



Just Transition

Asia-Pacific Economic Cooperation

March 15, 2023



PNNL is operated by Battelle for the U.S. Department of Energy



Coal and Power Plant Communities and Economic Revitalization

- The Interagency Working Group (IWG) was established by [Executive Order 14008](#), Sec. 218, on Jan. 27
- The IWG released an [Initial Report](#) with recommendations to catalyze robust economic activity and support workers in America's energy sector



Initial Report to the President on Empowering Workers Through Revitalizing Energy Communities, Released April 23, 2021

The Just Transition Lens

- Communities with direct economic linkages to coal-fired power plants have felt the effects of the coal industry's declining economic viability. As many coal power plants near retirement, the question of how to involve communities as stakeholders in the decision-making process remains unanswered.
- Understanding the economic, environmental, and social problems that the energy transition poses at the community level is necessary to support community needs through an equitable and just transition.



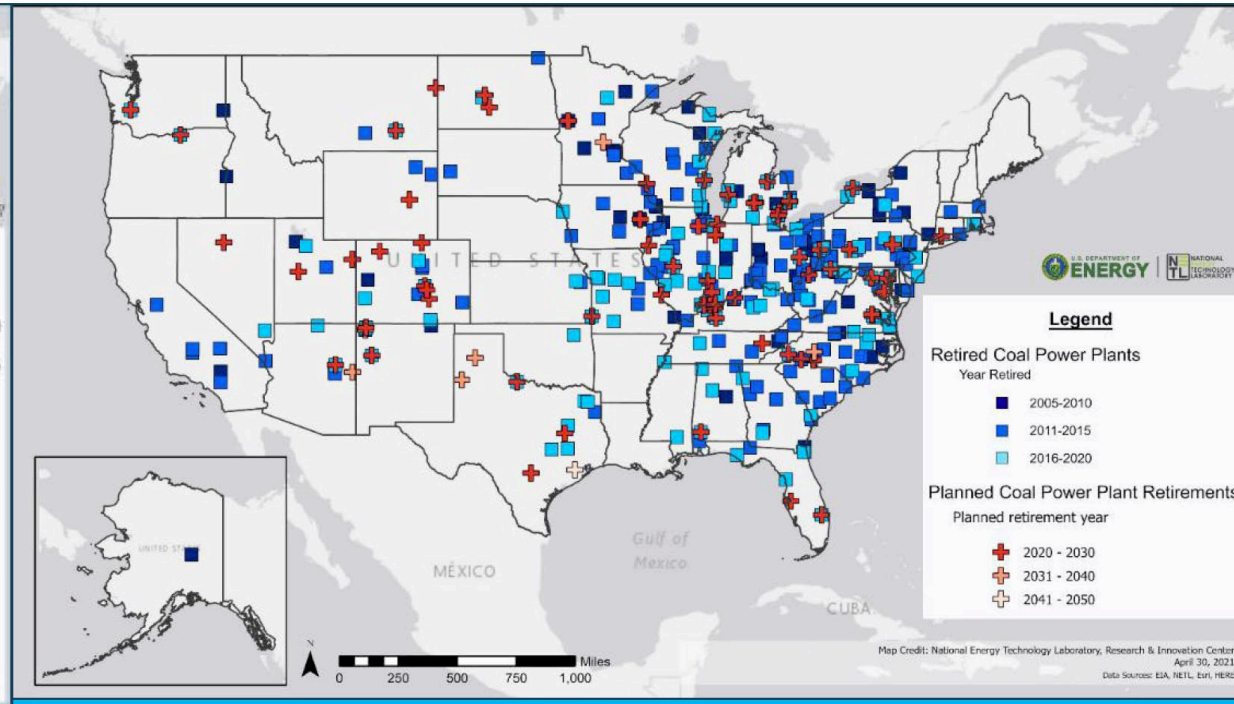
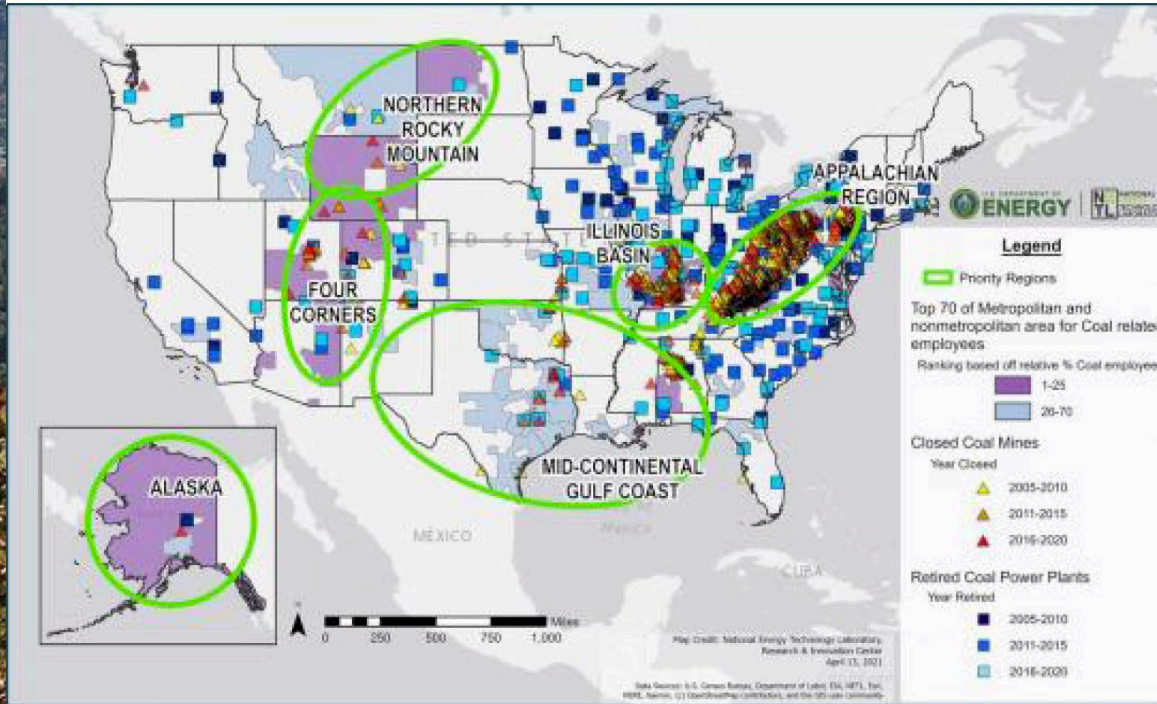
Coal-Fired Generation in the U.S.

