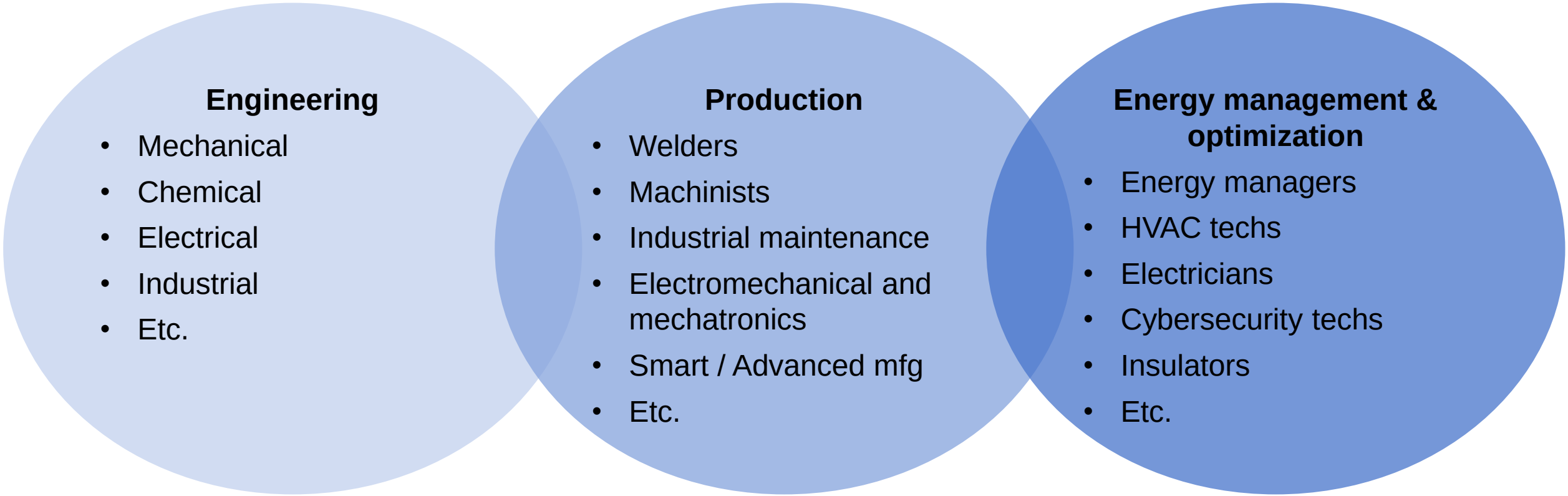
1. Engage with ITACs for potential interns, apprentices, recruits, and training for your staff

