U.S. DEPARTMENT OF ENERGY
Fossil Energy and Carbon Management

Capacity Building for Repurposing Energy Assets - Expanded Eligibility

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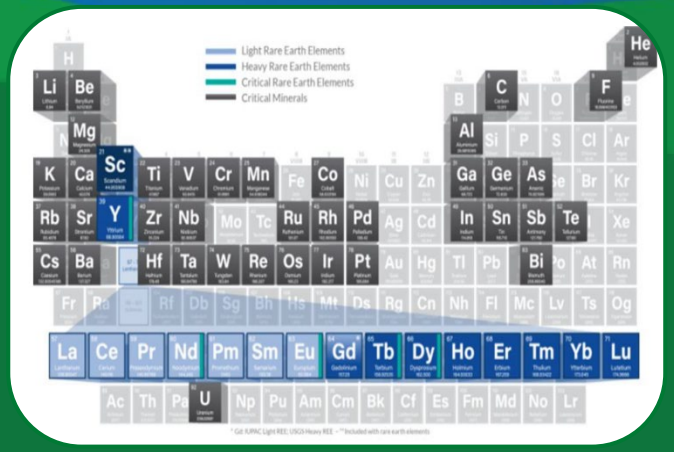


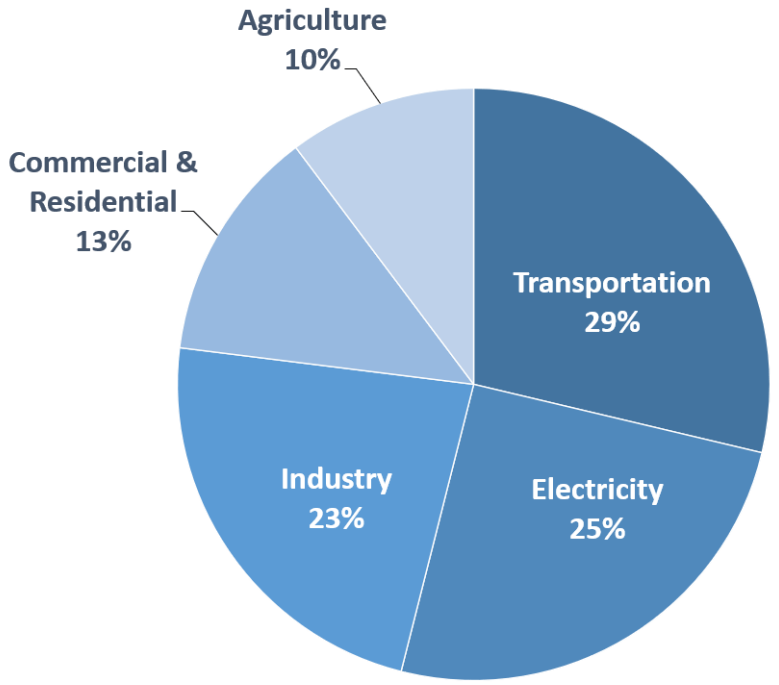
Fossil Energy & Carbon Management (FECM)

The Office of Fossil Energy and Carbon Management through its strategic vision strives to work toward the new Administration goals :

- 50% emissions reduction by 2030
- CO_2 emissions-free power sector by 2035
- Net zero emissions economy by no later than 2050

Please see the Youtube video of the previous broadcast to get a background on this funding opportunity! You can see it at: https://vimeo.com/892341274

Total U.S. Greenhouse Gas Emissions by Economic Sector in 2019



U.S. Environmental Protection Agency (2021). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019

Energy Asset Transition program is crucial in meeting Biden Administration environmental & sustainability goals

The ***Biden Administration*** has ***emphasized*** the U.S.' need to ***focus on climate and sustainability*** through executive orders such as *Tackling the Climate Crisis* and *Actions to Address Environmental Justice* as well as federal initiatives around ***Environmental Justice***.

DOE and other government organizations are ***dedicated to coordinate the activities*** that are needed to achieve the Biden Administration clean energy goals. A crucial factor in the success of these goals will be ***successfully transitioning energy assets and industrial infrastructure***, which is often located in communities, into ***prosperous clean energy initiatives***.

What is needed…

> ***"Communities do not have the resources or capabilities*** to adequately respond to Government funding opportunities to support a just transition of their legacy assets"

> "There is a need to assess regional characteristics and identify transition ***opportunities that best reflect those regional needs***."

> "Work with DOE and other government agencies and help convene, coordinate, and catalyze the actions of both local communities, and stakeholders to enhance just transitions of legacy energy assets."

Recommended Actions

Work with us

Help DOE and other government organizations to coordinate activities across agencies to ensure communities are receiving the support they need to make a clean energy transition and help meet Administration clean energy goals.

