



REVITALIZING COAL COMMUNITIES

A REVIEW OF STRATEGIES
TO ASSIST COAL COMMUNITIES
IN A CHANGING ECONOMY

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EXECUTIVE SUMMARY

THE COAL INDUSTRY HAS BEEN IN A PERIOD OF DECLINE. ENVIRONMENTAL CONCERNS, CHANGES IN TECHNOLOGY, AND INCREASED COMPETITION FROM OTHER SOURCES OF ENERGY HAVE REDUCED THE DEMAND FOR COAL AND COAL MINING JOBS.

While some see this as progress; others see this as a threat. In coal communities across the United States, miners are losing their jobs, governments are losing coal-tax revenues, and coal companies are filing for bankruptcy.

In light of the changes in the energy sector, organizations—public and private—are working to prevent coal miners from slipping through the cracks. This paper examines some of the initiatives underway to assist displaced coal miners and distressed coal communities.

The decline of the coal sector has not occurred uniformly across U.S. coal producing regions. While some regions have been suffering from changes in the production of coal for quite some time, others are just beginning to feel changes. This phenomenon, coupled with differing economic, political, and natural characteristics between coal production centers in the country, has resulted in different strategies and approaches to addressing the decline of the coal industry.

The current economic climate has left the job security and ability of miners to find employment vulnerable, and adversely impacted the financial health of the United Mine Workers of American Health and Retirement Funds. To ensure miners have access to this investment in their future and health, the unions and politicians have promoted legislative strategies to maintain critical and promised benefits to miners. A number of state and federal programs have been developed with the goal of getting miners back to work, and in jobs that can provide a middle-class lifestyle. Some programs focus on linking miners with employers

who can use their current skill sets. Other programs open up more job opportunities to miners through workforce development programs, a number of which provide on-the-job training.

The focus has not just been on getting miners back on their feet, but improving the economic health of their communities. Some coal communities are looking to diversify their economies and attract and develop more businesses. To do this, there has been investment in infrastructure. For example, Kentucky has invested in expanding broadband internet access throughout the state. Reclaiming land left unproductive due to abandoned mines is seen as another economic opportunity. The RECLAIM Act (H.R. 4456), a proposed bill in Congress seeks to fund reclamation projects on former coal mines, so the land can be converted into more productive uses. There has also been work to promote the development of particular industries. For example, tourism is an industry many communities are interested in developing as part of their economic mix.

The Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) and POWER + Plus, are executive branch efforts to assist coal miners and mining communities. The POWER+ Plan and RECLAIM Act were included in the President Obama's 2016 proposed budget. Projects that align with the POWER+ Plan's goals have already received grant money as well through the POWER grant initiative. For example, grant money has been awarded to the Friends of Southwest Virginia to support their work developing a tourism cluster in that part of the state (White House 2015).

While communities aspire to reinvent their economies, some places are reticent to give up on coal, and seek to preserve coal as a major sector in their economy. In Wyoming and Illinois, there have been investments in new technologies to make the use and production of coal cleaner.

Work being done to support coal miners and their communities is essential to prevent an economic free-fall in vulnerable coal communities. Measures to assist coal miners and their families may help them retain their work benefits and retrain them for other types of employment. However, retraining workers does not ensure they find jobs in their communities—they may have to leave their communities. In addition, many of these jobs do not pay as well as their former coal jobs. Plans to assist coal-miners specifically may just be stop-gap measures. However, broader plans and investments being made to enable a revitalized future for these communities have the potential to dramatically transform these regions over time.

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REVITALIZING COAL COMMUNITIES: A REVIEW OF STRATEGIES TO ASSIST COAL COMMUNITIES IN A CHANGING ECONOMY

Adija Manley and Christina Simeone, December 15, 2016 kleinmanenergy.upenn.edu

INTRODUCTION

A RECURRING THEME IN THE 2016 PRESIDENTIAL ELECTION SEASON WAS HOW TO ASSIST THOSE BEING ECONOMICALLY LEFT BEHIND IN THE UNITED STATES. One

group that candidates of both parties addressed is coal mining communities. As the coal industry contracts, coal communities are in distress. Demand for coal has decreased, because of increased use of natural gas for power production, increased regulation of coal mining, and greater regulation of coal-based pollution from power plants. Regulations in particular have attracted much ire because of perceived impacts on demand for coal and loss of jobs. People in these communities are feeling the pressure as energy systems transition away from coal.

