OFFICE OF MANUFACTURING AND ENERGY SUPPLY CHAINS

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

Intermountain West §48C Regional Event

March 2024

Agenda

What is the **Office of Manufacturing and Energy Supply Chains (MESC)**?

What **relevant programs does MESC administer** and how can I benefit?

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

Audience **Questions and Answers**

What is the Office of Manufacturing and Energy Supply Chains (MESC)?

MESC is focused on the “HOW" of the energy transition

PURPOSE

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

MISSION

Frontline of **clean energy capital deployment** to accelerate America’s transition to a **resilient, equitable** energy future via $20B+ of direct investment.

VISION

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

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.

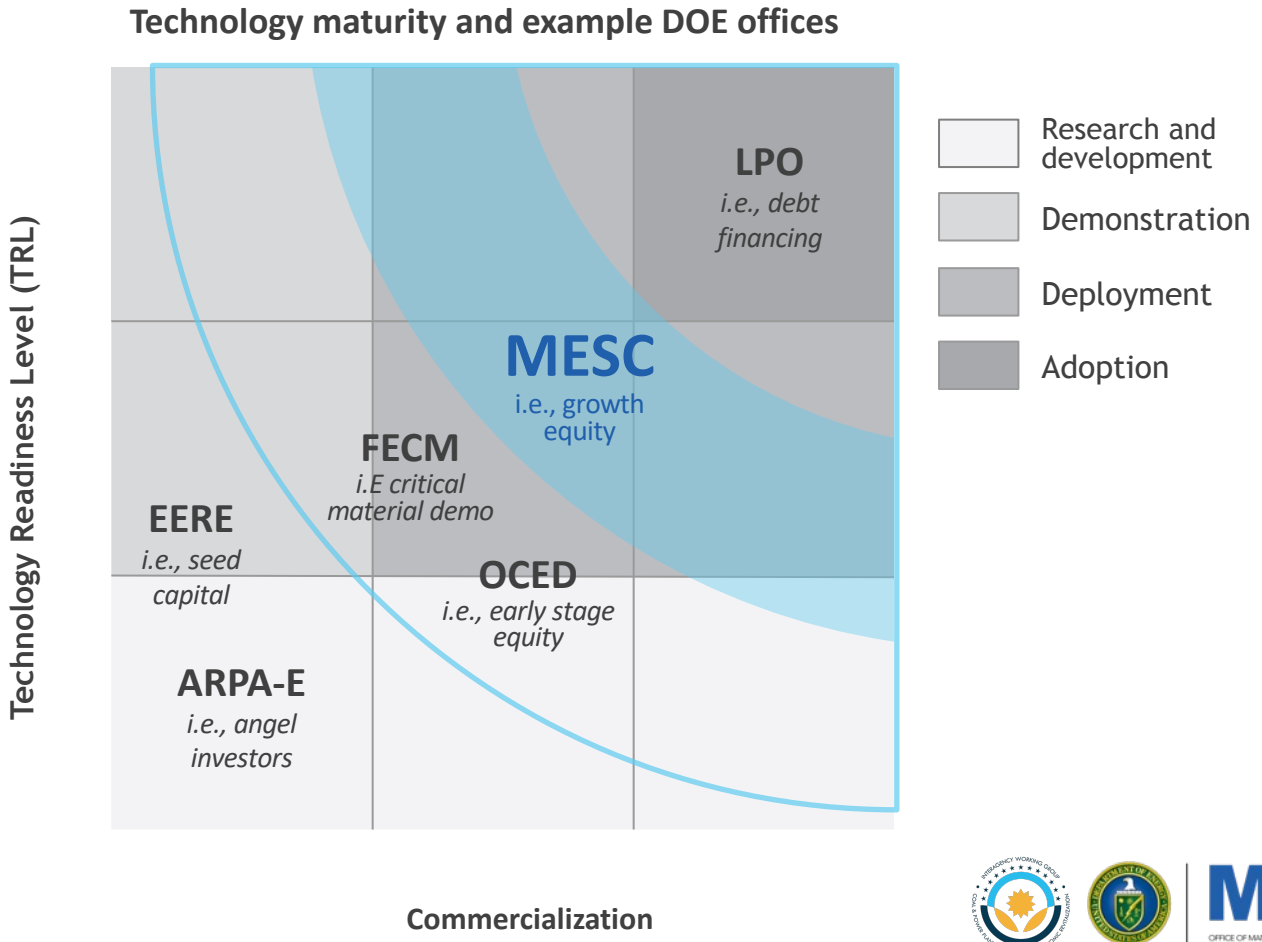
MESC
OFFICE OF MANUFACTURING AND ENERGY SUPPLY CHAINS

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

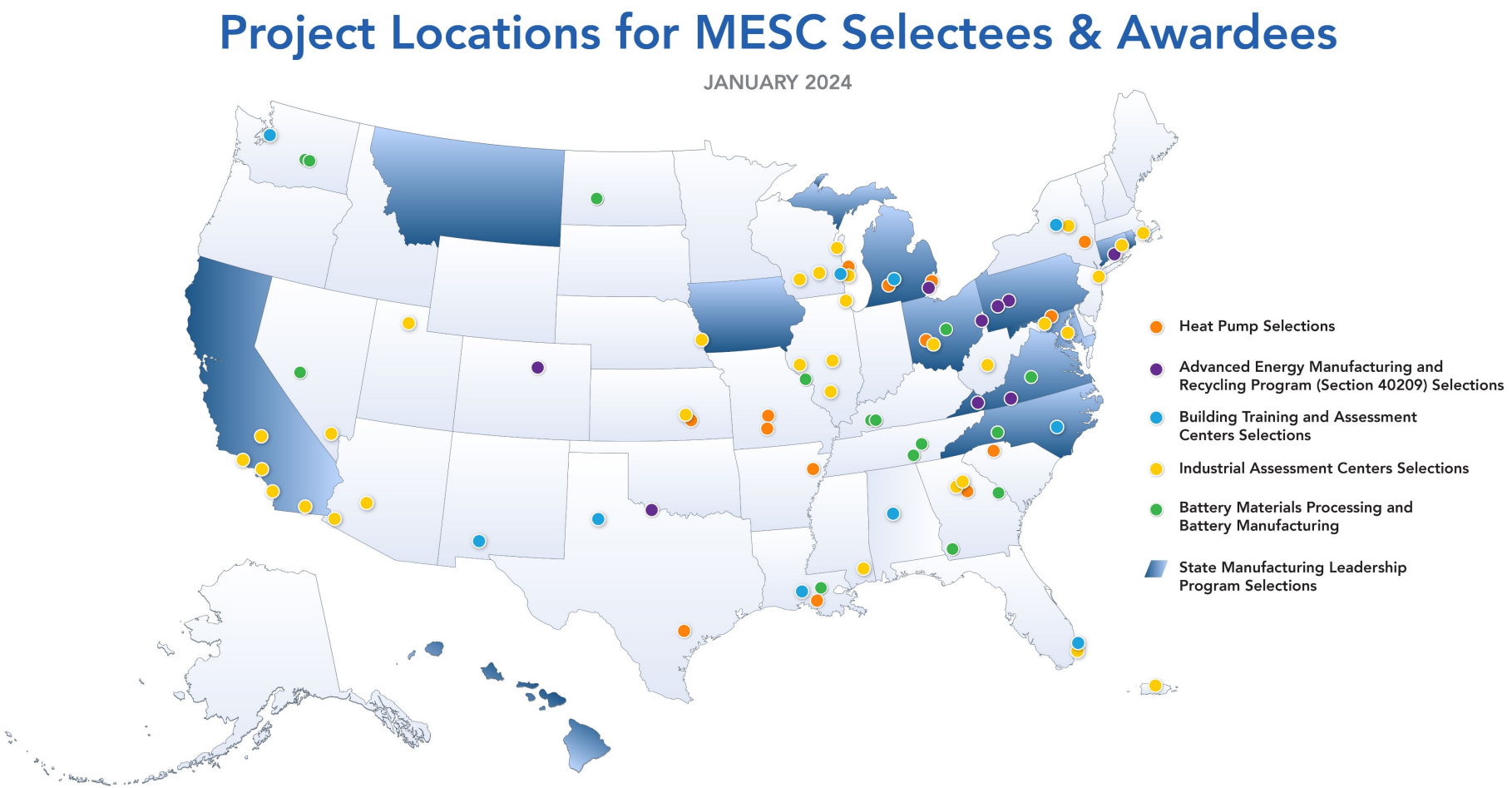
The Office of Manufacturing and Energy Supply Chains is working alongside private capital to be a force multiplier to secure American supply chains domestically.