Closures

721 plants closed 2005-2020

Planned Retirements

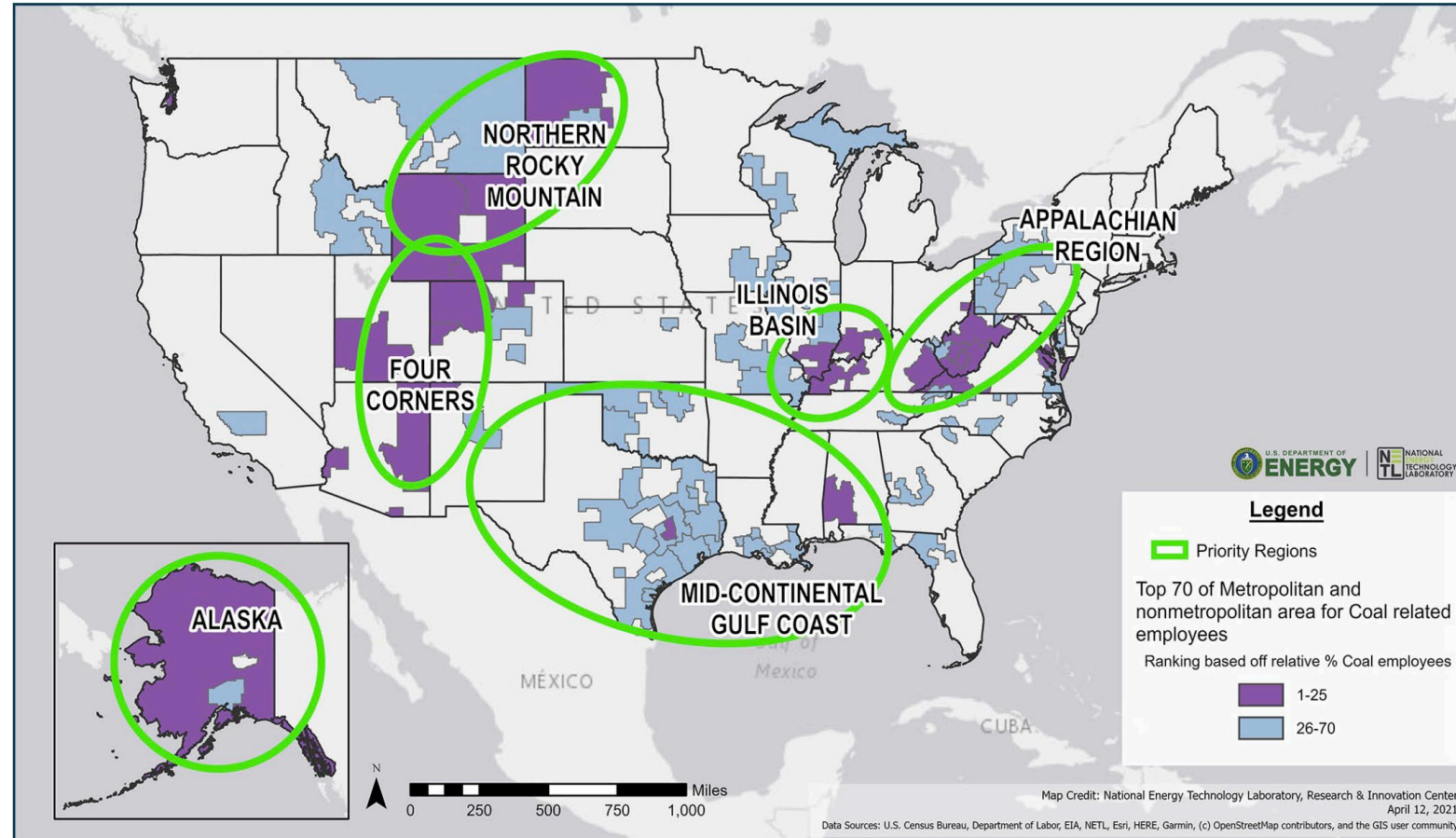
75 planned retirements through 2050



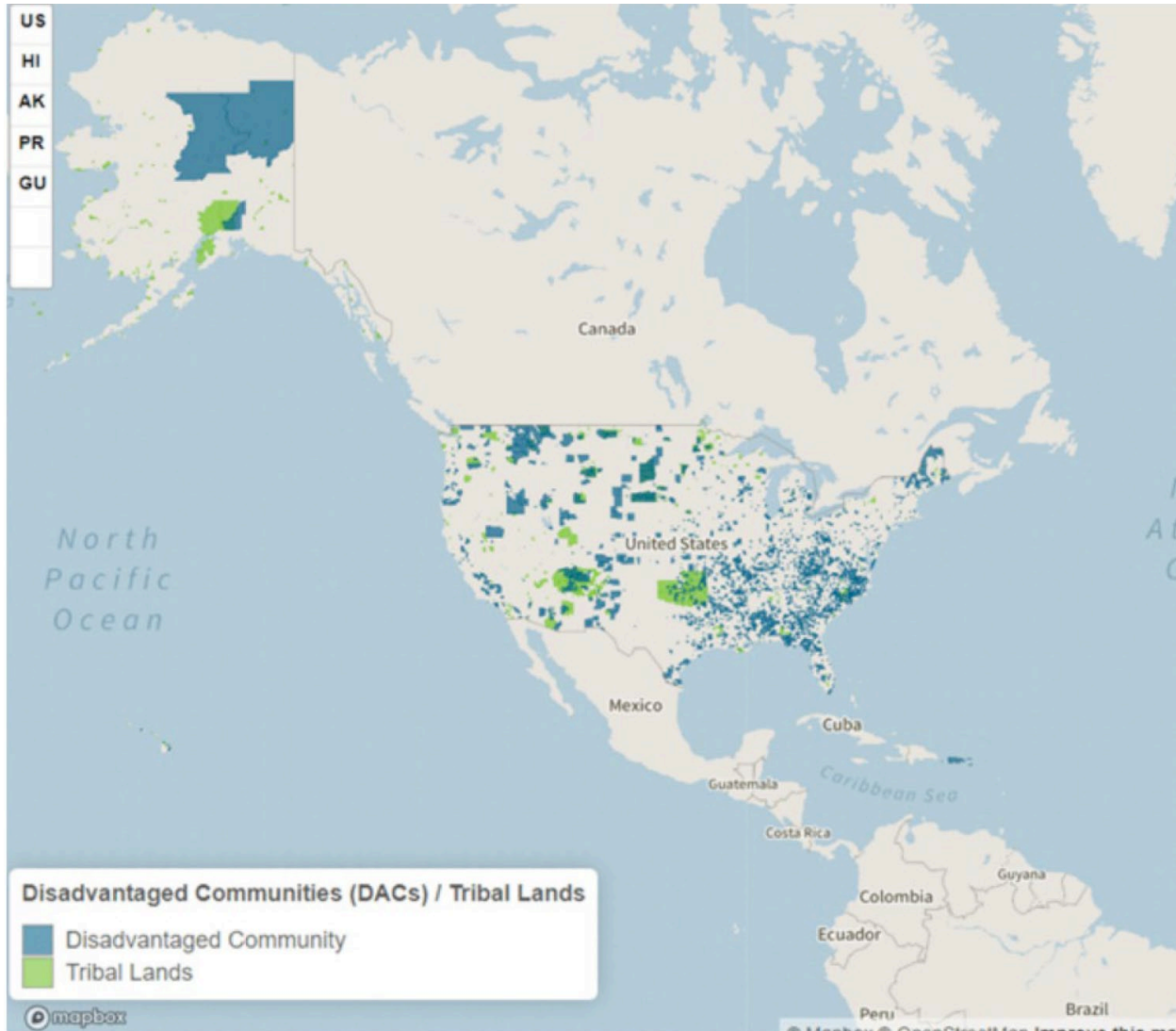
Priority Regions

Four main goals:

- Create good-paying jobs
- Spur economic revitalization
- Remediate environmental degradation
- Support energy workers



