

INVESTING IN AMERICA'S ENERGY FUTURE



**MESCC**

OFFICE OF MANUFACTURING AND ENERGY SUPPLY CHAINS



# Office of Manufacturing and Energy Supply Chains Programs and §48C Qualifying Advanced Energy Project Credit Overview

**Illinois Basin §48C Regional Event**

April 2024

# Agenda



What is the **Office of Manufacturing and Energy Supply Chains (MESC)**? What **relevant programs** does **MESC administer** and how can you benefit?



What is the **§48C Qualifying Advanced Energy Project Credit** and how can you apply?



**Audience Questions and Answers**

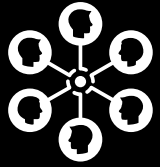


**What is the Office of Manufacturing and Energy Supply Chains (MESCC)? What relevant programs does MESCC administer and how can you benefit?**



# MESC's Core Functions

## *Underpinned by Robust Analytical Modeling*



### VISION

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

### 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*

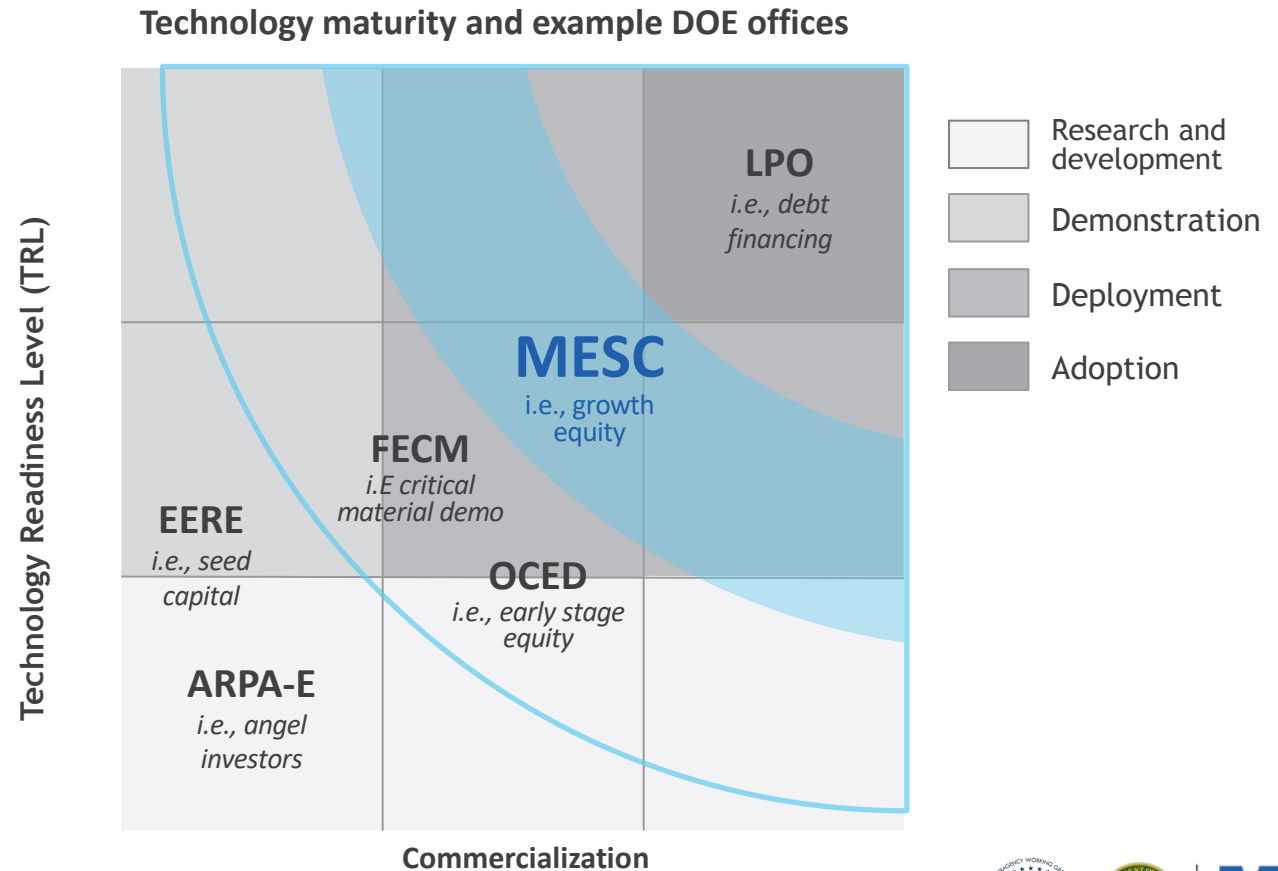
**MESC's investments in** enables the success of DOE's other project deployment offices by **de-risking supply chains** for transmission, H2, carbon capture, and other clean energy projects.

# MESC supports late-stage technology development, driving large-scale energy manufacturing

The Office of Manufacturing and Energy Supply Chains leverages private capital investment to secure American energy supply chains.

DOE and MESC investments are data-driven, building on modeling, mapping, and analyses from MESC and National Lab experts.

