SOCIAL AND ENVIRONMENTAL JUSTICE

AN EXAMINATION OF CARBON ORE, RARE EARTH AND CRITICAL MINERAL (CORE-CM) COMMUNITIES



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Panel Moderator

TUESDAY, APRIL 5, 2022

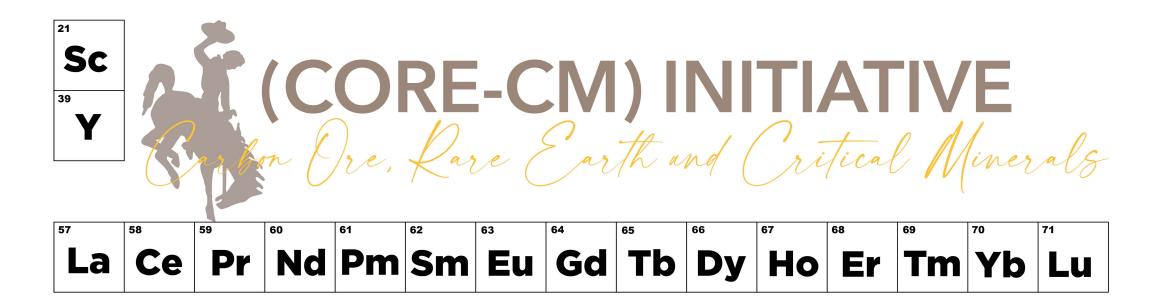


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Social and Environmental Justice

An Examination of the CORE-CM Communities







A DOE sponsored project

to recover REEs and CMs from coal and coal by-products

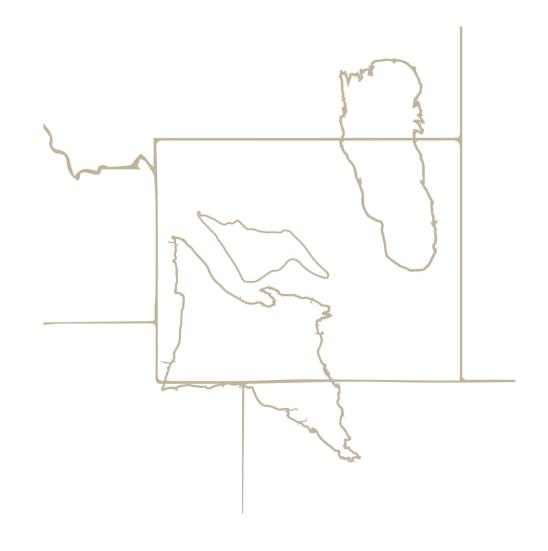


Develop industries
to promoting
economic growth
and workforce
development

The CORE-CM Communities

Powder River Basin

Greater Green River Basin & Wind River Basin





Understanding Social and Environmental Justice

Social Justice

The distribution of advantages and disadvantages across all members of society, regardless of race or background



Environmental Justice

A part of social justice that focuses on distribution of advantages and disadvantages of environmental factors

EPA Definition of Environmental Justice

The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

Our Discussion

A more expansive understanding



How do we define social and environmental justice?



Why are they important in the context of CORE-CM?



What are the perspectives of the CORE-CM communities?



What are the legal and policy issues?

CORE-CM:

Social and Environmental Justice

Webinar: April 5, 2022

Environmental Justice Defined

"The right of all people to share equally in the benefits bestowed by a healthy environment."

- Evans, Adamson, and Stein *The Environmental Justice Reader*

Environmental Justice Defined

Environmental Protection Agency

"the <u>fair treatment</u> and meaningful involvement of all people <u>regardless of race, color, national origin, or income</u>, with respect to the <u>development, implementation, and enforcement</u> <u>of environmental laws, regulations, and policies</u>. This goal will be achieved when everyone enjoys:

- The same degree of protection from environmental and health hazards, and
- Equal access to the decision-making process to have a healthy environment in which to live, learn, and work"



Environmental Justice – A Brief History

1964	Civil Rights Act (Title VI): "prohibits discrimination on the basis of race, color, or national origin in any program or activity that receives Federal funds or other Federal financial assistance" See Also: Equal Protection Clause: 14th Amendment
1982	Warren County, NC
1987	Toxic Waste and Race in the United States (UCC-CRJ)
1991	First National People of Color Environmental Leadership Summit
1991	17 Principles of Environmental Justice

Environmental Justice Expanded



Environmental Justice Issues

Built Environment: Affordable/resilient housing, gentrification, disaster resilience, public health

Food: Food insecurity/access, climate impacts on agriculture, food systems (droughts, floods, biodiversity)

Energy: Extraction and power plant siting, energy poverty/access, land reclamation/stranded assets, energy transition

<u>Climate Change</u>: Disproportionate impacts on low-income and minority communities

Adjacent: Jobs and labor rights, affordable and resilient housing, healthcare, reproductive rights

EJ Issues intersect with issues of race, class, gender, ethnicity, etc.