Coal production has and continues to support families, towns, states, and regions. However, as the amount of coal produced has declined, so has the number of communities and people the coal industry can support. In 2010, there were 1,285 mines in the United States. By 2014, that number had fallen to 985, a 30% decline. In the same period, the amount of coal produced fell from 1,084,368 to 1,000,049 thousand short tons (U.S. Energy Information Administration b n.d.; U.S. Energy Information Administration 2016e). In 2001, the United States relied on coal for 51% of its generated electricity. By 2015, coal supported only about one-third of electricity generation (U.S. Energy Information Administration d n.d.; U.S. Energy Information Administration 2016c n.d.).

Coal behemoths such as Peabody Energy Corporation and Alpha Natural Resources have declared Chapter 11 Bankruptcy, restructured, and are closing and/or reducing mining operations. According to the Wall Street Journal, “About half of U.S. coal is now being produced by bankrupt companies...” (Miller and Jarzemsky 2016, par 10). The impact is that thousands of miners have lost their jobs in recent years. In many places, these are some of the best-paying jobs available—in 2013, the average annual income of a coal miner was over \$80,000 (National Mining Association 2014).¹ Furthermore, coal mining is the traditional work that people in these communities know how to perform.

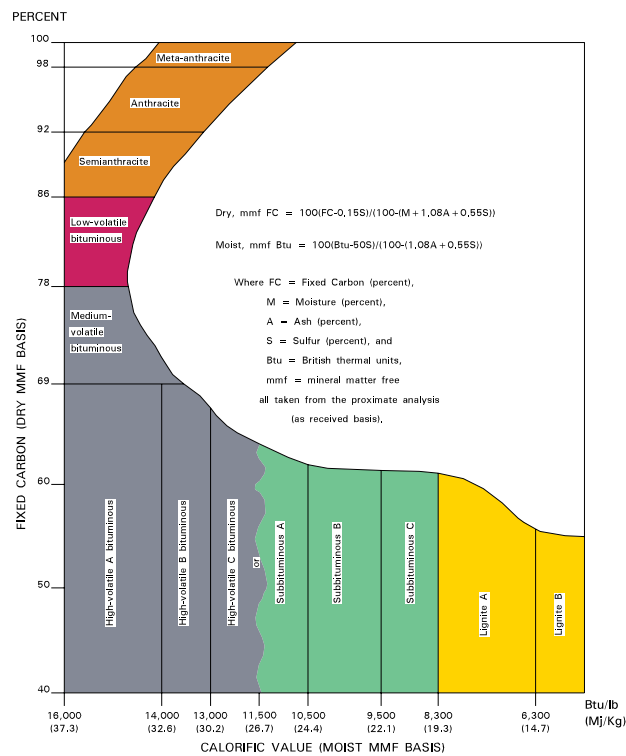
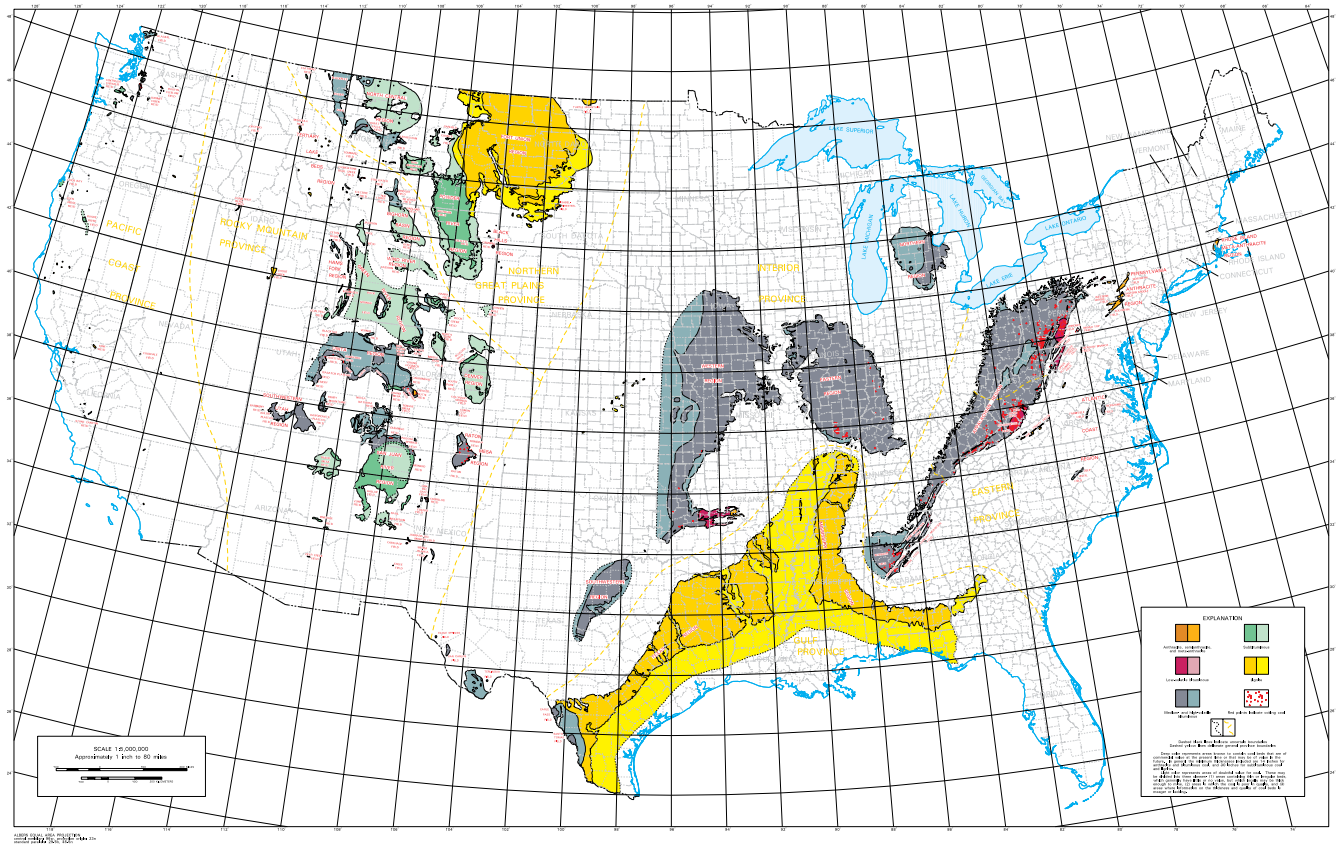
The contraction of the coal industry is not just impacting individuals who have lost their jobs, but whole communities and regions dependent on the industry. In 2014, coal mines employed just 0.005% of employed people in the United States.² The Energy Information Administration’s (EIA) Annual Coal Report 2014, identifies that there were on average nearly 75,000 people employed by coal mines in 2014—11,000 fewer jobs than in 2010.³ These employment numbers include coal mine workers not employed as miners, such as office staff (Table 18).

Cuts in employment can be attributed to a decline in coal production and demand, and changes in technology. Coal production has declined due to the competitive price of low-cost natural gas that is cleaner than coal, increased competitiveness of renewable sources of energy, stricter environmental regulation on coal extraction methods, and changes in demand for coal. The movement away from coal, in part due to changing market dynamics (increased use of natural

¹ The National Mining Association’s source is the U.S. Bureau of Labor Statistics’, Quarterly Census of Employment and Wages.

