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Federal Economic Assistance for Coal Communities

November 8, 2023

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Federal Economic Assistance for Coal Communities

SUMMARY

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Changes in energy production and markets broadly—and the coal industry in particular—have impacted the economic well-being of communities and workers. The effects of these changes have not been evenly distributed across industries, occupations, and regions, with some communities facing fiscal challenges and job losses. While observers note that changes in the energy markets have provided certain benefits to some workers and communities, this report focuses primarily on broader, community-level economic development challenges.

Certain coal communities have faced place-specific hurdles such as job losses and relocations, decreased tax revenues, environmental challenges, and other barriers to economic transition and diversification. The term "coal communities" lacks a standard definition but generally refers to communities with a concentration of coal-related industries and coal employment, particularly industries that extract coal or communities that have a coal-fired electric plant. Sometimes the definition includes consideration of economic dependence on those activities. Beginning in 2014, in response to the challenges presented by ongoing energy transitions, Congress has supported targeted policies that provide assistance to coal communities and workers. Congress continues this support through four—primarily place-based—types of assistance:

- grants for economic diversification for communities;
- tax incentives and business development programs to encourage private sector investment;
- grants for mine land reclamation for environmental and health and human safety activities; and
- human capital and workforce training and education programs for dislocated workers.

Energy and climate policies enacted in the 117th Congress included incentives for new and non-fossil fuel energy resources and related technologies. Members of Congress may continue to be interested in reviewing existing and proposed pathways for federal assistance to coal communities and the United States's overall strategy for assisting economically distressed coal communities. For instance, Congress may seek to authorize new or expand existing programs for coal and/or other energy communities; continue targeted, place-based assistance to coal communities; or monitor the increased levels of funding and actions by recent administrations.

Congress may also be interested in reviewing specific aspects of current federal policies for coal communities and workers. Congress may wish to consider the overall scale, role, and structure of federal assistance for coal communities; criteria for broadening or targeting assistance criteria; options for program integration and agency coordination; and continued efforts to evaluate and monitor existing programs. Congress may be interested in examining how supportive programs have been implemented and if intended goals have been achieved. To the extent that another industry (fossil fuel or otherwise) experiences a similar long-term downturn, Congress may consider aspects of the programs designed for coal communities or other place-based economic and community development policies (e.g., economic adjustment assistance grants, tax credit policies, environmental remediation grants).

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Introduction

Electricity generation is a major source of demand for coal in the United States. The U.S. Energy Information Administration (EIA) has noted that since 1961, "the electric power sector has accounted for the majority of U.S. coal consumption," and that "the electric power sector accounted for about 91.7% of the total U.S. coal consumed in 2022."[1] In addition to electricity generation, coal is used to a lesser degree for other purposes in the United States (e.g., steel manufacturing, other industries).[2]

In recent years, coal's market share in overall electricity generation has declined, and EIA energy analysts expect this trend to continue.[3] Changes in electricity generation are generally the result of both market forces and federal, state, and local policies which have influenced the use of different energy sources. According to some analysts, the net effect for coal has been a general loss of competitiveness compared to natural gas, wind energy, and solar energy.[4]

Results of energy sector restructuring have affected certain communities due to declining levels of coal production, employment, and state and local revenues—particularly since 2011 in areas with high rates of coal dependence.[5] The term "coal communities" lacks a standard definition but generally refers to communities with a concentration of coal-related industries, particularly industries that extract coal or communities that have a coal-fired electric plant (see "Identifying Coal Communities" for definitions). In certain coal communities, the regional economy is not diversified, job losses are highly concentrated, and impacted workers face barriers to relocation or new employment.[6] Economic and workforce development initiatives in these areas face

[1] U.S. Energy Information Administration (hereinafter, EIA), "Coal Explained," https://www.eia.gov/energyexplained/coal/use-of-coal.php. For a summary of U.S. consumption, production, and net exports between 1950 and 2022, see https://www.eia.gov/energyexplained/coal/imports-and-exports.php.

[2] Different coal-producing regions produce different types of coal. The different types of coal are used for different purposes. Bituminous coal is one of several types of coal. Thermal and metallurgical are subtypes of bituminous coal. Thermal coal is generally used for electricity generation in power plants. Metallurgical coal is generally used for steel production. EIA, "Coal Explained," https://www.eia.gov/energyexplained/coal/imports-and-exports.php; and CRS Report R43263, *Petroleum Coke: Industry and Environmental Issues*, by Richard K. Lattanzio. For a background primer on coal, see CRS Report R44922, *The U.S. Coal Industry: Historical Trends and Recent Developments*, by Marc Humphries.

[3] For an analysis and projection of trends in coal-fired generating capacity, see EIA, "EIA projects coal capacity will decrease in our Annual Energy Outlook 2023," https://www.eia.gov/todayinenergy/detail.php?id=56460; and "The largest coal-fired power plant in Pennsylvania will close by July 2023," June 5, 2023, https://www.eia.gov/todayinenergy/detail.php?id=56700.

[4] For additional information, see CRS Report R47521, *Electricity: Overview and Issues for Congress*, by Ashley J. Lawson. See also Sanya Carley, Tom P. Evans, and David M. Konisky, "Adaptation, Culture, and the Energy Transition in American Coal Country," Energy Research & Social Science, vol. 37 (2018), p. 133, https://doi.org/10.1016/j.erss. 2017. 10. 007, which refers to an energy transition as a "shift from an economic system dependent on one set of resources and technologies to another."

[5] See report section titled "Trends in U.S. Coal Production and Employment."

[6] See Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization, *Initial Report to the President on Empowering Workers Through Revitalizing Energy Communities*, April 2021, pp. 6, 8-10, https://netl.doe.gov/IWGInitialReport; and Appalachian Regional Commission (hereinafter ARC), "Coal Production and Employment in Appalachia," Bureau of Business and Economic Research, West Virginia University, Commissioned by the ARC, Summer 2023, pp. 2-3, https://www.arc.gov/wp-content/uploads/2023/09/Coal-Production-and-Employment-in-Appalachia-2023.pdf. For a discussion of the decline in geographic mobility and related barriers, see "Moving Problems" in Timothy Bartik, "Should Place-Based Jobs Policies Be Used to Help Distressed Communities?" Upjohn Institute Working Paper, 19-308, (Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 2019), https://doi.org/10. 17848/wp19-308; and Ryan Nunn, Jana Parsons, and Jay Shambaugh, "The Geography of Prosperity," in *Place-Based Policies for Shared Economic Growth*, The Brookings Institution, (continued...)

challenges related to environmental, community, and individual health impacts associated with past and current coal industry activity. To address the localized nature of economic, employment, and environmental concerns, Congress has approved primarily place-based programs that support the revitalization of economically distressed coal communities.[7]

While some note that changes in the energy markets have provided certain benefits to some workers and communities, this report focuses primarily on broader, community-level economic development challenges.[8] This report provides an overview of trends in the U.S. coal industry and the factors that have contributed to economic distress in certain coal communities. This report also summarizes existing federal policies that provide place-based assistance for economic diversification and development in coal communities. The final part of this report outlines various policy tools Congress may consider if it seeks to adjust or expand assistance for coal communities, including options for program integration and areas for additional research and evaluation. A full cost-benefit analysis of the economic, environmental, and health impacts of coal activity and related policies is not within the scope of the report.

While this report focuses on economic, community, and workforce development policies, Congress has notably provided federal financial assistance for certain health care and pension programs for eligible coal workers.[9] Programs that provide assistance directly to individuals are generally not discussed in this report.

Economic revitalization challenges may be similar across different types of energy communities. Several programs described in this report, in the context of coal-impacted communities, may broadly provide assistance to those other types of energy communities. This report does not

September 2018, pp. 17-19, https://www.brookings.edu/wp-content/uploads/2018/09/PBP_FramingChapter_compressed_20190425.pdf.

[7] A full review of place-based assistance, people-based assistance, and other policy approaches to economic development is beyond the scope of this report. For additional information on place-based and people-based policies, see David Neumark and Helen Simpson, "Place-Based Policies," in *Handbook of Regional and Urban Economics*, ed. Giles Duranton, J. Vernon Henderson, and William Strange (Elsevier: Amsterdam, Netherlands, 2015); and CRS In Focus IF12409, *What Is Place-Based Economic Development?*, by Adam G. Levin. For a guide to federal economic development resources, see CRS Report R46683, *Federal Resources for State and Local Economic Development*, by Julie M. Lawhorn.

[8] Researchers note that coal production and coal-fired electric plants may impact local, regional, and national economies through contributions to the "employment base, economic output, labor income, and tax revenue." For a summary of direct, indirect, and induced economic impacts related to coal, see Christiadi, Eric Bowen, and John Deskins, "The Economic Impact of Coal Production and Coal-Fired Power Generation in the United States," *Bureau of Business & Economic Research*, 353 (2022), https://researchrepository.wvu.edu/bureau_be/353. For a summary of research examining various economic impacts of coal on regional economies, including a discussion of gaps in the research and a study of boom and bust periods (1990-2010), see Michael R. Betz, et al., "Coal Mining, Economic Development, and the Natural Resources Curse," *Energy Economics*, vol. 50 (2015), pp. 105-108, https://doi.org/10. 1016/j.eneco. 2015. 04. 005. Among other studies included in the summary by Betz et al. is the perspective on the economic impact of coal on local labor markets in Kentucky, Ohio, Pennsylvania, and West Virginia in the 1970s and 1980s by Dan Black, Terra McKinnish, and Seth Sanders, "The Economic Impact of the Coal Boom and Bust," *The Economic Journal*, vol. 115 (2005), issue 503, pp. 449-476, https://doi.org/10. 1111/j.1468-0297. 2005. 00996.x.

[9] For example, the Surface Mining Control and Reclamation Act (SMCRA) authorizes federal financial assistance to United Mine Workers of America (UMWA) health and pension benefit plans for retired coal miners and family members who are eligible to be covered under those plans. See CRS Report R46266, *The Abandoned Mine Reclamation Fund: Reauthorization Issues in the 116th Congress*, by Lance N. Larson, and CRS In Focus IF11370, *Health and Pension Benefits for United Mine Workers of America Retirees: Recent Legislation*, by John J. Topoleski.

As another example, Congress established the Federal Black Lung Program to provide federal financial assistance to coal miners affect by coal worker's pneumoconiosis (commonly referred to as black lung disease). See CRS Report R45261, *The Black Lung Program, the Black Lung Disability Trust Fund, and the Excise Tax on Coal*, by Scott D. Szymendera, Molly F. Sherlock, and Anthony A. Cilluffo.

attempt to examine specific policy considerations for oil, natural gas, nuclear, or other types of energy communities.

Identifying Coal Communities

The term "coal communities" is not uniformly defined in statute and certain federal agencies and outside groups use the term in various ways. When defining "coal communities" for the purpose of federal assistance and national analyses, federal agencies and other groups have typically used a range of criteria associated with the levels and types of coal industry activity. To identify conditions of regional economic distress associated with coal regions, definitions of "coal communities" often combine measures of coal industry activity with indicators of socioeconomic distress.[10] The various definitions generally identify communities that have power plants with coal-fired electric generators or a concentration of coal-related industries, particularly those that extract coal.[11] Researchers often demonstrate a relationship or "dependence" of a region on coal sector activity through measures of sector employment levels, sector employment as a share of total employment,[12] the current or past level of sector production,[13] and/or the presence or number of coal mines or power plants with coal-fired electric generators that may be active, retired, or

[10] Not all coal communities are economically distressed. Certain communities may be economically diversified and/or benefit from industry activities, but may also be economically vulnerable. Definitions and measures of economic distress vary and may include certain thresholds related to unemployment, prime age employment, poverty, income, and other measures or a combination of several measures. For information on the economic distress thresholds applicable to certain programs administered by the U.S. Economic Development Administration (EDA), see CRS In Focus IF12074, *Areas of Economic Distress for EDA Activities and Programs,* by Julie M. Lawhorn.

Analysts also note that the " socioeconomic vulnerability" to coal plant and coal mine closures varies across the United States. See Kelli F. Roemer and Julia H. Haggerty, "Coal Communities and the U.S. Energy Transition: A Policy Corridors Assessment," *Energy Policy,* vol. 151 (2021), p. 2, https://doi.org/10. 1016/j.enpol. 2020. 112112.

[11] The EIA's list of "coal producing regions" includes the Appalachian Region, which includes the Northern, Central, and Southern Appalachian Regions; the Interior Region (with Gulf Coast), which includes the Illinois Basin; and the Western Region, which includes the Powder River Basin and Uinta Basin. See EIA, "Coal Producing Regions," https://www.eia.gov/tools/glossary/index. php?id=Coal-producing%20regions.

For a map of coal producing regions, see EIA, "Coal Production by Region, in Million Short Tons and Regional Share of Total U.S. Production, 2019," https://www.eia.gov/energyexplained/coal/images/coal_production_map.jpg. For data and a map of U.S. coal mine locations, see EIA, https://atlas.eia.gov/search? categories=coal. For an interactive map showing the census tracts (or directly adjoining census tracts) in which a coal mine closed after 1999 or in which a coal-fired electric generating unit was retired after 2009, see Interagency Working Group (IWG) on Coal and Power Plant Communities and Economic Revitalization, "Energy Community Tax Credit Bonus," https://energycommunities.gov/energy-community-tax-credit-bonus. See also, CRS Report R44922, *The U.S. Coal Industry: Historical Trends and Recent Developments,* by Marc Humphries.

[12] Researchers generally note that by examining the coal employment share, they may account for the influence of coal activity on the labor market. See Michael R. Betz, et al., "Coal Mining, Economic Development, and the Natural Resources Curse," *Energy Economics,* vol. 50 (2015), p. 109, https://doi.org/10. 1016/j.eneco. 2015. 04. 005. Researchers measuring a region's coal dependence or vulnerability note that the U.S. Department of Agriculture's (USDA's) Economic Research Service "defines a county as 'mining dependent' if 8% or more of its employment is engaged in the mining industry (USDA 2019)." See Adele Morris, Noah Kaufman, and Siddhi Doshi, "The Risk of Fiscal Collapse in Coal-Reliant Communities," The Brookings Institution, July 2019, https://www.brookings.edu/research/the-risk-of-fiscal-collapse-in-coal-reliant-communities.

[13] For the purposes of analyzing coal production and employment, a 2023 ARC-commissioned report defined Appalachian coal counties as counties within Appalachia that produced at least one thousand short tons of coal in any year from 2000 through 2022. See ARC, "Coal Production and Employment in Appalachia," Bureau of Business and Economic Research, West Virginia University, Commissioned by the ARC, Summer 2023, p. 6, https://www.arc.gov/wp-content/uploads/2023/09/Coal-Production-and-Employment-in-Appalachia-2023.pdf.

scheduled for retirement.[14] Certain definitions may also include areas with supply chain, distribution, or transportation connections to coal activity. These definitions may cover communities that do not have coal supplies or generating facilities, but nonetheless may be impacted by shifts in the coal industry.[15]

Congress, federal agencies, and the Biden Administration have used differing methodologies to define and identify coal communities, which are explored below.

Interagency Working Group (IWG) on Coal and Power Plant Communities and Economic Revitalization

In January 2021, the Biden Administration established the Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization (IWG) to facilitate economic revitalization in coal, oil and gas, and power plant communities.[16] In an April 2021 report, the IWG identified the 25 "most impacted regions for coal-related declines" (see **Figure 1**). To define those regions, the IWG analyzed "workers directly employed in coal mining and power generation, and also the workers in related jobs in logistics and services ... as well as fenceline communities and other communities impacted by environmental and health effects of fossil fuel generation."[17] Seven of the IWG's 10 most-impacted coal regions were in Appalachia or Wyoming. Twelve of the 25 regions were in the seven highest coal-producing states.[18]

[14] An electric generator is the equipment that produces electricity. A power plant can have one or more electric generators using different energy sources. For example, some power plants have a combination of coal-fired and natural gas-fired electric generators. Some generators at a power plant might continue operating after an individual electric generator is retired.

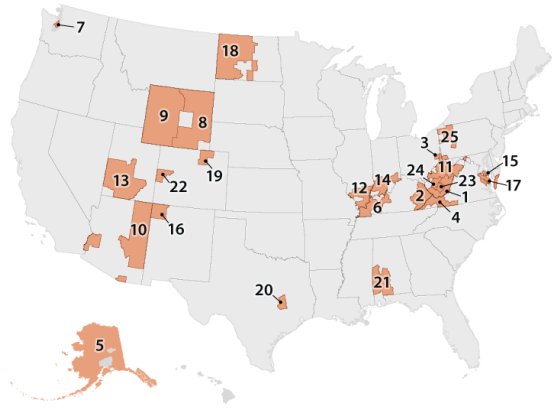
[15] For example, EDA has defined "coal economy" as a term that reflects the complete supply chain of coal-reliant industries, including coal mining, coal-fired power plants, and related transportation, logistics, and supply chain manufacturing. See EDA, "Assistance to Coal Communities (ACC)," https://www.eda.gov/coal. The ARC directs certain grant resources to "communities and regions that have been affected by job losses in coal mining, coal power plant operations, and coal-related supply chain industries due to the changing economics of America's energy production." See ARC "Partnerships for Opportunity and Workforce and Economic Revitalization Initiative," https://www.arc.gov/grants-and-opportunities/power/.

[16] See E.O. 14008, "Tackling the Climate Crisis at Home and Abroad," 86 *Federal Register* 7619, February 1, 2021. The IWG has not been authorized by Congress, though it received $3 million for FY2023 (see Senator Patrick Leahy, "Explanatory Statement Submitted by Mr. Leahy, Chair of the Senate Committee on Appropriations, Regarding H.R. 2617, Consolidated Appropriations Act, 2023," Senate, Congressional Record, vol. 168, no. 198 (December 20, 2022), p. S8356, available at https://www.congress.gov/117/crec/2022/12/20/168/198/CREC-2022-12-20-pt1-PgS7819-2.pdf). The IWG is coordinated primarily by Department of Energy staff. Additional information about the IWG is available in CRS In Focus IF12238, *Interagency Working Group (IWG) on Coal and Power Plant Communities and Economic Revitalization*, by Julie M. Lawhorn, and at https://energycommunities.gov/background.