Environmental Justice – Enforcement

NO Federal Law governing environmental justice

- EPA has no authority to mandate actions or remedies
- Pressure from below grassroots action

CERCLA/Superfund (1980)

Relief for some EJ communities

Executive Order 12898: President Clinton (1998)

- Required agencies to make achieving EJ part of their missions
- Empowered EJ Advisory Council to influence EPA
- Largely unenforced up to agencies

Justice40 – Biden Administration (2021)

• 40% of investments in climate/clean energy to disadvantaged communities

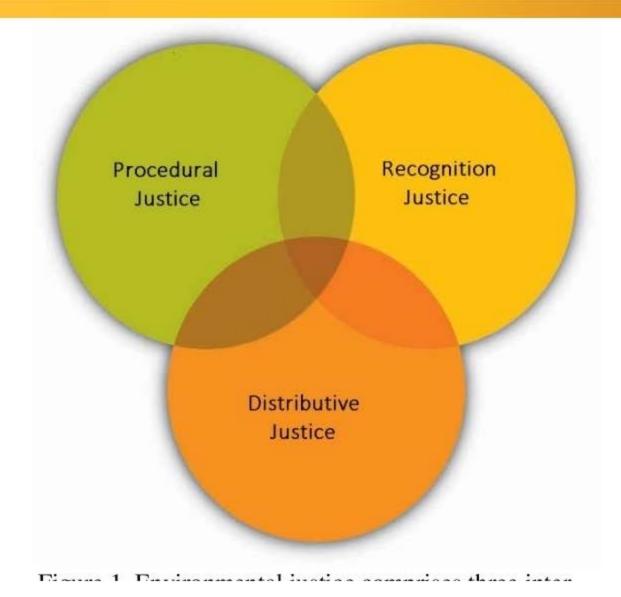
Environmental Justice Communities

• Often in a defensive posture, under-resourced and seeking remedies – "bottom up" approach