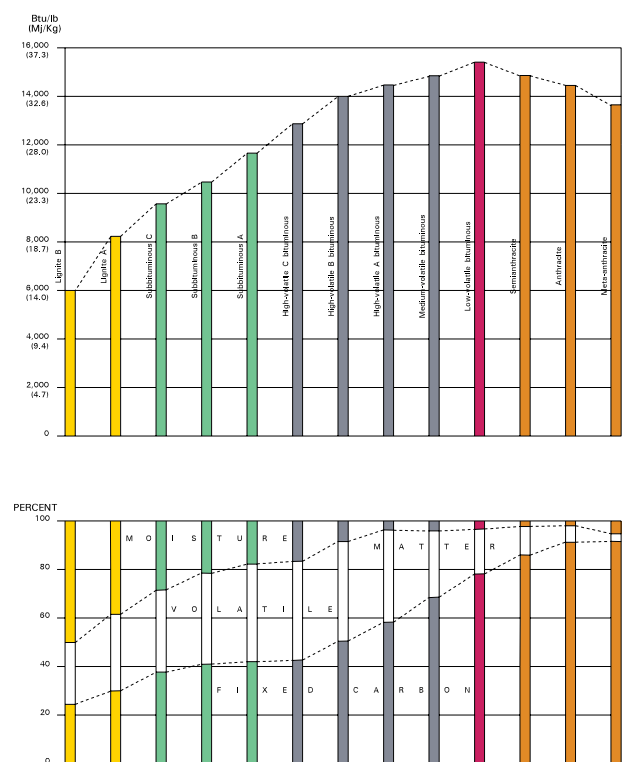
² Employment data from the US Census Bureau’s 2010 – 2014 American Community Survey and Energy Information Administration’s 2014 and 2010 Annual Coal Reports used to calculate the proportion of people working in the coal industry.

³ The difference between the reported Average Number of Employees in 2014 and 2010 used for this value. The data is from Table 18 of the Annual Coal Report 2014 and Table 18 of the Annual Coal Report 2010 by the U.S. Energy Information Association.



**BASIS OF RANK CLASSIFICATION OF COALS IN THE
UNITED STATES, AND THE FORMULA USED IN
MAKING APPROXIMATE RANK DETERMINATIONS**

Determinations based on the above cannot be considered final or even adequate for any but the most general application. For further information, see the Standard Specifications for Classification of Coals by Rank of the American Society for Testing Materials, A.S.T.M. designation D388-95.



**MAXIMUM CALORIFIC VALUES OF COALS OF DIFFERENT RANKS
COMPARED TO PROXIMATE ANALYSIS DATA**

Figure 1b - United States Coal Fields (USGS, 1996)

REGIONAL DIFFERENCES IN COAL PRODUCTION

Coal is mined and produced throughout the United States. The two regions that produce the most coal are the Appalachian Region in the Mid-Atlantic and the Powder River Basin, located in Montana and Wyoming. While overall, coal has struggled in recent years, the severity of the change in the coal industry has not been uniform across regions. The Appalachian Region felt an early pinch due to the high cost of extracting and transporting coal in the mountains, while in Illinois, there has been growth in coal production in recent years (Kentucky Energy and Environment Cabinet et al. 2015). The differences in the size and strength of the coal economy around the country can be seen in Figures 2 and 3, which look at coal production and the average annual number of coal mining employees in Appalachia, the Powder River Basin, and Illinois Basin between 2001 and 2014.

It is worthwhile to note that not all towns dependent on coal are facing the same downturn. Some communities have been able to turn to other industries and resources. For example, some parts of Pennsylvania and Ohio were able to turn to another extractive energy industry, natural gas, given their location in the Marcellus Shale region. Because the experiences of coal communities have not been uniform, some areas have seen more or less activity in efforts to support miners. Appalachia has a number of programs and

policies in place to assist coal communities and move their economies in a different direction. On the other hand, there are fewer services and programs to address the changing economy in the Powder River Basin, a region that has more recently felt a pinch in the coal industry. Organizations concerned with economic development in Wyoming are open to applying for grant funding to support coal communities through the POWER Grant Initiative despite the perception the initiative was created to assist coal communities in Appalachia (Bleizeffer 2016).