[17] Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization, *Initial Report to the President on Empowering Workers Through Revitalizing Energy Communities*, April 2021, p. 1, https://netl.doe.gov/IWGInitialReport.

[18] This uses the EIA's definition of the "Appalachian Region," which includes Alabama, Eastern Kentucky, Maryland, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia. See EIA, *Glossary*, https://www.eia.gov/tools/glossary/?id=coal.

Figure 1. IWG-Identified 25 Priority Communities for Coal-Related Employees



"Top 25 Priority Communities"

Communities that were identified by the IWG as Bureau of Labor Statistics (BLS) metro and non-metro areas that are vulnerable to impacts from coal-specific job losses.

1. S. West Virginia*
2. E. Kentucky*
3. Wheeling, WV-OH
4. SW Virginia*
5. Alaska*
6. W. Kentucky*
7. Bremerton-Silverdale, WA
8. E. Wyoming*
9. W. Wyoming*
10. Arizona*
11. N. West Virginia*
12. S. Illinois*
13. Central Utah*
14. S. Indiana*
15. California-Lexington Park, MD
16. Farmington, NM
17. NE Virginia*
18. W. North Dakota*
19. Greeley, CO
20. College Station-Bryan, TX
21. SW Alabama*
22. Grand Junction, CO
23. Beckley, WV
24. Charleston, WV
25. W. Pennsylvania*†

*Non-metropolitan. †Added for geographic diversity.

Source: Map created by CRS using data provided by the IWG and listed in IWG, *Initial Report to the President on Empowering Workers Through Revitalizing Energy Communities*, Appendix B (Counties within Priority Communities). Figure created by Cassandra Higgins, GIS Analyst, and Amber Wilhelm, Visual Information Specialist.

Notes: The IWG identified the 25 Priority Communities based on the "number of direct coal-related jobs as a percentage of the total number of jobs in each area." According to the IWG, the Western Pennsylvania non-metropolitan area (*) was added for geographic diversity, and the "shading highlights BLS metro and non-metro areas that are communities vulnerable to impacts from coal-specific job losses." There may be minor mapping discrepancies between the CRS map and the areas shown in Figure 2 of the IWG report. Congressional offices may contact the author for more information. Figure 2 of the IWG report includes the location of the top 1-25 and 26-70 metropolitan and nonmetropolitan areas with a high number of coal-related employees. The CRS map (above) shows the top 1-25 communities identified by the IWG. The IWG report also included a map that identified the location of the top 75 metropolitan and nonmetropolitan areas with a high number of fossil energy activities and jobs; see IWG, Figure 1.

U.S. Department of Commerce Economic Development Administration (EDA)

The EDA, a bureau of the U.S. Department of Commerce (DOC), is the only federal agency with economic development as its sole mission. The agency was established pursuant to the enactment of the Public Works and Economic Development Act (PWEDA) of 1965 (42 U.S.C. §3121 et seq.) to assist state and local stakeholders with developing the conditions and amenities to grow businesses, create jobs, and expand investment in economically distressed areas.

The Economic Adjustment Assistance (EAA) program (42 U.S.C. §3149) is one of EDA's core programs for economically distressed areas. EDA administers the Assistance to Coal Communities (ACC) grant initiative primarily through the EAA program. EDA does not provide a list of eligible coal communities; however, agency guidance notes that potential applicants should use third-party data to document the extent to which contractions in the coal economy have negatively impacted (or will negatively impact) the community or region.[19] EDA has defined "coal economy" as a term that reflects the complete supply chain of coal-reliant industries,

[19] Economic Development Administration (EDA), "FY 2023 Public Works and Economic Adjustment Assistance Notice of Funding Opportunity," p. 16, https://www.grants.gov/web/grants/view-opportunity. html? oppId=346815.

including coal mining, coal-fired power plants, and related transportation, logistics, and supply chain manufacturing.[20]

Appalachian Regional Commission (ARC)

The ARC is one of eight federal regional commissions and authorities that Congress has authorized to address instances of major economic distress in certain defined geographic regions of the country.[21] The ARC was established in 1965 to address economic distress in the Appalachian region,[22] which spans 423 counties in Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia.[23]

The ARC does not provide a list of eligible coal communities for its main grant program for coal communities within its jurisdiction. Instead, for its Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) Initiative, the ARC's request for funding proposals indicates that

> Eligible POWER projects must be located within and targeted to communities or regions that have been recently impacted (or can reasonably demonstrate that they will be impacted in the near future) by coal-mining or coal-power-plant employment loss, or employment loss in the supply-chain or logistics industries of either sector.[24]

The POWER Plus Plan for Coal Communities (the Power Initiative)

In 2015, the Obama Administration launched the multi-agency federal Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) Plus Plan, which addressed the coal sector's decline through funding for (1) economic stabilization, (2) social welfare efforts, and (3) environmental efforts.[25] While certain proposed provisions of POWER Plus Plan were never enacted or funded, other elements of the Plan have continued and are described below. The Appalachian Regional Commission's POWER Initiative is the only program to retain the original branding. For additional information, see CRS Report R46015, *The POWER Initiative: Energy Transition as Economic Development*.

[20] For additional information, see EDA, "Assistance to Coal Communities (ACC)," https://www.eda.gov/coal; and CRS Insight IN11648, *The Economic Development Administration's Assistance to Coal and Nuclear Closure Communities Initiatives for Economic Transitions*, by Julie M. Lawhorn.

[21] For additional information on federal regional commissions and authorities, see CRS Report R45997, *Federal Regional Commissions and Authorities: Structural Features and Function*, by Julie M. Lawhorn .

[22] 40 U.S.C. §§14101-14704.

[23] ARC, "About the Appalachian Region," https://www.arc.gov/about-the-appalachian-region/.

[24] ARC, "POWER Initiative 2023 Request for Proposals," pp. 5-6, https://www.arc.gov/wp-content/uploads/2023/02/2023-POWER-RFP.pdf.

[25] The White House, Office of the Press Secretary, "FACT SHEET: The Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) Initiative," press release, March 27, 2015, https://obamawhitehouse.archives.gov/the-press-office/2015/03/27/fact-sheet-partnerships-opportunity-and-workforce-and-economic-revitaliz.

U.S. Department of Health and Human Services, Community Economic Development—Focus on Energy Communities

Certain discretionary grant funds provided under the Community Economic Development (CED) initiative[26] are also set aside for "energy communities."[27] The CED is administered by the U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Services. CED grants are made available through a competitive process to qualifying private, non-profit community development corporations with 501(c)(3) status.[28] Under the CED Initiative, "energy communities" are defined by the agency as "communities that have experienced employment loss and/or economic dislocation events because of declines in the fossil fuel industry and/or are disproportionately reliant on fossil fuel energy production or distribution, including coal, oil, gas, and power plant."[29] The goal of the CED's Focus on Energy Communities initiative are to create jobs, spur economic revitalization, remediate environmental degradation, and support energy workers.[30] In fiscal year (FY) 2021, OCS provided bonus points to CED applications for projects located in and serving coal, oil, and gas, and/or power plant communities, and indicated that it would provide funding through separate funding opportunities for projects serving these communities starting in FY2022.[31]

Coal Communities Impacted by Coal Closures 2000/2010 or Later

In 2021, the Infrastructure Investment and Jobs Act (IIJA, P.L. 117-58) established the Advanced Energy Manufacturing and Recycling Grant Program[32] (see **Table 2**), which provides grants for qualified businesses in coal communities impacted by certain coal closures. In the context of this program, coal communities include areas located in census tracts containing coal-fired generating units that have retired since December 21, 2009, coal mines that have closed since December 31, 1999, or adjacent census tracts. **Figure 2** shows an example from the DOE mapping tool that may be used to help identify these census tracts.

[26] 42 U.S.C. §9921(a)(2).

[27] Department of Health and Human Services (DHHS), Administration for Children and Families (ACF), Office of Community Services (OCS), "Community Economic Development Grants Supporting Energy Communities," https://www.acf.hhs.gov/sites/default/files/documents/ocs/ced-program-in-energy-communities-2021.pdf.

[28] DHHS, "CED Program Supporting Energy Communities," https://www.acf.hhs.gov/ocs/ced-program-supporting-energy-communities; and DHHS, "Community Economic Development Focus on Energy Communities—FY2024 Notice of Funding Opportunity," https://www.acf.hhs.gov/sites/default/files/documents/ocs/CED-HHS-2022-ACF-OCS-EE-0081-FY2023.pdf. For information about the CED program, see CRS Report RL32872, *Community Services Block Grants (CSBG): Background and Funding*, by Conor F. Boyle.

[29] Ibid.

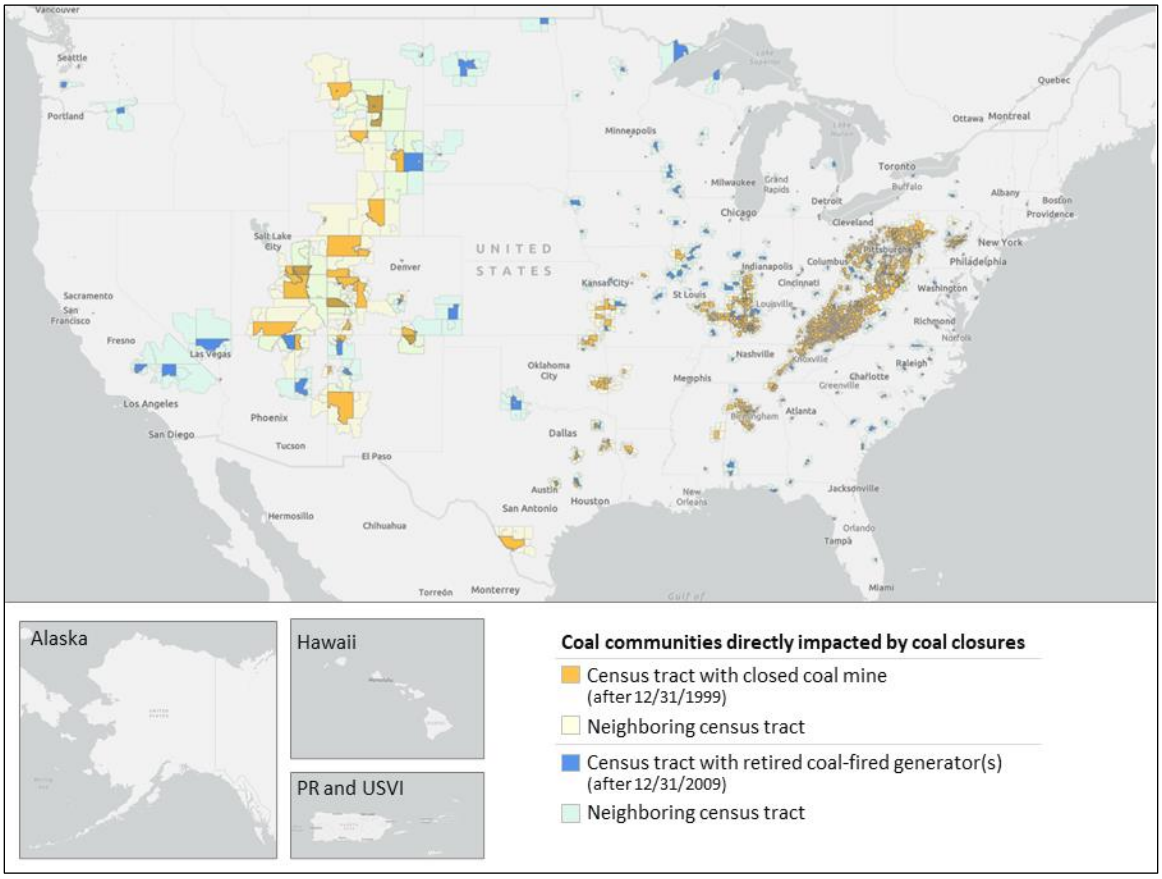
[30] Ibid.

[31] DHHS, ACF, OCS, "Community Economic Development Grants Supporting Energy Communities," https://www.acf.hhs.gov/sites/default/files/documents/ocs/ced-program-in-energy-communities-2021.pdf.

[32] P.L. 117-58, Division D, Title III, Subtitle A, Sec. 40209.

Figure 2. Coal Communities Directly Impacted by Coal Closures 2000/2010 or Later

According to DOE's IIJA Mapping Tool for the Advanced Energy Manufacturing and Recycling Grant Program, as of July 2023



Source: Figure created by CRS based on U.S. DOE, "BIL [Bipartisan Infrastructure Law] Section 40209: Coal Communities Directly Impacted by Coal Closures 2000/2010 or Later," accessed July 25, 2023, https://arcgis.netl.doe.gov/portal/apps/experiencebuilder/experience/?id=09457c32614541759528795 1ed376a29. (DOE and other entities use the term "BIL" to refer to P.L. 117-58. P.L. 117-58 is commonly referred to as the BIL and/or the IIJA.) Figure created by Amber Wilhelm, Visual Information Specialist.

Notes: PR is Puerto Rico, and USVI refers to the U.S. Virgin Islands. Figure does not display other U.S. Territories. The online version of the map is interactive and includes additional data visualization options. DOE further notes that—as in statute, proposed projects under the program funding announcement for the Advanced Energy Manufacturing and Recycling Grant Program must be located in (a) a census tract in which a coal mine closed after December 31, 1999, (b) a census tract in which a coal-fired electricity generating power plant unit closed after December 31, 2009, or (c) a census tract immediately adjacent to (a) or (b).

Coal Communities as a Subset of "Energy Communities"

Depending on the type of coal industry activity and other factors present, coal communities may be considered a type of "energy community." The Inflation Reduction Act (IRA, P.L. 117-169) provided enhanced tax credits for certain energy projects, facilities, and technologies, if the investments are located in "energy communities." (See **Table 3** for additional examples from the IRA.) In the context of the IRA's climate and energy incentives, energy communities are defined as:

- A brownfield site as defined in subparagraphs (A), (B), and (D)(ii)(III) of section 101(39) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980;
- A metropolitan statistical area or non-metropolitan statistical area with an above-average unemployment rate and either greater than 0.17% direct employment or greater than 25% local tax revenues related to the extraction, processing, transport, or storage of coal, oil, or natural gas (as determined by the Secretary);
- A census tract (or directly adjoining tract)
  - In which a mine closed after December 31, 1999, or
  - In which a coal-fired generating unit was retired after December 31, 2009.[33]

See **Table 3** for additional information about selected energy community tax credit policies.[34]

Figure 3 shows an example from the DOE's mapping tool for energy community tax credit policies that provides up to 10% (for production tax credits) or 10 percentage points (for investment tax credits) to taxpayers and applicable entities[35] for certain investments in energy communities. The increased rates or amounts pertain to certain energy community requirements under Section 45, 48, 45Y, or 48E of the Internal Revenue Code. **Figure 3** does not include brownfields locations. The energy community bonus tax credits are for areas associated with fossil fuels, including coal as well as oil and natural gas. This contrasts with **Figure 2**, which shows areas associated with coal activity.[36]

[33] Internal Revenue Code §45(b)(11)(B). For a list of census tracts related to the IRA's definition of "energy communities," see Appendix 3 (https://www.irs.gov/pub/irs-drop/n-23-47-appendix-3.pdf) and Appendix C (https://www.irs.gov/pub/irs-drop/n-23-29-appendix-c.pdf) accompanying the U.S. Treasury Notice 2023-29. For a summary of tax provisions in the IRA, see CRS Report R47202, *Tax Provisions in the Inflation Reduction Act of 2022 (H.R. 5376)*, coordinated by Molly F. Sherlock.

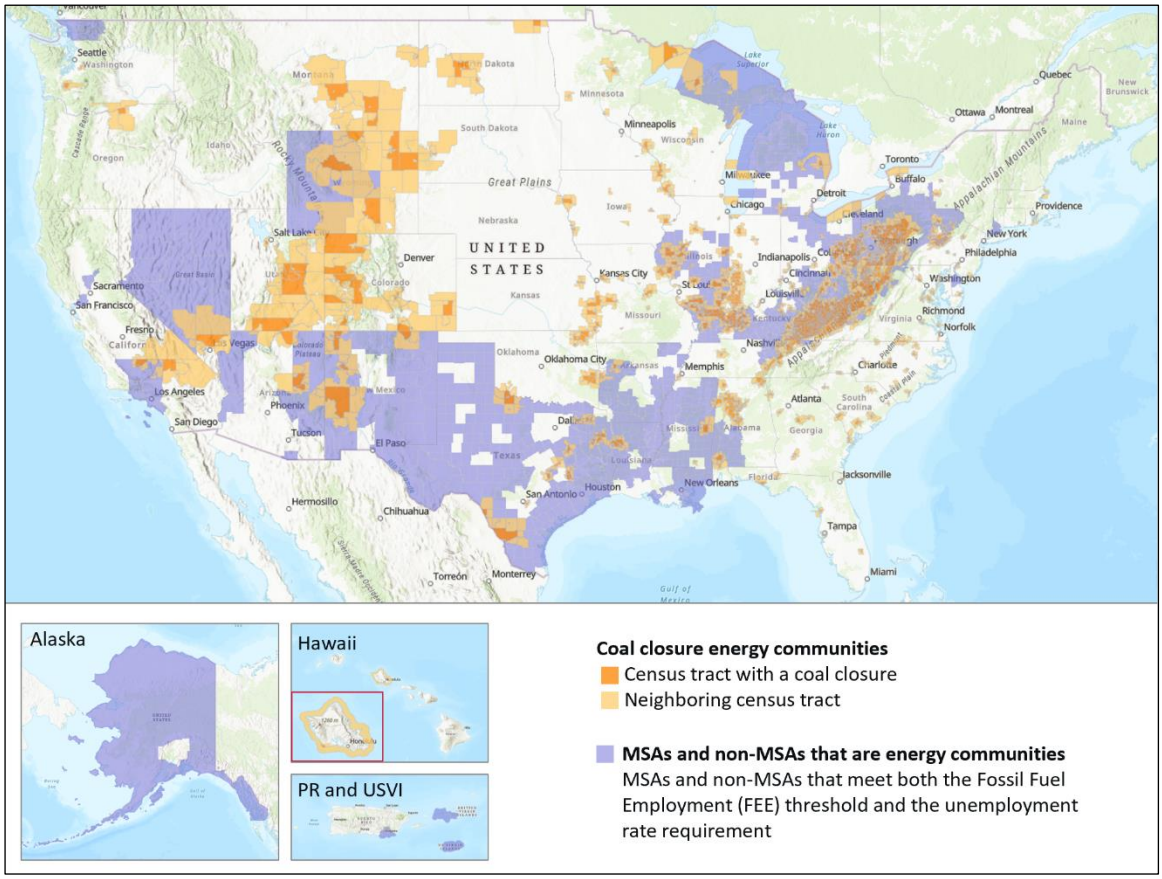
[34] For a summary of other tax provisions in the IRA (P.L. 117-169), see CRS Report R47202, *Tax Provisions in the Inflation Reduction Act of 2022 (H.R. 5376)*, coordinated by Molly F. Sherlock. For a directory of other tax credit policies and other assistance programs for energy communities, see "Clearinghouse" at https://energycommunities.gov.