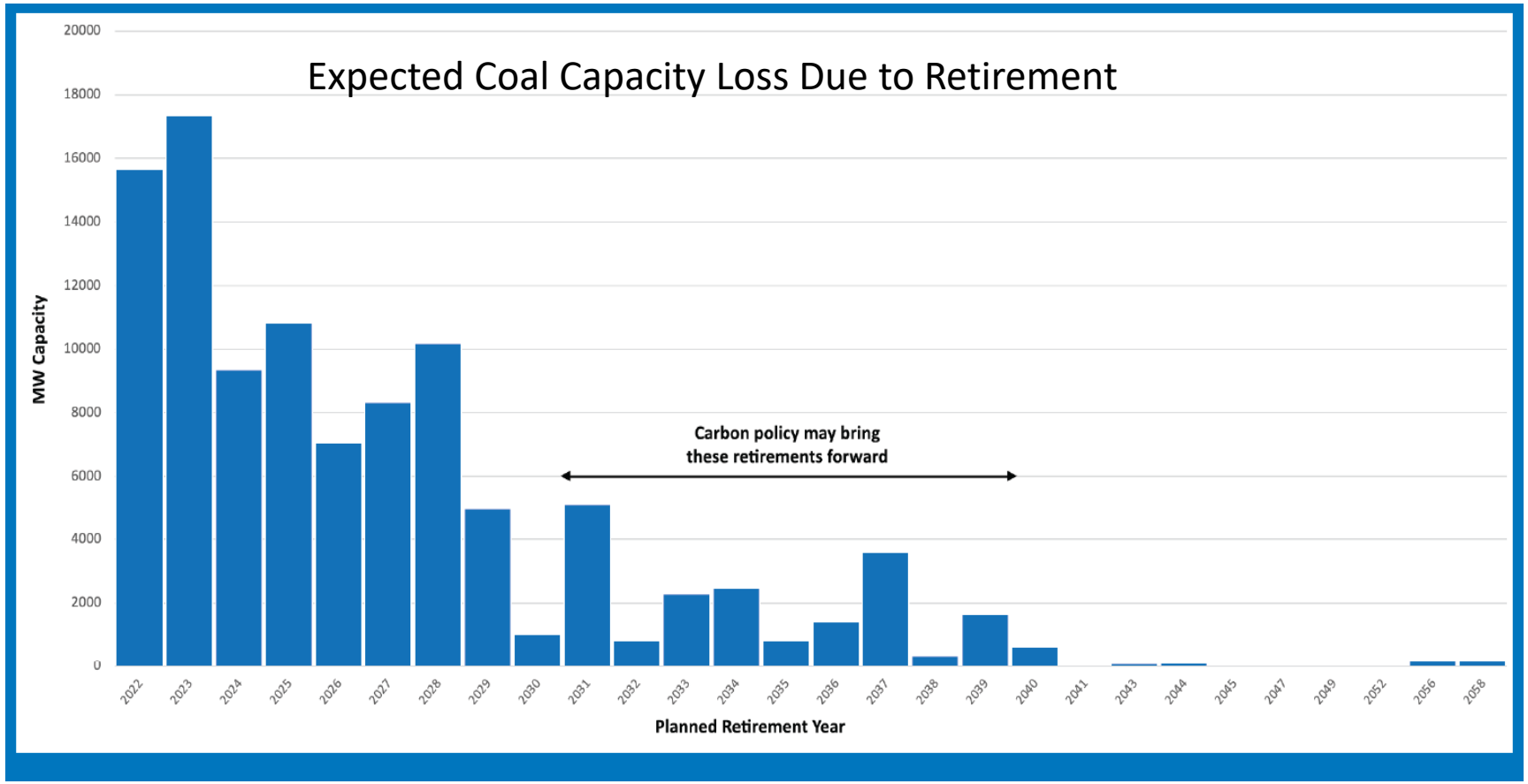
Form Regional Coalitions to Identify Regional Characteristics and Needs

Through RRT's hosted by the IWG, form regional coalitions that will engage local communities, utilities, and economic and policy stakeholders to assess regional characteristics and needs with the understanding that each region may have a unique transition pathway.

Demonstrate New Ways to scale ideas for Energy Communities

Create new avenues for communities through the resources provided and use pilot studies across multiple regions and assets to assess the capability to change.

Declining Utilization of Fossil Assets



Although some areas in the Midwest and West witnessed fewer coal plant retirements and more stable operation, **every region recorded substantial declines in generation in 2019**. The Southeast, East North Central, and West South Central regions, which have large coal capacities, each had **reductions of more than 18%** in coal-fired generation.

Similar trends are being observed with Mine Lands, Oil and Gas fields, and Refineries

What is driving energy asset retirements?