Coal Production by Region in 2014

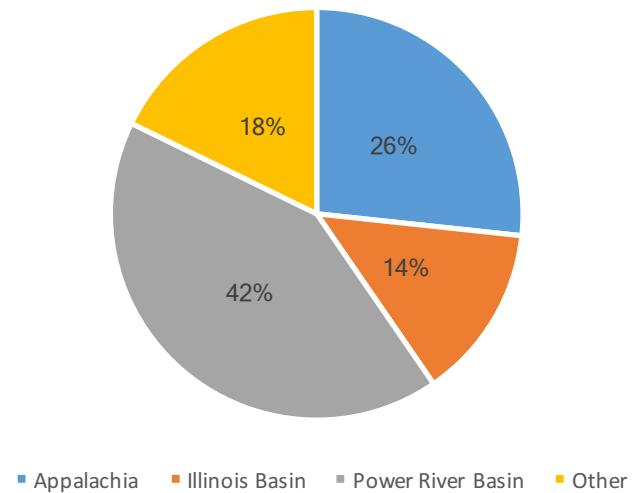


Figure 2 - U.S. Coal Production by Region (2014)

Average Number of Mining Employees Per Region

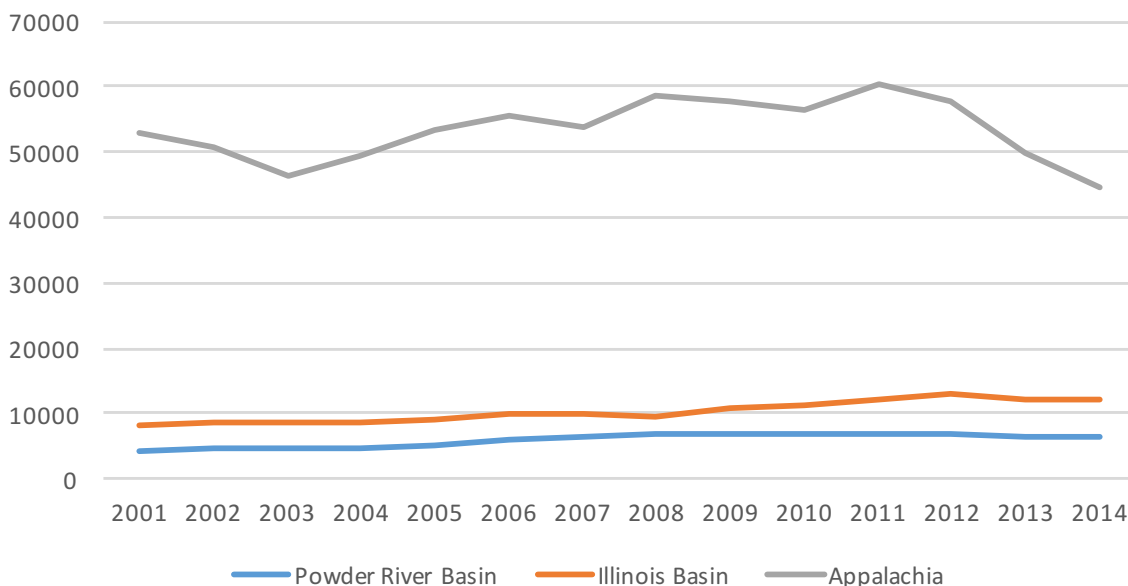


Figure 3 - Average Number of Mining Employees Per Region

In economic and social measures, the Appalachian region of the United States has struggled for decades compared to much of the country. Many of the programs and efforts to help the region thrive are not solely due to the downturn of the coal industry. Work to encourage the economic development of the region, at the national level, has been underway for the better part of a century.

