

Issue Brief

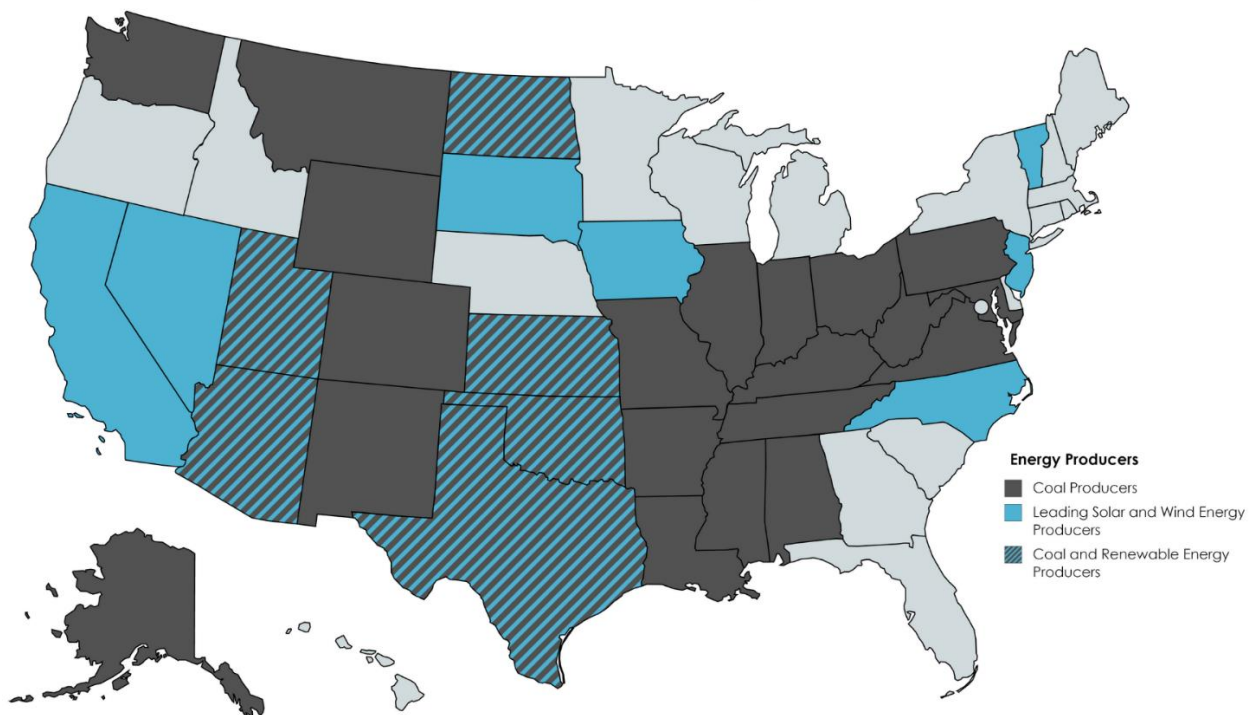
How Coal Country Can Adapt to the Energy Transition

November 2020

From international bodies to town halls, focus has been increasingly directed toward deploying clean energy and decarbonizing the economy following [reports](#) from the Intergovernmental Panel on Climate Change (IPCC) that countries must drastically cut carbon dioxide (CO₂) emissions within the next decade to limit global average temperature rise to 1.5°C (2.7°F).^{1,2} While widespread, rapid decarbonization is essential, communities that have developed with the coal industry as their backbone are already feeling the burden of the energy and economic transition. Policymakers at all levels of government are interested in mitigating harm to coal-dependent communities. This issue brief characterizes broad issues for communities in transition and surveys federal and regional policies, programs, and proposals intended to provide workforce development opportunities, diversify local economies, and alleviate economic hardship.