Economics

- Fossil energy is increasingly uneconomical compared to VRE in many regions
- Repurposing retired assets can reduce decommissioning costs and new RE capacity investments
- **BIL** investments to clean up brownfield and Superfund sites
- **IRA** tax incentives for fossil energy retirement and clean energy manufacturing
- **LPO** loan guarantees for clean energy projects

Environmental Regulations

- Most retiring coal-fired plants were built before the Clean Air Act of 1970 and face regulations that will impact their performance.
- EPA regulations require most fossil fuels to cut emissions by 90% by 2040
- Meeting emissions targets will require investment in CCS, which may make many fossil fuel assets unviable

Regional and State-Level Policies

- EPA Brownfields and Land Revitalization programs
- State level funds for retirement and decommissioning
- POWER grant program and other community redevelopment funds
- RE-Powering America's Land Initiative
- State level energy efficiency, carbon neutrality, and renewables standards

Repurposing Energy Assets Creates Opportunities

Repurposing Energy Assets

Support the US's Energy Transition Goals and Reduce Costs *(to Utilities and Consumers)*

- Avoided costs from decommissioning *(reduced environmental remediation costs, structural demolition may not need to occur)*
- Supports several of the Biden Administration's goals *(see next slide)*

Ensure a Just Energy Transition

- Re-energize Local Community
- Replace tax revenue and restore jobs
- Create new opportunities in communities impacted by the energy transition

De-risk New Energy Assets

- Less capital investment required for land *(zoning, water rights, etc.)* and auxiliary infrastructure *(transmission, etc.)*
- Provide readily available workforce

Trade & Industry Development: Upcycling Power Plant Benefits (Sept 2013)

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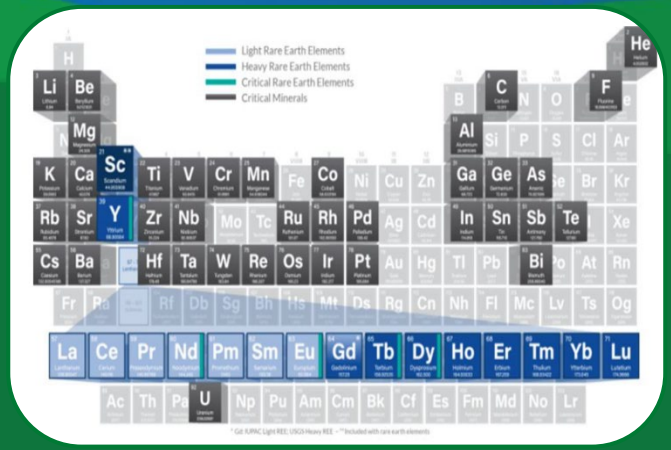
Strategies to Transition



Which Repurposing Option is Right?

Energy and non-energy pathways

Energy Options

- Renewable electricity (wind, solar, biomass, geothermal)
- Synchronous condenser
- Thermal energy storage
- Natural gas
- Nuclear
- Hydrogen/ammonia and other fuels
- Biofuels

Non-Energy Options

- **Manufacturing** (steel, EV's..)
- **Metal / mineral processing** (lithium, copper, and others) and **recovery of rare elements**
- Cultural redevelopment
- Industrial parks
- Logistics hubs
- Data Centers
- e-Recycling

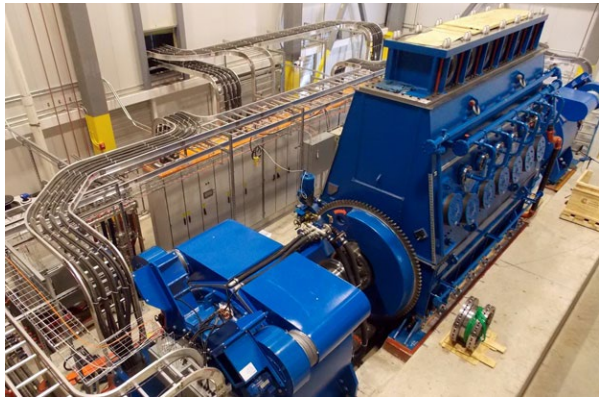
…Some options depend more on having supply chains in place or supporting infrastructure

Examples of Repurposed Energy Assets (5-10 years)

Green Repowering of Coal Plants

Repurposing Coal plant in Kemmerer, WY- Terrapower.

Pumped hydro or CAES energy storage in inactive coal mines



Repurposing out-of-use coal mines into pumped hydro or compressed air energy storage facilities to store electricity.

Hydrogen storage or CAES in inactive O&G wells

Repurposing one of the 2.7 million inactive oil and gas wells in the US for compressed air energy storage or Hydrogen storage allows for cheaper storage than above ground tanks.