One of the organizations concerned with the economic growth of Appalachia is Appalachian Regional Commission (ARC), a federal economic development agency established in 1965 dedicated to addressing their unique economic challenges. While not all of Appalachia is tied to the coal industry, this federal agency is included in this report due to its involvement in areas that are impacted by the coal industry. Currently, ARC invests in projects that meet at least one of their five goals:

1. Invest in entrepreneurial and business development strategies that strengthen Appalachia's economy.
2. Increase the education, knowledge, skills, and health of residents to work and succeed in Appalachia.
3. Invest in critical infrastructure—especially broadband; transportation, including the Appalachian Development Highway System; and water and wastewater systems.
4. Strengthen Appalachia's community and economic development potential by leveraging the region's natural and cultural heritage assets.
5. Build the capacity and skills of current and next-generation leaders and organizations to innovate, collaborate, and advance community and economic development.

(Appalachian Regional Commission a n.d.)

Coal is a key sector of Wyoming's economy. In fiscal year 2012, coal was responsible for over 10% of state revenue and gross state product. At peak production, in 2008, Wyoming produced over 40% of the nation's coal as reported in "The Impact of the Coal Economy on Wyoming." The report explains, coal has not always been such an influential sector in Wyoming's economy. In the 1970s the state produced less than 5% of coal nationally. As of 2014, they were producing just under 40% of the nation's coal (Godby, et al. 2015).⁴ Changes in the energy sector have caused economic stress in the state. On March 31, 2016, nearly 500 people working at two Wyoming coal mines lost their

jobs (Bleizeffer 2016). Due to the changes in the energy landscape, the state is taking steps to protect their economy moving forward.

UNION REPRESENTATION

Many coal miners are represented by the United Mine Workers of America (UMWA), a union established in 1890. UMWA also represents public employees, manufacturing workers, clean coal technicians, truck drivers, and healthcare workers. The union negotiates with coal mining companies on behalf of workers in the coal industry for workplace safety, retirement and healthcare benefits, wages, and the employment of miners. Recently, UMWA's work includes insulating coal miners from the uncertainty in the coal sector. The union re-negotiated and ratified Collective Bargaining agreements with Alpha Natural Resources, a major coal company that has filed for bankruptcy, and its spin-off in the bankruptcy, Contura Energy, to fund health benefits for retirees at several of their plants (UMWA 2016 c). Earlier this year, the union negotiated a collective bargaining agreement with Coal Acquisition Inc. to protect workers' employment and rehire more workers in Alabama (UMWA 2016 b).

The UMWA is responsible for the creation of the United Mine Workers of America Health and Retirement Funds, a collection of multi-employer funds for people working in the coal industry that began in 1946. In recent years, the solvency of the funds has been impacted by the Great Recession and the downturn in the coal industry, threatening retired and current coal workers' ability to collect from the funds.

A proposed bill called the Miners Protection Act was introduced into the U.S. Congress in 2015 by Senators Joe Manchin and Shelley Moore Capito of West Virginia. According to The Hill, "Several senators this year introduced [the] bill to transfer excess funds from the Abandoned Mine Land fund to help prop up the pension plan" (Henry 2016; Jagoda 2016). The bill also allows for those who have retired to become part of another multiemployer health plan should former employers be unable to contribute to the fund (Jagoda 2016). The UMWA has supported this bill and a similar bill in the House of Representatives, and organized a rally in Washington D.C. to push for the bill's passage (UMWA 2016 d; The Register-Herald.com 2016).

⁴They use data from the U.S. Geological Survey.

UMWA also advocates for workplace safety. The Federal Coal Mine Health and Safety Act of 1969 saw increased regulation and oversight of coal operations to keep workers safe and healthy (Main 2015). One health hazard associated with coal mining is Black Lung, a condition caused by inhaling coal dust. Black Lung can inhibit the ability to work, and can lead to more severe health challenges that can result in death (UMWA n.d.).

The Black Lung Benefits Program administered by the Division of Coal Miners Workers at the U.S. Department of Labor and established by the Black Lung Benefits Act of 1973 “provide[s] benefits... to coal miners who are totally disabled due to pneumoconiosis and to the surviving dependents of miners whose death was due to such disease...” (Black Lung Benefits Act). The Black Lung Disability Trust Fund is intended to provide benefits to miners with Black Lung in certain situations. For example, if the responsible coal mine operator is financially unable to pay the benefits and the miner is able to identify which mine caused their ailment (Society for Human Resource Management 2008).