[35] Certain entities without tax liabilities may be able to transfer tax credits to entities with tax liabilities. For an overview of elective pay, which allows certain tax-exempt and governmental entities that would otherwise be unable to claim certain credits because they do not owe federal income tax, to benefit from some clean energy tax credits, see IRS, "Elective Pay," https://www.irs.gov/pub/irs-pdf/p5817.pdf. For IRS guidance on applicable entities for elective pay, see IRS, "Elective Pay and Transferability Frequently Asked Questions," https://www.irs.gov/credits-deductions/elective-pay-and-transferability-frequently-asked-questions-elective-pay#eligibility.

[36] DOE also provides an interactive 48C Designated Energy Communities Mapping Tool that "displays census tracts that are considered energy communities for the purposes of the 48C tax credit." This tax credit is commonly referred to as the Advanced Energy Project Credit—see IRS, "Advanced Energy Project Credit," https://www.irs.gov/credits-deductions/businesses/advanced-energy-project-credit. To access the 48C mapping tool, see https://arcgis.netl.doe.gov/portal/apps/experiencebuilder/experience/?id=a44704679a4f44a5aac122324eb00914&page=home. The IRA Energy Community Tax Credit Bonus Mapping Tool, shown in **Figure 3**, is separate from the 48C Designated Energy Communities Mapping Tool. For information on the 48C tax credit, see https://energycommunities.gov.

Figure 3. Areas Meeting Fossil Fuel-Related Criteria for the IRA's Energy Community Tax Credit Bonus for 2023

Brownfields not shown



Source: Figure created by CRS based on U.S. DOE, "IRA Energy Community Tax Credit Bonus Mapping Tool," accessed July 24, 2023, https://arcgis.netl.doe.gov/portal/apps/experiencebuilder/experience/?id=a2ce47d4721a477a8701bd0e08495e1d. Figure created by Amber Wilhelm, Visual Information Specialist.

Notes: MSAs are metropolitan statistical areas. PR is Puerto Rico and USVI refers to the U.S. Virgin Islands. Figure does not display other U.S. Territories. The online version of the map is interactive and includes additional data visualization options. The IWG provides a link (https://energycommunities.gov/energy-community-tax-credit-bonus) to the U.S. DOE's mapping tool with the following description of the mapping tool:

> The mapping tool [above] reflects currently available data on two types of energy communities. First, the map shows energy communities that are census tracts and that have had coal mine closures after December 31, 1999 or coal-fired electric generating unit retirements after December 31, 2009, and tracts that are directly adjoining. Second, the map shows the metropolitan statistical areas (MSAs) and non-metropolitan statistical areas (non-MSAs) that are energy communities for 2023. These MSAs and non-MSAs have had for at least one year since 2009, 0.17% or greater direct employment related to extraction, processing, transport, or storage of coal, oil, or natural gas (the fossil fuel employment (FFE) threshold) and have an unemployment rate for 2022 that is equal to or greater than the national average unemployment rate for 2022. These MSAs and non-MSAs that meet the 2022 unemployment rate requirement are energy communities as of January 1, 2023 and will maintain that status until the unemployment rates for 2023 become available and a new list of energy communities is provided. The guidance that determines the MSAs and non-MSAs that are energy communities based on 2023 unemployment rates will likely be released in May 2024.
>
> Note that brownfields are not shown on this map.

The IWG also provides the following disclaimer associated with the mapping tool:

> The mapping tool may not be relied upon by taxpayers to substantiate a tax return position or for determining whether certain penalties apply and will not be used by the IRS for examination purposes. The mapping tool does not reflect the application of the law to a specific taxpayer's situation, and the applicable Internal Revenue Code provisions ultimately control.

Trends in U.S. Coal Production and Employment[37]

Since the 1920s, coal communities have generally experienced long-term declines in employment which may be exacerbated by more recent declines in coal production. Experts expect these declines to continue with current technologic, economic, and policy trends. Key changes include:[38]

- The mix of U.S. energy production has shifted among fuels and technologies (**Figure 4**). For electricity generation, market shares have generally shifted from coal to natural gas and, more recently, to wind and solar energy. Since the mid-2000s, coal production has declined by almost one-half.
- Fossil fuel production, especially coal production, has shifted from the eastern to the western United States. The largest reduction has occurred in the central Appalachian basin (**Figure A-1**). On average, western mines require fewer miners to produce a ton of coal than eastern mines.[39]
- Employment in coal production has experienced a century-long decline (**Figure 6**). This has occurred heterogeneously across U.S. regions (**Figure 6**).[40] A 2022 report by researchers at West Virginia University noted that

> 37.3 thousand workers were employed in the coal mining industry in 2021. This reflects a significant decline of around 37.8 thousand jobs, or more than 50 percent, from 2001. Notice that jobs in the coal industry continued to decline in 2021, even as the U.S. economy was recovering from the COVID pandemic. Jobs in the other industries in the U.S., on the other hand, increased by more than 12 percent during the same period. Overall, this reflects a gradual shift in the national economy away from coal over time.[41]

[37] For information on coal mining, production, and employment before 2017, see CRS Report R44922, *The U.S. Coal Industry: Historical Trends and Recent Developments*, by Marc Humphries. For a summary of recent trends and issues, see the Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization, *Initial Report to the President on Empowering Workers Through Revitalizing Energy Communities*, April 2021, https://netl.doe.gov/IWGInitialReport.

[38] For a more complete discussion, see among others, Charles D. Kolstad, "What Is Killing the US Coal Industry?" Policy Brief, Stanford Institute for Economic Policy Research, March 2017.

[39] EIA, "Table 24. Coal Mining Productivity by State, Mine Type, and Union Status, 2021," *Annual Coal Report*, October 18, 2022, https://www.eia.gov/coal/annual/pdf/table24.pdf.

[40] Among other resources, see Denny Ellerman, Thomas Stoker, and Ernst R. Berndt, "Sources of Productivity Growth in the American Coal Industry 1972-95," in *New Developments in Productivity Analysis*, University of Chicago Press, 2001; Joel Darmstadter, "Innovation and Productivity in U.S. Coal Mining," In *Productivity in Natural Resource Industries*, Routledge, 1999; G.S. Maddala, "Productivity and Technological Change in the Bituminous Coal Industry, 1919-54," *Journal of Political Economy*, vol. 73, no. 4, August 1965; and Kolstad, op. cit.

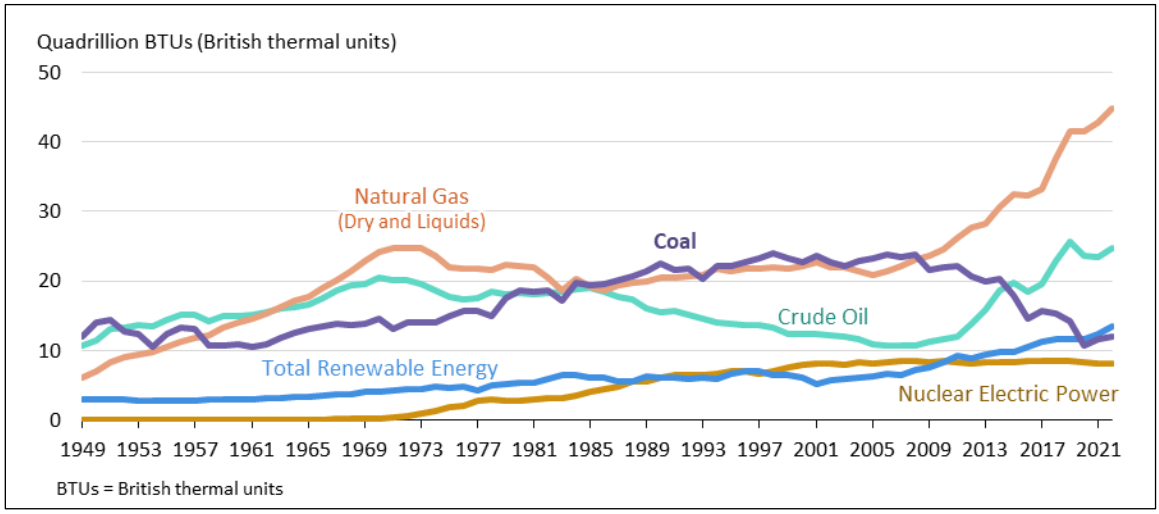
[41] Christiadi, Eric Bowen, and John Deskins, "The Economic Impact of Coal Production and Coal-Fired Power Generation in the United States," *Bureau of Business & Economic Research*, 353 (2022), https://researchrepository.wvu.edu/bureau_be/353.

The Appalachian region,[42] in particular, experienced concentrated job losses between 2005 and 2015.[43]

- The long-term decline in coal employment has been attributed primarily to technological changes (e.g., substitution of capital for labor inputs) and economic changes (e.g., the shifting competitiveness of production across types and locations of mines) that reduced, in most decades, the average labor necessary to produce a ton of coal.[44] Throughout the century, these shifts led to declining employment even in places where coal production increased (**Figure 6**). The decrease in coal production since 2008 has further reduced coal-related employment.

Figure 4. U.S. Energy Production by Source, 1949-2021

In quadrillion British thermal units



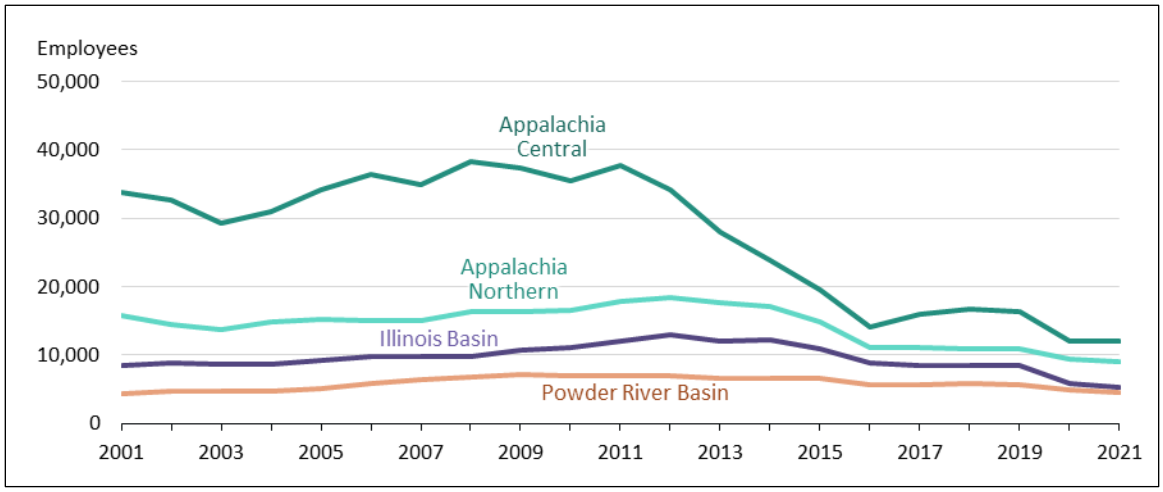
Source: CRS, using data from the U.S. Energy Information Administration, "Monthly Energy Review," December 2022, https://www.eia.gov/totalenergy/data/monthly. Figure created by Amber Wilhelm, Visual Information Specialist.

[42] The Appalachian region is composed of the counties in the region covered by the Appalachian Regional Commission (ARC) in Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia. See 40 U.S.C. §§14101-14704.

[43] Eric Bowen, Christiadi, John Deskins, et al., *An Overview of the Coal Economy in Appalachia*, West Virginia University, commissioned by ARC, January 2018, https://www.arc.gov/wp-content/uploads/2018/01/CIE1-OverviewofCoalEconomyinAppalachia-2.pdf.

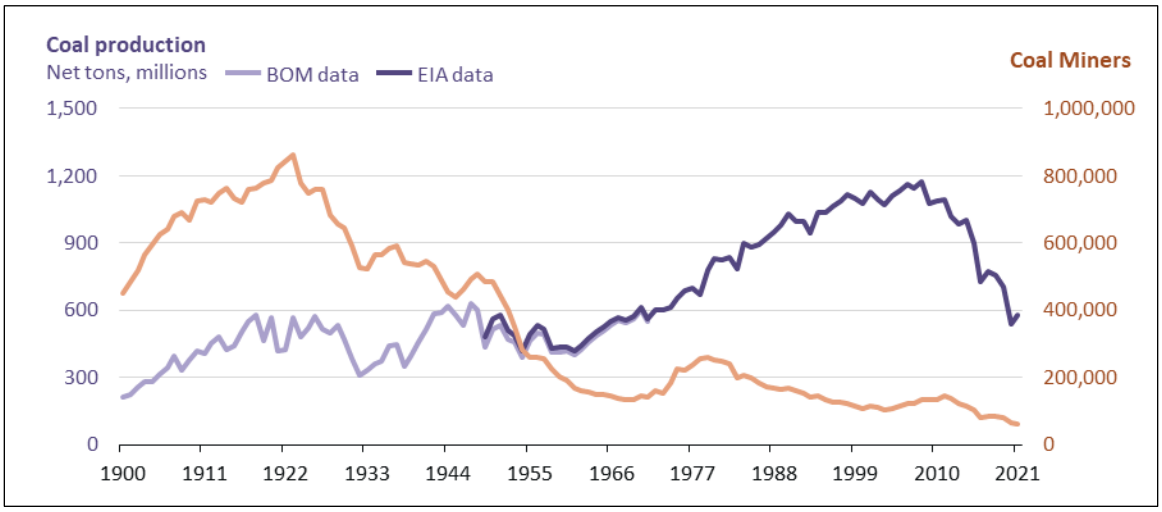
[44] Among other resources, see Denny Ellerman, Thomas Stoker, and Ernst R. Berndt, "Sources of Productivity Growth in the American Coal Industry 1972-95," in *New Developments in Productivity Analysis*, University of Chicago Press, 2001; Joel Darmstadter, "Innovation and Productivity in U.S. Coal Mining," in *Productivity in Natural Resource Industries*, Routledge, 1999; G.S. Maddala, "Productivity and Technological Change in the Bituminous Coal Industry, 1919-54," *Journal of Political Economy*, vol. 73, no. 4, August 1965; and Kolstad, op. cit.

Figure 5. Annual Average Coal Mine Employees in Selected Regions



Source: CRS, using data from the U.S. Energy Information Administration, "Coal Data Browser," https://www.eia.gov/coal/data/browser/#/topic/36? agg=. Figure created by Amber Wilhelm, Visual Information Specialist.

Figure 6. U.S. Coal Production and Employment 1900-2021



Source: CRS, using the following data: Coal Production: National Mining Association, "Growth of the Bituminous Coal Mining Industry in the United States, 1900-1971," accessed January 24, 2023, https://nma.org/wp-content/uploads/2016/08/Historic-Bituminous-Coal-Production.pdf; and Energy Information Administration, Coal Data Browser, "Aggregate Coal Mine Production, Total Annual," accessed January 24, 2023; Coal Employment: Mine Safety and Health Administration, "Coal Fatalities for 1900 through 2022," U.S. Department of Labor, accessed June 29, 2023, https://arlweb.msha.gov/stats/centurystats/coalstats.asp. Figure created by Amber Wilhelm, Visual Information Specialist.

Notes: BOM is the U.S. Bureau of Mines; EIA is the U.S. Energy Information Administration; DOL is the U.S. Department of Labor. Employment data include office workers beginning in 1973.

Analysts have identified a number of factors that have influenced the growth and decline in coal production in the United States. Since 2008, demand for coal for electricity has fallen with the

decreasing cost-competitiveness of coal as a fuel for electricity generation.[45] Factors affecting the loss of cost-competitiveness include:

- changing federal policy incentives;[46]
- technological advances that reduced the cost of natural gas production;[47]
- increasing costs of environmental regulation;[48] and
- increasing costs of production in Appalachia.[49]

Figure A-1 illustrates the differences in coal production across regions and individual states from 2001 to 2021. Nearly all states have witnessed declines in coal production from their recent peaks, though some much more than others. See "Economic Diversification and Employment in Coal Communities" for a discussion of community impacts associated with changes in coal production.