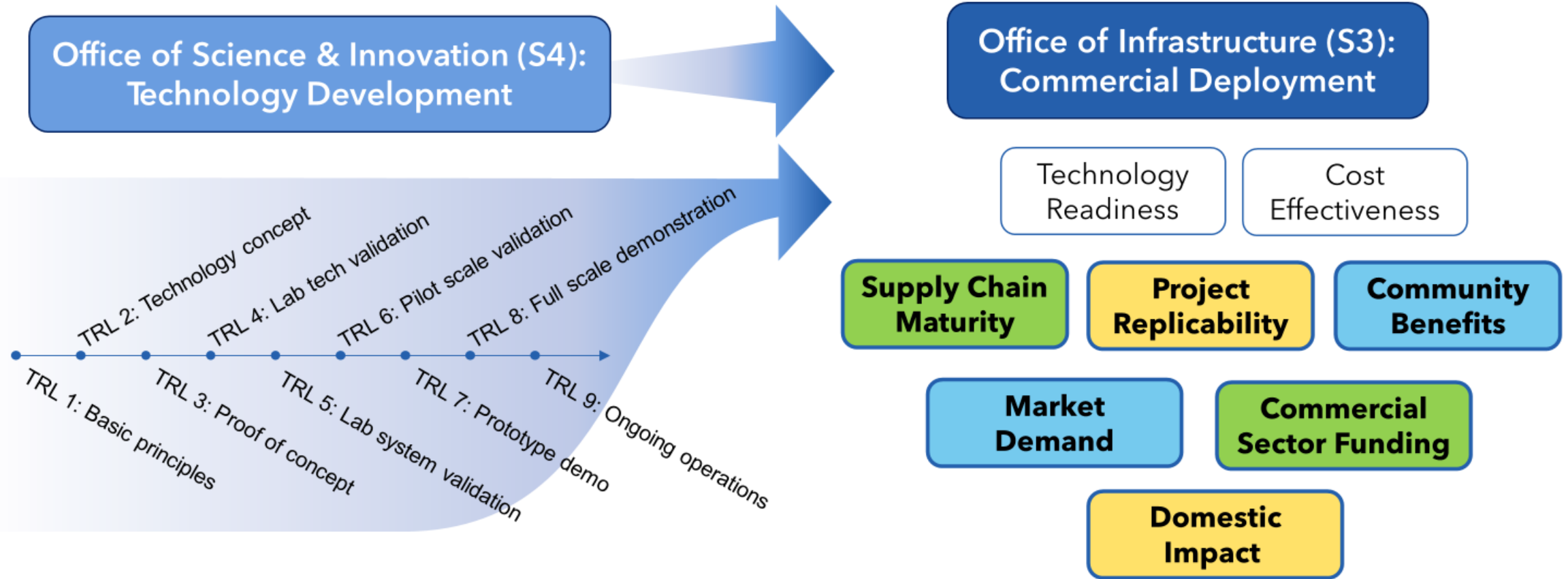
MESC supports workforce development by directly funding cutting-edge energy manufacturing programs at universities, community colleges, and trade schools, focusing on expanding equitable access to skilled worker training.



# New Capabilities to Supercharge Markets

**Commercialization** - Moving a technology from ideation to market viability

**Deployment** - Addressing market issues to facilitate adoption at scale



*Comprehensive set of capabilities to serve the country in leading clean energy innovation*

# Open MESOC Programs

## Open for New Applications

\$400 M	Industrial Assessment Centers Program (IAC) – Implementation	BIL 40521 (b)(1)
\$425 M	Adv. Manufacturing and Recycling Grants	BIL 40209
\$24 M	IAC- Clean Energy and Manufacturing Workforce Training and Technical Assistance Awards	BIL 40521 (b)(3)
\$16 M	IAC Technical Field Managers/ Clearinghouse	BIL 40521 (b)(3)
\$15 M	Consumer Electronics Battery Recycling, Reprocessing, and Battery Collection	BIL 40207 (f4) [Retail]
\$10 M	Extended Product System (EPS) Rebate Program	BIL 40555

## Under Review

\$3.5 Bn	Batteries Material Processing and Battery Manufacturing Grants	BIL 40207 (b) & (c)
\$2 Bn	Domestic Manufacturing Conversation Grants Program	IRA 50143
\$275M	Adv. Manufacturing and Recycling Grants	BIL 40209
\$250M	Defense Production Act- Heat Pumps Manufacturing	IRA 30001
\$50M	Consumer Electronics Battery Recycling, Reprocessing, and Battery Collection	BIL 40207 (f3) [State & Local]
\$50M	State Manufacturing Leadership Program	BIL 40534
\$32M	Industrial Assessment Centers Program –Expansion	BIL 40521 (b)(3)

## Forthcoming

\$6Bn	Qualifying Advanced Energy Project Credit (48C) Program Round 2	IRA 13501
\$1.5M	EV Conversion Playbook Deployment	BIL 40521.b3
\$63M	Program for Recycling Infrastructure and Smart Manufacturing (PRISM)	BIL 40534 & 40207 (f3)
\$50M	EV Conversion Grants State Partnerships	IRA 50134