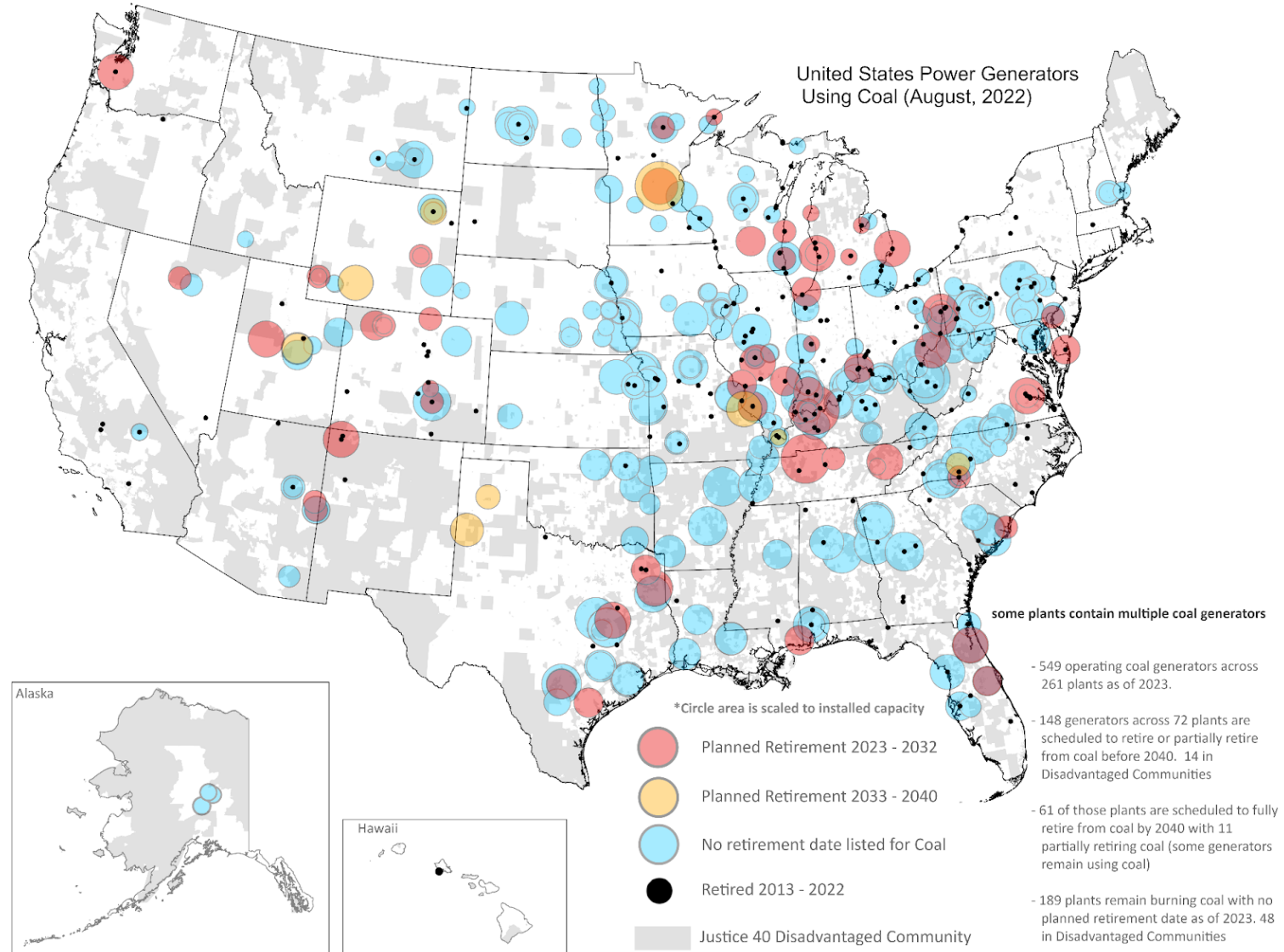
Justice40: Disadvantaged Communities



Based on 36 indicators made up of:

- Fossil Dependence (2)
- Energy Burden (5)
- Environmental and Climate Hazards (10)
- Vulnerability (Socioeconomic, housing burden, transportation burdens, etc.) (19)