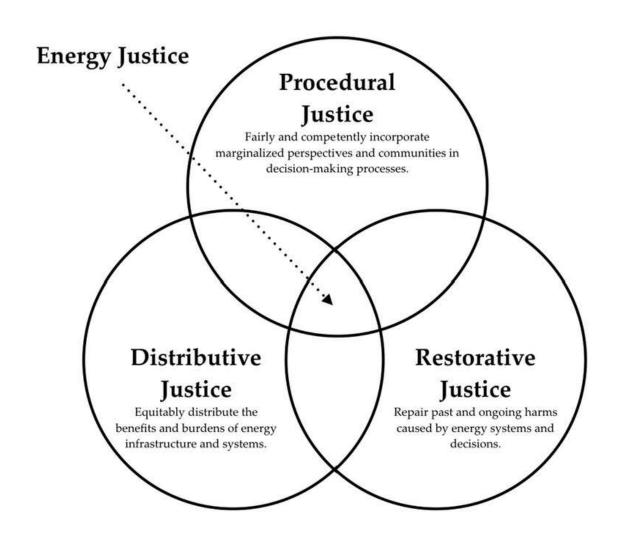


Environmental Justice Frameworks

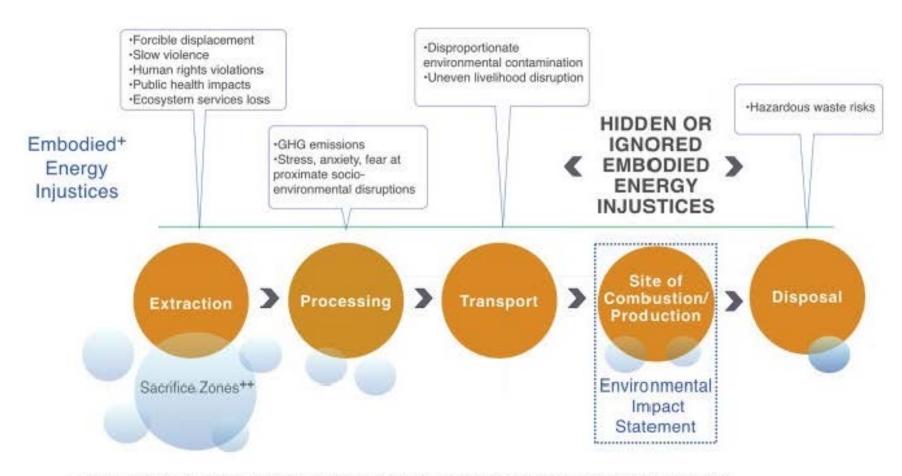
- **Distributive**: Equitable distribution of impacts/burdens
- Procedural/Process: Decision-making inclusive, transparent, fair
- Recognition: Diverse peoples and cultures and their knowledge systems and relations to the environment are recognized and respected
- Reparative: The repair of human and biotic relationships damaged by injustice



Energy Justice



Energy Justice



- + The injustices listed can occur anywhere along the supply-chain but typically are most prevalent around sites of extraction.
- ++ Sacrifice zones are areas poisoned or destroyed for the supposed greater good of economic progress.

EJ, Mining, and CORE-CM

Mining

- Roughly 3% of the country's oil and natural gas reserves, 15% of coal reserves and between 37-55% of uranium reserves are located on Indigenous land. These resources and their associated land have in the past been taken away from Indigenous people once they were discovered
- The U.S. imports more than 90% of the elements critical to advanced energy generation, transmission, and storage.
- Artisanal and small-scale mining (ASM) accounts for 15-20% of global mineral and metal production. ASM often has unsafe working conditions (e.g., child labor) and bad environmental practices (e.g., high mercury emissions).

EJ, Mining, and CORE-CM

Paradox

Decarbonization and transition to clean energy economy require critical minerals and rare earth elements

Downstream

Reduction in GHG emissions, justice for "frontline" (disadvantaged) communities

Upstream

Communities adjacent to extraction sites and processing facilities face challenges

CORE-CM and Environmental Justice

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Source: Hephron, R.J., "The Role of Justice in Developing Critical Minerals, Extractive Industries in Society 7, no. 3 (2020), 855-863, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7336934/

Rights Are rights recognized for different impacted groups, e.g. low-

income and Indigenous communities?

Taxation Where is revenue going? How is it distributed?

EIA Are there mechanisms to compel adherence to national and

local standards and to encourage transparency and meaningful

public/stakeholder participation?

Waste Management How are externalities managed? By whom? Who pays?

Cross-Border Actions Are production processes ethical? See, e.g., human rights

abuses in critical minerals sector – human displacement, child

and slave labor, etc.

CORE-CM and Environmental Justice

Distributive Justice Equitable revenue distribution, job creation, environmental

externalities (waste, facility siting)

Procedural Justice Legal processes observed (EIS, EIA), transparency,

community involvement

Recognition Rights recognized (esp. Indigenous, low-income

communities)

Restorative Justice Rectification of injustice by appropriate parties;

reclamation of land and waste management

Opportunities

- Prioritization of EJ = build ethical supply chain
- Compete with China, elsewhere
 - Reduce dependence, bolster domestic supply
 - Back up claims of U.S. commitment to social/environmental equity



ENVIRONMENTAL JUSTICE ANALYSIS PROCESS



Prepare

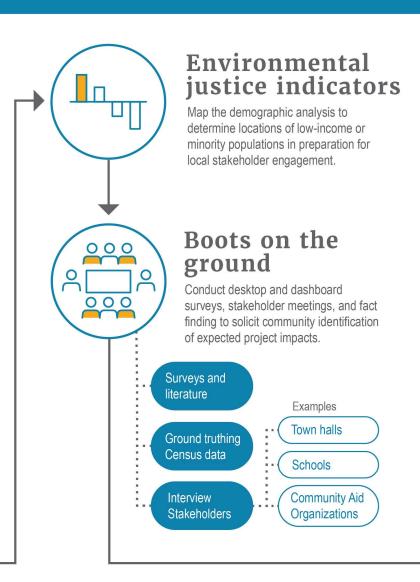
Review background material about the proposed action, the local communities, public comments, and previous assessments.