# Industrial Assessment Centers: Version 1.0

- **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
- **Bipartisan Infrastructure Law expansions and upcoming milestones**
  - **\$150M for expanded workforce development**, including:
    - New IACs at community colleges, trade schools, and union training programs – **see current \$45M funding opportunity here:** <https://tinyurl.com/3a6wsn5r>
    - Regional centers of excellence, and a national Clearinghouse
    - Apprenticeships and internships with federal cost share
  - **\$400M in implementing grants to SMMs who received an IAC or similar assessment (funding opportunity forthcoming)**

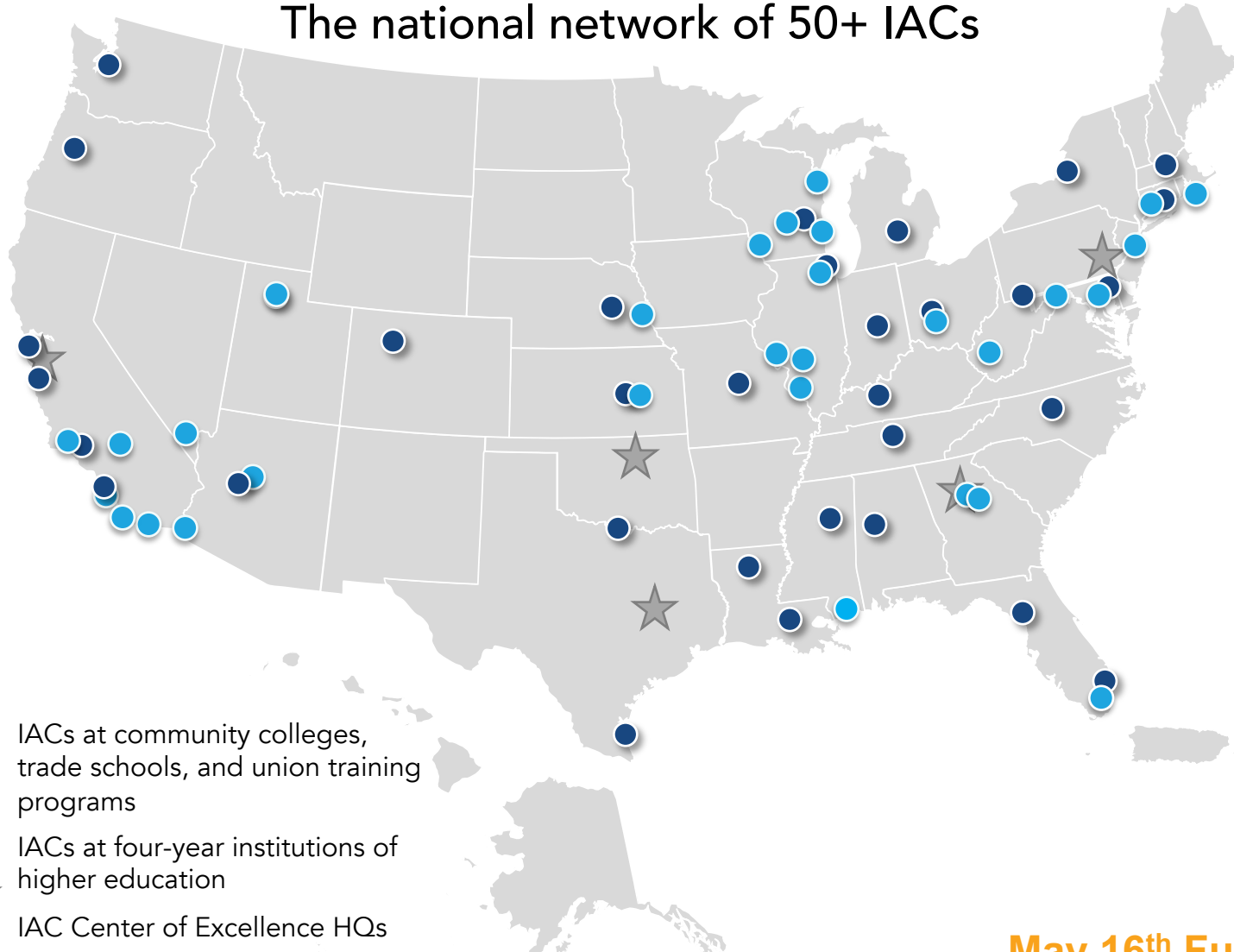


IACs have conducted nearly 20,000 assessments and provided nearly 150,000 recommendations to small/medium manufacturers



# Industrial Assessment Centers (IACs): Training the industrial workforce and supporting manufacturers

The national network of 50+ IACs



1) Train high-quality, in-demand jobs

2) Provide technical assistance or training for local manufacturers (or seed ideas)

3) Deliver meaningful community benefits

- IACs are hosted at *universities, community colleges, technical and trade schools, and union training programs nationwide.*
- The IAC Program also provides *grants to SMMs* to implement energy-saving and productivity-enhancing upgrades recommended by IACs
- *IAC Network Expansion Round 1 (2023)*  
Selectees received ~\$32M total

- IACs at community colleges, trade schools, and union training programs
- IACs at four-year institutions of higher education
- IAC Center of Excellence HQs

May 16<sup>th</sup> Full Applications due



# Industrial Assessment Center (IAC) Expansion



Train for high-quality, in-demand jobs,



Provide technical assistance or training for local



Deliver meaningful community benefits



## Round 2 (Now Open!)

- Up to \$24 million to continue to expand the IAC network
- Streamlined application and more structured guidance on required IAC program components
- New track for Planning and Capacity-Building applicants
- Cost share is generally not required

# Align with other Investing in America projects

## INVESTING IN AMERICA

### \$6.9 Billion

in public infrastructure and clean energy investments in Indiana under the Biden Administration, including:



**\$4.7B** announced for transportation investments in roads, bridges, public transit, ports and airports, as well as electric school and transit buses, EV charging, and more.