Bill Gates' TerraPower to build its first nuclear reactor in Wyoming coal town (cnbc.com)

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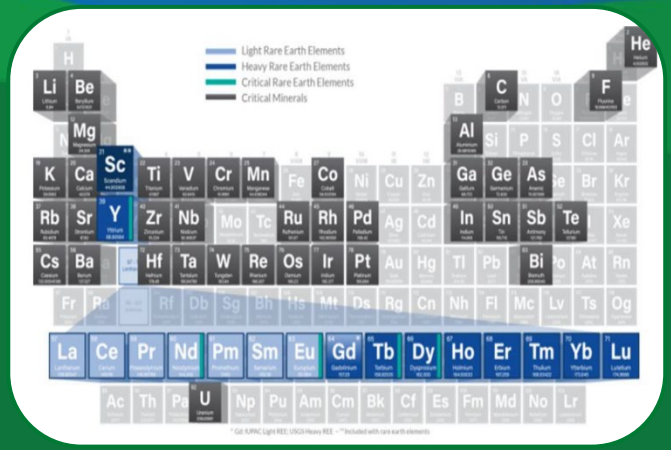
Partnership Intermediary Agreement (PIA)



Target Audience for the FECM Opportunity

People/Organization who will receive the funding (Main)

1. Community Colleges, including Historically Black Colleges and Universities or Minority Serving Institutions, or other educational entities recognized by the U.S. Department of Education's Office of Civil Rights.
2. Local economic development entities.
3. Community based organizations and NGOs; and
4. Local elected officials from municipalities (mayor's office). Labor unions
5. Labor-management organizations,
6. Worker organizations that represent workers in energy communities, and workforce development entities involved in administering the public workforce system.

Supportive Stakeholders (Secondary)

- Asset owners
- Asset operators
- Academia
- Consultants
- Private companies
- Environmental groups
- Local/Federal Government
- State
- Developer (small – medium)

Asset Candidates

- Energy Assets (power plants, coal mines, oil/gas well lands)
- Retired or are planning to retire (2009-2033)

Expectations from the PIA

Communities will come together for a common goal to repurpose Energy Assets with an emphasis on workforce retention and development.

Meet with stakeholders.

- *Local Government*
- *Energy Asset Owners*
- *Financiers*
- *Energy Engineering, Sustainable Economic Development, Groups*
- *Equitable transition Groups*
- *Community Advocacy and Planning Groups*
- *Coalition Building Groups*
- *Research & Policy Analysis Groups*
- *Economics and Workforce Development Division*
- *R&D Entities close by*
- *Grant writers*

Find Faculty Coaches in and around your community such as:

- *Energy Transition Community Planner*
- *Utility Union Leader*
- *Regulatory expert*

You need to come together with project goals…

- *A shared understanding of the importance of unlocking the potential for new opportunities in the communities*
- Help communities transition to sustainable solutions.
- Create a group that constitutes **local decision-makers and advocates.**
- Create a draft proposals to garner support and funding from various sources.

Community

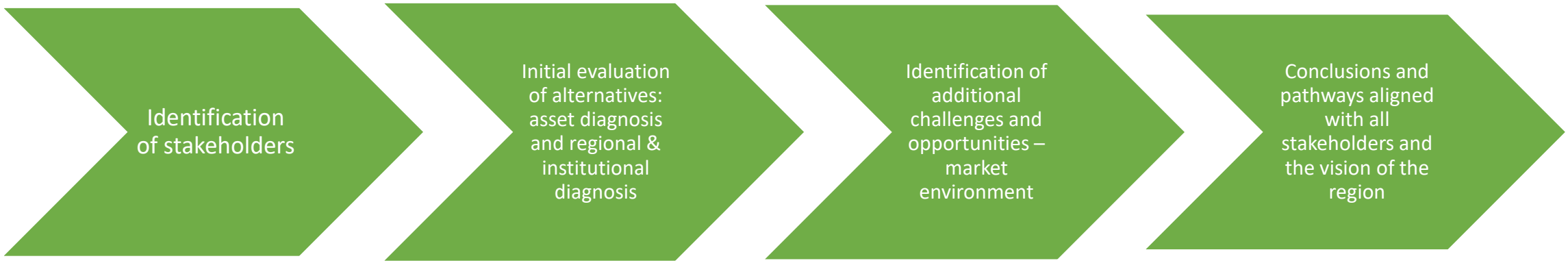
Assets

Technologies

Owners

Investors

Collaborative approach



DOE is facilitating communication between community, asset owners, and other stakeholders through this Funding Opportunity

Join Our Ecosystem which collects potential data and provides convenient notifications for future opportunities.

Impacts

Provide	Enduring economic benefits for communities and the private sector alike, with support from the federal government DOE and the general public with a central repository of information around Energy asset repurposing.
Inform	Inform DOE as well as other communities and help reach the net zero goal Spur greater input and participation from industry in helping reach the net-zero future
Generate	Generate ideas for communities on best ways to work together to adopt new technologies and find ways for these communities to continue to thrive beyond current operations!