The Coal Transition

Coal vs. Renewable Energy Producers



Source:
 Levin, Amanda. "2017 Clean Energy by the Numbers: A State-by-State Look." 28 February, 2018. NRDC.
 "Where our coal comes from." 13 November 2019. Energy Information Administration.
 Graphic by: Sydney O'Shaughnessy

The American coal industry is centered in three regions: the Western region, the Appalachian region, and the Interior region. The top five coal-producing states in 2018, accounting for 71 percent of the nation’s coal resources, were Wyoming, West Virginia, Pennsylvania, Illinois, and Kentucky.³ U.S. coal production [peaked in 2008](#) with 1,171.5 million short tons (MMst).^{4,5} In 2019, coal production totaled 706 MMst, a decrease of 7 percent from 2018.⁶

But times are changing. There are two main factors driving the transition away from coal energy: the proliferation of cheaper alternative energy sources, and increases in the cost of coal extraction. Natural gas has been undercutting coal prices since the early 2010s.⁷ Meanwhile renewable energy is steadily declining in [cost](#) and the [depletion of the most productive Central Appalachian coal reserves is increasing production costs](#),⁸ making the industry even less profitable. Most studies have found that environmental regulations have played a limited role in coal’s [decline](#) when compared to competition from cheaper alternative sources, although regulations such as the Clean Air Act caused many utilities to seek less polluting coal reserves.^{9,10,11}

The changing economics of energy generation and the industry’s [move toward automation](#) have caused shocks to the coal workforce.¹⁵ For example, 2019 saw the [second-highest number of coal-fired power plant closures](#), behind 2015,¹⁶ and coal mining employment in the United States declined by 39 percent between [2009 and 2016](#).¹⁷ These trends are exacerbated by the COVID-19 pandemic, which will have lasting impacts on the fossil fuel industry in general, and [coal production in particular](#).¹² [Historically high coal stockpiles](#) may force mining companies to shut down,¹³ and the [U.S. Energy Information Administration forecast](#) that coal production would decline by 25 percent in 2020.¹⁴ This is accelerating the workforce crisis in coal-dependent areas, as [over 6,000 coal mining jobs were lost](#) in March and April 2020 alone.¹⁵

National Coal Mine Employment vs. Price of Coal



Source:
 U.S. Department of Labor: Mine Safety and Health Administration (MSHA) & The U.S. Energy Information Administration: Annual Coal Report
 Graphic by: Sydney O’Shaughnessy



A longstanding reliance on coal as the foundation of communities’ economies and relatively low solar and wind resources have limited the adoption of renewable energy technologies and made the energy transition in Appalachia

and the West [particularly difficult](#).^{16,17} Although the energy mix is changing nationwide, it is not occurring at the same speed in all regions. Some areas of the United States are leading the transition toward renewable energy, while other areas have been slow to adopt clean energy. [Wind and solar](#) energy generation has been built out primarily in the Midwest and Southwest, respectively,¹⁸ but adoption in other regions is limited by resource availability.

New forms of energy must compete against forms of energy generation that utilities have been investing in for decades. A [Union of Concerned Scientists report](#) identified "market entry" as one of the most significant barriers to the adoption of renewable energy. The more entrenched one kind of generation is in a region, the more difficult it is for renewable energy companies, particularly smaller companies, to take hold. Therefore, renewables may face higher barriers in regions where entire communities and economies are dependent on coal.¹⁹

Programs to ease the workforce transition process should not simply shift economies from being exclusively focused on one industry to being focused on another single industry. Policies and programs should also not assume that displaced fossil fuel workers want to or are able to migrate to new jobs. Instead, the transition should serve as an opportunity for economic diversification, which [mitigates the shock](#) created by the decline of one industry.²⁰ Finally, since [coal industry jobs tend to pay relatively high wages](#),²¹ workforce transition solutions should aim to help workers maintain their current quality of life.

Recent National-Level Policy Recommendations

The federal government has taken steps to assist communities in transition, but has not yet implemented a comprehensive strategy. Recent recommendations from the House and the nonprofit Just Transition Fund have sought to create a framework for a national strategy.

Select Committee on the Climate Crisis

Members of the 116th Congress have considered workforce transition as a component of the overall suite of solutions necessary to address climate change. In the House Select Committee on the Climate Crisis's [majority staff report](#), released in June 2020, the Democratic staff included "Invest in America's Workers and Build a Fairer Economy" as one of its pillars. The report recommended establishing a **National Economic Transition Office** to coordinate federal activity, expanding clean energy apprenticeship and training programs, reestablishing the Civilian Conservation Corps (CCC), and creating a Climate Resilience Service Corps (CRSC). The CCC would employ young people in forest and ecosystem restoration and regenerative agriculture, and the CRSC would conduct service projects to improve disaster adaptation, mitigation, response, and recovery.²²