Overlap of Coal Plants with Poverty Rate



Targeted Policy Interventions

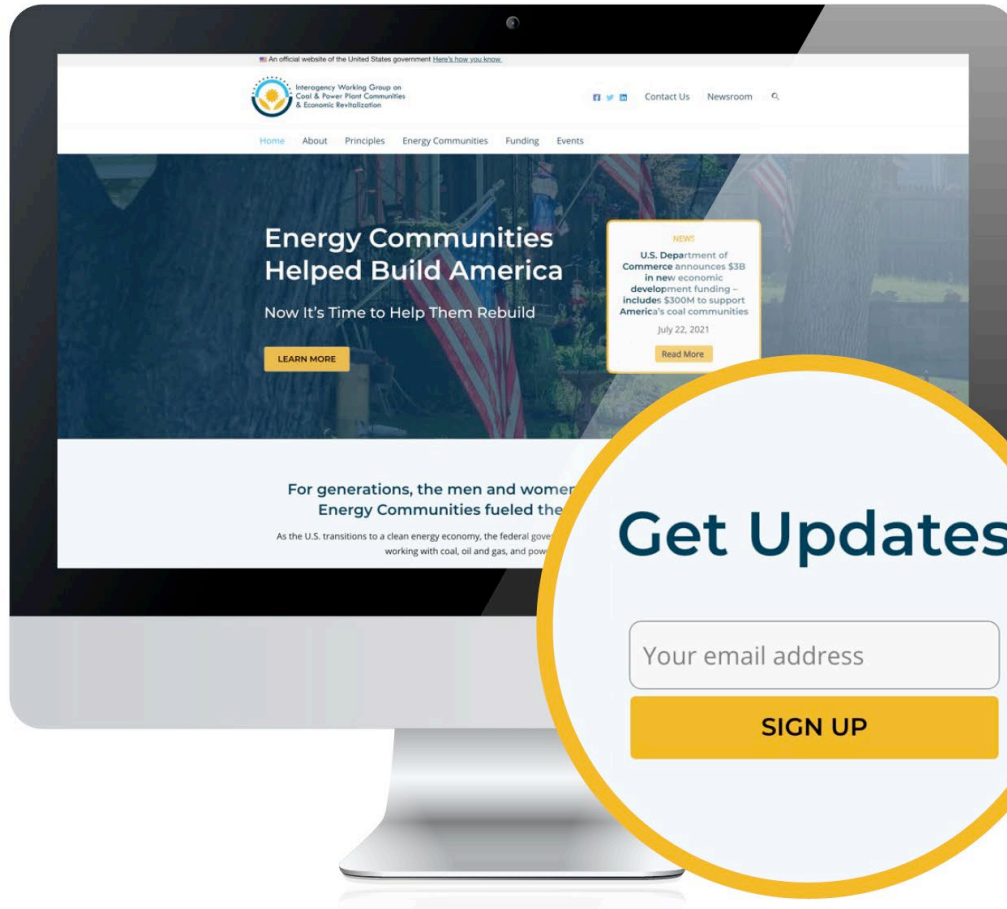
Bipartisan Infrastructure Law

- \$750M for clean energy manufacturing in former coal plant/coal mine communities
- \$500M for clean energy demonstrations on current and former mine lands
- \$1B for clean energy demonstrations in rural and remote areas
- And much more...

Inflation Reduction Act

- 10% additional clean energy development tax credits for “energy communities”
- \$4B carve-out in advanced manufacturing tax credits for “energy communities”
- \$250B in loan authority for energy infrastructure repurposing/reuse/decarbonization

IWG — Information Sharing



energycommunities.gov



@EnergyComm_US



@EnergyCommunitiesUS



@energycommunitiesus

Deep Dive: Just Transition



Drivers for Coal Plant Retirements

Policy and Regulations

- Clean Water Act
- Clean Air Act
- Utility oversight

Cost Competition with Other Fuels

- Plummeting costs of solar, wind, storage
- Switch to natural gas

Corporate Emissions Goals

- Net zero commitments
- Emission reduction targets
- Replacing coal with gas or renewables

Types of Coal Plant Shutdowns



1. Retirement without Repurpose

- Possibility of many retired power plants remaining structurally intact; developers do not want to take on the risk of remediation and waste removal



2. Repurpose with Fuel Switch

- Coal power plant sites have transmission infrastructure that may be attractive for redevelopment into alternative forms of energy generation



3. Repurpose to Handle Remote Transmission

- There are other locational benefits, aside from transmission infrastructure to redeveloping the site of a retired coal plant, including access to railroad, waterways, ports, highways, utility grids, and existing industrial workforce looking for jobs



4. Repurpose with Other Commercial Activity

- Specialized developers are willing to take on the risk of site remediation to sell the land for commercial use

Communities and Plant Shutdowns

- Power Plants are a Revenue Asset for Communities
 - Tax base impacts school system, public goods, etc.
- Community Connection to Plants
 - Power plants have a symbolic meaning to communities
 - Plants employ families through generations
- Other Economic Impacts
 - Coal communities face high levels of unemployment rates when retired plants are not repurposed with job-creating activities
 - Idled power plants can decrease property values
 - Undesirable locations have lower chance of redevelopment - plants tend to sit idle for longer periods

Stakeholder Engagement: key Lessons Learned

- Need to **think ahead**: “Plan for transition or be run over by it.”
- **Economic diversification** is as important as energy transition.
- Basic infrastructure matters: **transportation, transmission, workforce, water.**
- Every community brings different challenges and opportunities.
 - There is **no “one size fits all”** approach to energy transition.
 - There are **no “silver bullets”** or 1:1 industry replacement.
- Need for immediate **high-quality** jobs, equitable access to these jobs, AND long-term economic strategies.
- Meaningful **community engagement** matters.