Timeline

1. **April 18, 2024** - Submit a **Three-page concept paper by (5PM ET)**.
2. **May 31, 2024-** Selections completed. Energywerx (ENWX) notifies and sends Research and Development Agreement (RDA) and preliminary Statement of Effort (SOE) to selected performers
3. **Brief Management before awards.**
4. **June 13, 2024** - Deadline for selected performers to sign final SOE
5. **July 9, 2024** - DOE & ENWX conduct kick-off meeting with selected performers. (Exact time will be announced closer to the date)
6. **August 22, December 12, 2024 and January 30, 2025 : Participate in listening session / focus group to be held VIRTUALLY through TEAMS by DOE and ENWX to share information all awardees.** (Exact time will be announced closer to the date)
7. **March 15, 2025 - Final report due**

Expected Outcomes

1. **Help communities come up with a baseline plan** on a future with stable, high-quality jobs for all and a productive, energy efficient, and climate-positive future will look like.
2. **Provide an opportunity for communities to evaluate the variety of options** available and find the right fit based on their economic, geographic, and workforce needs.
3. **Help us understand the magnitude of the problems that communities are facing** through the concept papers gathered from across the US.
4. **If selected, provide a report with details (**such as graphic flow charts that detail the future) for the workforce development and what is planned by the community for the energy asset transformation **by September 30, 2024.**
5. **Provide a 3-5 minute video of what the community is planning.**

Selection Criteria

- **Merit review criteria**
  - **Concept:**
    - **Does the repurposing plan (context and planning) fit the objectives in the SOO**
  - **Workforce:**
    - **Would this project increase the readiness, capacity, or skill diversity of the local or regional workforce?**
  - **Partnership:**
    - **Does the team include community and labor participation?**
  - **Does the application discuss economic development in the community and its impacts**
  - **Does the application cover environmental impact?**
  - **Does the plan/approach have a community benefits plans**

- **Programmatic factors**
  - **Applications will be reviewed and the applications that most align with the program objectives will be selected.**
  - **Asset Diversity (oil &gas, coal mine, mine land)**
  - **Geographic diversity**
  - **Technology diversity**
  - **Community capacity – We want to help those most in need.**

Panel of several members will vote to get a consensus on the concept papers using these criteria.

Resources Available before you Begin the concept Paper

- **Before starting on submission of the concept Paper it is strongly suggested that you look at the resources covered in the following slides.**

IWG One Stop Shop at energycommunities.gov

Contact Us

Home | About | Technical Assistance | Funding | Eligibility Maps | News and Events | Resources

We are delivering federal resources to help revitalize America's energy communities

EXPLORE FUNDING CLEARINGHOUSE

Learn about new Inflation Reduction Act funding and tax credits

$268B+	$405B+	159	49	22
Open/Planned Competitive	Open/Planned Formula	Open/Planned	Opportunities That Don't	Inflation Reduction Act Tax

Privacy - Terms

IWG One Stop Shop – Funding Clearinghouse

$263B+

Value of Open/Planned Competitive Funding

$406B+

Value of Open/Planned Formula Funding

154

Open/Planned Opportunities

50

Opportunities w/ no cost share

22

IRA tax credits

https://energycommunities.gov/funding/

Totals from a curated subset of funding opportunities sponsored by ARP, BIL, IRA, and annual appropriations relevant to energy community needs or with explicit energy community eligibility and implemented by the 11 IWG Federal agency partners.

Engagement Opportunities

- ✓Check out funding clearinghouse
- ✓Take advantage of information and tools
- ✓Join us for a webinar or event
- ✓Reach out to learn more
- ✓Sign up to receive updates on funding, events, and more

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The Inflation Reduction Act

Tax Credits & Loan Guarantees

IRA provides **targeted investments** in energy communities.

$250 Billion in Authority for Redeveloping & Repurposing

Bonus Tax Credits for Clean Energy Projects in Energy Communities

$4 Billion Clean Energy Manufacturing Tax Credits for Energy Communities

Workers/Communities/ Environmental Justice

IRA supports **energy workers, and their families**, who built this country.