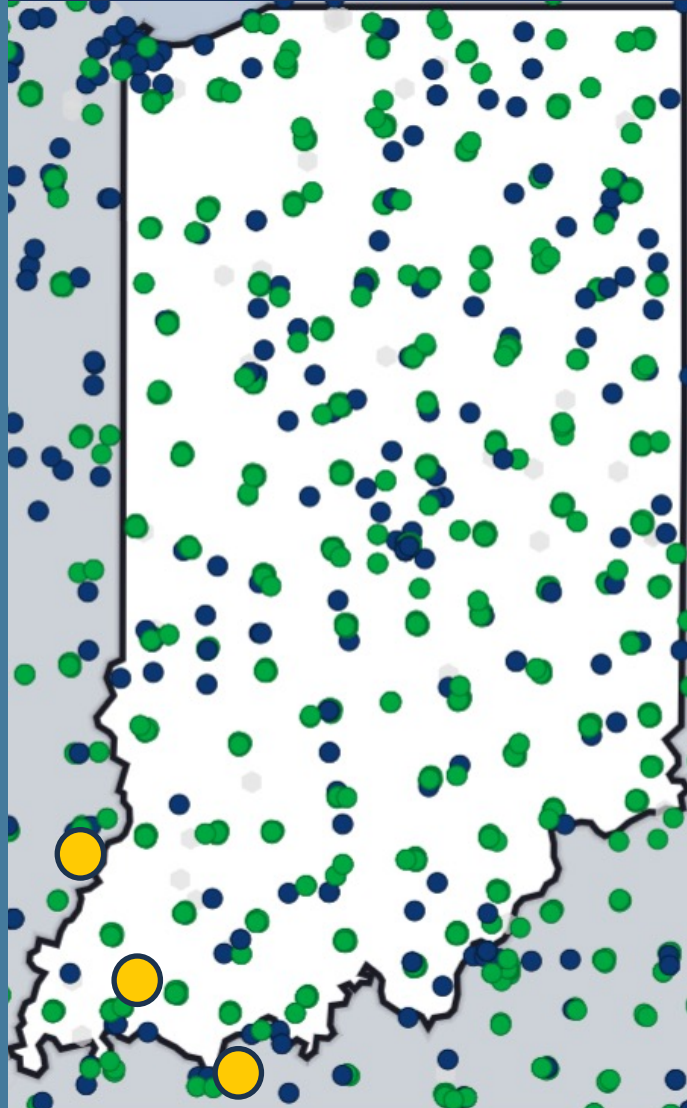
**\$326.1M** announced for grants, rebates, and other initiatives to accelerate the deployment of clean energy, clean buildings, and clean manufacturing. This is not inclusive of the clean energy tax incentives from the Inflation Reduction Act.



**\$118.8M** announced to make our communities more resilient to climate change and other threats.



**\$437.8M** announced to provide clean water across Indiana and improve water infrastructure. This includes \$108.5M dedicated to lead pipe and service line replacement.



● Discretionary ● Formula

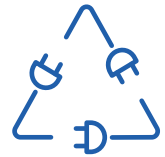
- The federal government is making billions of dollars of manufacturing investments
- Workforce, advanced manufacturing, and energy performance are key considerations
- DOE welcomes IAC applications that support the success of these projects
- Applicants can also explain how their projects build on or complement other workforce and SMM-relevant programs
  - (e.g., Commerce's Good Jobs Challenge, NSF's Regional Innovation Engines)

# IAC Implementation Grants

Bipartisan Infrastructure Law Provision 40521.b1



**\$80M in funding** available in the first year (Additional funding available in the next couple years depending on demand)



Grants awards of up to **\$300,000 per funding round**, at a 50% cost share<sup>1</sup> (**valid cost share options** include internal capital, in-kind contributions, state and local public programs, private loans – including SBA-guaranteed sources, utility programs, leases, and Energy Savings Performance Contracts)



Eligibility exclusively for **small- and medium-sized manufacturing firms**,<sup>2</sup> (\$3.5M > energy bill > \$100k | Employees < 500 | Sales < \$100M, < 500 employees)



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.

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.**

# IAC Implementation Grants Program Process

1



## Receive a Free Qualified Assessment

Small- to medium-sized manufacturer receives an energy assessment from a qualified assessor (IAC, CHP/Onsite Energy TAP, or third-party\* assessor)

2



## Apply for Grant Funding

Manufacturer applies for IAC Implementation Grant funding of up to \$300,000 (with 50% cost share) to implement project recommendations from qualified assessments

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 <https://www.energywerx.org/opportunities/iacimplementationgrants>

Working through a “partnership intermediary” enables a very streamlined application process!