EIA projections indicate that U.S. coal production is likely to continue to decrease under current policies and anticipated technological advances, as well as a wide range of alternative economic assumptions. The EIA's outlook for coal production to 2050 includes a reference case as well as a range of "side cases" that reflect alternative economic and technological assumptions. In all of EIA's side cases, coal production continues its long-term decline, even in cases with more favorable assumptions, such as high economic growth combined with high zero-carbon technology costs, and omission of the IRA (P.L. 117-169) and its incentives for renewable energy development.[50] Despite these changes, coal is generally expected to continue as a component of the U.S. energy supply.[51]

Economic Diversification and Employment in Coal Communities

In recent years, coal communities across the United States have faced a combination of inter-related economic diversification and employment challenges, including:[52]

[45] The EIA states that "Coal-fired plants have not been competitive economically with relatively lower-cost natural gas and renewables." EIA, "Coal Was the Largest Source Of Electricity Generation For 15 States in 2021," December 7, 2022, https://www.eia.gov/todayinenergy/detail. php?id=54919.

[46] For example, see Figure 1 in CRS Report R44852, *The Value of Energy Tax Incentives for Different Types of Energy Resources*, by Molly F. Sherlock.

[47] Brett Watson, Ian Lange, and Joshua Linn, "Coal Demand, Market Forces, and U.S. Coal Mine Closures," *Economic Inquiry*, vol. 61, no. 1, 2023, https://doi.org/10.1111/ecin. 13108. See also John Coglianese, Todd D. Gerarden, and James H. Stock, "The Effects of Fuel Prices, Environmental Regulations, and Other Factors on U.S. Coal Production, 2008-2016," *The Energy Journal*, vol. 41, no. 1 (January 1, 2020), https://doi.org/10. 5547/01956574. 41.1. jcog; and Joshua Linn and Kristen McCormack, "The Roles of Energy Markets and Environmental Regulation in Reducing Coal-Fired Plant Profits and Electricity Sector Emissions," *The RAND Journal of Economics*, vol. 50, no. 4, 2019, https://doi.org/10.1111/1756-2171.12294.

[48] Coglianese et al., op. cit. This research indicates that environmental regulations contributed 6% to the decrease of coal production during the period studied, in contrast with the decline of natural gas prices' contribution of 92%.

[49] Watson et al., op. cit.

[50] EIA, "EIA Projects Coal Capacity Will Decrease in Our Annual Energy Outlook 2023," May 11, 2023, https://www.eia.gov/todayinenergy/detail. php? id=56460.

[51] See CRS Report R44922, *The U.S. Coal Industry: Historical Trends and Recent Developments*, by Marc Humphries.

[52] Impacts associated with recent shifts in coal industry activity vary by region and time period. Researchers observe production, labor, and other differences between the coal producing regions of Appalachia and those in the western U.S. states.

- declining coal-related tax revenues for state and local governments;[53]
- sustained, long-term job losses—both direct and indirect—in coal and coal-related industries;[54]
- local workforces skilled in coal-related jobs, but less prepared for positions in other industries, and barriers to labor mobility for new employment seekers;[55]
- health, education, and other concerns that accompany the concentrated job losses;[56] and
- environmental impacts tied to coal mining and production.[57]

Regional economies that are less diversified—including certain coal communities—are more vulnerable to multiple challenges following the decline of major industries and other economic shocks or events. For instance, decreased tax revenues from lower coal production levels may lead to fewer resources for public services. Although state and local tax structures and rates vary,[58] a 2020 analysis of three of the nation's most coal mining-dependent counties found that "coal-related revenue may fund a third or more of their budgets."[59] The decline in tax revenues and public services in coal communities may compound economic and workforce development challenges,[60] since limited resources for the planning and implementation of diversification strategies may impede efforts to attract new investment, industries, and jobs.[61]

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[53] See Adele Morris, Noah Kaufman, and Siddhi Doshi, "The Risk of Fiscal Collapse in Coal-Reliant Communities," The Brookings Institution, July 2019, https://www.brookings.edu/research/the-risk-of-fiscal-collapse-in-coal-reliant-communities; Julia H. Haggerty et al., "Planning For the Local Impacts of Coal Facility Closure: Emerging Strategies in the U.S. West," *Resources Policy*, vol. 57 (2018), pp. 69-80; and Calvin Kent, "The Cruel Coal Facts: The Impact on West Virginia Counties from the Collapse of the Coal Economy," (Huntington, WV: National Association of Counties, 2016), https://www.marshall.edu/cber/files/2021/04/2016-09-Cruel_Coal.pdf.

[54] See report section titled "Trends in U.S. Coal Production and Employment." Indirect employment includes jobs in supply chain, manufacturing, transportation, and other sectors. For a summary of direct, indirect, and induced economic impacts related to coal, see Christiadi, Eric Bowen, and John Deskins, "The Economic Impact of Coal Production and Coal-Fired Power Generation in the United States," *Bureau of Business and Economic Research*, 353 (2022), p. 7, https://researchrepository.wvu.edu/bureau_be/353.

[55] For a discussion of the decline in geographic mobility and related barriers, see "Moving Problems" in Timothy Bartik, "Should Place-Based Jobs Policies Be Used to Help Distressed Communities?" Upjohn Institute Working Paper, 19-308, (Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 2019), https://doi.org/10. 17848/wp 19-308; and Ryan Nunn, Jana Parsons, and Jay Shambaugh, "The Geography of Prosperity," in *Place-Based Policies for Shared Economic Growth*, The Brookings Institution, September 2018, https://www.brookings.edu/wp-content/uploads/2018/09/PBP_FramingChapter_compressed_20190425.pdf. See also the U.S. Council of Economic Advisors, *Economic Report of the President, Ch. 7 Accelerating and Smoothing the Clean Energy Transition*, April 14, 2022, p. 243, https://www.whitehouse.gov/wp-content/uploads/2022/04/ERP-2022.pdf.

[56] For a summary of findings linking unemployment, economic distress, and individual and community health, see Timothy J. Bartik, "Using Place-Based Jobs Policies to Help Distressed Communities," *Journal of Economic Perspectives*, vol. 34, no. 3, pp. 99-100, https://www.aeaweb.org/articles? id=10. 1257/jep. 34.3. 99.

[57] U.S. Energy Information Administration (EIA), "Coal Explained, Coal and the Environment," https://www.eia.gov/energyexplained/coal/coal-and-the-environment.php.

[58] Adele Morris, Noah Kaufman, and Siddhi Doshi, "Revenue at Risk in Coal-Reliant Counties," National Bureau of Economic Research (NBER) Working Papers 27307, 2020, pp. 92-93, https://www.nber.org/papers/w27307.

[59] Ibid.

[60] See Adele Morris, Noah Kaufman, and Siddhi Doshi, "Revenue at Risk in Coal-Reliant Counties," National Bureau of Economic Research (NBER) Working Papers 27307, 2020, https://www.nber.org/papers/w27307.

[61] See, for example, Enrico Botta, "A Review of 'Transition Management' Strategies: Lessons for Advancing the Green Low-Carbon Transition," 2019, *OECD Green Growth Papers*, No. 2019/04, OECD Publishing, Paris, p. 14, https://doi.org/10. 1787/4617a02b-en; Julia H. Haggerty et al., "Planning for the Local Impacts of Coal Facility Closure: Emerging Strategies in the U.S. West," *Resources Policy*, vol. 57 (2018), pp. 69-80; and Amy Liu et al., (continued...)

Declining state and local revenues may pose a particular challenge for rural areas. Researchers observe that geographically isolated, rural areas may be more vulnerable to declining production and employment changes at coal mining facilities because these areas generally have fewer industries, longer commuting distances for dislocated workers, and a greater reliance on taxes for public services and infrastructure.[62]

Less diversified regional economies may have fewer employment opportunities, and this challenge may be exacerbated in certain areas by concentrated, ongoing job losses associated with shifts in the coal industry.[63] As noted above, the number of coal mining jobs has declined since a peak in the 1920s, and the rate of decline has intensified in the most recent decades (see **Figure 6**). Following employment shifts, a spatial mismatch may occur when available jobs are not located near dislocated coal workers and alternative employment is not available to absorb dislocated workers within the affected region. Dislocated workers in economically distressed areas may also face barriers to moving to other areas to pursue employment, training, or other economic opportunities.[64] Furthermore, a mismatch of skills may occur when private sector (non-coal firms) workforce demands do not align with workers' skills. Non-coal jobs may require different training, certification, or skillsets than those of coal workers.[65] The spatial mismatch and workforce gaps may further intensify economic development and training challenges for coal-impacted communities.

Additional issues may complicate efforts to redevelop coal communities.[66] For example, some have identified particular challenges related to land ownership and use as impediments to development in some locations: inaccurate land ownership records; land ownership by "absentee"

"Making Local Economies Prosperous and Resilient: The Case for a Modern Economic Development Administration," The Brookings Institution, June 27, 2022, https://www.brookings.edu/research/making-local-economies-prosperous-and-resilient-the-case-for-a-modern-economic-development-administration.

[62] Julia H. Haggerty et al., "Planning for the Local Impacts of Coal Facility Closure: Emerging Strategies in the U.S. West," *Resources Policy*, vol. 57, 2018, pp. 69-80; Kellie F. Roemer and Julia H. Haggerty, "The Energy Transition As Fiscal Rupture: Public Services and Resilience Pathways in a Coal Company Town," *Energy Research and Social Science*, vol. 91 (2022), https://doi.org/10. 1016/j.erss. 2022. 102752; and Michael R. Betz et al., "Coal Mining, Economic Development, and the Natural Resources Curse," *Energy Economics*, vol. 50 (2015), pp. 105-116, https://doi.org/10. 1016/j. eneco. 2015. 04. 005.

[63] Researchers further note that, "Joblessness reduces earnings not only in the present but also in the future, because reduced work experience erodes skills." See "Job Creation Policies Can Raise Local Employment Rates, Especially for Distressed Communities," Upjohn Institute (Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, January 2021), https://doi.org/10. 17848/pb2021-29. See also Michael R. Betz et al., "Coal Mining, Economic Development, and the Natural Resources Curse," *Energy Economics*, vol. 50 (2015), pp. 105-116, https://doi.org/10.1016/j.eneco. 2015.04.005; Julia H. Haggerty et al., "Planning for the Local Impacts of Coal Facility Closure: Emerging Strategies in the U.S. West," *Resources Policy*, vol. 57 (2018), pp. 69-80; and Adele Morris, Noah Kaufman, and Siddhi Doshi, "Revenue at Risk in Coal-Reliant Counties," National Bureau of Economic Research (NBER) Working Papers 27307, 2020.

[64] Drew Haerer and Lincoln Pratson, "Employment Trends in the U.S. Electricity Sector, 2008–2012," *Energy Policy*, vol. 82 (2015), pp. 85-98, https://doi.org/10.1016/j.enpol.2015.03.006; Enrico Botta, "A Review of 'Transition Management' Strategies: Lessons for Advancing the Green Low-Carbon Transition," 2019, *OECD Green Growth Papers*, No. 2019/04, OECD Publishing, Paris, https://doi.org/10.1787/4617a02b-en; and U.S. Council of Economic Advisors, *Economic Report of the President, Ch. 7 Accelerating and Smoothing the Clean Energy Transition*, April 14, 2022, pp. 241-243, https://www.whitehouse.gov/wp-content/uploads/2022/04/ERP-2022.pdf.

[65] See, for example, analysis of workers and communities impacted by four coal-fired electric plant closures in Indiana, in Tom Guevara et al., "Economic, Fiscal, and Social Impacts of the Transition of Electricity Generation Resources in Indiana," Indiana University Public Policy Institute, August 2020, p. 23, https://ppidb.iu.edu/Uploads/PublicationFiles/IURC-Report_Aug.4.2020.final.pdf.

[66] See also "Factors Related to Prosperity and Poverty Across Communities: a Synthesis of Related Research" in Linda Lobao et al., "Socioeconomic Transition in the Appalachia Coal Region: Some Factors of Success," October 25, 2021, Washington, DC: World Bank Group.

landholding corporations; separation of surface and mineral rights; and legacy environmental degradation, among others.[67] Others note that certain communities may have economic systemic and capacity challenges related to broadband, infrastructure, and health care.[68] Researchers have observed low levels of entrepreneurship in certain coal communities.[69] Some researchers have noted that certain coal communities have declining population levels due to outmigration, but note that outmigration may involve a range of complex push and pull factors, particularly for rural areas, and trends vary by region and time period.[70]

Selected Federal Assistance Policies

The rationale for providing federal assistance to coal communities generally reflects one or more policy objectives tied to economic development, economic growth, national economic interests, environmental remediation, or equity. Other policy objectives may include improved fiscal health of local governments, higher per capita earnings, increased educational attainment levels, improved health measures, or other outcomes.

Recent executive branch initiatives and congressional actions indicate continued interest in providing assistance to coal communities to meet a range of policy objectives. In recent years, in response to the challenges noted above, core objectives of these policies have focused on the overall diversification of regional economies and expansion of employment opportunities. Since FY2014, executive actions or legislative actions authorized by Congress that have provided assistance to coal communities include:

- targeted, place-based economic adjustment assistance[71] grant funding for economic diversification activities in coal communities (e.g., the EDA's Assistance to Coal Communities (ACC) Initiative, the ARC's POWER Initiative);

[67] Appalachian Land Ownership Task Force, "Land Ownership Patterns and Their Impacts on Appalachian Communities Final Report and an Addendum," February 1981; Gaventa, John. "The Political Economy of Land Tenure: Appalachia and the Southeast," June 1995; Eban Goodstein, "Landownership, Development, and Poverty in Southern Appalachia." *The Journal of Developing Areas*, vol. 23, no. 4, 1989; Partnership for Responsible Growth, and National Wildlife Federation, "Coal Community Sourcebook: Local Experts, Issues and Ideas from Local Voices," October 1, 2020; Beth Spence et al., "Who Owns West Virginia?" West Virginia Center on Budget and Policy and the American Friends Service Committee; YES! Magazine, "Citizens Begin Reclaiming Coal Country After Decades of Corporate Land Grabs," July 20, 2017.

[68] U.S. Council of Economic Advisors, *Economic Report of the President, Ch. 7 Accelerating and Smoothing the Clean Energy Transition*, April 14, 2022, p. 241; and Linda Lobao et al., "Socioeconomic Transition in the Appalachia Coal Region: Some Factors of Success," October 25, 2021, Washington, DC: World Bank Group.

[69] Michael R. Betz et al., "Coal Mining, Economic Development, and the Natural Resources Curse," *Energy Economics*, vol. 50 (2015), p. 115, https://doi.org/10.1016/j.eneco.2015.04.005.

[70] Michael R. Betz et al., "Coal Mining, Economic Development, and the Natural Resources Curse," *Energy Economics*, vol. 50 (2015), pp. 105-116, https://doi.org/10.1016/j.eneco.2015.04.005; and Dan Black, Terra McKinnish, and Seth Sanders, "The Economic Impact of the Coal Boom and Bust," *The Economic Journal*, vol. 115, iss. 503 (2005), pp. 449-476, https://doi.org/10.1111/j.1468-0297.2005.00996.x.

[71] GAO developed the following definition of economic adjustment: "Economic adjustment assistance programs and tax expenditures are those whose primary purpose includes helping or preparing workers, businesses/firms, or communities to adjust to economic disruption, where disruption is defined as significant changes in the economy that reduce the demand for certain workers. Examples of these changes include, but are not limited to, U.S. or international policy decisions related to trade, defense, or energy, and other economic forces that drive changes in immigration, globalization, automation, or cause a prolonged cyclical downturn." See GAO, Economic Adjustment Assistance, GAO-19-85R, March 5, 2019, https://www.gao.gov/assets/700/697222.pdf. For a discussion of economic shocks, conditions of ongoing economic distress, and economic resilience faced by urban regions, see Harold Wolman, Howard Wial, Travis St. Clair, and Edward Hill, *Coping with Adversity* (Ithaca: Cornell University Press, 2017).

- tax credits to incentivize business investments in certain energy communities, including coal communities (e.g., provisions in the IRA);[72]
- grants for mine land reclamation (e.g., the Department of the Interior's Abandoned Mine Land Economic Revitalization (AMLER) program);
- assistance for dislocated workers, workforce training, education (e.g., aspects of ARC's POWER Initiative); and
- other initiatives and economic adjustment assistance, including interagency working groups and legislation authorizing programs that are broadly available for economic and business development purposes.

The following sections summarize the federal policies designed to assist coal communities with revitalization, regional economic diversification, mine lands, and dislocated workers, as well as other federal activities.[73]

Programs for Economic Diversification, Community Revitalization, and Jobs

For almost a century, Congress has authorized place-based economic development programs, many of which have been designed to assist economically distressed or socially disadvantaged areas. Place-based policies provide assistance to designated geographic areas rather than focusing assistance on individuals regardless of location.[74]

While many regions may experience economic difficulties, coal communities' unique set of issues may suggest they could benefit from place-based policies tailored to their needs. Since FY2014, in response to the decline in coal sector activity, Congress has enacted place-based programs to address the localized nature of economic and employment concerns in coal communities.[75] **Table**

[72] For additional information, see CRS Report R47202, *Tax Provisions in the Inflation Reduction Act of 2022 (H.R. 5376)*, coordinated by Molly F. Sherlock.

[73] Francesca Diluiso et al., "Coal Transitions—Part 1: A Systematic Map and Review of Case Study Learnings from Regional, National, and Local Coal Phase-Out Experiences," *2021 Environmental Research Letters*, October 21, 2021, 16, https://iopscience.iop.org/article/10.1088/1748-9326/ac1b58.

[74] For additional information on place-based policies, see David Neumark and Helen Simpson, "Place-Based Policies," in *Handbook of Regional and Urban Economics*, eds. Giles Duranton, J. Vernon Henderson, and William Strange (Elsevier: Amsterdam, Netherlands, 2015), pp. 1197-1287; and CRS In Focus IF12409, *What Is Place-Based Economic Development?*, by Adam G. Levin.

Studies analyzing the effects of place-based policies have been mixed. See, for example, Adam Scavette, "How the CHIPS and Science Act Will Target Economic Development in Distressed Labor Markets," Federal Reserve Bank of Richmond, October 13, 2022, https://www.richmondfed.org/research/regional_economy/regional_matters/2022/rm_10_13_2022_chips_science_act, among others. To note, some researchers recommend targeted place-based strategies for distressed communities. See Timothy J. Bartik, "Should Place-Based Jobs Policies Be Used to Help Distressed Communities?" Upjohn Institute Working Paper, 19-308, (Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 2019), https://doi.org/10.17848/wp19-308.