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.



So far, MESC has selected 71 projects across 38 states



MESC
OFFICE OF MANUFACTURING AND ENERGY SUPPLY CHAINS

MESC's impact to-date

$7B+ private sector investment catalyzed

8,000+ jobs created

34% of investments in energy justice communities

500+ students trained annually

10M+ EVs enabled annually

Source: DOE BIL Battery FOA Fact Sheets, MESC IAC Website

MESC
OFFICE OF MANUFACTURING AND ENERGY SUPPLY CHAINS

What relevant programs does MESC administer and how can I benefit?

Advanced Energy Manufacturing and Recycling Grant Program (BIL 40209)

Advanced Energy Property Projects

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

Greenhouse Gas Emission Reduction Projects

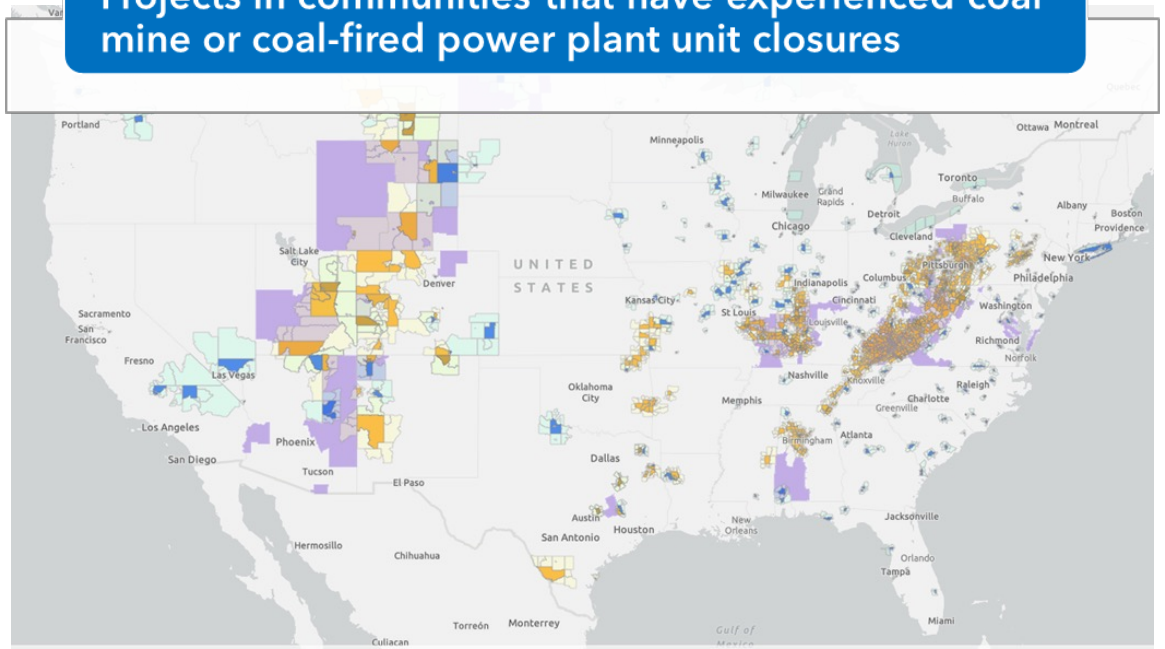
Projects to establish, re-equip, or expand industrial/manufacturing facilities with equipment designed to reduce GHG emissions through:

- *Energy efficiency and industrial waste reduction technologies*
- *Low- or zero-carbon heat systems;*
- *Carbon capture, transport, removal, utilization, and sequestration / storage;*
- *Manufacturing low embodied carbon materials and*
- *Other industrial technologies that reduce greenhouse gas emissions substantially below current best practices.*

$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, which are required, are due April 8, 2024, at 5:00 p.m. ET.
Full applications are due June 24, 2024, at 5:00 p.m. ET. Send questions to: MESC_FOA3294@netl.doe.gov