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



# Advanced Energy Manufacturing and Recycling Grant Program (BIL 40209)



## Clean Energy Manufacturing and Recycling Projects

*Projects to establish, re-equip or expand facilities produce or recycle clean energy products.*



Learn more about the Program here!



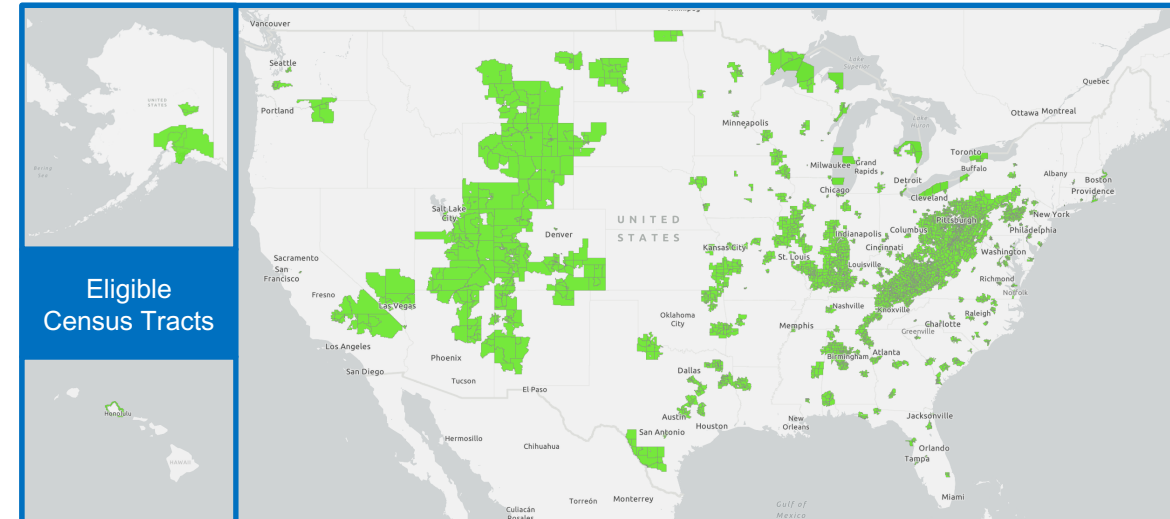
## Industrial Decarbonization Projects

- *Projects to re-equip industrial/manufacturing facilities with equipment to substantially reduce the greenhouse gas emissions of the facility*
- *Projects to establish, re-equip, or expand facilities to produce materials that result in substantially lower carbon intensity compared to industry benchmarks*

\$425 Million available through open FOA

Benefiting small- and medium-sized manufacturing firms

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



**Concept papers due April 22, 2024**, at 5:00 p.m. ET.

Full applications due July 1, 2024, at 5:00 p.m. ET.

Send questions to: [MESC\\_FOA3294@netl.doe.gov](mailto:MESC_FOA3294@netl.doe.gov)



# Energy Communities: Impacts to Date



## \$1.775 Billion in Direct Investment

- **48C:** \$1.5B supports projects in historic energy communities of \$4B selected in Round 1
- **40209:** \$275M selected in Round 1