[75] As noted previously, in 2015, the Obama Administration launched the multi-agency federal Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) Plus Plan. In FY2014, Congress directed the EDA to allocate funding to provide assistance for coal mining communities. The explanatory statement accompanying the Consolidated Appropriations Act, 2014 (P.L. 113-76) noted,

> The agreement includes House report language regarding efforts to assist communities impacted by economic dislocation in the coal and timber industries. In addition, the agreement includes no less than $3,000,000 to enhance regional business development in areas negatively impacted by the downturn in the coal industry. Priority shall be given to those distressed counties whose coal mining job losses since July 1, 2011, as determined by data compiled by the Department of Labor,

(continued...)

1 summarizes selected economic development grant programs that have criteria specifically for coal-impacted communities.[76] The programs for community-level support generally include grants and loans for planning, technical assistance, infrastructure, business development and entrepreneurship, workforce development and re-employment opportunities, capacity building, and other activities.[77]

Table 1. Selected Place-Based Economic Development Grant Programs with Criteria for Coal Communities

Agency, Program	Establishing Statute	FY2023 Funding Amount	Program Purpose
Appalachian Regional Commission (ARC), Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) Initiative	Congress directs ARC (40 U.S.C. §§14101-14704) to allocate a certain amount of funding to the POWER Initiative in explanatory statements accompanying annual appropriations. In report language, funding to be set aside is generally described as activities "in support of the POWER+ Plan" or "in support of the POWER Initiative."	$65 million	Grants for community-level economic development and economic diversification in the ARC region.
Economic Development Administration (EDA), Assistance to Coal Communities	EDA administers ACC funding primarily through its Economic Adjustment Assistance (EAA) program (42 U.S.C. §3149). Congress directs EDA to allocate a certain amount of funding to the ACC initiative in explanatory statements accompanying annual appropriations. In FY2021, EDA allocated 10% ($300 million) of the amount of supplemental appropriations provided by American Rescue Plan Act of 2021 (ARPA, P.L. 117-2) through the EAA for projects that served coal communities (i.e., the Coal Communities Commitment).	$48 million	Grants for community-level economic development and economic diversification.
Department of the Interior, Office of Surface Mining Reclamation and	Congress has provided funding for the AML pilot program through annual appropriations from the General Fund of the U.S. Treasury since FY2016.	$135 million	Reclaim abandoned coal mining sites with the intent to increase economic and

Mine Safety and Health Administration, Mine Data Retrieval System, exceed the average for job losses in the entire economy. Funds may be used for small business technical assistance, training development programs, export assistance, and other related programs.

The report also directed the ARC allocate funding to "a program of high-speed broadband deployment in distressed counties within the Central Appalachian region that have been most negatively impacted by the downturn in the coal industry." See Representative Hal Rogers, "Explanatory Statement Submitted by Mr. Rogers, Chairman of the House Committee on Appropriations Regarding the House Amendment to the Senate Amendment on H.R. 3547, Consolidated Appropriations Act, 2014," *Congressional Record*, vol. 160, No. 9, (January 15, 2014), pp. H507 and H894, https://www.congress.gov/113/crec/2014/01/15/160/9/CREC-2014-01-15-pt2-PgH475-2.pdf.

[76] Select programs are noted in **Table 1**. For a directory of other funding opportunities, events, and resources for energy communities, including coal communities, see energycommunities.gov.

[77] Timothy Bartik, "Should Place-Based Jobs Policies Be Used to Help Distressed Communities?" Upjohn Institute Working Paper, 19-308, (Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 2019), pp. 21-25, https://doi.org/10.17848/wp19-308.

Agency, Program	Establishing Statute	FY2023 Funding Amount	Program Purpose
Enforcement (OSMRE), Abandoned Mine Land Economic Revitalization (AMLER) Program			community development to certain coal communities.

Sources: Compiled by CRS from relevant legislation and with information from Appalachian Regional Commission, https://www.arc.gov/; Economic Development Administration, https://www.eda.gov/ and https://www.eda.gov/funding/programs/american-rescue-plan/coal-communities-commitment; OSMRE, "AMLER," https://www.osmre.gov/programs/reclaiming-abandoned-mine-lands/amler; and IWG, "Revitalizing Energy Communities: Two-Year Report to the President," April 2023, https://energycommunities.gov/revitalizing-energy-communities-two-year-report.

Notes: For additional programs available to energy communities, see "Clearinghouse" at https://energycommunities.gov. The programs listed in this table were selected for having specific criteria that prioritize coal-impacted communities for economic development assistance grant funding. Other programs may have eligibility criteria related to coal-impacted communities and focus on different policy objectives, such as technology or research and development. For additional information, see CRS Report R46991, *Economic Development Administration: An Overview of Programs and Appropriations (FY2011-FY2023)*, by Julie M. Lawhorn, and CRS Report R46015, *The POWER Initiative: Energy Transition as Economic Development*, by Julie M. Lawhorn.

Other federal grant programs are broadly available to coal communities for economic diversification and business development efforts, but may not prioritize or include specific criteria for coal communities. For example, programs administered by the U.S. Department of Agriculture's Rural Development support economic development projects in rural communities, and the Department of Housing and Urban Development (HUD) administers programs that support community development initiatives in both rural and urban areas.[78] Other programs may be available to broader "energy communities," such as the U.S. Department of Health and Human Services' Community Economic Development Focus on Energy Communities initiative and the Capacity Building for Repurposing Energy Assets initiative, which is administered by the DOE Office of Fossil Energy and Carbon Management.[79]

Selected Business Development, Research and Development, and Energy Infrastructure Programs

Policymakers occasionally authorize or amend programs designed to provide financial assistance (e.g., grants, loan guarantees) for business development activities. These programs may support specific activities such as research and development (R&D), the development of regional entrepreneurial ecosystems, or the commercialization of new technology and innovative processes or products. Some such programs encourage or require federal assistance to be directed to specific geographic areas that may include energy communities.

Several bills enacted during the 117th Congress included provisions for grant and loan guarantee programs that encouraged participation by coal communities or directed agencies to prioritize activities or projects located in energy communities, including coal communities. **Table 2** highlights selected programs authorized by P.L. 117-58 (the Infrastructure Investment and Jobs Act (IIJA)), P.L. 117-167 (commonly known as the CHIPS and Science Act), and P.L. 117-169

[78] For a guide to federal economic development resources, see CRS Report R46683, *Federal Resources for State and Local Economic Development*, by Julie M. Lawhorn. For a guide to resources for rural businesses, see CRS Report R47438, *Federal Credit Assistance and Grant Programs for Rural Businesses: In Brief*, coordinated by Lisa S. Benson.

[79] DOE, "Funding Notice: Capacity Building for Repurposing Energy Assets," https://www.energy.gov/fecm/funding-notice-capacity-building-repurposing-energy-assets.

(the Inflation Reduction Act (IRA) of 2022) that provide grants and loan guarantees for business development and/or R&D activities in energy communities, including coal communities.

Table 2. Selected Business Development and R&D Programs for Energy Communities, Including Coal Communities

Programs established or amended by P.L. 117-58, P.L. 117-167, and P.L. 117-169

Agency, Program	Establishing Statute	Program Purpose and Connection to Energy or Coal Communities
Department of Energy (DOE), Regional Direct Air Capture (DAC) Hubs	P.L. 117-58, (Infrastructure Investment and Jobs Act (IIJA)), Division D, Title III, Subtitle A, Sec. 40308	The grant program is designed to contribute to the development of a network of DAC projects, potential carbon dioxide utilization off-takers, connective carbon dioxide transport infrastructure, subsurface resources, and sequestration infrastructure located within a region. The IIJA directed the Secretary of Energy to locate two of the Regional DAC Hubs in "economically distressed communities" with "high levels of coal, oil, or natural gas resources."[a]
DOE, Advanced Energy Manufacturing and Recycling Grant Program	P.L. 117-58, Division D, Title III, Subtitle A, Sec. 40209	The grant program is to provide grants for businesses in census tracts in which a coal-fired electric generating unit had been retired after December 31, 2009, a coal mine had been closed after December 31, 1999, or is immediately adjacent to such census tracts.[b]
DOE, Clean Energy on Mine Lands	P.L. 117-58, Division D, Title III, Subtitle A, Sec. 40342	The grant program is designed for mine lands and energy communities to address climate impacts from legacy energy infrastructure. The provision for Clean Energy on Mine Lands provided $500 million to a total of five clean energy deployment projects on mine land sites "with a reasonable expectation of commercial viability."[c]
DOE, Advanced Nuclear Technologies Federal Research, Development, and Demonstration Program	P.L. 117-167 (commonly known as the CHIPS and Science Act), Title VI, Subtitle P, Sec. 10781	The program is designed to support R&D and demonstration of advanced nuclear reactors with priority criteria provided for projects involving former fossil fuel generating sites or communities.[d]
DOE, Carbon Materials Research Initiative	P.L. 117-167, Division B, Title I, Sec. 10102(e)	The program is designed to support research on utilizing coal and coal waste for the production of material products. P.L. 117-167 also directs the Director of the Office of Science to establish one research center in each of the two major coal-producing regions.
Economic Development Administration (EDA), Regional Innovation and Technology Hubs (Tech Hubs)	P.L. 117-167, Division B, Title VI, Subtitle C, Sec. 10621	The grant program is a place-based, technology-focused initiative, designed to facilitate economic growth, create jobs, and contribute to national competitiveness and innovation capacity. The law requires the designation of at least 20 geographically distributed tech hubs in areas that are currently not leading technology centers. The law also directed the Secretary of Commerce to encourage "proposals from eligible consortia that would significantly benefit an area or region whose economy significantly relies on or has recently relied on coal, oil, or natural gas production or development."

Agency, Program	Establishing Statute	Program Purpose and Connection to Energy or Coal Communities
DOE, Energy Infrastructure Reinvestment (EIR) Loan Guarantee	P.L. 117-169 (Inflation Reduction Act, (IRA), Title V, Section 50144) amended P.L. 109-58 (the Energy Policy Act of 2005) to establish the new Energy Infrastructure Reinvestment (EIR, Section 1706) loan guarantee under Title XVII	DOE's Loan Programs Office (LPO) administers the Title XVII Clean Energy Financing Program under the authority created in Title XVII of P.L. 109-58, the Energy Policy Act of 2005. Under Title XVII authority, the LPO administers several loan guarantees that support clean energy deployment and energy infrastructure reinvestment projects. According to DOE guidance, the new EIR authority expands LPO's mission under Title XVII to repurpose or replace energy infrastructure that has ceased operations or those "that continue to operate but could benefit from [greenhouse gas] GHG or pollution-reducing improvements."[e] Certain power plants (which could include either operating or retired coal power plants), fossil fuel extraction sites, transmission systems, fossil fuel pipelines, refineries, or other energy facilities that meet program requirements may be eligible for the EIR loan guarantee. Congress authorized a $250 billion lending limit for the EIR loan guarantee program, and appropriated $5 billion to pay for the costs of these guarantees. This program is time limited; authorities and appropriations are available through the end of FY2026.[f]

Source: Compiled by CRS from relevant legislation and with information from IWG, "Revitalizing Energy Communities: Two-Year Report to the President," April 2023, https://energycommunities.gov/revitalizing-energy-communities-two-year-report.

Notes: For additional programs available to energy communities, see "Clearinghouse" at https://energycommunities.gov. For additional programs that may be "well suited" to energy communities, see IWG, "Revitalizing Energy Communities: Two-Year Report to the President," April 2023, https://energycommunities.gov/revitalizing-energy-communities-two-year-report. The programs listed in this table were selected for having specific criteria that prioritizes energy communities broadly, which may include coal communities. Tax credit policies are not included.

a. For more information, see CRS Report R47034, *Energy and Minerals Provisions in the Infrastructure Investment and Jobs Act (P.L. 117-58)*, which notes that "Division J, Title III, appropriates a total of $3.5 billion for the period of FY2022-FY2026" for Regional DAC Hubs.

b. For more information and to view an interactive map that identifies eligibility for the program, see DOE, "Advanced Energy Manufacturing and Recycling Grant Program," https://www.energy.gov/mesc/advanced-energy-manufacturing-and-recycling-grants. DOE provides a mapping tool showing "Energy Communities Directly Impacted by Coal Closures 2000 / 2010 or Later" at https://arcgis.netl.doe.gov/portal/apps/experiencebuilder/experience/?id=09457c326145417595287951ed376a29.

c. The program will be administered by DOE's Office of Clean Energy Demonstrations. For more information, see CRS Report R47034, *Energy and Minerals Provisions in the Infrastructure Investment and Jobs Act (P.L. 117-58)*, coordinated by Brent D. Yacobucci.

d. See also CRS Report R45706, *Advanced Nuclear Reactors: Technology Overview and Current Issues*, by Mark Holt, Advanced Nuclear Reactors: Technology Overview and Current Issues.

e. DOE, "Program Guidance for Title 17 Clean Energy Financing Program," May 19, 2023, pp. 6, 25, https://www.energy.gov/lpo/articles/program-guidance-title-17-clean-energy-program.

f. The DOE's program guidance further notes that the EIR loan guarantee authority may involve projects that "support reinvestment in communities throughout the United States where existing Energy Infrastructure has been challenged by market forces, resource depletion, age, technology advancements, or the broader energy transition. This infrastructure might include power plants, fossil fuel extraction sites, transmission systems, fossil fuel pipelines, refineries, or other energy facilities that have ceased to operate or that continue to operate but could benefit from GHG or pollution reducing improvements. These energy assets

have often served as economic backbones for local communities for decades and can continue to do so, with targeted investment and economic development support. Redeveloping energy infrastructure typically comes with valuable benefits to new industry, including reuse of existing infrastructure assets, ready access to roads, rails and other means of transportation, existing grid connections, and water access, as well as additional use permits. In addition, these areas are often home to a workforce that is well suited to building and operating complex energy infrastructure." DOE, "Program Guidance for Title 17 Clean Energy Financing Program," May 19, 2023, p. 25, https://www.energy.gov/lpo/articles/program-guidance-title-17-clean-energy-program.

g. For a summary of other Title XVII loan guarantee programs, see CRS Insight IN11984, *Inflation Reduction Act of 2022 (IRA): Department of Energy Loan Guarantee Programs*, by Phillip Brown; and CRS Insight IN11432, *Department of Energy Loan Programs: Title XVII Innovative Technology Loan Guarantees*, by Phillip Brown et al.

Tax Credit Policies for Businesses in Coal Communities

For decades, Congress has authorized tax credit policies to encourage private business investment in targeted business activities (e.g., R&D), geographic areas (e.g., Opportunity Zones), or to meet specific policy objectives (e.g., trade). Federal tax credit policies may also be designed to incentivize economic development objectives (e.g., policies to encourage investment in distressed regions or to increase firm-level and entrepreneurial activity around the country).

Congress has also authorized tax credit policies to incentivize investment in defined energy communities, some of which may identify as coal communities. P.L. 117-169, the Inflation Reduction Act, for example, provided bonus tax credits for certain projects located in "energy communities" (see "Identifying Coal Communities" for the definition of energy communities in the IRA).[80] As noted, the IRA also authorized the Advanced Energy Project Credit, which provides a competitively awarded tax credit that includes a set-aside for "projects in areas that have seen the closure of a coal mine or retirement of a coal-fired electric generating unit."[81] **Table 3** summarizes selected community tax credit policies established, modified, or amended by the IRA. **Table 3** also highlights tax credit policies that include criteria for energy communities, which includes many coal communities.

Table 3. Selected Community Tax Credit Policies in P.L. 117-169

Policies established, modified, or amended by P.L. 117-169 with criteria for energy communities

Program	Establishing Statute	Tax Credit Structure
Advanced Energy Project Credit (program extension)	26 U.S.C. §48C[a] (As amended by P.L. 117-169, Sec. 13501)	Provides $10 billion in allocations of a tax credit for qualifying investments in advanced energy projects, with at least $4 billion for energy communities.
Investment Tax Credit for Energy Property (ITC) (special rule for qualified facilities located in energy communities)	26 U.S.C. §48 (Program modified and extended by P.L. 117-169, Sec. 13102)	The policy provides an ITC for qualifying facilities that generate clean electricity that begin construction prior to January 1, 2025. The credit is increased by 2 percentage points if the project is in an energy community or 10 percentage points for

[80] P.L. 117-169, Secs. 13101 and 13702, https://www.congress.gov/117/bills/hr5376/BILLS-117hr5376enr.pdf#page=170; and Internal Revenue Code §45(b)(11)(B).

[81] P.L. 117-169, Sec. 13501, https://www.congress.gov/117/bills/hr5376/BILLS-117hr5376enr.pdf#page=152; and https://home.treasury.gov/system/files/136/Fact-Sheet-IRA-Equitable-Clean-Energy-Economy.pdf. See also IRS, "Advanced Energy Project Credit," https://www.irs.gov/credits-deductions/businesses/advanced-energy-project-credit. To access the DOE's 48C mapping tool, see https://arcgis.netl.doe.gov/portal/apps/experiencebuilder/experience/?id=a44704679a4f44a5aac122324eb00914&page=home.

Program	Establishing Statute	Tax Credit Structure
		facilities that pay prevailing wages and meet registered apprenticeship requirements.
Production Tax Credit (PTC) for Electricity from Renewables (special rule for projects located in energy communities)	26 U.S.C. §45 (Program modified and extended by P.L. 117-169, Sec. 13101)	The policy provides a PTC to produce clean electricity for facilities that begin construction before January 1, 2025. The credit is increased by up to 10% if the project is in an energy community.
Clean Electricity ITC (special rule for qualified facilities located in energy communities)	26 U.S.C. §48E (Established by P.L. 117-169, Sec. 13702)	The policy provides an ITC for qualifying facilities that generate clean electricity that are placed in service after December 31, 2024. The credit is increased by up to 2 percentage points if the project is in an energy community or 10 percentage points for facilities that pay prevailing wages and meet registered apprenticeship requirements.
Clean Electricity Production Tax Credit (PTC) (special rule for projects located in energy communities)	26 U.S.C. §45Y (Established by P.L. 117-169, Sec. 13701)	The policy provides a PTC to produce clean electricity at facilities placed in service after December 31, 2024. The credit is increased by 10% if the project is in an energy community.