MESC
OFFICE OF MANUFACTURING AND ENERGY SUPPLY CHAINS

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

MESC
OFFICE OF MANUFACTURING AND ENERGY SUPPLY CHAINS

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

MESC & Energy Communities IWG

Collaborating to advance the clean energy [illegible]ion

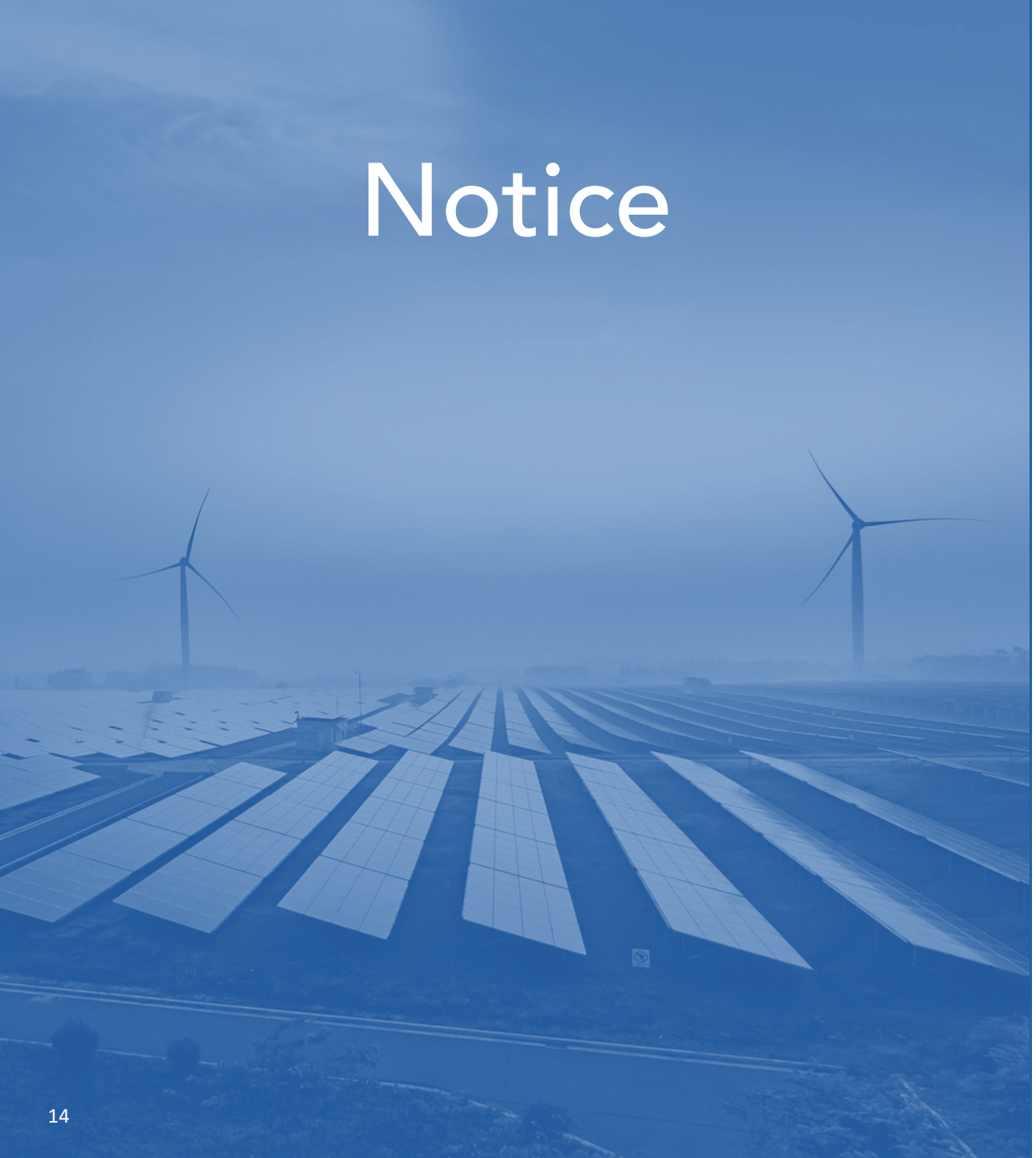
Office of Manufacturing & Energy Supply Chains (MESC)

- Serves as the frontline of clean energy deployment, accelerating America's transition to a resilient, equitable energy future through **$20 billion of direct investments in manufacturing capacity and workforce development**.
- Spurs development of secure, resilient, domestic clean energy supply chains and domestic manufacturing
- Supports workforce through programs at universities, community colleges, and trade schools to provide entry-level and mid-level career support.
- Develops and provides the analytical tools that help to inform programs and investments across DOE and the U.S.