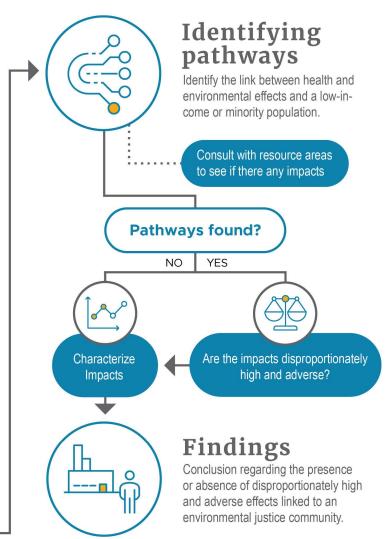


Locate income and racial demographic data for the affected area, surrounding region, and comparison area.



Analyze Census data to identify racial/ethnic and low-income population segments.







Federal Perspective on Environmental & Social Responsibility

University of Wyoming CORE-CM Environmental and Social Justice Webinar

Savannah Rice, ORISE Fellow



Environmental Justice: what is it?

- EPA definition: "Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys:
 - The same degree of protection from environmental and health hazards, and
 - Equal access to the decision-making process to have a healthy environment in which to live, learn, and work."
 - Environmental, energy, and climate injustice persist across the US
 - Closely tied with social justice

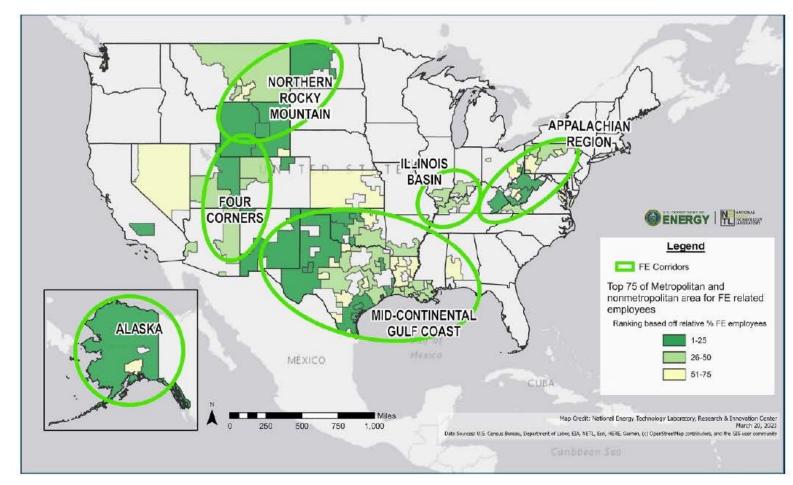
EO 14008: Justice 40 Initiative

- 40% of the overall benefits of certain Federal investments—
 including investments in clean energy and energy efficiency, training and
 workforce development, the remediation and reduction of legacy pollution,
 and more—must flow to disadvantaged communities (DACs)
- DACs: Census tract level. 36 indicators defined by vulnerabilities, environmental hazards, energy burden, and fossil dependence
- Minerals Sustainability -- CORE-CM falls under this
- In alignment with EO 14008, we must incorporate justice and equity into our work, measure and track the benefits

Priorities and Metrics for J40 Investments

- 1. Decrease energy burden in disadvantaged communities (DACs).
- 2. Decrease environmental exposure and burdens for DACs.
- 3. Increase parity in clean energy technology (e.g., solar, storage) access and adoption in DACs.
- 4. Increase access to low-cost capital in DACs.
- 5. Increase clean energy enterprise creation (MBE/DBE) in DACs.
- 6. Increase the clean energy job pipeline and job training for individuals from DACs.
- 7. Increase energy resiliency in DACs.
- 8. Increase energy democracy in DACs.