Although the report focuses largely on recommendations for the clean energy and infrastructure workforce, it does include a number of strategies aimed specifically at transitioning fossil fuel workers and communities. For displaced coal workers, the majority staff recommends financial support through wage replacement, health care, and job retraining and placement, along with community-oriented assistance such as coal site reclamation, investment in local leadership and entrepreneurs, temporary supplements for lost tax revenue to ensure essential services, and investments in economic diversification. The report also calls for increased funding for reclamation projects on former coal mines and oil and gas wells.²³

The National Economic Transition (NET) Platform

The [NET Platform](#), a project of the Just Transition Fund published in June 2020, identifies seven overarching policy recommendations to guide federal support for communities in transition:

- Investments in local leadership;
- Economic development through diverse entrepreneurs and businesses;
- A broad system of workforce development pathways;
- Reclamation and restoration of former coal sites;
- Investments in physical, social, and digital infrastructure;
- Protections for workers, communities, and the environment during bankruptcies;
- Coordination to ensure communities have direct access to federal resources.²⁴

The breadth of strategies in the NET Platform is consistent with [research](#) on transition plans that identifies replacing and stabilizing revenue streams; planning, funding, and executing environmental remediation; attention to local context; and positive community outlook as key components of effective strategies.²⁵ The NET Platform also calls for an overarching federal transition program to support a holistic, community-driven approach to economic development and diversification.²⁶

Recent Federal Legislation Addressing Coal Transitions

Several recent bills aimed at addressing energy transitions in coal country have been proposed in Congress, including:

- The ***Marshall Plan for Coal Country Act*** ([S.4306](#)), introduced by Senator Tammy Duckworth (D-Ill.) in July 2020, would expand Medicare to former coal workers; provide free higher education to former coal workers and their families; require bankrupt coal companies to pay for pensions, healthcare, and environmental restoration; fund environmental restoration in coal communities; establish an Office of Economic Development at the Department of Energy to help coal communities access federal resources; increase the federal minimum wage to \$15 an hour; and support coal communities' economic development.²⁷
- The ***Environmental Justice for All Act*** ([H.R.5986](#)), introduced by Representative Raul Grijalva (D-Ariz.) in February 2020, includes provisions for fossil fuel-dependent communities in transition. The bill would create a Federal Energy Transition Economic Development Assistance Fund to be used for land restoration, technical assistance for economic development, financial support for displaced workers, natural carbon sequestration projects, and broadband infrastructure expansion.²⁸ H.R.5986 lifts some provisions from H.R.5435 (see below), but is less expansive. It has a companion bill in the Senate ([S.4401](#)), which was introduced by Kamala Harris (D-Calif.) with 13 original cosponsors.
- The ***American Public Lands and Waters Climate Solution Act of 2019*** ([H.R.5435](#)), introduced by Representative Grijalva in December 2019, would also establish the Federal Energy Transition Economic Development Assistance Fund. Eligible projects include investments in economic development in historically fossil fuel-dependent communities, job retraining, wage support for displaced workers, and environmental remediation. The fund would be filled from a fee on oil and gas leases, and the bill would establish a Just Transition Advisory Committee to oversee the fund's management.²⁹

- The ***Revitalizing the Economy of Coal Communities by Leveraging Local Activities and Investing More (RECLAIM) Act*** ([H.R.2156](#)), introduced by Representative Matt Cartwright (D-Pa.) in April 2019, would disburse \$1 billion of the Abandoned Mine Reclamation Fund's unappropriated balance of \$2.3 billion to economically distressed communities with eligible reclamation projects between 2020 and 2024. The Act would prioritize funding projects that support economic revitalization, diversification, and development. The House Democrats' infrastructure bill, *Moving Forward Act* ([H.R.2](#)), included the RECLAIM Act's key provisions.³⁰
- The ***Clean Energy Worker Just Transition Act*** ([S.2398](#)), introduced by Senator Bernie Sanders (I-Vt.) in 2015, would provide former coal workers unemployment insurance, healthcare, and pensions based on their previous salary. It would also increase funds to Appalachian Regional Commission and Economic Development Assistance Programs, and provide funding for abandoned mine land reclamation and infrastructure investments.³¹

Federal Transition Programs

Although the Trump Administration has sought to slow the transition, employment in the coal industry continues to [decline](#).³² The following are federal programs that could provide assistance to communities and workers in transition:

- **Solar Training and Education for Professionals (STEP) program.** Established in 2016, STEP connected solar instructors to employers, and veterans and engineering students to training programs. This program is no longer distributing funding, but many regional training centers that participated are still serving their communities.³³
- **Partnerships for Opportunity and Workforce and Economic Revitalization Dislocated Worker Grant (POWER DWG) and National Emergency Grant (POWER NEG) programs.** These grant programs were created in 2016 and administered by the Department of Labor. Grants supported state governments in Ohio, Kentucky, and West Virginia in providing job creation, economic diversification, and worker training resources for individuals and communities affected by the energy transition.³⁴ In 2017 alone, the POWER initiative served 49,034 individuals, 3,760 businesses, and 384 communities.³⁵ The program is no longer distributing grants, but the state and local organizations that received support are still providing training and reemployment assistance. For example, the Eastern Kentucky Concentrated Employment Program used its POWER grant to run the [Hiring Our Miners Everyday](#) program to connect former miners and their spouses to employers and job training funding.³⁶
- **Economic Development Administration (EDA).** EDA is a federal agency within the Department of Commerce that invests in innovation and regional collaboration to promote job growth and economic development within the United States. It works directly with communities to support strategies that fit within local economic conditions and needs. EDA invests in communities experiencing economic distress, and its grants have funded planning, technical assistance, and infrastructure construction.³⁷ It also works to integrate economic development resources from federal, state, local, and philanthropic sources to help communities best leverage available assistance.³⁸
- **Assistance to Coal Communities program.** This Department of Commerce program under EDA, authorized in 2015, supports economic diversification, job creation, investment, workforce development, and re-employment opportunities in coal-dependent communities. In 2017, the program served [37 communities](#).³⁹ One project funded by a 2018 grant was the construction of a [Metrology and Materials Testing Center at](#)

the [Navajo Technical University of Crownpoint, New Mexico](#). The \$1 million federal grant is expected to generate \$15 million in private investment and to diversify the Navajo Nations' economy by training displaced workers for new jobs in the energy sector.⁴⁰

- **Public Works.** This Department of Commerce program under the EDA, authorized in 1965, may provide opportunities for communities affected by the decline of coal. [Public Works](#) is designed to help communities attract new industry and diversify local economies by developing public infrastructure such as water and sewer systems, skills-training facilities, and brownfields redevelopment.⁴¹ [About 80-150 Public Works projects](#) are funded every year, with investments ranging from \$200,000 to \$3,000,000.⁴²
- **Economic Adjustment Assistance (EAA).** This Department of Commerce program under the EDA, also authorized in 1965, is designed to help distressed communities meet their needs in light of economic changes, and one of the program's current investment priorities is workforce development and manufacturing. About [70-140 EAA projects](#) are funded every year, with investments ranging from \$100,000 to \$1,250,000.⁴³
- **The Workforce Innovation and Opportunity Act (WIOA) Dislocated Worker (DW) State Formula Program.** This Department of Labor program was authorized in 2014 with the objective of helping dislocated workers find re-employment through job search assistance, career services, and training. Appropriations were authorized for programs from FY2015 through FY2020. WIOA-DW grants are awarded to states, which then disburse them to local areas. WIOA-DW grants are funded at about \$1 billion a year.⁴⁴

Region-specific federal programs also exist to fund projects that create jobs in formerly coal-dependent regions while helping build more diverse economies:

- The [Abandoned Mine Land \(AML\)](#) grant program, overseen by the Office of Surface Mining Reclamation and Enforcement (OSMRE), funds reclamation projects on formerly-mined land.⁴⁵ In 2019, \$115 million in grants from the [AML Reclamation Economic Development Pilot Program](#) were distributed to Kentucky, Pennsylvania, West Virginia, Alabama, Ohio, Virginia, the Hopi Tribe, the Crow Tribe, and the Navajo Nation. Projects that involved both AML and water reclamation or community development were eligible for funding.⁴⁶ [Past projects](#) have ranged from removing toxins and hazards left behind by mining projects to constructing new opportunities for economic development.⁴⁷

Recent examples of the Abandoned Mine Land (AML) grant program include:

- [Boone's Ridge](#) (formerly the Appalachian Wildlife Center), a visitor center, wildlife preserve, and trail system in Kentucky that is projected to bring \$124 million into the regional economy, directly employ 94 people, and indirectly create over 2,000 jobs.^{48,49}
- [East Kentucky Advanced Manufacturing Institute](#), which will train 100 students annually, including former coal industry employees.^{50,51}
- The Golden Delicious Apple Project, which will reintroduce the species of tree to three counties in West Virginia, begin orchards on formerly mined lands, and construct a processing and storage facility, a research station, and commercial greenhouses. Overall, the project is expected to create about 550 full-time permanent jobs.⁵²