Interagency Working Group on Coal & Power Plant Communities and Economic Revitalization

- Created to break down barriers energy communities face when accessing federal resources to support economic revitalization
- Place-based approach to target federal engagement and investment to the most hard-hit coal and power plant communities
- Committed to:
  - Creating good-paying jobs
  - Remediating environmental damage
  - Supporting energy workers
  - Spurring economic revitalization

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?

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 "energy communities"**

Clean Energy Manufacturing and Recycling

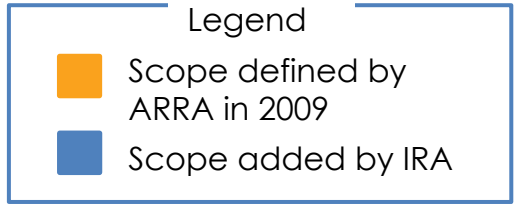
- Re-equip, expand, or establish Industrial or manufacturing facility for production **or recycling of** clean energy and energy efficiency technologies

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%



What is §48C? Cont'd.

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

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.

§48C energy communities include:

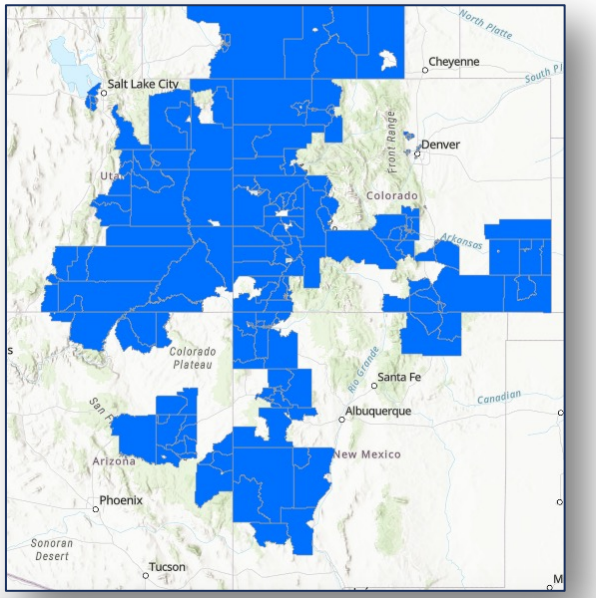
Census tracts with coal mines that have closed since **December 31, 1999**

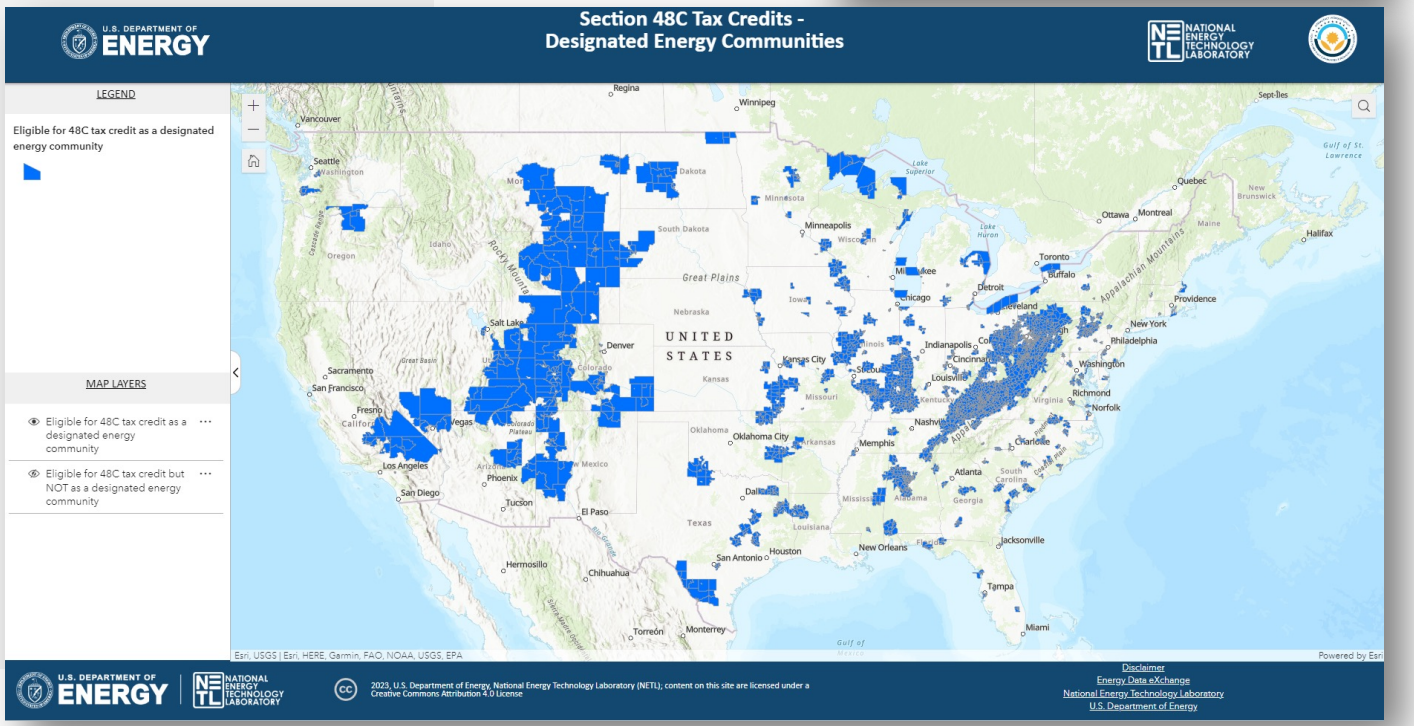
Census tracts with coal power plants that have closed since **December 31, 2009**