Wyoming and the Energy Transition



Source: NETL Community Analysis

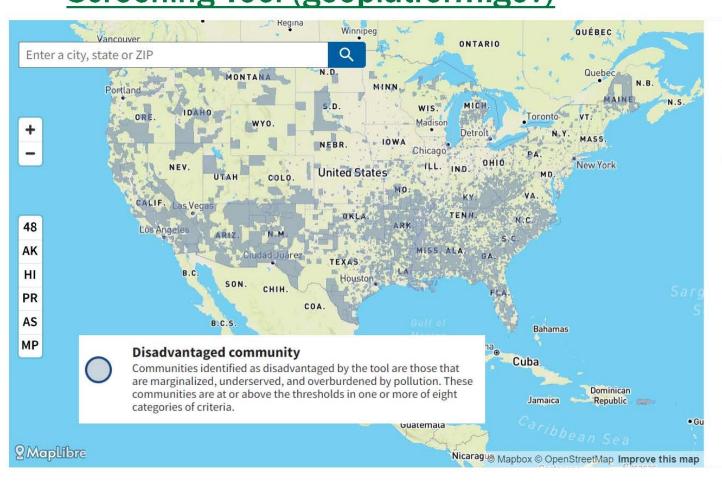
- The state of Wyoming relies heavily on the fossil energy industry for jobs
- What skills does the population have?
- What legacy pollution must be cleaned up?
- What do the tribal nations find important?
- What existing infrastructure can be repurposed?

How can you address EJ, engagement, and the workforce?

Environmental Justice	Community Engagement	Workforce Development
If coal is used as a feedstock, where it will be mined and what are the associated near-term and legacy environmental impacts of the coal mining, including methane leakage.	How the project plans to ensure community and stakeholder input and engagement from underserved communities (BIPOC, religious minorities, LGBTQ+, persons with disabilities, persons in rural areas, persons otherwise affected by poverty or inequality)	Whether application of the process will create new jobs , including clean energy jobs, at the prevailing wage.
If coal wastes are being remediated, indicate the relationship between the amount of coal wastes used versus the amount of product formed.	The nature of the jobs, recruitment strategies for individuals who belong to groups that are historically underserved or underrepresented, anticipated recruitment of workers from the local community, and whether training will be required or if the skills are associated with an existing labor force.	The extent to which those new jobs will be located in power plant and coal communities that are economically distressed and/or have been harmed by the adverse environmental impacts of the energy industry.
How the planned technology remediates legacy environmental impacts of the energy industry, including environmental impacts associated with the use of coal.	Records of interactions with state and local government, tribes, unions, etc. periodically and incorporation of their input into project goals and outcomes	How many new jobs will be created as a result of technology deployment (e.g., number of jobs per unit of product, # of jobs per unit of waste remediated, # of jobs per unit of emissions mitigated).

CEQ Climate and Economic Justice Screening Tool

Online GIS tool hosted at <u>Explore the tool - Climate & Economic Justice</u>
 Screening Tool (geoplatform.gov)



Zoom and select a census tract to view data

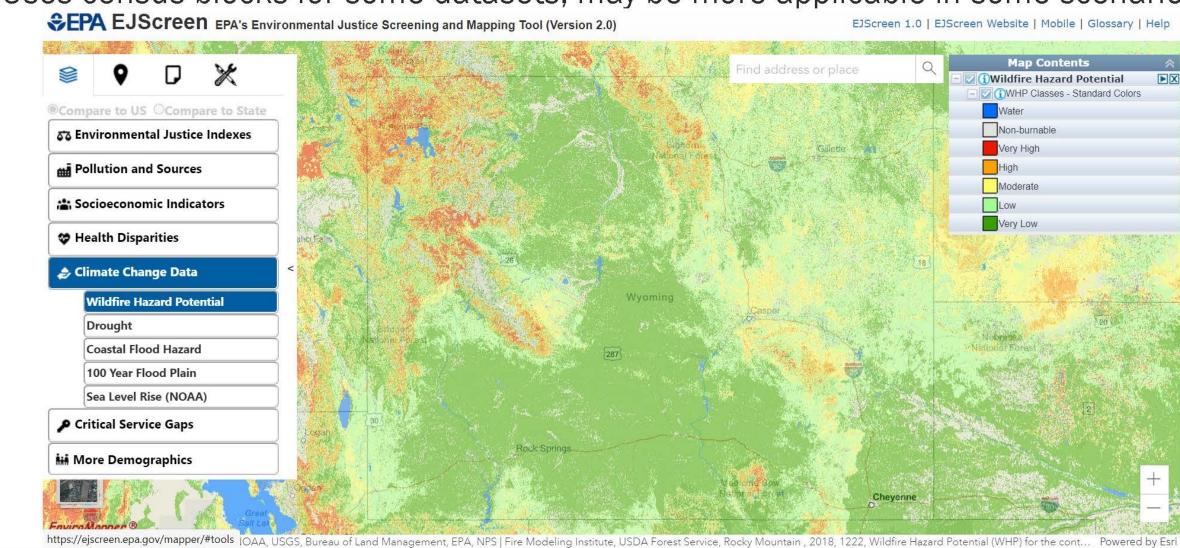
☑ Did you know?