What are drivers for coal plant shutdowns?

Two case studies:

TVA Bull Run Fossil Plant, TN (Shown: Top)

Economic drivers: rising economic cost of maintaining declining and environmentally taxing performance; analysis showed that retirement of this unit (and its sister unit in KY) would result in ~\$1.3 billion in avoided capital costs for TVA

Cobb Plant, MI (Shown: Bottom)

Climate drivers: retirement aligned with the utility's goal of decreasing GHG emissions across its plants

Economic drivers: cost of upgrading the units to comply with the rules far too expensive

Market drivers: cost-competitive natural gas and renewable energy sources make investments in coal-fired plants unwise



*Bull Run: Owned by Tennessee Valley Authority;
Operational since 1967.*



*Cobb Plant: Owned by Consumers Energy;
Operational since 1948.*

How do communities react when plants are closed?

Two case studies (continued):

TVA Bull Run Fossil Plant, TN (Shown: Top)

- There was mixed reactions to the retirement decision; some argued the plant provides critical fuel diversity and cheap power; others cited climate change and environmental and human health factors as key reasons for closing the facility
- Most local residents agree that a major concern surrounding the future of the plant is the coal ash.

Cobb Plant, MI (Shown: Bottom)

- The community did not fight to save the facility due to its old age, declining performance, and environmental footprint.
- Because the retirement process itself was largely nonnegotiable, community members focused their efforts on determining the best long-term reuse plan for the site.



The Bull Run Plant's coal ash stack, located next to children's playground in Anderson County.



The Cobb Plant smokestack, overlooking Muskegon County and Muskegon Lake.

What are some community-identified best practices in transitioning away from coal power?

Two case studies:

TVA Bull Run Fossil Plant, TN

- Ensure effective community engagement throughout the National Environmental Policy Act process. Uplift community voices in the evaluation of site alternatives.
- Integrate community support resource opportunities into the decision-making process, such as the technical expertise available at the nearby Oak Ridge National Laboratory.
- Conduct plant decommissioning impact assessments and communicate results to affected communities. Perform environmental assessments and release monitoring reports regularly to keep the community informed of potential environmental hazards.

Cobb Plant, MI

- Encourage communities to survey their options for alternative site uses. Provide technical assistance, expertise, and/or funding for communities to determine the best fit and most economic redevelopment plan for the site.
- Encourage statewide reform of property taxes and regulations to dissuade absentee ownership of former industrial sites and the creation of brownfields.

What are best practices for guiding communities through coal plant shutdowns?



Planning Ahead



Early planning of projects: economic and environmental remediation



Communication and Transparency



Early and continued engagement (w/ many forms)



Funding and Economic Support



Identification of funding, partnerships, and resources to support communities



Community Role



Acknowledgment of communities as critical stakeholders

Communities are unique: there is no “one size fits all” development plan



Goal: create equity

Providing Equitable Decommissioning Outcomes

EQUITABLE DECOMMISSIONING CRITERIA



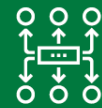
Community Engagement

- Early Engagement
- Information Transparency
- Community Feedback Opportunities
- Mechanisms/Mediums for Engagement
- Continued Engagement



Community-Driven Decommissioning Planning

- Economic Remediation Plans
- Environmental Remediation Plans
- Public Health Remediation Plans
- Sociocultural Remediation Efforts



Community-Driven Redevelopment Process

- Site Redevelopment Planning



Community Assistance

- Financial and Technical Resources

DOE Community Benefits Plans

- **Justice 40**
 - Ensure at least 40% of benefits accrue to disadvantaged communities
- **Diversity, Equity, Inclusion, and Accessibility**
 - Equitable access to wealth building opportunities
- **Good Jobs**
 - Create good-paying jobs to attract and retain skilled workers
- **Workforce and Community Agreements**
 - Meaningful engagement with community and labor partners leading to formal agreements



*In most cases, these plans equate to 20% of the technical merit points for project



Thank You!

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