Census tracts immediately adjacent to either of the above

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

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





§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.

1. CONCEPT PAPER

Submission: Interested applicants must submit a concept paper detailing the proposed project.

Review: Concept papers are reviewed by DOE.

Decision: Applicants receive an "encourage" or "discourage" letter from DOE.

2. APPLICATION

Submission: Whether encouraged or discouraged, interested applicants submit an application (~35 pages)

Review: Application papers are reviewed by DOE.

Decision: Applicants receive an allocation letter or a denial letter from IRS.

3. CERTIFICATION

Projects must meet certification requirements within two years of Allocation. If requirements are met, IRS certifies the §48C Facility by sending a letter (Certification Letter).

4. PLACED IN SERVICE

Projects must be placed in service within two years of certification. Applicants receive the tax credit the year the project is placed in service.

For successful applicants only

Technical Review Criteria

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.

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

DOE will evaluate applications using category-specific technical review criteria, including whether the project addresses specific energy supply chain and manufacturing priority areas, as well as overarching program policy factors identified by Notice 2023-44.

In determining allocation recommendations, DOE will also consider whether the proposed project is located in §48C(e) Energy Communities Census Tracts, detailed in Appendix C of Notice 2023-44. In Round 1, DOE anticipates recommending ~$1.6 billion in §48C credits to energy community projects.

Criterion 1: Commercial Viability

- Project schedule and time from certification to completion:
  - Readiness to proceed with the proposed project as evidenced by **firmness of site selection and progress towards securing required permits**, contracts, reviews, and agreements; and
  - **Reasonableness of the timeframe** required for construction and commissioning of the project, including interim milestones and overall timeline

- The extent to which **risk management issues and mitigation strategies are identified and addressed**, including the level of contingency proposed to address risk

- Strength of the proposed business plan, including:
  - The **potential for commercial deployment**, based on estimates of market share, market growth potential, and price competitiveness of the product
  - The **source and certainty of funding** for the equity that will be invested in the project, including private financing, DOE funding, state and local incentives, and other sources
  - The **strength of key arrangements**, such as financing, acquisition/supply strategy, and power purchase agreements for the proposed project, as well as offtake (sales) arrangements for the facility's products
  - The degree to which the application justifies the **proposed project's economic viability, sustainability, and potential growth**
  - The **degree to which the investment is profitable**, based on the proposed budget and spend plan, as well as described cash flow analysis of the project
  - The **levelized cost of generated or stored energy**, or of measured reduction in energy consumption or GHG emission (or similar metric) for the facility's products, **compared to similar technologies or materials within the same market segment**

- Strength of the proposed management plan, including the **management team's track record of success** in areas relevant to the project **and corporate health** of the applicant