A census tract is generally between 1,200 to 8,000 people, with an average size of 4,000 people.
Census tracts are small, relatively permanent subdivisions of a county defined by the U.S.
Census Bureau and usually cover a contiguous area. The census tract level currently represents the smallest geographical unit for which publicly-

- Consider that census tracts may not be the best way to identify injustices
- DOE justice
 researchers are
 working on this
 right now and we
 will incorporate
 this into our
 working groups

EPA EJ Screening Tool

Uses census blocks for some datasets, may be more applicable in some scenarios



Addressing EJ in your basin

Sustained and meaningful engagement with communities and tribes

- Early and often lifecycle engagement with disadvantaged communities ->
 incorporate their feedback
- Community outreach to academia & professional societies including K-12, college postgrad, industry, local governments, tribes, and unions

Metrics and data collection

- Quantifiable measures of improvement in energy access, employment, etc.
- Workforce development plans in line with the Administration's goals of creating more union jobs that pay family-sustaining wages, including career ladders so that every American has access to a middle-class career with health care, retirement benefits, and worker protections

Environmental and health considerations each step of the way

Reporting Progress and Success on this Front

Write-ups to be included as appendices to the Final Technical Report on subtasks:

- 1.1 Summary of Environmental Justice Considerations
- 1.2 Summary of Economic Revitalization and Job Creation Outcomes
- 1.3 Environmental, Safety, and Health Analysis for Products Proposed to be Manufactured from CORE-CM Resources

UW SCHOOL OF ENERGY RESOURCES

"Legal & Policy Considerations - With a Focus on DOE"

UW/SER CORE-CM Social & Environmental
Justice Webinar

Presented By:
Kipp Coddington, Senior Advisor, UW/SER
April 5, 2022



School of Energy Resources

Agenda

- □ Legal Underpinnings of Social & Environmental Justice (collectively "EJ")
- ☐ Current Policies
- ☐ The Justice 40 Initiative
- **□**Tools
- ☐ A Wyoming Example



Legal Underpinnings of EJ

- ☐ Due Process Clause of the 14th Amendment to the U.S. Constitution
 - ✓ Echoes the "no one shall be deprived of life, liberty of property without due process of law" language of the Fifth Amendment
 - ✓ Three buckets: (1) procedural due process; (2) individual rights in the Bill of Rights; and (3) substantive due process
- ☐ Equal Protection Clause of the 14th Amendment of the U.S. Constitution
 - Racial discrimination is constitutionally suspect; the U.S. Supreme Court has interpreted the clause to prohibit discrimination on other bases besides race
- National Environmental Policy Act
 - ✓ EJ issues must be adequately considered when there is a federal agency action that may involve environmental impacts on minority populations, low-income populations, and/or Indian tribes and indigenous communities
- ☐ Title VI of the 1964 Civil Rights Act
 - ✓ Prohibits discrimination on the basis of race, color, or national origin in any program or activity that receives Federal funds or other Federal financial assistance
- ☐ State Constitutions, statutes, regulations (where applicable)

Sources: U.S. Constitution, NEPA, 1964 Civil Rights Act



Current Policies

- ☐ Executive Order 13985 ("Executive Order on Advancing Racial Equality and Support for Underserved Communities Through the Federal Government"; Jan. 20, 2021)
 - ✓ Directs federal agencies to assess and advance "equity" using federal resources
 - "Equity" means "the consistent and systematic fair, just and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender and queer (LGBTQ+); persons with disabilities; persons who live in rural areas; and persons otherwise affected by persistent poverty or inequality"

Source: https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/



Current Policies

- ☐ Executive Order 14008 ("Executive Order on Tackling the Climate Crises at Home and Abroad"; Jan. 27, 2021)
 - ✓ "Agencies shall make achieving [EJ] part of their mission by developing programs, policies, and activities to address disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts"
 - Created within the Executive Office of the President a White House EJ Interagency Council, chaired by the Chair of the Council on Environmental Quality (CEQ); DOE is a member
 - ✓ Mandated that identified federal agencies including DOE designate an EJ Officer.
 - ✓ Created the White House EJ Advisory Council
 - ✓ Directed CEQ to create a geospatial "Climate and Economic Justice Screening Tool"
 - Created the Justice40 Initiative that is designed to examine "how certain Federal investments might be made toward a goal that 40% of the overall benefits flow to disadvantaged communities"