Source: IWG, "Revitalizing Energy Communities: Two-Year Report to the President," April 2023, https://energycommunities.gov/revitalizing-energy-communities-two-year-report; "Energy Community Tax Credit Bonus," https://energycommunities.gov/energy-community-tax-credit-bonus; and "Energy Community Tax Credit Bonus FAQs," https://energycommunities.gov/energy-community-tax-credit-bonus-faqs.

Notes: The tax credit policies in this table feature criteria for projects located in energy communities, which generally include many coal communities. P.L. 117-169 provides the statutory definition of "energy communities" (https://www.congress.gov/117/bills/hr5376/BILLS-117hr5376enr.pdf#page=95). For a summary of other tax provisions in the IRA (P.L. 117-169), see CRS Report R47202, *Tax Provisions in the Inflation Reduction Act of 2022 (H.R. 5376)*, coordinated by Molly F. Sherlock. For a directory of other tax credit policies and other assistance programs for energy communities, see "Clearinghouse" at https://energycommunities.gov.

a. The DOE provides a 48C Designated Energy Communities Mapping Tool that "displays census tracts that are considered energy communities for the purposes of the 48C tax credit." See https://arcgis.netl.doe.gov/portal/apps/experiencebuilder/experience/?id=a44704679a4f44a5aac122324eb00914&page=home. The 48C Designated Energy Communities Mapping Tool is separate from the IRA Energy Community Tax Credit Bonus Mapping Tool (see **Figure 3**).

Federal Assistance for Mine Land Reclamation for Economic and Community Development

Congress has considered whether the reclamation of abandoned coal mining sites could spur economic and community development for communities affected by the decline of coal production and associated tax revenues.

Enacted in 1977, Title IV of the Surface Mining Control and Reclamation Act (SMCRA; P.L. 95-87) established the Abandoned Mine Lands (AML) program to address public health, safety, and environmental hazards at these legacy abandoned coal mining sites.[82] The Abandoned Mine Reclamation Fund (AMRF), established under Title IV of SMCRA, provides funding to eligible states and tribes for the reclamation of surface mining impacts associated with historical mining

[82] 30 U.S.C. §§1231-1244.

of coal.[83] The Office of Surface Mining Reclamation and Enforcement (OSMRE), within the Department of the Interior, administers grants from the AMRF to eligible states and tribes to reclaim affected lands and waters resulting from coal mining sites abandoned or otherwise left unreclaimed prior to SMCRA's enactment. Fees collected on coal mining operators in coal-producing states, deposited into the AMRF are the source for grants to eligible states for the reclamation of AML sites.[84] Under Title IV of SMCRA, the objective of reclamation is to restore lands or waters adversely affected by past coal mining to a condition that would mitigate potential hazards to public health, safety, and the environment.

In more recent years, Congress has established other programs in addition to the AML program under Title IV of SMCRA that are intended to reclaim abandoned coal mining sites to increase economic and community development in certain coal communities or former coal industry workers. Those programs, discussed below, include the Abandoned Mine Land Economic Revitalization (AMLER) program and funding provided under Section 40701 of the IIJA.[85]

Abandoned Mine Land Economic Revitalization (AMLER) Program

Congress provides funding for the AMLER program for the reclamation of abandoned coal mining sites to facilitate economic and community development. Beginning in the 114th Congress and continuing through the 117th Congress, versions of the Revitalizing the Economy of Coal Communities by Leveraging Local Activities and Investing More (RECLAIM) Act were introduced in both the House and the Senate but not enacted. These bills would have authorized $1 billion over five years from the existing unappropriated balance of the AMRF to facilitate economic and community development in states and tribes with eligible reclamation programs under Title IV of SMCRA.[86]

In the FY2016 President's budget request, the Obama Administration included a similar legislative proposal to provide $1 billion, in equal amounts over a five-year period, of the unappropriated balance of the AMRF to "use for the reclamation of abandoned coal mine land sites and associated polluted waters in a manner that promotes sustainable redevelopment in economically distressed coal country communities."[87]

Beginning in FY2016, Congress took a more limited approach to provide funding for a pilot project similar in scope and purpose to versions of the RECLAIM Act and the administration's proposal that could inform future policy decisions regarding authorizing additional funds towards these purposes. The Consolidated Appropriations Act, 2016, authorized the AML Pilot Program to provide grants to eligible states and tribes and provided $90 million in annual appropriations from the General Fund for FY2016 for this program.[88]

Congress has directed that funding for the AML pilot program be distributed to the six Appalachian states with the largest unfunded reclamation needs and three eligible tribes under

[83] See CRS Report R46266, *The Abandoned Mine Reclamation Fund: Reauthorization Issues in the 116th Congress*, by Lance N. Larson.

[84] 30 U.S.C. §1232.

[85] 30 U.S.C. §1231a.

[86] In the 114th Congress: H.R. 4456 and S. 3532. In the 115th Congress: H.R. 1731 and S. 728. In the 116th Congress: H.R. 2156 and S. 1232. In the 117th Congress: H.R. 1733 and S. 1455.

[87] The President's Budget, Fiscal Year 2016, *Investing in Coal Communities, Workers, and Technology: The Power+ Plan*, https://obamawhitehouse.archives.gov/sites/default/files/omb/budget/fy2016/assets/fact_sheets/investing-in-coal-communities-workers-and-technology-the-power-plan.pdf.

[88] P.L. 114-133, Division G, Department of Interior, Environment and Related Agencies Appropriations Act of 2016.

SMCRA.[89] Congress limited eligibility for these funds to AML projects located in ARC counties, where the project would have the potential to facilitate economic or community development. Congress used the existing framework of Title IV of SMCRA as the requirements for AML sites to be reclaimed under the AML pilot program.

Since FY2016, Congress has continued to provide funding for the AML pilot program, which is now referred to as the AMLER program.[90] According to OSMRE's FY2024 budget justification, Congress has provided annual appropriations for this program totaling $750 million between FY2016 and FY2022.[91] The Consolidated Appropriations Act, 2023, provided $135 million for the AMLER Program,[92] and the President's FY2024 budget requested $135 million.[93]

Whether these funds have achieved the intended purpose of reclaiming abandoned coal sites to facilitate economic and community development presents an oversight consideration for Congress. OSMRE guidance requires AMLER states and tribes to demonstrate the AML project's economic and community development nexus "in different ways depending on whether the proposed project is intended to: (1) incorporate economic and community development related activities as part of the project itself (Category A projects), or (2) primarily involve reclamation activities that create the conditions for future economic and community development that occurs post-reclamation (Category B projects)."[94] OSMRE guidance urges AMLER-eligible states and tribes to track and report as many economic and environmental performance measures as practical, including examples of:[95]

- Jobs created (beyond those jobs necessary to conduct reclamation);
- Businesses created or served;
- Infrastructure created (impact could be measured by the linear feet, acreage, square feet, or other unit of measure for the expected amount of water, sewer, utility, or other form of infrastructure installed, constructed, or repaired);
- Revenues increased (export or domestic sales);
- Patients served;
- Participants served;
- Organizations served;
- Increased, enhanced, or restored infrastructure system capacity (includes energy capacity, broadband accessibility);
- Communities served;
- Households served;

[89] OSMRE provides information about eligible states that have received funding by fiscal year; see OSMRE, *Abandoned Mine Land Economic Revitalization (AMLER) Program*, https://www.osmre.gov/programs/reclaiming-abandoned-mine-lands/amler. The three tribes are the Crow Tribe, Hopi Tribe, and Navajo Nation.

[90] See OSMRE, *Abandoned Mine Land Economic Revitalization (AMLER) Program*, https://www.osmre.gov/programs/reclaiming-abandoned-mine-lands/amler.

[91] U.S. Department of the Interior, *Budget Justifications and Performance Information, Fiscal Year 2024*, p. 33, https://www.doi.gov/sites/doi.gov/files/fy2024-osmre-greenbook.pdf-508.pdf.

[92] P.L. 117-328.

[93] OSMRE, *Budget Justifications and Performance Information Fiscal Year 2024*, p. 22.

[94] OSMRE, *Guidance for Project Eligibility Under the Abandoned Mine Land Economic Revitalization Program for Fiscal Year 2023*, https://www.osmre.gov/sites/default/files/inline-files/AMLER-Project-Eligiblity-Guidance-2023.pdf.

[95] Ibid.

- Reclamation achieved (e.g., acres reclaimed, waters improved, improved revegetation, methane reduced, etc.);
- Housing units constructed or rehabilitated;
- New or existing workers or students served;
- Number of visitors (overnight and daytime); and
- Quantifiable recreational opportunities created.

OSMRE's most recent program implementation and status report for FY2016-FY2019 stated that, as of November 30, 2019, "121 of the 134 reviewed projects are currently active and are moving forward in their use of AML Pilot funds."[96] Additionally, that report stated "the 13 remaining projects have been tabled by the state or project applicant for various reasons (e.g., to secure additional funds, pending negotiations with partners, or withdrawn application)." To date, OSMRE has not issued similar reports for projects funded in recent years. Those more recent projects may be ongoing and at various stages of the reclamation process.

AML Funding in the Infrastructure Investment and Jobs Act

With the enactment of the IIJA, Congress reauthorized the coal reclamation fee under Section 402 of SMCRA through FY2034 and decreased fee rates from prior law by 20% for underground and surface mining and for lignite coal.[97] SMCRA authorizes OSMRE to collect these coal fees from coal mining operators, based on coal production, and credit the fees to the AMRF. SMCRA directs these coal fees to be distributed annually as grants to eligible states to support the reclamation of abandoned coal mining sites within their respective jurisdictions.[98]

Additionally, the IIJA provided $11.293 billion in emergency appropriations to the AMRF.[99] Congress authorized the use of the $11.293 billion to provide grants to eligible states and tribes, in equivalent amounts over a 15-year period, based on relative percent of coal production prior to 1977.[100] Provisions in the IIJA limit the use of grants from the $11.293 billion to eligible states and tribes for the reclamation of abandoned coal mining sites under Section 403(a), Section 403(b), and emergency projects under Section 410 of SMCRA.

In addition to the priorities in Section 403 of SMCRA, the IIJA authorizes states and tribes to consider AML projects that may provide employment to former workers of the coal industry.[101] This provision is unique to AML projects authorized by the IIJA, as Congress had directed prioritization of AML projects authorized under SMCRA by public health and safety and natural resources.[102] According to OSMRE's guidance for implementing the AML provisions in the IIJA,

> measures to implement these priorities include: (1) requiring contractors to affirm they will give preference to miners in any hiring for BIL-funded AML projects; (2) requiring contractors to report on the extent to which miners have been employed in any AML work

[96] See OSMRE, *Report on Abandoned Mine Land Reclamation Economic Development Pilot Program (AML Pilot Program) for FY 2016 – FY 2019)*, December 18, 2020, https://www.osmre.gov/sites/default/files/pdfs/2016_2019_Annual_Report_AML_Economic_Development_Pilot_Program.pdf.

[97] For more information on AML provisions in the IIJA, see CRS In Focus IF11352, *The Abandoned Mine Reclamation Fund: Issues and Legislation in the 117th Congress*, by Lance N. Larson.

[98] See CRS Report R46266, *The Abandoned Mine Reclamation Fund: Reauthorization Issues in the 116th Congress*, by Lance N. Larson.

[99] P.L. 117-58, Division J.

[100] 30 U.S.C. §1231a.

[101] 30 U.S.C. §1231a(f).

[102] 30 U.S.C. §1233.

> the contractors perform; (3) requiring contractors to retain data that can substantiate the reported information; and (4) providing to OSMRE the information reported by the contractors as part of the State or Tribe's regular AML reporting processes.[103]

Additionally, OSMRE guidance encourages states and tribes to engage with labor or workforce development organizations that represent current or former coal industry employees to identify potential candidates.

Workforce Development Programs (Job Training and Education)

Congress has authorized a range of programs to support labor-market relevant human capital development. In some cases, programs support individuals in developing the skills with the express purpose of obtaining employment.[104] In other cases, federal support of higher education may not be primarily considered a direct workforce investment, though the relationship between higher education and positive labor market outcomes is well-documented.[105]

Compared to the federal policies noted previously for targeted community assistance—and with few exceptions—most federal workforce development programs are authorized to meet a range of human capital concerns and are not specific to coal communities or coal workers. The primary federal support for skill development is accessed through permanent federal systems with a nationwide footprint. For example:

- The Workforce Innovation and Opportunity Act (WIOA) supports state systems and funding streams that state and local workforce development boards can use for career services and training that align with local labor market needs. While these programs are not typically targeted to communities with specific characteristics (e.g., coal communities), some of the characteristics of these communities (e.g., high unemployment) may make some resources more accessible. For example, formula funds under the WIOA Dislocated Worker program are partially allocated to states with higher unemployment or larger shares of long-term unemployed.[106]
- The WIOA also authorizes National Dislocated Worker Grants, which is competitive funding to support workers in states and local areas experiencing disasters, emergencies, or "major economic dislocations."[107] In some cases, appropriations language or DOL under its administrative authority has targeted this funding with a broader statutory authorization to specific areas or areas experiencing specific hardships. For example, a portion of FY2016 funding for

[103] OSMRE, *Guidance on the Bipartisan Infrastructure Law Abandoned Mine Land Grant Implementation,* https://www.doi.gov/sites/doi.gov/files/bil-aml-guidance.pdf.

[104] A 2019 analysis from the Government Accountability Office (GAO) identified 44 federal "employment and training" programs that "help job seekers enhance their job skills, identify job opportunities, and obtain employment." See GAO-19-200, *Employment and Training Programs: Department of Labor Should Assess Efforts to Coordinate Services Across Programs,* March 2019, https://www.gao.gov/products/gao-19-200.

[105] See, for example, U.S. Bureau of Labor Statistics, "Education Pays, 2021," https://www.bls.gov/careeroutlook/2022/data-on-display/education-pays.htm. For a more nuanced discussion of the relationship between educational attainment and employers' education requirements, see CRS Report R47059, *Skills Gaps: A Review of Underlying Concepts and Evidence*, by Sarah A. Donovan et al..

[106] For more information on WIOA, associated systems, and how funds are allotted, see CRS Report R44252, *The Workforce Innovation and Opportunity Act and the One-Stop Delivery System,* by Benjamin Collins and David H. Bradley.

[107] See WIOA Section 170 for statutory authorization. For more details on eligibility and the application process, see https://www.dol.gov/agencies/eta/dislocated-workers/grants.

National Dislocated Worker Grants was targeted to communities adversely affected by coal economy contractions as a component of the multi-agency POWER initiative (see the text box, above, on "POWER Initiative for Coal Communities").[108]

- The Higher Education Act (HEA) authorizes a system of federal student aid that makes portable aid available to individual students that can be used at eligible institutions for eligible degree and certificate programs. While most student aid programs are not targeted on the basis of community characteristics, students with fewer financial resources may qualify for larger amounts of need-based aid (e.g., Pell Grants). Eligibility for need-based aid is determined by information provided on the Free Application for Federal Student Aid (FAFSA) and program-specific details.[109]
- A number of programs target employment-related assistance to individuals on the basis of individual characteristics. For example, various programs can support employment-related services for individuals with disabilities and veterans.[110]

In some cases, workforce development is an allowable use of federal resources with broader objectives, often relating to industrial policy or economic development.[111] Cataloging training efforts associated with these funds can be challenging due to their integration with other activities.[112]

Other Federal Activities

In addition to the financial assistance programs noted above, federal involvement in the economic diversification of coal communities may include the coordination of existing resources and partners. In January 2021, the Biden Administration established the Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization to facilitate economic revitalization in coal, oil and gas, and power plant communities and to support workers. The IWG leads workshops, stakeholder engagement, and capacity-building activities to support state and local transition efforts, and carries out resource identification, analysis, and interagency

[108] For more information on National Dislocated Worker Grant funding associated with POWER, see DOL Training and Employment Guidance Letter 09-16, https://www.dol.gov/sites/dolgov/files/ETA/advisories/TEGL/2016/TEGL_9-16_Acc.pdf. For information on specific grantees, see https://www.dol.gov/agencies/owcp/dcmwc/powergrants.

[109] For more information on the HEA and associated programs, see CRS Report R43351, *The Higher Education Act (HEA): A Primer*, by Joselynn H. Fountain. For information on forthcoming changes to the FAFSA and the Pell Grant program, see CRS Report R46909, *The FAFSA Simplification Act*, by Benjamin Collins and Cassandria Dortch.

[110] For example, the Vocational Rehabilitation State Grants program provides employment-related services to workers with disabilities, and the G.I. Bill can support higher education for former members of the Armed Forces. See CRS Report R43855, *Rehabilitation Act: Vocational Rehabilitation State Grants*, by Benjamin Collins; and CRS Report R42785, *Veterans' Educational Assistance Programs and Benefits: A Primer*, by Cassandria Dortch.

[111] For example, among laws enacted in the 117th Congress, there were potential workforce development components in the Infrastructure Investment and Jobs Act (IIJA, P.L. 117-58), the CHIPS and Science Act (P.L. 117-167), and the Inflation Reduction Act (P.L. 117-169). The National Governors Association cataloged elements of these laws that could potentially support workforce activities at https://www.nga.org/publications/workforce-development-in-the-iija-chips-and-ira/.