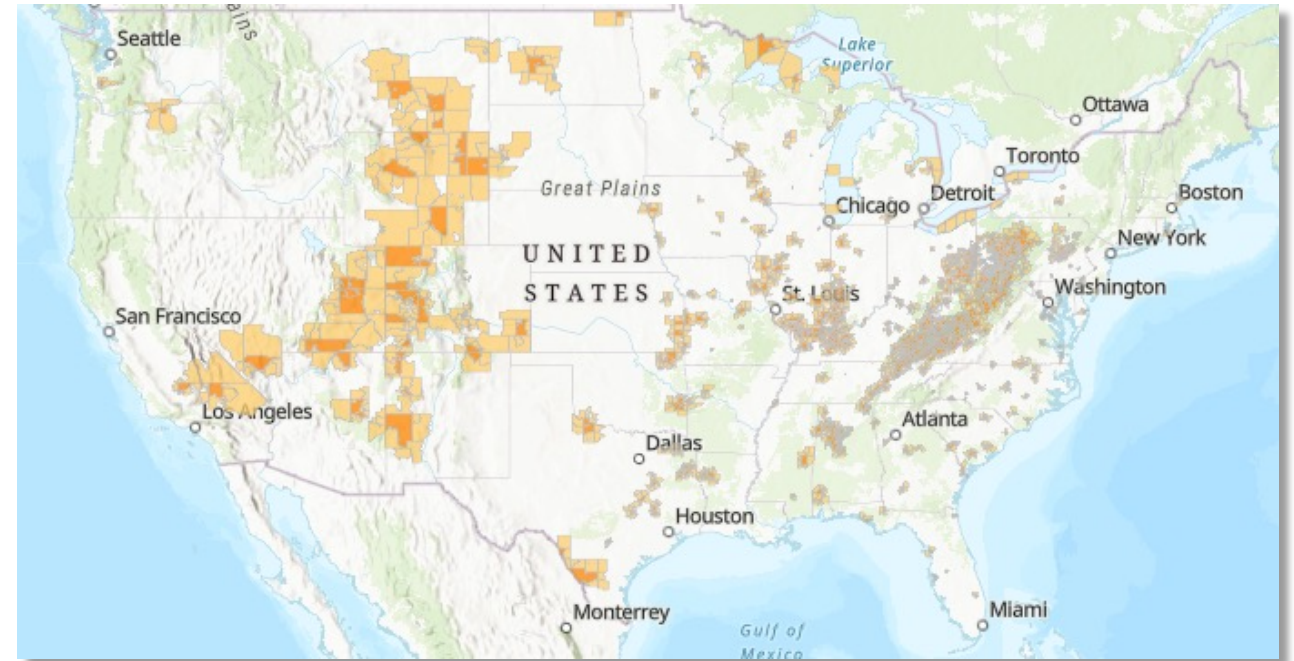
## State Benefits

- **40209:** West Virginia, Connecticut, Michigan, Texas, Virginia, Colorado, and Pennsylvania
- Additional projects through 48C



## Workforce Training & Job Creation

- Nearly **\$2.2M** for West Virginia University's Industrial Assessment Center.
- 40209 Round 1 estimated to create up to **1,500 high-quality, good-paying jobs** in cutting edge technologies.
- 48C requires **prevailing wage and apprenticeships** to capture full 30% credit.



- Census tract directly adjoining a census tract with a coal closure
- Census tract with a coal closure



# What is the §48C Qualifying Advanced Energy Project Credit and how can you apply?



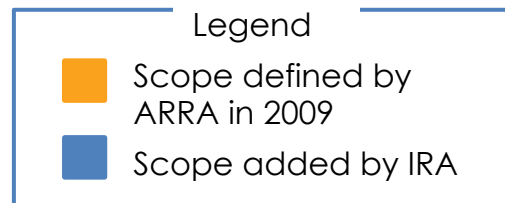


# Notice

- All applicants are strongly encouraged to carefully read IRS Notices when published and adhere to the stated submission requirements
- Merit review criteria are specific to each IRS published guidance. This presentation provides a summary of Round 1 Merit Review Criteria.
- The Notice is the controlling document, and applicants should rely on the Notice language and seek clarification by submitting a question.

# What is §48C?

- 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 “energy communities”**



## 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

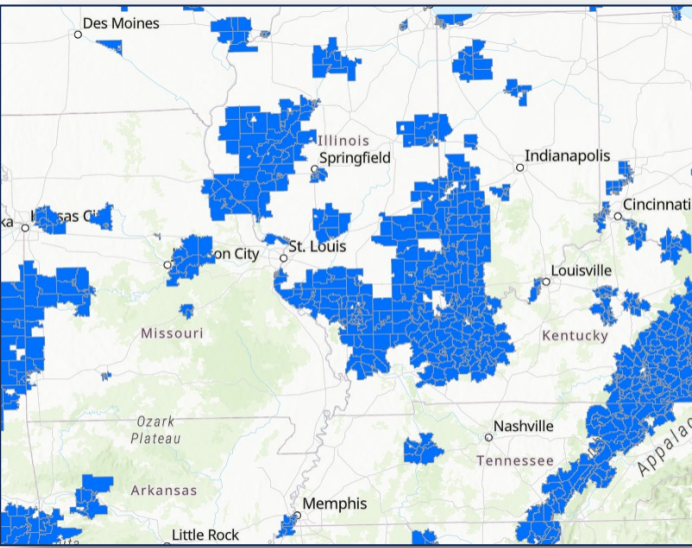
- Re-equips industrial or manufacturing facility to reduce greenhouse gas emissions by at least 20%



# Section §48C(e) Energy Communities Census Tracts

OF THE  
**\$10 billion**  
 IN TAX CREDITS TO BE ALLOCATED,  
**AT LEAST**  
**\$4 billion**  
 MUST GO TO QUALIFYING PROJECTS  
 IN ENERGY COMMUNITIES.

Energy communities have knowledge, infrastructure, resources, and know-how to play a leading role in the move to a clean energy economy.