2. Connect with nearby planning awardees (and the Centers of Excellence supporting them) to help shape their ITAC design

3. Get a no-cost ITAC assessment

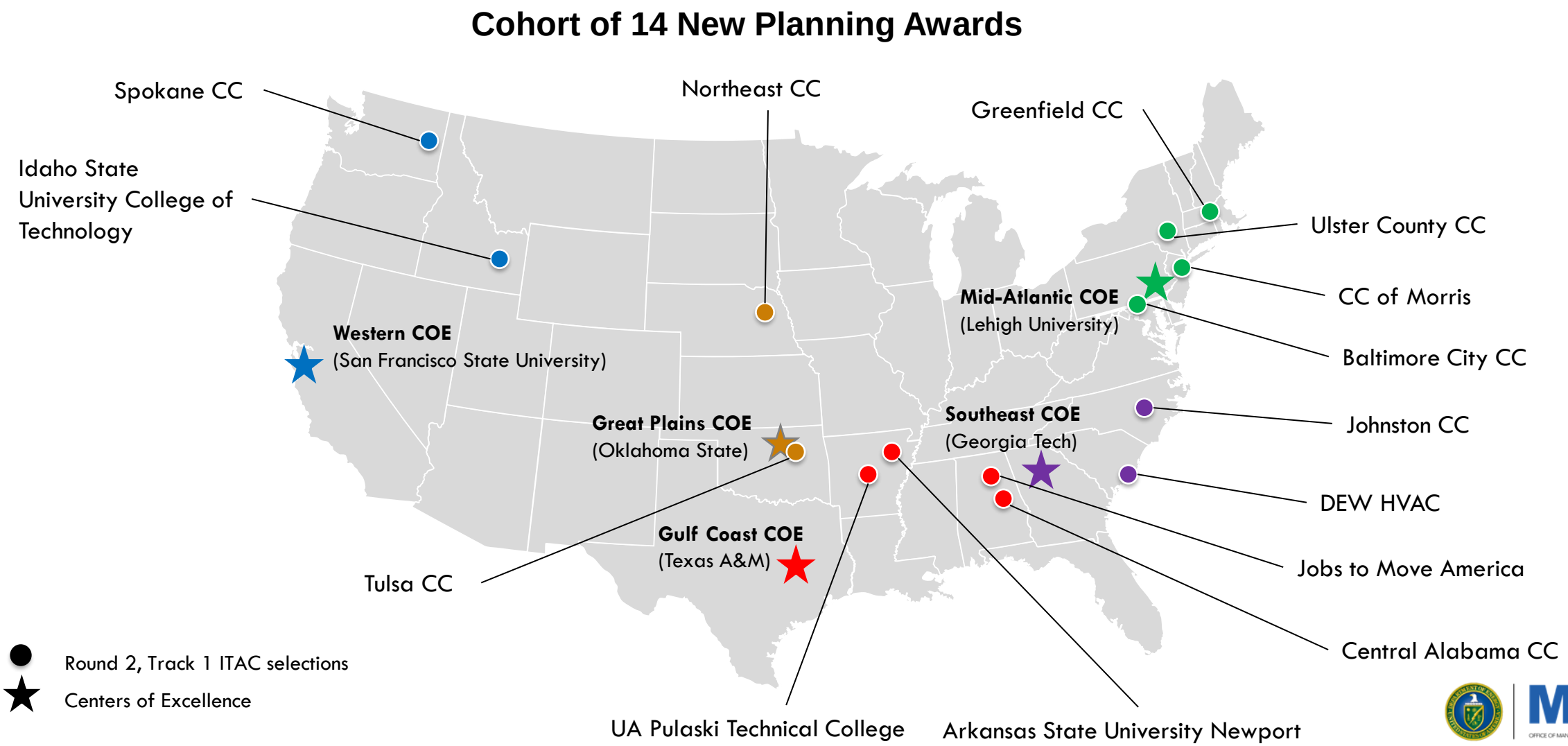
4. Use the assessment results to apply for implementation grants

1. Engage with ITACs for potential interns, apprentices, recruits, and training for your staff



Note: Many ITACs and ITAC Centers of Excellence also can provide training on relevant topics for your current employees. Reach out to the nearest Center of Excellence to learn more.

2. Connect with nearby planning awardees (and the Centers of Excellence supporting them) to help shape their ITAC design



3. Get a no-cost ITAC assessment

Request an assessment

Reach out to the nearest ITAC:

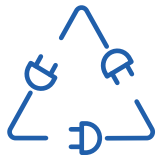
Or, visit:
iac.university

Typical timeline:
~1 month to assessment visit
~2 months to complete report

- Improve site energy and/or material efficiency
- Improve site cybersecurity infrastructure
- Improve site productivity & smart manufacturing
- Reduce site waste production
- Reduce site greenhouse gas emissions and/or nongreenhouse gas pollution

4. Use the assessment results to apply for implementation grants

Up to $400M in funding, available until expended. Most of it is still available.



Grants awards of up to **$300,000 per project to implement unique assessment recommendations** on a quarterly funding round basis, at a 50% cost share

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

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

Grant Eligibility Requirements (from the BIL statute)

Annual Gross Sales[1]

- Less than $100M
- Based on **manufacturing firm/entity**

Annual Energy Bills[1]

- Between $100K - $3.5M
- Based on **manufacturing firm/entity**

Number of Employees

- Fewer than 500
- Based on **facility/plant site**

All three grant eligibility requirements can be determined using either last completed fiscal year or year in which the assessment was completed (if different)

1. If the manufacturer/facility is an individual LLC that pays separate taxes from the parent company, then eligibility is based on the LLC.