Criterion 2: Greenhouse Gas Emissions Impacts

- End products impact on avoidance or reduction in anthropogenic emissions of GHGs, based on:
  - Potential GHG improvement over higher-emitting incumbent technologies or systems.
  - Potential to capture or remove carbon oxides or other GHGs.
  - Potential to provide indirect emissions reductions or avoidance by enabling a reduction in energy or fuel use or the manufacturing or adoption of other low emissions technologies (e.g., charging infrastructure to enable the adoption of electric vehicles).
  - Potential of recycling projects to avoid or reduce emissions associated with raw materials, use, or end-of life of advanced energy property
- The extent to which the efficiency, lifetime, recyclability, or other characteristics that reduce overall GHG emissions of the facility's products exceed those of incumbents or competitors.
- Efforts to mitigate GHG emissions from the proposed manufacturing or recycling facility:
  - The extent to which the project involves current best-in-class manufacturing or recycling approaches, including the use of innovative equipment, processes, and low-carbon fuels, as demonstrated through project planning documents or front-end engineering and design studies.
  - The extent to which the project aligns with the long-term strategy of the United States to achieve net-zero emissions.

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

- The extent to which the proposed project addresses current and anticipated supply chain vulnerabilities for clean energy products that facilitate progress in line with the long-term strategy of the United States to achieve net-zero emissions.

- The extent to which the project would increase domestic production capacity and availability of clean energy products that facilitate progress towards a net-zero economy, including a qualifying clean energy product itself or associated components or materials.

- The extent to which the proposed project addresses current and anticipated supply chain vulnerabilities for clean energy products that facilitate progress towards a net zero economy, based on a comparison of the production capacity and the current and anticipated gap between domestic manufacturing capacity and demand for the specified advanced energy property or materials produced by the proposed project.

- In the case of recycling projects, these technical review criteria will be evaluated based on which materials are produced at the recycling facility and evidence that those produced materials will serve as inputs to clean energy supply chains.

Criterion 4: Workforce and Community Engagement

- **Job Creation and Workforce Continuity**: The number of domestic jobs created (both direct and indirect) (a) during completion of the project (the credit period) and (b) during operations of the facility after it is placed in service, including jobs within energy communities (if applicable) attained by locals or individuals previously employed by the local or regional coal industry.
  - The quality and manner in which the proposed project will create and/or retain high-quality, good-paying jobs (both direct and indirect) with employer-sponsored benefits for all classifications and phases of work.
  - The extent to which the applicant engaged key stakeholders to develop partnerships to better serve local and diverse workforce through training and support.
- **Ensuring Timely Project Completion Through Workforce and Community Engagement:** The extent of current and planned efforts to engage community and labor stakeholders, including as it relates to the ability to execute the project on schedule and with adequate workforce.
  - The extent to which workforce recruitment and support of the community for the project have been strengthened through benefit-sharing agreements, consideration of environmental impact, use of local resources, and improved access to employment opportunities for the local workforce.
- **Energy Community Transition:** The extent to which the application includes specific and high-quality actions to support energy communities, including transition opportunities for workers in the coal, other energy, and automotive sectors.
  - The extent to which a project will utilize existing resources or infrastructure that previously supported the local or regional coal industry.
- **Local Environmental Impacts:** The extent to which the proposed project accounts for its environmental impact to the surrounding community by having clear plans to avoid or reduce local air pollution, land contamination, and/or water contamination.
  - The extent to which the application identifies specific, measurable benefits for disadvantaged communities, including energy communities.

Note: Criterion 4 is the same across all three project categories

Energy Community Transition

- **Section §48C(e) Energy Communities are Census tracts that have ever had, since December 31, 1999, a closed coal mine or have ever had, since December 31, 2009, a retired coal-fired electric generating unit, and directly adjoining tracts, except for census tracts with applicants that previously received a §48C credit allocation prior to the date of enactment of the IRA.**
- Applicants may:

- Describe plans to repurpose existing infrastructure/assets that have been abandoned due to the closing of a coal mine or coal plant.

- Describe plans to maintain high-quality jobs for both new and incumbent workers such as:
  - Honoring existing collective bargaining agreements at facilities that are being retooled;
  - Identifying and working with local unions to employ workers dislocated from fossil energy or manufacturing employment.

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

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.

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

Recap and Q&A

What is the Office of Manufacturing and Energy Supply Chains (MESC)?

What relevant programs does MESC administer and how can I benefit?