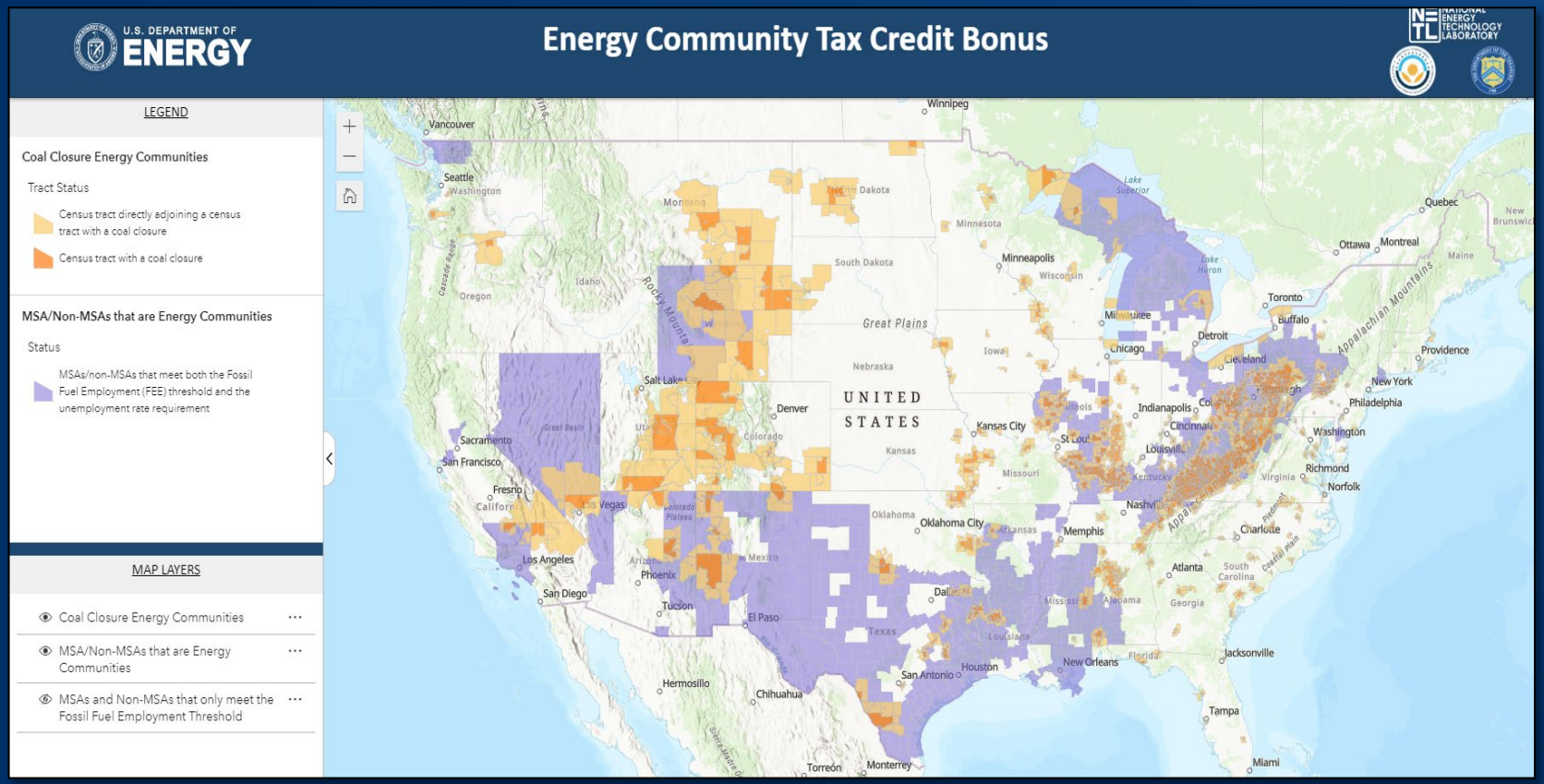
Black Lung Disability Trust Fund Reinstated

$27 Billion Green House Gas Reduction Fund

$3 Billion for Environment and Climate Justice

$145 Million Tribal Electrification

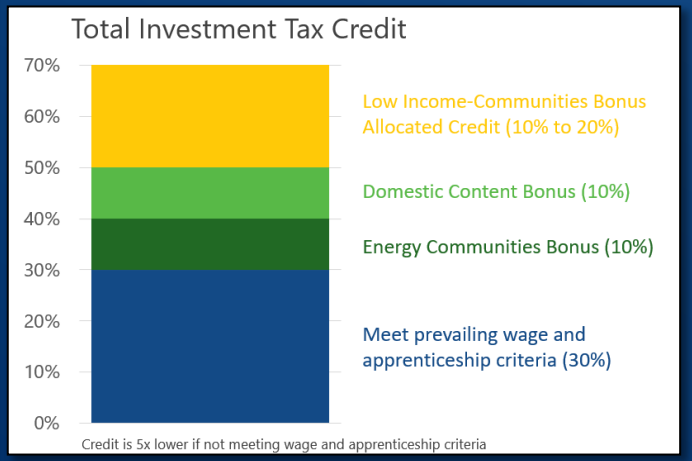
Investing in Energy Communities



Tax credits and bonuses can stack, creating possibly large credit values.