[112] The Government Accountability Office (GAO) occasionally conducts reviews that define and identify employment and training programs across the federal government. The most recent was published in 2019; see GAO, *Employment and Training Programs: Department of Labor Should Assess Efforts to Coordinate Services Across Programs*, GAO-19-200, https://www.gao.gov/products/gao-19-200.

coordination activities.[113] For example, in order to provide direct technical assistance on federal grants, the IWG created Rapid Response Teams (RRTs) in coal and fossil energy communities that connect local stakeholders with federal resources and agency representatives.[114]

Federal agencies and federal regional commissions also directly provide or facilitate technical assistance to stakeholders in coal communities. Technical assistance may include agency efforts to connect stakeholders from different coal-impacted areas with communities experiencing similar issues. For example:

- EDA funding supports non-governmental partners that provide targeted technical assistance to coal-impacted communities through the Building Resilient Economies in Coal Communities (BRECC) Initiative. BRECC activities include a peer network, education, outreach, and other efforts designed to assist coal communities with economic diversification and revitalization strategies.[115]
- ARC convenes POWER grantees and other partners for peer learning and provides other technical assistance to coal communities in the Appalachian region.[116]

Policy Considerations

Since FY2014, Congress has supported policies designed to address economic diversification, environmental challenges, and workforce and business development in coal communities. Should Congress continue to support programs to assist coal communities, policymakers may seek to review the roles of federal, state, and private assistance as well as the type and scale of assistance provided. Congress may also be interested in reviewing if—or how—federal assistance programs align with policy objectives as well as how they are structured, accessed, overseen, evaluated, and financed.

Role of Federal Assistance

Federal assistance for economically distressed coal communities generally reflects policy objectives related to reducing regional economic disparities, expanding tax bases, increasing individual or community wealth, and improving job opportunities and quality of life measures. Federal assistance for coal communities also reflects the belief by some that support for these areas provides a means of shoring up the national economy.[117] Some analysts also view economic

[113] The IWG's website features a clearinghouse of over 160 federal funding opportunities and is searchable by agency, funding type (e.g., grants, incentives, loans), applicant type, and activity. For funding opportunities, events, and resources, see https://energycommunities.gov. For additional information on the IWG, see CRS In Focus IF12238, *Interagency Working Group (IWG) on Coal and Power Plant Communities and Economic Revitalization*, by Julie M. Lawhorn.

[114] IWG, "Revitalizing Energy Communities: Two-Year Report to the President," April 2023, https://energycommunities.gov/revitalizing-energy-communities-two-year-report.

[115] EDA, "Building Resilient Economies in Coal Communities," https://www.eda.gov/strategic-initiatives/communities-of-practice/building-resilient-economies-in-coal-communities-initiative.

[116] ARC, "POWER Initiative Evaluation: The POWER of Change," Chamberlin Dunn, LLC, commissioned by ARC, September 16, 2021, p. 43, https://www.arc.gov/report/power-initiative-evaluation-the-power-of-change.

[117] Testimony by Secretary of Commerce, Gina Raimondo, U.S. House of Representatives, Appropriations Subcommittee on Commerce, Justice, Science and Related Agencies, Hearing on "Fiscal Year 2024 Budget Request for the Department of Commerce," April 18, 2023; and Testimony of Timothy J. Bartik, U.S. House of Representatives, Select Committee on Economic Disparity and Fairness in Growth, Hearing on "Bringing Prosperity to Left-Behind (continued...)

transitions, and energy transitions in particular, as processes to be managed proactively and with federal support, so as to minimize social division, economic disruption, and overall community resistance to structural and policy changes.[118] They note that the geographic concentration of the coal industry, the lack of diversified regional economies, and barriers to worker mobility warrant federal and state policy intervention—in addition to support from the private sector.[119] Others view federal assistance as a responsibility—of government and other stakeholders—to address the past contributions of communities and workers towards the growth of the country through energy-related activities. Some of these sentiments reflect an interest in providing support to regions and stakeholders based on their prior contributions to the nation's economic growth.[120] Analysts observe that Congress has previously provided targeted economic assistance for communities and workers impacted by changes associated with federal policies, such as trade (i.e., trade adjustment assistance programs for workers, firms, and communities[121]) and military base closures and realignments[122] (i.e., place-based, economic adjustment assistance programs administered by the Department of Defense Office of Local Defense Community Cooperation[123]).[124]

Conversely, for others, federal assistance for local economic development in coal communities—could be limited, in favor of private sector and/or state and local support, or for direct assistance to individuals regardless of where they live. As Congress continues to debate matters related to federal spending, policymakers may opt to limit support for various programs, including economic development assistance overall and economic development assistance to distressed areas and coal communities. In response to proposals that would limit or reduce federal involvement, some researchers note that many coal communities are in persistently economically

Communities: Using Targeted Place-Based Development to Expand Economic Opportunity," May 11, 2022, p. 10, https://www.congress.gov/117/meeting/house/114724/witnesses/HHRG-117-EF00-Wstate-BartikT-20220511.pdf.

[118] Michaël Aklin and Johannes Urpelainen, "Enable a Just Transition for American Fossil Fuel Workers Through Federal Action," The Brookings Institution, August 2, 2022, https://www.brookings.edu/research/enable-a-just-transition-for-american-fossil-fuel-workers-through-federal-action.

[119] Ibid.

[120] In January 2021, the Biden Administration—a year before the enactment of new climate and energy policies—linked the role of mining and power plant workers in contributing to national economic growth, and called for expanded federal coordination to foster "economic revitalization of and investment in these communities, ensure the creation of good jobs that provide a choice to join a union, and secure the benefits that have been earned by workers." See E.O. 14008, "Tackling the Climate Crisis at Home and Abroad," 86 *Federal Register* 7619, February 1, 2021. For a review of the Biden Administration's approach to federal assistance to fossil fuel communities, see U.S. Council of Economic Advisors, *Economic Report of the President, Ch. 7 Accelerating and Smoothing the Clean Energy Transition,* April 14, 2022, pp. 240-249, https://www.whitehouse.gov/wp-content/uploads/2022/04/ERP-2022.pdf.

[121] While the majority of policies discussed in this report are place-based, the Trade Adjustment Assistance for Workers is considered a people-based policy. For additional information on trade adjustment assistance programs, see CRS In Focus IF12430, *Trade Adjustment Assistance for Firms*, by Kyla H. Kitamura; CRS Report R47200, *Trade Adjustment Assistance for Workers: Background and Current Status*, by Benjamin Collins; and CRS Report R40863, *Trade Adjustment Assistance for Communities: The Law and Its Implementation*, by Eugene Boyd and Cassandria Dortch.

[122] Congress has approved five rounds of military base realignments and closures under the Base Realignment and Closure (BRAC) process: in 1988, 1991, 1993, 1995, and 2005. For information on BRAC, see CRS Report R45705, *Base Closure and Realignment (BRAC): Background and Issues for Congress*, by Christopher T. Mann.

[123] See Department of Defense Office of Local Defense Community Cooperation, "Program Overview," https://oldcc.gov/program-overview.

[124] U.S. Council of Economic Advisors, *Economic Report of the President, Ch. 7 Accelerating and Smoothing the Clean Energy Transition,* April 14, 2022, p. 242, https://www.whitehouse.gov/wp-content/uploads/2022/04/ERP-2022.pdf.

As noted in "Trends in U.S. Coal Production and Employment," the impact of changes in coal production on communities and workers is generally attributed to a combination of various factors including federal policy, as well as technology, automation, industry trends (e.g., natural gas competition), and other factors.

distressed places that do not have the fiscal resources to implement expanded economic and workforce development programs. They contend that the federal government possesses the capacity to coordinate and deploy redevelopment resources at a scale that is larger than that of states or other authorities.[125]

Structure, Coordination, and Integration Considerations

Congress may consider options to structure federal programs as community-led (i.e., bottom-up), nationally-coordinated, or through a combination of these approaches to deploy assistance. With a bottom-up approach, federal programs generally assist with locally developed projects to advance industries or strategies based on a region's particular assets and challenges; the federal agencies' role in planning and implementing state and local projects is limited. The existing federal grant programs for coal communities generally use a community-led approach (e.g., EDA's ACC initiative, ARC's POWER Initiative).[126]

Some observers and agencies note that existing programs are decentralized, and coal communities apply separately to multiple agencies for assistance.[127] Some outside groups have called for a more centralized approach through a federal office for transition assistance that could oversee a holistic, long-term strategy and serve in a coordination role among agencies and different levels of government.[128] Some also view a more nationally-coordinated approach as a way to provide assistance designed to transition communities *towards* the development of a specific industry, policy goal, or economic restructuring scenario (e.g., innovation, technology, healthcare, clean energy industries, decarbonized economies).

A combination of these approaches may involve some degree of federal coordination and/or expanded interagency collaboration. A combination approach may also involve assistance that is provided for specific industries, strategies, or policy goals, but continues to be deployed using community-led processes, engagement, and representation from coal community stakeholders.

Congress may consider options to provide assistance through one or more different types of policy vehicles, including tax credits, place-based grant and loan programs, or a combination of these or others. Each type of assistance involves budgetary considerations and limitations.[129]-Each

[125] For an example of this perspective, see Michaël Aklin and Johannes Urpelainen, "Enable a Just Transition for American Fossil Fuel Workers Through Federal Action," The Brookings Institution, August 2, 2022, https://www.brookings.edu/research/enable-a-just-transition-for-american-fossil-fuel-workers-through-federal-action; and Kelli F. Roemer and Julia H. Haggerty, "Coal Communities and the U.S. Energy Transition: A Policy Corridors Assessment," *Energy Policy,* vol. 151 (2021), p. 8, https://doi.org/10.1016/j.enpol.2020.112112.

[126] ARC and EDA describe their assistance programs as supporting "bottom-up strategies." See, for example, ARC, "Area Development Program," https://www.arc.gov/area-development-program/; and EDA, "FY2024 Congressional Budget Justification," pp. 35, 56, https://www.commerce.gov/sites/default/files/2023-03/EDA-FY2024-Congressional-Budget-Submission.pdf.

[127] IWG, "Revitalizing Energy Communities: Two-Year Report to the President," April 2023, pp. 6-7, https://energycommunities.gov/revitalizing-energy-communities-two-year-report.

[128] For examples of these perspectives and a review of regional economic transition studies, see Michaël Aklin and Johannes Urpelainen, "Enable a Just Transition for American Fossil Fuel Workers Through Federal Action," The Brookings Institution, August 2, 2022, https://www.brookings.edu/research/enable-a-just-transition-for-american-fossil-fuel-workers-through-federal-action; Daniel Raimi et al., "Policy Options to Enable an Equitable Energy Transition," Resources for the Future, Report 21-09, pp. 47-48, https://media.rff.org/documents/RFF_Report_21-09_Policy_Options_to_Enable_an_Equitable_Energy_Transition.pdf; and Sandeep Pai, Kathryn Harrison, and Hisham Zerriffi, "A Systematic Review of the Key Elements of a Just Transition For Fossil Fuel Workers," *Clean Economy Working Paper Series,* Issue 4, April 2020, pp. 19-20.

[129] For analysis of tax expenditures and spending programs, including discretionary grant programs, see CRS Report
(continued...)

policy tool is also designed to affect different stakeholders and aspects of regional economies. For instance, tax credits may be designed to broadly incentivize certain private sector activities in coal communities. Tax credit policies may be further refined to target even more specific geographic areas, and/or they may include criteria to incentivize capital, labor, trade, R&D, or other activities or outcomes.

Federal place-based grant and loan assistance programs, on the other hand, are based on the premise that public support for strengthening a region's existing assets may create conditions for broad economic development (e.g., support for stable fiscal income, community amenities, research institutions, broadband, workforce, education, and infrastructure).[130] A potential benefit to providing broad, place-based assistance is that such programs may be designed for multiple stakeholders or a range of beneficiaries, rather than a targeted set of businesses or industries.[131] The deployment of multiple policy instruments simultaneously may offer an approach to assistance that may address the many different phases of economic transition and various types of stakeholders and industry conditions.

Role of NonFederal Assistance: State and Private Support[132]

Outside groups have identified state government and private sector entities as sources of additional assistance for economic diversification and worker training activities in coal communities. Selected states, private utilities, and philanthropic organizations, for example, provide grant funds to pay for economic development activities as well as grant writing assistance, technical and feasibility studies, pre-development assistance, and other ways of expanding the capacity of local and regional stakeholders.[133] Universities and other institutions of higher education also provide technical assistance, engagement, and planning services to coal communities.[134]

R44530, *Spending and Tax Expenditures: Distinctions and Major Programs*, by Grant A. Driessen. For analysis of federal grants, see CRS Report R40638, *Federal Grants to State and Local Governments: A Historical Perspective on Contemporary Issues*, by Julie M. Lawhorn.

[130] Timothy Bartik, "Bringing Jobs to People: Improving Local Economic Development Policies," Upjohn Institute Working Paper No. 2020-023 (Kalamazoo, MI: W.E. Upjohn Institute for Employment Research), 2020; and Ben Cahill and Sandeep Pai, "Working Toward a Just Transition for Coal Communities," Center for Strategic and International Studies, September 27, 2021, https://www.csis.org/analysis/working-toward-just-transition-coal-communities.

[131] An example of this type of assistance is the EDA's ACC initiative, which provides flexible funding for a variety of projects that may support economic diversification, job creation, capital investment, workforce development, and re-employment opportunities for coal-impacted communities. Other EDA programs (e.g., Economic Adjustment Assistance, Build Back Better Regional Challenge, Recompete Pilot) and programs administered by federal regional commissions and authorities (e.g., Appalachian Regional Commission) also provide flexible forms of federal grant assistance for community-led economic development projects in economically distressed areas.

[132] The examples provided in this section are illustrative and do not represent a comprehensive review of nonfederal policy options. For a perspective on expanded state policy options for distressed areas, see Timothy J. Bartik, "How State Governments Can Help Distressed Places," Upjohn Institute for Employment Research, August 4, 2022, https://research.upjohn.org/empl_research/vol29/iss3/1/; among others.

[133] State policies focusing on economic transitions in selected western states are summarized by Kelli F. Roemer and Julia H. Haggerty in "Coal Communities and the U.S. Energy Transition: A Policy Corridors Assessment," *Energy Policy*, vol. 151 (2021), pp. 6-8, https://doi.org/10.1016/j.enpol.2020.112112. See also, for examples of programs administered by philanthropic organizations, the Coal Communities Get Ready! Challenge, funded by the Just Transition Fund (https://justtransitionfund.org/get-ready-challenge) and the Utilities Grant Program, funded by three Arizona utility companies (se https://tucson.com/business/tucson-electric-aps-srp-offer-1m-in-grants-to-coal-communities/article_0b7aa202-e097-11ed-a049-eb9f8958311e.html).

[134] See, for example, the Just Energy Transition Center at Arizona State University, https://globalfutures.asu.edu/justenergy.

Researchers that track state economic transition policies in selected western states have observed that state policy objectives and approaches vary. They note that some states have enacted policies to support planning and diversification activities, while others have enacted policies for continued coal operations.[135] Additionally, as noted above, certain federal abandoned mine land reclamation programs are funded by coal excise taxes on private sector firms to support remediation activities. In recent years, legislation at the state and federal levels have proposed taxes on private companies to fund remediation activities and to fund economic development initiatives in anticipation of future energy market fluctuations and potential impacts on local and regional economies.[136] In light of emerging state energy transition policies, Congress may wish to review how certain states have proposed or implemented strategies to fund economic diversification activities or support continued industry activity.

Whether and How to Target Assistance for Coal Communities

Congress may be interested in reviewing whether to continue providing targeted assistance for coal communities that is separate from—or in addition to—assistance designed for other communities or types of economic shocks. Some researchers and policymakers point to location-specific conditions that may warrant additional assistance for coal communities (see "Economic Diversification and Employment in Coal Communities" for examples of such conditions). Conversely, Congress may provide assistance for coal communities through programs that assist communities impacted by any type of shock or event—regardless of sector or location. For example, the Distressed Area Recompete Pilot Program (Recompete Pilot Program) was recently authorized to provide long-term comprehensive economic development grants to areas with persistent gaps in prime age employment. Certain coal communities may be eligible for the Recompete Pilot Program, but the program is not designed to serve only coal communities.[137]

Congress could also consider how coal communities may qualify for support through more general programs that target individuals and areas on the basis of more general economic disadvantage. If coal communities have larger shares of low-income individuals or higher unemployment, they may receive higher levels of support from programs that target those more general criteria.[138] One advantage of supporting coal communities through these broader mechanisms is they are based on established systems and eligibility requirements.

If Congress continues to provide targeted assistance to coal communities, it may consider options to direct resources and activities through statutory program definitions of coal communities or through other requirements. In defining coal communities, Congress may expand or narrow the definitions of eligible communities or provide agencies with discretion to develop definitions or

[135] Kelli F. Roemer and Julia H. Haggerty, "Coal Communities and the U.S. Energy Transition: A Policy Corridors Assessment," *Energy Policy*, vol. 151 (2021), pp. 6-8, https://doi.org/10.1016/j.enpol.2020.112112.

[136] For examples of state policies for severance taxes and trust funds (in the context of oil and gas communities), see Devashree Saha and Mark Muro, "Permanent Trust Funds: Funding Economic Change with Fracking Revenues," Metropolitan Policy Program at Brookings Institution, April 2016, https://www.brookings.edu/wp-content/uploads/2016/07/Permanent-Trust-Funds-Saha-Muro-418-1.pdf.

For an example of federal legislation, see H.R. 4799 (117th Congress). H.R. 4799 proposed to use a portion of royalties on coal leases to fund economic revitalization and workforce development grants.

[137] 15 U.S.C. 3722b. For more information, see EDA, "Distressed Area Recompete Pilot Program (Recompete Pilot Program)," https://www.eda.gov/funding/programs/recompete-pilot-program.

[138] For example, federal student aid, which supports individuals in pursuit of higher education, is largely awarded on the basis of need. Funding for workforce development programs under the Workforce Innovation and Opportunity Act is award via a formula that considers unemployment-related factors.

designations.[139] For other approaches to targeted assistance, Congress could consider establishing statutory requirements that a certain number of projects or amounts of funding are provided to coal (or other) communities (see examples in "Selected Business Development, Research and Development, and Energy Infrastructure Programs").