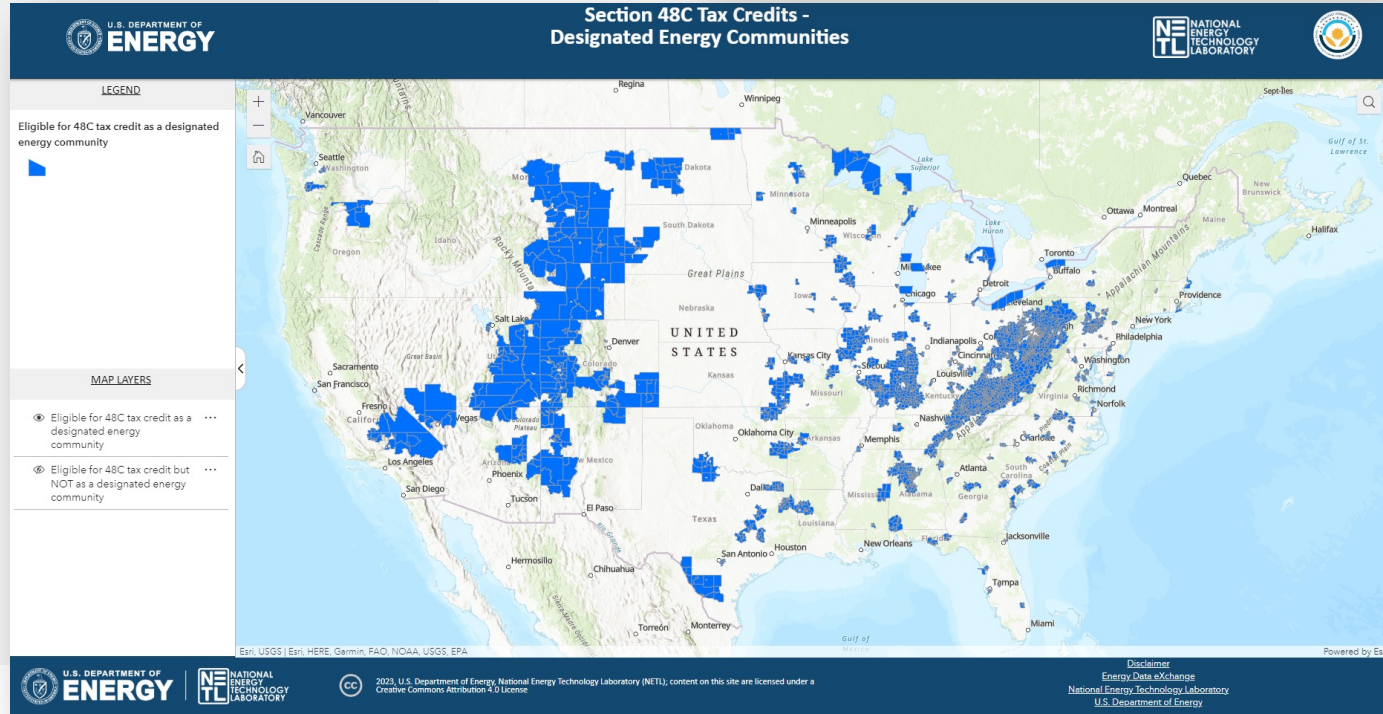
## §48C energy communities include:

Census tracts with coal mines that have closed since **December 31, 1999**

Census tracts with coal power plants that have closed since **December 31, 2009**

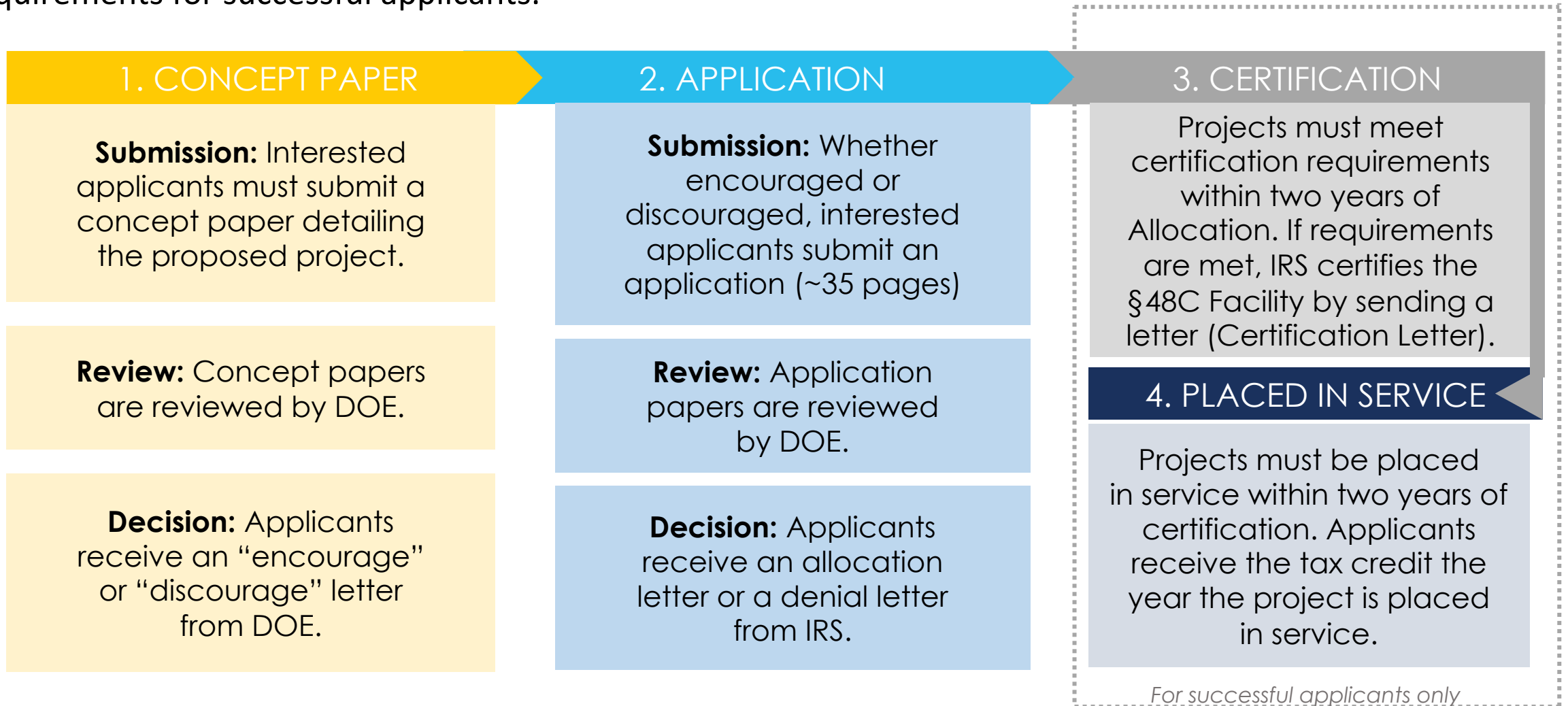
Census tracts immediately adjacent to either of the above