Opportunities for Transition

In the absence of a wide-reaching and sustained federal strategy, state, local, and private-sector entities have stepped in to create programs to ease the transitions of displaced workers into new careers and coal regions into more diverse economies without coal as a central driver. These programs typically operate on a local scale, training or hiring small numbers of people at a time. The local focus aims to create more diverse, stable economies so that workers and their families can remain in their communities. The following are major areas of workforce development and opportunities for economic diversification in coal-dependent areas, along with examples of organizations implementing workforce development programs in affected communities.

Renewable energy and energy efficiency

Job losses from the energy transition have been centered in traditional coal regions like West Virginia and Kentucky. On a national level, clean energy jobs will surpass coal [jobs lost](#), but the uneven geography of wind and solar resources means that retraining fossil fuel workers to work in renewable energy will not be sufficient on its own to solve the workforce displacement problem.⁵³ However, clean energy still offers opportunities for some coal workers, since a nationwide energy transition will require clean energy in coal regions as well. Some former coal workers could benefit from apprenticeships or retraining programs and move into jobs installing and maintaining clean energy in their communities. Furthermore, renewable energy investments in coal-dependent regions generate a [significant emissions reduction return](#) because they are offsetting coal-generated power rather than clean sources like hydropower.⁵⁴

The energy efficiency sector is another potential source of employment. Energy efficiency saw [more jobs and faster job growth than any other energy sector in 2019](#),⁵⁵ and has significant potential to [reduce greenhouse gas emissions while providing co-benefits to energy users](#).⁵⁶ Many coal communities, because of the historic availability of cheap electricity, benefitted from low energy prices and were built with little concern for energy efficiency. However, the closure of coal plants and regional population decline is causing energy prices in Appalachia to [skyrocket](#),⁵⁷ and in 2018, [Wyoming had the highest energy expenditures per capita in the United States](#).⁵⁸ In 2019, the American Council for an Energy-Efficient Economy ranked Wyoming [51st, West Virginia 48th, and Kentucky 38th in energy efficiency](#) among U.S. states and the District of Columbia.⁵⁹

Organizations exist across the region to promote the expansion of renewable energy and energy efficiency. Many of these organizations work to both facilitate the use of renewables and train local workers for their installation and maintenance. For example, the [Mountain Association](#) primarily works to support small businesses, local governments, communities, and individuals in accessing energy efficiency, solar energy, and financing.⁶⁰ Its [Appalachian Transition program](#) seeks to ease the transition to a "post-coal economy" in Appalachia by educating individuals and supporting community-led transition efforts.⁶¹ It also runs the paid, six-month [New Energy Internships program](#) in eastern Kentucky, which focuses on commercial and residential energy efficiency and is aimed toward displaced coal industry workers.⁶²

The Nature Conservancy has also shown an interest in the transition toward solar energy in formerly coal-dependent areas. The [Solar on Mine Lands initiative](#), which began in February 2020, sees reclaimed mine lands as a potential location for solar installations. The group identified up to 400,000 acres of formerly mined land that holds potential because of its flatness, lack of forest cover, and existing connectivity to roads and transmission lines. The Nature Conservancy has released a [roadmap](#) detailing potential stakeholders and actions to make the idea a reality.⁶³

Environmental Restoration

Another area of opportunity is in restoring land and water affected by fossil fuels. Coal mining, processing, and burning have [detrimental effects](#) on water and air. Acidic water containing heavy metals often leaks out of coal mines, polluting nearby water sources. Coal slurry, a byproduct of washing coal to remove impurities, has also been found leaking into water resources.⁶⁴ [Coal ash](#) is another common byproduct of coal combustion that can contaminate drinking water, groundwater, and air.⁶⁵

Environmental remediation of coal mining sites and power plants is an opportunity to employ displaced coal industry workers while improving public health and local economies. The presence of contamination can [prevent commercial investment](#) in an area, so cleanup may improve communities' access to capital. Restoration activity in communities increases local government tax revenues, helping balance the loss of tax revenue from coal operations closing.⁶⁶