Source: https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/



The Justice 40 Initiative

- ☐ On July 20, 2021 the White House Office of Management & Budget (OMB) published interim implementation guidance for the Justice40 initiative. Based off of EO 14008's term "disadvantaged communities," the guidance defines
 - "<u>Community</u>" as "either a group of individuals living in geographic proximity to one another, or a geographically dispersed set of individuals (such as migrant works or Native Americans), where either type of group experiences common conditions"
 - "Disadvantaged" as "using appropriate data, indices and screening tools" to assess (but not limited to): (1) low income, high and/or persistent poverty; (2) high unemployment and underemployment; (3) racial and ethic residential segregation, particularly where the segregation stems from discrimination by government entities; (4) linguistic isolation; (5) high housing cost burden and substandard housing; (6) distressed neighborhoods; (7) high transportation cost burden and/or low transportation access; (8) disproportionate environmental stressor burden and high cumulative impacts; (9) limited water and sanitation access and affordability; (10) disproportionate impacts from climate change; (11) high energy cost burden and low energy access; (12) jobs lost through the energy transition; and (13) access to health care
 - √ "Covered program" to include "clean energy"
 - ✓ "Covered investments" to include federal grants and other types of financial assistance, including loans, credit, guarantees, or direct spending

Sources: https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf; https://www.energy.gov/sites/default/files/2021-12/Justice40%20FAQS%20Deck.pdf

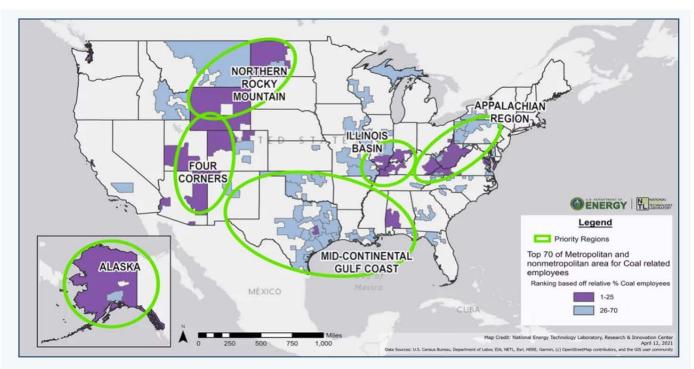


Tools

- □ Climate & Economic Justice Screening Tool: https://www.whitehouse.gov/ceq/news-updates/2022/02/18/ceq-publishes-draft-climate-and-economic-justice-screening-tool-key-component-in-the-implementation-of-president-bidens-justice40-initiative/
 - ✓ Primary purpose: Defines and maps disadvantaged communities for the purposes of informing how federal agencies guide the benefits of certain programs, including through the Justice40 initiative
- ☐ U.S Environmental Protection Agency's "EJ Screen" Tool: https://www.epa.gov/ejscreen
 - ✓ Primary purpose: Screens for potential disproportionate environmental burdens and harms at the community level
- □ DOE's "Energy Justice Dashboard": https://www.energy.gov/diversity/energy-justice-dashboard
 - ✓ Primary purpose: Serves as a data visualization tool that displays DOE-specific investments in communities across the country experiencing disproportionately high and adverse economic, human health, climate-related, environmental, and other cumulative impacts. It displays DOE cost data grants, cooperative agreements, and contracts for more than twenty-five DOE program offices from FY2019 to present
- ☐ Interagency Working Group on Coal and Power Plant Communities & Economic Revitalization "Priority Energy Communities": https://energycommunities.gov/priority-energy-communities/
 - ✓ Primary purpose: Prioritizing funding regions based on employment data, metrics of community economic need, cumulative impact data, economic development & diversification pathways



A Wyoming Example



Shading highlights BLS metro and non-metro areas that are communities vulnerable to impacts from coal-specific job losses.