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

Audience Questions and Answers

INVESTING IN AMERICA'S ENERGY FUTURE

MESC

OFFICE OF MANUFACTURING AND ENERGY SUPPLY CHAINS

Technical Criteria Deep Dive – Workforce and Community Engagement

Prioritizing workforce and community engagement, will lead to domestic job creation, reduce barriers that might otherwise increase project completion time, and have an impact on avoiding or reducing local pollution

Workforce and Community Engagement Plans

1. **Decrease** project risks and delays due to community or labor opposition
2. **Decrease** health and safety risks to workers and communities

3. **Increase** participation of affected stakeholders in decision-making
4. **Increase** opportunities for two-way communication
5. **Increase** accountability to affected workers and communities
6. **Increase** benefits and broadly shared prosperity from place-based projects

Job Creation and Workforce Continuity

- Applicants can detail commitments to:
  - High-Quality Jobs
    - Pay **above average wages** and benefits in both the construction and ongoing operations jobs
    - Invest in workforce training to **support a skilled workforce** and provide pathways to advancement
    - Ensure worker participation in workplace **health and safety** plan design and implementation
  - Affirmative support for worker organizing and collective bargaining

Job Quality and Workforce Continuity:
Examples of Effective Commitments

Construction-Phase Jobs

1. Commitments to negotiate Project Labor Agreements for large construction activity associated with project. (An MOU can spell out the process by which PLAs would be negotiated)
2. Commitments to utilize registered apprentices, such as a ratio 15-20% of work hours
3. Commitments to local hire, such as 50% of jobs
4. Commitments to skilled and trained/credentialed workforce with a national journey-card credential
5. Wages above required Davis-Bacon prevailing wages

Job Quality and Workforce Continuity:
Examples of Effective Commitments

Operations Phase Jobs

1. Commitments to support worker organizing and collective bargaining, such as:
    - Pledge to remain neutral during any union organizing campaigns
    - Pledge to permit union recognition through card check (as opposed to requiring union elections)
    - Pledge to enter into binding arbitration to settle first contracts
    - Pledge to allow union organizers access to appropriate onsite non-workspaces (e.g., lunchrooms)
    - Pledge to refrain from holding captive audience meetings

2. Commitments to provide high-quality jobs, such as:
    - 75th percentile wages or above for industry and relevant production occupations + competitive benefits
    - Paid training plus tuition reimbursement for additional training
    - Establishment of health and safety committees with participation and training of hourly production workers

Ensuring Timely Project Completion Through Workforce and Community Engagement

- Describe the applicant's plans to engage with labor unions and worker organizations, Tribal governments, and community-based organizations representing local stakeholders including disadvantaged communities.

- Describe plans to negotiate formal workforce and community agreements to detail benefits, partner obligations, and remedies to ensure accountability.

Energy Community Transition

Examples of Effective Commitments

Applicants proposing projects in energy communities should describe plans to utilize existing local and regional resources that previously supported coal, other energy, or automotive industries, including through transition opportunities for workers.

Applicants may:

- Describe plans to repurpose existing infrastructure/assets that have been abandoned due to the closing of a coal mine or coal plant.
- Describe plans to maintain high-quality jobs for both new and incumbent workers such as:
  - Honoring existing collective bargaining agreements at facilities that are being retooled;
  - Identifying and working with local unions to employ workers dislocated from fossil energy or manufacturing employment.

Community and Labor Engagement:
Examples of Effective Commitments

1. Commitment to negotiate Collective Bargaining Agreements, Community Benefits Agreements, Community Workforce Agreements, and/or Good Neighbor Agreements. (MOU outlining the conditions for negotiation at DOE negotiation stage)

2. Identification of benefits provided to affected stakeholders and local community (e.g., the number of local jobs to be created and wages paid), timelines, and remedies for non-compliance

3. Establishment of Community Advisory Councils including labor, Tribal, and Environmental Justice representatives

Local Environmental Impacts:
Examples of Effective Commitments

- Applicant clearly identifies the communities impacted (positive or negative) by the project or program and indicates how these communities are characterized, including whether they are designated as disadvantaged by the CEJST, DOE DAC reporter, state tools, other.
- Applicant clearly defines what benefits will result from the project or program and how these benefits will flow to the communities impacted. Benefits should be reasonable and obtainable.
- Applicant must clearly describe impact of the project (both positive and negative) on local air, water, and/or land quality.
- Applicant offers clear and reasonable metrics to track how the identified benefits will flow and provides milestones/a schedule for when these expected outcomes will be achieved.