ITAC Implementation Grants Process

1

Receive a Free Qualified Assessment

Small- to medium-sized manufacturer receives an energy assessment from a qualified assessor (ITAC, CHP/Onsite Energy TAP, or third-party* assessor). *Can take up to 2 months for final report.*

2

Apply for Grant Funding

Manufacturer applies for ITAC Implementation Grant funding of up to $300,000 (with 50% cost share) to implement project recommendations from qualified assessments. Note, applications are open year-round, with quarterly review cycles.

3

Get Selected and Receive Grant Funding

DOE selects and works with manufacturer to finalize award size and sign award documents; after project implementation, manufacturer 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

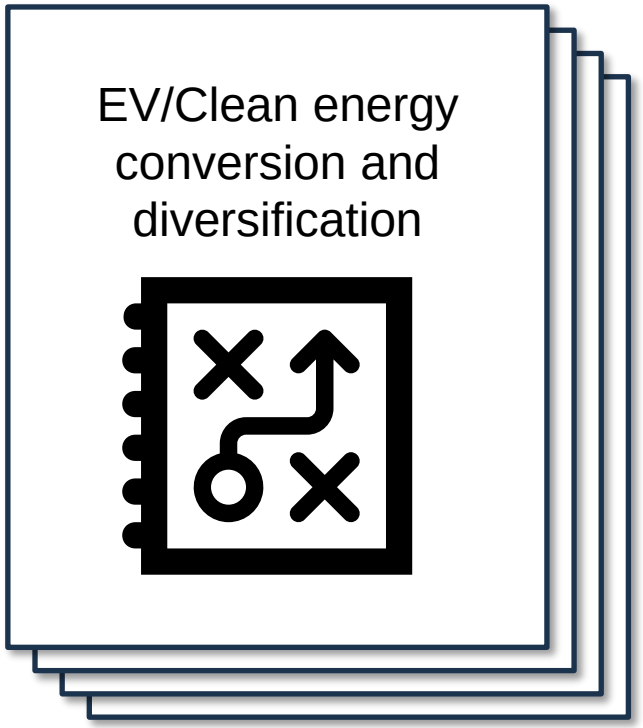
www.energywerx.org/itac

Working through a "partnership intermediary" enables a very streamlined application process!

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

Forthcoming opportunity for auto suppliers: An EV/clean energy transition playbook + ITAC TA

Expected public release: Late 2024 / early 2025



The playbook will cover several topics:

- Which internal combustion vehicle products face greater tailwinds and headwinds in the clean energy transition
- Possible EV/clean energy market opportunities, and how to identify others
- Approaches to prioritizing and pursuing new market opportunities
- Operational considerations, including financing, workforce, new certifications/standards requirements, etc.

New, interdisciplinary ITAC teams can help you deploy it:

Purdue University Manufacturing Extension Partnership + Conexus Indiana

University of Michigan and Michigan State ITAC

UI-Chicago ITAC, Argonne National Lab, Illinois Manufacturers Association, Midwest Energy Efficiency Alliance

Other Workforce Investing: Industrial Sustainability, Energy Efficiency and Decarbonization (ISEED) Collaborative

- **The U.S. Department of Energy's Industrial Efficiency and Decarbonization Office's ISEED Collaborative is an initiative to help grow the readiness of the workforce knowledge and skills needed to decarbonize the U.S. industrial sector.**
- The ISEED Collaborative will:
  - Assist partners to develop and disseminate instructional curricula and training programs focused on industrial sustainability, energy efficiency, and decarbonization
  - Make resources available for workers and empower learners to build skills and knowledge to contribute to sustainable manufacturing
- Up to 6 selected organizations will receive funding, technical support, and guidance over two years to develop and pilot solutions that can be scaled regionally or nationally, with broad sectoral coverage
  - Applicants need experience or networks in energy efficiency, industrial electrification or low-carbon fuels, feedstocks, and energy sources
  - Applications are due 11/01/2024

https://bit.ly/ISEEDCollaborative

Analytics backbone: Industrial Technologies Joint Strategy Team

CHARTERED BY THE SECRETARY & DEPUTY SECRETARY TO:

1) DEVELOP A STRATEGY
2) COORDINATE INTERNALLY
3) ENGAGE EXTERNALLY

SCOPE

Energy efficiency and decarbonization technologies that **reduce emissions and increase competitiveness** of the US industrial sector *in a net zero economy.*

INITIAL FOCUS AREAS

END USE SECTORS:
Metals, Chemicals, Cement

CROSS-CUTTING APPROACHES:
Energy Efficiency, Electrification

MOBILIZING
50
STAFF

ACROSS
10
OFFICES

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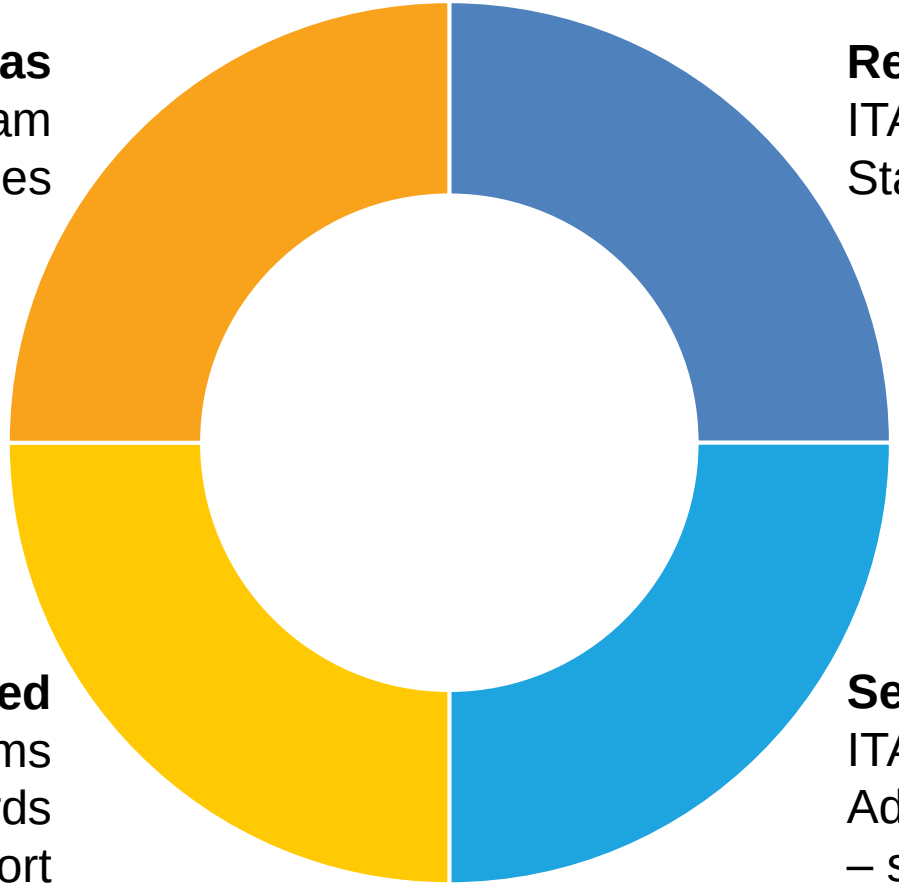
SFSA members can engage with MESC across these programs

Inform DOE priority areas
Joint Strategy Team
RFI responses



Receive low/no-cost TA
ITAC assessment
State Mfg Leadership Programming

Get the workforce you need
ITAC training programs
ITAC planning awards
State Mfg Leadership support

Seek funding and customers
ITAC implementation grants
Advanced Energy Manufacturing Grants – selectees and future opportunities

Thank you

energy.gov/mesc

MESC@hq.doe.gov

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