The [Surface Mine Control and Reclamation Act](#) (SMCRA), passed in 1977, requires companies and states to take certain reclamation actions on closed surface mines.⁶⁷ However, regulations developed by the Office of Surface Mining Reclamation and Enforcement (OSMRE) have historically been lax and not based on the best scientific recommendations, so many reclamation efforts have been ["failed or half-hearted."](#)⁶⁸ To improve Appalachian land reclamation practices, OSMRE began the [Appalachian Regional Reforestation Initiative](#) (ARRI) in 2004. ARRI is a coalition of groups ranging from restoration nonprofits to coal companies to governments that focuses on restoring forests on coal-mined lands using a Forestry Reclamation Approach, which is based on leading forestry science and incorporates soil creation, ground cover planting, and the use of commercially valuable tree species.⁶⁹

Retraining and employing former coal workers to restore ecosystems could be a way to provide local work while also mitigating the harmful effects of the coal industry. According to a [case study](#) of coal ash cleanup plans at the Colstrip power plant in Montana, thorough cleanup can create jobs and lasting protection for human health and safety, and stimulate the local economy. Studies suggest environmental remediation at the Colstrip plant would create 66.4 direct jobs per year over the next 40 years and would generate hundreds more jobs in supporting positions such as mechanics, electricians, and restaurant employees.⁷⁰ Coal plant cleanup has been shown to create jobs regardless of region; for example, Duke Energy's coal ash cleanup efforts in North Carolina created over [3,700 jobs](#) between 2013 and 2019.⁷¹

Forest restoration is another employment opportunity. A [2014 report from the Appalachian Regional Commission](#) (ARC) identified forest restoration initiatives as a way to address the problems of unemployment and degraded land at the same time. Beyond landscapes affected by coal mines, ARC identified a history of mismanagement of Appalachia's vast forest resources. Private landowners and forest managers could partner with the Department of Agriculture to develop and implement sustainable forestry practices, create "green forest jobs," and ensure long-term profitability of forest resources and recreation.⁷²

[Green Forests Work](#) has planted more than 3 million trees across more than 4,500 acres since 2009 in partnership with the federal Appalachian Regional Reforestation Initiative. These forests are designed to act as a "renewable and sustainable multi-use resource" to support economic opportunity and the environment. Green Forests Work supports jobs for local workers in equipment operation, tree planting, and nurseries.⁷³

[Appalachian Headwaters](#) is another group that sees land restoration as a vehicle for workforce development, economic diversification, and environmental reclamation. It works towards its mission to "develop sustainable economic opportunities while restoring damaged ecosystems in central Appalachia" using three approaches. First, it conducts mined land restoration through restoring native hardwood forests and bodies of water to promote the recreation, tourism, agroforestry, and sustainable forest product industries.⁷⁴ Second, the [Appalachian Native Plant](#)

[Horticultural Initiative](#) is developing a native plant nursery and education center.⁷⁵ Finally, the [Appalachian Beekeeping Collective](#) trains residents of Appalachia on beekeeping and entrepreneurship and provides materials and support to lower operation costs and barriers to entry.⁷⁶

Fiber Optic/Broadband

Training displaced fossil fuel workers in the skills to work in broadband deployment and fiber optic cable installation is another potential route to benefit individual workers and rural communities. High-speed internet access is an important component of doing business in a digital economy, and a literature review by the [International Telecommunication Union](#) found that broadband access contributes to economic growth through a variety of direct and indirect pathways.⁷⁷ However, access to broadband is not evenly distributed across the country. According to the [Pew Research Center in 2019](#), only 63 percent of rural Americans have home broadband service, compared to 75 percent of urban Americans and 79 percent of suburban Americans.⁷⁸ This is a particular problem in Appalachian coal communities, which tend to be rural.

Some former coal workers have already moved into careers in broadband and fiber optic. [Kentucky](#) used a federal grant to retrain displaced workers in laying fiber optic cable,⁷⁹ and Lightworks, a small business in [Delta County, Colorado](#), has retrained over 80 former coal workers. Improved internet in the rural Colorado region has provided opportunities for residents to find remote employment and stay in their small towns after two of the county's three coal mines closed.⁸⁰

The [Center for Rural Development](#) funds a variety of rural economic development and worker training programs in Southern and Eastern Kentucky, and has partnered with the Commonwealth of Kentucky on the [KentuckyWired](#) program.⁸¹ [KentuckyWired](#) is a project to lay a 3,350-mile high-speed fiber optic cable network.⁸² As of March 2019, [80 percent](#) of construction work-hours were done by Kentucky residents.⁸³ The Kentucky Community and Technical College System has supported the initiative by offering training for linemen and fiber-optics installation and maintenance, as well as tuition assistance for workers impacted by the decline of coal.⁸⁴