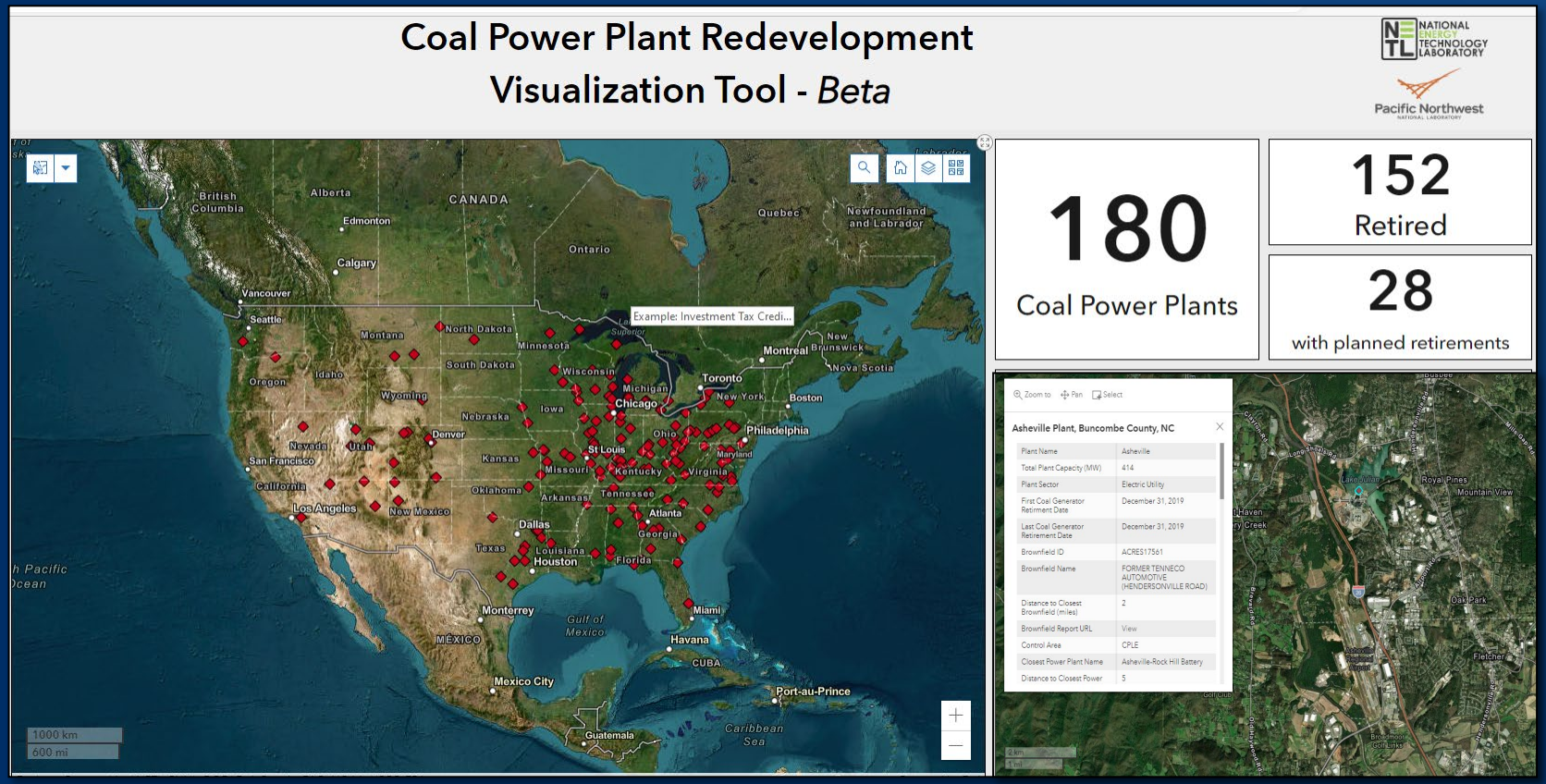
A hypothetical 1 MW community solar facility costing $1 million could earn a **70% tax credit** worth $700,000