Census tracts without a pre-IRA 48C qualifying advanced energy project



# §48C Concept Paper and Application Process

The §48C Program may follow a two-stage application process, followed by certification and placed in service requirements for successful applicants.



# Technical Review Criteria

Eligible 48C(e) applications will be evaluated by DOE against technical review criteria reflecting four major priorities:



**Criterion 1:** Commercial Viability



**Criterion 2:** Greenhouse Gas Emissions Impacts



**Criterion 3:** Strengthening U.S. Supply Chains and Domestic Manufacturing for a Net-Zero Economy



**Criterion 4:** Workforce and Community Engagement

**Merit review criteria are specific to each IRS published guidance. This presentation provides a summary of Round 1 Merit Review Criteria. Additional guidance specific to future rounds will be issued by the IRS.**

# Clean Energy Manufacturing and Recycling – Round 1 Priority Areas



**Electric Grid:** Manufacturing of transformers, materials (including electrical steel, amorphous alloy), power electronics, and other grid components and equipment (including MVDC/HVDC converter station components and switchgears)



**Electric Heat Pumps:** Manufacturing of air-source or ground-source heat pump components and infrastructure, particularly reversing valves, control circuits, compressors, and heat exchangers



**Electric Vehicles:** Manufacturing of power electronics (including semiconductors, modules, and circuits for EV motor traction drives, on-board EV chargers, DC/DC converters, and EV charging stations), permanent magnets, and battery components for use in electric vehicle motors



**Nuclear Energy:** Manufacturing of specialized components and equipment for nuclear power reactors or their fuels (including fabrication of fuels, and manufacturing of equipment for conversion, enrichment, and deconversion), for both existing reactors and new reactor deployments



**Solar Energy:** Polysilicon, wafer production facilities, ingot and wafer production tools, and solar glass production facilities



**Sustainable Aviation Fuels:** Manufacturing of equipment needed for low-carbon aviation fuel production (including feedstock handling equipment and pretreatment reactors)



**Wind Energy:** Component production facilities and specialized steel production, particularly for offshore wind, such as monopile-grade steel and towers; recycling of wind components, particularly blades

# § 48C Round 1 : \$4 Billion in Tax Credits ~\$1.5 Billion for Projects in Energy Communities

Over **100 projects across 35 states** selected to **accelerate domestic clean energy manufacturing** and **reduce greenhouse gas emissions at industrial facilities**

Clean Energy Manufacturing and Recycling	Critical Materials Recycling, Processing, and Refining	GHG Emission Reduction Projects
<p><b>\$2.7 Billion for projects spanning multiple industries:</b></p> <ul style="list-style-type: none"> <li>• Clean hydrogen</li> <li>• Grid Components</li> <li>• EVs &amp; EV batteries</li> <li>• Nuclear</li> <li>• Solar</li> <li>• Wind</li> </ul>	<p><b>\$800 Million for critical materials:</b></p> <ul style="list-style-type: none"> <li>• Electrical steel applications</li> <li>• Lithium-ion battery recycling</li> <li>• Rare earth projects</li> </ul>	<p><b>\$500 Million for diverse industrial decarbonization projects, including:</b></p> <ul style="list-style-type: none"> <li>• Automotive manufacturing</li> <li>• Biofuels</li> <li>• Building materials</li> <li>• Ceramics</li> <li>• Chemicals</li> <li>• Food and beverage</li> <li>• Glass</li> <li>• Iron and steel</li> <li>• Low-carbon fuels and energy sources</li> <li>• Pulp and paper</li> </ul>

# Support 48C as a Reviewer

- **MESC has exciting opportunities to contribute to the 48C Tax Credit Program Application merit review process.**
- To implement this mission, we need support from a diverse group of people with expertise in multiple technologies and industries including:
  - Commercialization
  - Supply chains
  - GHG emissions impacts
  - Workforce and community engagement

Visit <https://www.energy.gov/infrastructure/48c> to learn more and apply.



# For More Information

For questions or comments email the  
Department of Energy at  
[48CQuestions@hq.doe.gov](mailto: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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