2	East Kentucky non-metropolitan area
3	Wheeling, West Virginia-Ohio
4	Southwest Virginia non-metropolitan area
5	Alaska non-metropolitan area
6	West Kentucky non-metropolitan area
7	Bremerton-Silverdale, Washington
8	Eastern Wyoming non-metropolitan area
9	Western Wyoming non-metropolitan area

Bureau of Labor Statistics Area Name

Southern West Virginia non-metropolitan area

Rank

Source: https://energycommunities.gov/priority-energy-communities/



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OVERVIEW OF NORTHWEST COLORADO

3 Counties with Significant Coal Operations





2020 Population*
6,260
(a decline of 5.4% since 2010)

Desarado Coal Mine



2020 Population*
13,181
(a decline of 4.5% since 2010)

Trapper Coal Mine

ColoWyo Coal Mine

Craig Station

- Unit 1 427 Megawatts Est. Retirement EOY 2025
- Unit 2 410 Megawatts Est. Retirement EOY 2029
- Unit 3 448 Megawatts Est. Retirement EOY 2029



2020 Population*
25,929
(an increase of 10.6% since 2010)

Foidel Creek Coal Mine (TwentyMile)

Hayden Station

- Unit 1 220 Megawatts Est. Retirement EOY 2030
- Unit 2 221 Megawatts Est. Retirement EOY 2030



The total economic contribution of the coal industry including both coal mining and coal power in Northwest Colorado is 2,862 jobs, with \$228,392,532 in labor income, and \$621,433,561 in regional GDP. For scale purposes this is 21.7% of the three-county regional GDP, and 8.2% of the three county region jobs. The effects are stronger in Moffat County, where coal contributes 47% of regional GDP and 19.8% of jobs. The coal transition in NW Colorado will see Moffat County incur significantly larger losses than neighboring Routt County, which has a larger, more diverse economy. **

**Partially excerpted from the Economic Transition in Northwest Colorado Study by Dr. Nathan Perry, Associate Professor of Economics, Colorado Mesa University

Ad Valorem

A significant portion of each county's ad valorem taxes go to the school system, including Moffat County (46%), Rio Blanco (23%) and Routt (63%). In IMPLAN, this money was coded based on information from the County Assessor's Office split between general government spending and school spending. Note that Craig Station makes up 37% of all taxes for Moffat County (\$9,970,574 out of \$27,001,297), while the two coal mines account for \$2,154,316, or 7% of all taxes, for a combined 44.9% of all taxes.**

Power Plant/Mine	Moffat County	Rio Blanco County	Routt County
Craig Station	\$9,970,574		
Hayden Station			\$5,203,532
ColoWyo Mine	\$1,162,391	\$135,717	
Trapper Mine	\$991,925		
Blue Mountain Mine		\$1,236,572	
Foidel Creek Mine			\$984,885
TOTAL	\$12,124,890	\$1,372,289	\$6,188,417

^{**}Partially excerpted from the Economic Transition in Northwest Colorado Study by Dr. Nathan Perry, Associate Professor of Economics, Colorado Mesa University

Total Economic Contribution of Ad Valorem

Employment	Labor Income	Regional GDP	Total Output
264.59	\$12,584,725.57	\$16,133,543	\$20,832,076

Region	Employment	Labor Income	Regional GDP	Total Output	Employment % of Total	Regional GDP % of Total
Moffat	1,398.47	\$109,992,178	\$321,187,590	\$632,428,130	19.83%	46.99%
Routt	1,074.79	\$ 85,801,045	\$199,947,246	\$355,846,027	4.54%	11.16%
Rio Blanco	389.21	\$ 32,599,310	\$100,298,726	\$158,673,740	9.07%	26.06%
Total Effect	2,862.47	\$228,392,533	\$621,433,561	\$1,146,947,896	8.18%	21.73%

Individual County
Economic
Contributions of
Coal, 2018**

The table above illustrates the individual effects per county. The impact on the individual regions becomes more apparent, as Moffat County is expected to experience a 46.9% reduction in economic activity, Routt—which is more diversified and larger—an 11.1% reduction, and Rio Blanco a 26% reduction as a result of the phasing out of all coal.

^{**}Partially excerpted from the Economic Transition in Northwest Colorado Study by Dr. Nathan Perry, Associate Professor of Economics, Colorado Mesa University



These NW counties suffered extraordinary economic setbacks as a result of the 2008 economic recession.

They had not fully recovered from the effects of the recession when the coal closure announcements were made; the pandemic lock downs came on the heels of the closure announcements.





Transition Issues

- Job availability after loss of coal industry
- Loss of population
- Maintaining Community Identity
- Supporting services schools, access to medical care, higher education
- Access to Broadband infrastructure/redundancy
- Access to funding lack of grant writers, expertise, etc.



DEVELOPING OPTIMISM





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