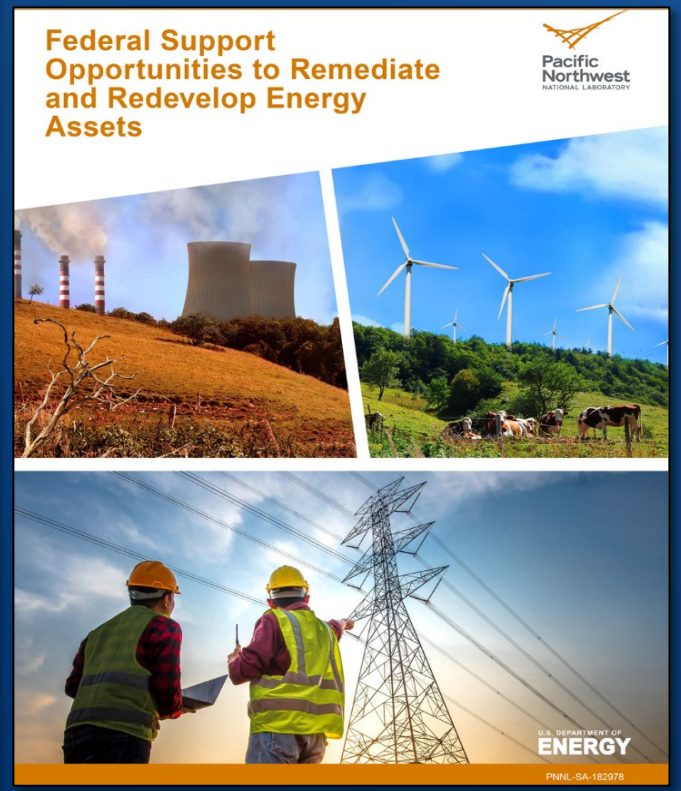
If it is owned by a tax-exempt entity, this could be a **direct cash payment** from the IRS



https://energycommunities.gov/energy-community-tax-credit-bonus/

Tools for Community Reinvestment





https://energycommunities.gov/coal-power-plant-redevelopment-visualization-tool/

Loan Program Office

Catalyzing U.S. Markets

Over a decade of success in building a bridge to clean energy commercialization

Critical Materials Supply Chain

Financed critical minerals processing and recycling projects, supporting battery cell manufacturing and bolstering domestic EV supply chains.

Utility-Scale Renewables Innovation

Financed large-scale, innovative solar, wind, geothermal, and transmission projects across the West.

Advanced Auto Manufacturing

Financed the upgrade of advanced auto manufacturing facilities across the Midwest, creating tens of thousands of jobs.

Advanced Nuclear Energy

Financed the construction of the first new nuclear reactor in the U.S. in 30 years.

What LPO Offers Borrowers

LPO loans and loan guarantees are differentiated in the clean energy debt capital marketplace in **three primary ways:**

Access to Patient Capital

that private lenders cannot or will not provide.

Flexible Financing

customized for the specific needs of individual borrowers.

Committed DOE Partnership

offering specialized expertise to borrowers for the lifetime of the project.

Energy Infrastructure Reinvestment 1706

Financing to leverage existing U.S. energy infrastructure for the clean energy future

Project Eligibility

In addition to meeting the common Title 17 eligibility requirements, EIR projects must:

1. Retool, repower, repurpose, or replace energy infrastructure that has ceased operations, **OR**
2. Enable operating energy infrastructure to avoid, reduce, utilize, or sequester air pollutants or anthropogenic emissions of greenhouse gases.

What is "Energy Infrastructure"?

A facility, and associated equipment, used for:

- The generation or transmission of electric energy;

OR

- The production, processing, and delivery of fossil fuels, fuels derived from petroleum, or petrochemical feedstocks.

Notes

- EIR projects **DO NOT** have an innovation requirement.
- Conditional commitments must be issued by **September 30, 2026**.
- **Environmental remediation** costs and **refinancing outstanding indebtedness directly relevant to the energy infrastructure** can be eligible for EIR financing as part of a larger reinvestment plan.

Energy Infrastructure Reinvestment 1706

Financing to leverage existing U.S. energy infrastructure for the clean energy future

Example Projects

Power plant (or associated infrastructure) retooled, repowered, repurposed or replaced with:

- Renewable energy (and storage)
- Distributed energy (e.g., VPPs)
- Transmission interconnection to off-site clean energy
- New manufacturing facilities for clean energy products or services
- Nuclear generation

- Reconductoring transmission lines and upgrading voltage
- Installing emissions control technologies, including carbon capture and sequestration (CCS)
- Repurposing oil and gas pipelines (e.g., for H_2, CO_2)
- Upgrading refineries for biofuels or hydrogen
- Upgrading or uprating existing generation facilities (with emissions control technologies for projects involving fossil generation)

What is expected from you …

1. **Follow through** with what you heard today on applying for funding at the **IWG Clearinghouse**; take advantage of the **Tax credits and show how you will leverage that;** and also leverage the **1706 Program** from the DOE Loan Program Office.
2. **Start fundraising**
3. ***Find ways to*** **keep people excited and engaged over the long-haul to see the redevelopment project through to the end?**
   - Develop trusted champions
   - Breakdown barriers / ease and speed up process
   - Accumulate, distill and disseminate various information needed
4. **Figure out how to sway reluctant owners? <u>Create a network of experts and champions to realize your goals!</u>**
5. **See how to ensure new opportunity is climate friendly while creating good union jobs and retraining the workforce. Find ways to replace tax base.**
6. **Perhaps test the idea with the community members to identify blind spots?**

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Thank you!

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