Small, Rural, or Underserved Communities and Capacity Considerations

Across various forms of assistance, experts note that small, rural, or underserved communities may face barriers to planning for economic diversification, supplying required matching funds, and accessing and applying for federal programs.[140] Researchers note that certain communities are challenged by limited local capacity for public engagement and economic development planning following the closure of coal fired generation plants.[141] Some note that rural and underserved areas—in facing declining tax revenues—also lack alternative funding streams to "directly address the fiscal challenges facing impacted communities,"[142] and that this challenge is exacerbated in geographically remote, isolated areas.[143] Others suggest that, in light of these challenges, Congress may seek to consider policies that support local capacity. Some advocate for policies that provide flexibility to applicants in terms of the level of nonfederal matching fund requirements or policies that provide resources to support applicants' readiness to apply for funding. Another approach to addressing capacity limitations may be to provide additional support for technical assistance for coal communities and helping underserved communities learn from other regions.[144] The IWG refers to this as "structural support" and noted that Congress has previously chartered and funded a nonpartisan nonprofit organization (i.e., Neighborworks[145]) to support communities with similar revitalization endeavors.[146]

[139] For a directory of programs that use criteria to prioritize coal-impacted communities for economic development assistance and for economic development programs that may be broadly available for other communities, see "Clearinghouse" at https://energycommunities.gov.

[140] In 2022, the IWG issued a Request for Information. One of the top three challenges facing energy communities was the "difficulty with the process of applying for state or federal assistance." See IWG, "Revitalizing Energy Communities: Two-Year Report to the President," April 2023, p. 6, https://energycommunities.gov/revitalizing-energy-communities-two-year-report.

[141] Julia H. Haggerty et al., "Planning for the Local Impacts of Coal Facility Closure: Emerging Strategies in the U.S. West," *Resources Policy*, vol. 57 (2018), p. 10.

[142] Kelli F. Roemer and Julia H. Haggerty, "Coal Communities and the U.S. Energy Transition: A Policy Corridors Assessment," *Energy Policy*, vol. 151 (2021), p. 8, https://doi.org/10.1016/j.enpol.2020.112112.

[143] Ibid.

[144] IWG, "Revitalizing Energy Communities: Two-Year Report to the President," April 2023, pp. 13, 25, https://energycommunities.gov/revitalizing-energy-communities-two-year-report; and Michaël Aklin and Johannes Urpelainen, "Enable a Just Transition for American Fossil Fuel Workers Through Federal Action," The Brookings Institution, August 2, 2022, https://www.brookings.edu/research/enable-a-just-transition-for-american-fossil-fuel-workers-through-federal-action.

[145] NeighborWorks America is a federally chartered nonprofit organization that typically receives congressionally appropriated funding as a related agency in the annual Transportation, Housing and Urban Development, and Related Agencies appropriations acts. For more information, see CRS Report R47045, *Section 4 Capacity Building for Community Development and Affordable Housing Program*, by Joseph V. Jaroscak.

[146] IWG, "Revitalizing Energy Communities: Two-Year Report to the President," April 2023, p. 28, https://energycommunities.gov/revitalizing-energy-communities-two-year-report.

Mine Land Reclamation Considerations

Congress could consider oversight options to assess whether funds going towards the AMLER program have achieved the intended purpose of reclaiming abandoned coal sites to facilitate economic and community development. As discussed previously, OSMRE has established numerous metrics for evaluating whether federal funding for AML reclamation has facilitated economic and community development. Congress may pursue oversight options to examine the extent to which funding for these reclamation programs provided intended benefits to economic and community development. Additionally, Congress may choose to provide direction for performance metrics, reporting requirements, and program success.

Congress may also consider the adequacy of past funding levels and future funding necessary to achieve program objectives. Congress has provided a total of $885 million from FY2016 through FY2023 for the AMLER program. Funding for the AMLER program has been provided through annual appropriations since FY2016. As discussed earlier, OSMRE requested $135 million for the AMLER program for FY2024. Congress may consider funding levels, conditions, and criteria for existing federal mine reclamation programs in future appropriations bills or accompanying explanatory statement.

Scale, Timing, and Program Evaluation Considerations

As Congress continues to review economic assistance for coal communities, policymakers may consider aspects of existing policies for future evaluation and oversight. However, attributing outcomes to prior policy interventions may be challenging because economic development investments may take many years or decades to plan and implement and may involve significant private sector investment. There are limitations to the potential impact of federal assistance in light of global markets, unexpected events, state policies, and other factors. Additionally, some view the challenges facing economically distressed coal communities as wide-ranging, complex, and inter-related,[147] and have examined whether there is sufficient funding at scale to support comprehensive transition and diversification.[148] Economic development experts note that following the decline of historically dominant industries, the process of regional economic diversification may involve long-term assistance and multiple rounds of investment from public and private stakeholders.[149] Experts further note that in terms of economic diversification strategies in coal communities, there is limited analysis on the outcomes and processes. Additional study may provide insight on which approaches worked well.[150]

[147] IWG, "Revitalizing Energy Communities: Two-Year Report to the President," April 2023, p. 7, https://energycommunities.gov/revitalizing-energy-communities-two-year-report.

[148] Sanya Carley and David M. Konisky, "The Justice and Equity Implications of the Clean Energy Transition," *Nature Energy*, vol. 5, August 2020.

[149] IWG, "Revitalizing Energy Communities: Two-Year Report to the President," April 2023, p. 7, https://energycommunities.gov/revitalizing-energy-communities-two-year-report; and Kelli F. Roemer and Julia H. Haggerty, "Coal Communities and the U.S. Energy Transition: A Policy Corridors Assessment," *Energy Policy*, vol. 151 (2021), p. 8, https://doi.org/10.1016/j.enpol.2020.112112.

[150] Sanya Carley and David M. Konisky, "The Justice and Equity Implications of the Clean Energy Transition," *Nature Energy*, vol. 5, August 2020, p. 575; and Kelli F. Roemer and Julia H. Haggerty, "Coal Communities and the U.S. Energy Transition: A Policy Corridors Assessment," *Energy Policy*, vol. 151 (2021), p. 8, https://doi.org/10.1016/j.enpol.2020.112112.

A 2021 study included a summary of variables associated with successful economic transition and examples of "Successful Post-transition Counties" in the ARC region. See Linda Lobao et al., "Socioeconomic Transition in the Appalachia Coal Region: Some Factors of Success," October 25, 2021, Washington, DC: World Bank Group.

Congress may also consider reviewing to what extent the existing programs address current and anticipated community, environmental, and worker needs, including how programs fit with different time periods of the transition process as well as the challenges faced by different types of occupations (e.g., mining, power plants, supply chain, manufacturing, transportation). Some analysts argue that some programs may only be available following a plant or mine closure, which may hinder advance planning and diversification efforts.[151] They suggest that existing assistance programs could be more flexible to include providing advance planning assistance before an anticipated sector decline or economic distress occurs.[152]

Researchers and outside groups have further identified barriers to data, human capital, and funding as factors that may limit coal communities' capacity to carry out near-term transition planning as well as holistic, longer-term scenario planning. They also note that federal policies could be expanded to include support for additional asset mapping, feasibility studies, and other place-sensitive, data-informed studies to help communities identify multiple, suitable sectors and opportunities.[153]

Additionally, while many agree that policies should support communities and workers, the indicators of success lack common definitions and measurements. Researchers note that little is known about the strategies that have worked well in coal communities, and in restructuring economies, overall. Researchers note that more cross-disciplinary research is needed on economic diversification and related activities.[154] Considering these limitations, Congress may still seek to gain additional insight on factors and conditions contributing to the success of state, local, and federal strategies, and the role of private sector assistance. Additional research and feedback from domestic and international stakeholders may inform priorities and policy decisions on how other regions and countries have implemented economic transition strategies over longer time periods.[155]

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[151] Francesca Diluiso et al., "Coal Transitions—Part 1: A Systematic Map and Review of Case Study Learnings from Regional, National, and Local Coal Phase-Out Experiences," *2021 Environmental Research Letters*, October 21, 2021, 16, https://iopscience.iop.org/article/10.1088/1748-9326/ac1b58.

[152] Kelli F. Roemer and Julia H. Haggerty, "Coal Communities and the U.S. Energy Transition: A Policy Corridors Assessment," *Energy Policy*, vol. 151 (2021), pp. 4, 8-9, https://doi.org/10.1016/j.enpol.2020.112112; IWG, "Revitalizing Energy Communities: Two-Year Report to the President," April 2023, p. 26, https://energycommunities.gov/revitalizing-energy-communities-two-year-report; and Francesca Diluiso et al., "Coal Transitions—Part 1: A Systematic Map and Review of Case Study Learnings From Regional, National, and Local Coal Phase-Out Experiences," *2021 Environmental Research Letters*, October 21, 2021, vol. 16, https://iopscience.iop.org/article/10.1088/1748-9326/ac1b58.

[153] Julia H. Haggerty et al., "Planning for the Local Impacts of Coal Facility Closure: Emerging Strategies in the U.S. West," *Resources Policy*, vol. 57 (2018), pp. 40-41; and Ben Cahill and Sandeep Pai, "Working Toward a Just Transition for Coal Communities," Center for Strategic and International Studies, September 27, 2021, https://www.csis.org/analysis/working-toward-just-transition-coal-communities. For an example of a regional diversification plan, see Go Virginia Region 1, "Growth and Diversification Plan," August 2019, https://www.dhcd.virginia.gov/sites/default/files/Docx/gova/region-one/region-1-growth-diversification-plan-2019.pdf.

[154] Harold Wolman, Howard Wial, Travis St. Clair, and Edward Hill, *Coping with Adversity* (Ithaca: Cornell University Press, 2017), p. 55; Michaël Aklin and Johannes Urpelainen, "Enable a Just Transition for American Fossil Fuel Workers Through Federal Action," The Brookings Institution, August 2, 2022, https://www.brookings.edu/research/enable-a-just-transition-for-american-fossil-fuel-workers-through-federal-action; and Sanya Carley and David M. Konisky, "The Justice and Equity Implications of the Clean Energy Transition," *Nature Energy*, vol. 5, August 2020, p. 575.

[155] Sanya Carley, Tom P. Evans, and David M. Konisky, "Adaptation, Culture, and the Energy Transition in American Coal Country," *Energy Research and Social Science*, vol. 37 (2018), pp. 133-139, https://doi.org/10.1016/j.erss.2017.10.007; Pao-Yu Oei, Hanna Brauers and Philipp Herpich, "Lessons from Germany's Hard Coal Mining Phase-Out: Policies and Transition from 1950 to 2018," *Climate Policy*, vol. 20, issue 8, (2020), pp. 963-979,
(continued...)

Congress may consider expanding policies and associated definitions to include areas with other concentrated industries or fossil resources, such as oil and gas. Regional economies associated with oil production assets have grown in recent years, including businesses directly and indirectly involved in oil extraction (e.g., manufacturing). However, the cyclical nature of the oil and gas industry means that oil and gas communities may experience boom and bust periods as well.[156] The IWG and others note, however, that oil and gas communities face challenges that are similar but distinct from those of coal communities.[157]

Conclusion

The geographic concentration of the coal industry, the lack of diversified regional economies, and barriers to worker mobility represent some of the inter-related challenges faced by coal communities in recent years. In response to these and other concerns, Congress has provided support for programs to address economic diversification, business development, workforce development, and environmental challenges. Since 2014, Congress has directed a number of federal agencies to provide flexible, place-based economic adjustment assistance and mine land remediation grants for coal communities. Federal assistance has since expanded to include additional agencies and grant programs, as well as additional types of assistance (e.g., tax credits). Additionally, recent Biden Administration efforts have focused on providing federal technical assistance, convening stakeholders, and coordinating aspects of federal, state, and regional strategies through the IWG. The IWG continues to incorporate activities with and for coal communities within a broader set of "energy community" stakeholders.

Energy transitions have occurred for centuries.[158] The challenges discussed in this report suggest that the regional economic development aspect of energy transitions may be a continuing issue for Congress. In reviewing economic development policy options, Congress may wish to examine the current program roles and authorities. Many of the available programs are place-based and flexible, while others specifically target coal communities (or broader energy communities) through tax credits or appropriations that set aside funding for coal-impacted communities in economic development or other program accounts. Congress may also wish to consider continuing to provide assistance through multiple channels and for different phases of the transition, including grant programs, tax credits, and interagency coordinating activities. Should other industries face similar long-term downturns, Congress may consider providing federal assistance to additional types of impacted communities.

https://www.tandfonline.com/doi/full/10.1080/14693062.2019.1688636; and "Lessons from Other Contexts" in Adele Morris, Noah Kaufman, and Siddhi Doshi, "The Risk of Fiscal Collapse in Coal-Reliant Communities," The Brookings Institution, July 2019, https://www.brookings.edu/research/the-risk-of-fiscal-collapse-in-coal-reliant-communities.

[156] Sanya Carley and David M. Konisky, "The Justice and Equity Implications of the Clean Energy Transition," *Nature Energy*, vol. 5, August 2020, p. 575; and U.S. Bureau of Labor Statistics, "All Employees, Oil and Gas Extraction [CES1021100001]," retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/CES1021100001, June 15, 2023.

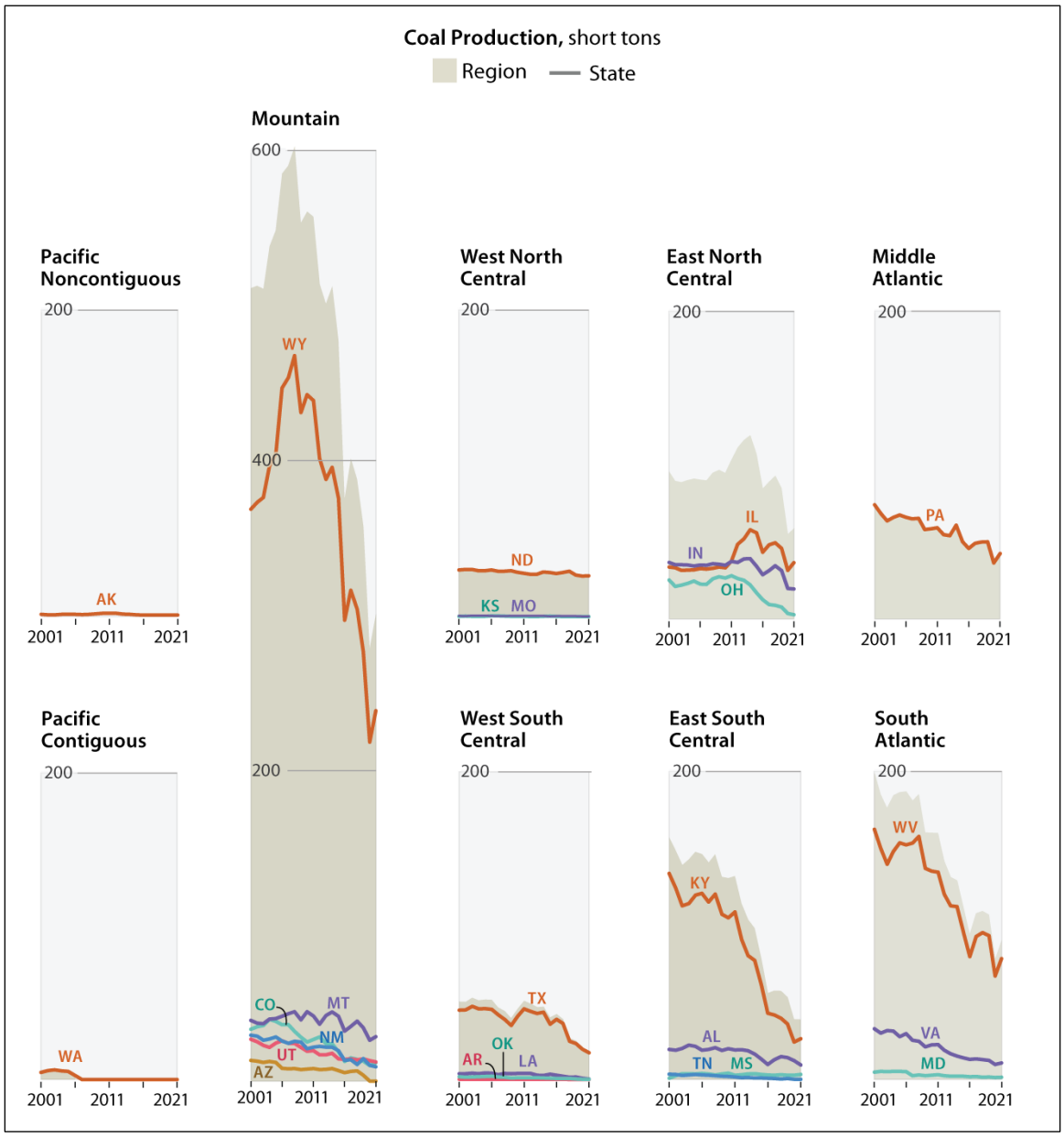
[157] IWG, "Revitalizing Energy Communities: Two-Year Report to the President," April 2023, p. 5, https://energycommunities.gov/revitalizing-energy-communities-two-year-report.

[158] See, for example, Christopher Jones, *Routes of Power: Energy and Modern America*, Cambridge: Harvard University Press, 2014.

Appendix. Changes in Coal Production by State

The following figure illustrates state-by-state changes in coal production from 2001 to 2021. While the magnitudes and patterns of production reductions vary, the overall trend in the period has been consistent in almost all states.

Figure A-1. Changes in Coal Mine Production by Region, 2001-2021



Source: CRS figure using data from EIA, "Aggregate Coal Mine Production: All Coal: Total," data accessed January 26, 2023. Figure created by Amber Wilhelm, Visual Information Specialist.

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