Entrepreneurship

Expanding entrepreneurship in formerly coal-dependent communities is another potential avenue for economic diversification and growth, and another sector for former fossil fuel workers to transition into. The Appalachian Regional Commission's 2016-2020 Strategic Plan called for investments to support business growth in targeted sectors such as manufacturing, energy, tourism, food systems, and health care, and identified useful steps to promote entrepreneurship in the region. [According to ARC](#), Appalachian entrepreneurs face the challenges all rural entrepreneurs face, including low population density, distance to markets, difficulty finding a skilled workforce, and difficulty accessing finance and specialized services. For these reasons, promoting entrepreneurship in rural areas generally requires higher costs than in urban areas. Forty-two percent of Appalachia is considered rural compared to 20 percent of the United States as a whole, but Appalachian entrepreneurship benefits from the region's scenic, recreational, and cultural resources and the low costs of living and doing business.⁸⁵

To promote a diverse entrepreneurial ecosystem, the Appalachian Regional Commission [recommends](#) broadening the focus from the quantity of businesses started to the ability of those businesses to be maintained and scaled up. This requires investing in entrepreneurship education programs that serve youth through adults, creating networks, targeted investing in areas or services that are lagging behind regional and national trends, strengthening community leadership, and attracting and retaining younger residents. [Entrepreneurship in Appalachia as a whole has been on the rise](#) in recent years, and strategic support could help communities build a more diverse economy with a variety of job options for displaced workers.⁸⁶

There are a number of initiatives aimed at supporting entrepreneurs in formerly coal-dependent regions. The Appalachian Regional Commission **identified** some major categories of entrepreneurship initiatives, including **online portals** for support programs and **regional outreach networks**. State and regional online portals provide directories of resources and technical assistance for small businesses.⁸⁷ These include [Business Link North Carolina](#)⁸⁸ and [Kentucky One Stop Business Portal](#).⁸⁹ Outreach networks, such as the Pennsylvania Partnerships for Regional Economic Prosperity and North Carolina's Business Resource Alliance, provide connections and support systems throughout the region. These networks allow new and growing entrepreneurs to leverage their resources and expertise to support the region's overall economic health.⁹⁰

Other Regional and Local Transition Programs

Shaping Our Appalachian Region (SOAR) is a task force formed in 2013 that seeks to "leverage resources and build capacity to create a 21st century Appalachia."⁹¹ Its [Regional Blueprint for a 21st Century Appalachia](#) focuses on seven areas identified by residents of Appalachian Kentucky: broadband, workforce, entrepreneurship, health, industrial development, agriculture, and tourism. Specifically, SOAR is targeting telecommunications (especially fiber optics), healthcare, energy, and manufacturing as industries for the Appalachian workforce to move into.⁹² The task force has been successful at bringing businesses into Kentucky communities. The Teleworks USA program, for instance, identifies and develops opportunities for remote work and provides workshops and job placement opportunities. Between 2015 and 2018, the program created over **1,900 new jobs** that allowed workers to remain in their communities.⁹³

Coalfield Development, based in West Virginia, began in 2009 to address dual concerns over housing and job training. The program began by hiring and training unemployed and underemployed people to build green, affordable housing, and since then has trained 850 people and created 190 new local jobs in real estate development, mine land reclamation, woodworking, agriculture, and artisan trades. Coalfield Development's program is a 2.5-year process that includes on-the-job training, community college classes resulting in an Associate's Degree in Applied Sciences, and personal development coaching.⁹⁴

Conclusion

To slow climate change and move toward a healthier and more sustainable future, all aspects of society and the economy must shift away from fossil fuels. However, it is important to provide support for the people and communities that will be dramatically affected by a transition to a clean energy economy. Ensuring a just transition is not as simple as assuming that all former fossil fuel workers will be able to move into the clean energy workforce. Instead, dedicated efforts are necessary to support these communities as they move away from single-industry economies toward more diversified, sustainable economies. Opportunities for a transitioning workforce include clean energy, environmental restoration, natural resources, broadband deployment, and entrepreneurship. The federal government must recognize the very real and pressing needs of economically distressed communities bearing much of the burden of the energy transition, and take steps to support historically coal-dependent regions so that they will not be left behind.

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