FEDERAL INITIATIVE

The Obama administration has put forth initiatives to assist coal miners and their communities during this time of change. Within the President’s Fiscal Year 2016 Budget is the POWER+ Plan. POWER stands for Partnerships for Opportunity and Workforce and Economic Revitalization. Some of the initiatives have support in Congress, such as legislation to change funding of miners’ pension plans and health benefits in the Senate in the Miners Protection Act (discussed above). The POWER+ plan also focuses on providing assistance to communities adversely impacted by changes in the coal industry through a number of programs and policies. Some of their objectives are listed below:

- Provide workforce development assistance to states where people have been impacted by the change in the coal industry. This part of the plan has been implemented, through the POWER Grant Initiative which is discussed below.
- Fund economic development planning and implementation, with an emphasis on entrepreneurship, physical infrastructure improvements, and improved access to capital through ARC.
- Change how the United Mine Workers of America pension plans and health benefit plans are funded to protect those currently covered and address the threat of insolvency of some of these funds.
- Have grant money available for the planning of brownfield sites in coal communities through the Environmental Protection Agency’s Brownfields Program.
- Use money from the Abandoned Mine Reclamation Fund (\$1 billion) “for the reclamation of abandoned coal mine land sites and associated polluted waters in a manner than promotes sustainable redevelopment in economically distressed coal country communities.”
- Encourage electricity plants to capture and sequester carbon through changes to the tax code.

(The White House n.d.)

Figure 4 below is a map the U.S. Economic Development Administration (EDA) provides as reference for the POWER Grant Initiative. The map highlights counties with power plant closures as well as coal mines that have reduced their operations or have closed down due to changes in the coal industry.

Grants awarded from the POWER Grant Initiative are intended to provide funding for economic and workforce development projects in communities reeling from the contraction of the coal industry. Twenty-nine projects to assist coal miners and their communities have been awarded POWER grants as of August 2016, totaling nearly \$40 million in funding (The White House 2016). The grants provide funding for projects and programs that fit within a community’s existing strategic plan created by a public or private organization. While projects are to be implemented by the organization submitting the grant, federal agencies encourage collaboration with community stakeholders for the best results.

There are two types of POWER grants:

1. Planning Grants: Provide funds for organizations to examine the state of their community and gather information to create a strategic plan.
2. Implementation Grants: Fund specific projects to be implemented. (U.S. Economic Development Administration; US Department of Commerce; Appalachian Regional Commission n.d.).

the programs provide or support on-the-job training, involve firms in workforce development programs, and allow people to earn certificates. According to a literature review completed by the executive branch, more successful workforce development programs have these features (U.S. Department of Labor et. al 2014).

Kentucky

Teleworks, based in Eastern Kentucky, connects people with employment opportunities that allow them to work remotely. The objective of the organization is to help people in rural communities, where there is not a variety or abundance of employment, find telecommuting jobs. They also train people in Eastern Kentucky for these job opportunities (TeleworksUSA).

Kentucky is investing heavily in broadband and becoming more connected, the Kentucky POWER Dislocated Worker Grant emphasizes training for jobs in the installation of Broadband and Fiber Networks and training for IT roles.

Kentucky's Hiring Our Miners Every Day (H.O.M.E.) program, created by the Eastern Kentucky Concentrated Employment Program (EKCEP) in 2012, assists coal miners and their spouses in their search and preparation for employment. H.O.M.E. works with potential employees and employers, funds on-the-job training opportunities, and connects those in the program with jobs. Initially funded by a National Emergency Grant, H.O.M.E is responsible for executing the Kentucky POWER Dislocated Worker Grant (Valentine 2014). EKCEP is a Concentrated Employment Program located in Eastern Kentucky. Concentrated Employment Programs are "to meet the job training needs of people in areas of high unemployment and acute poverty" (EKCEP n.d.).

Eastern Kentucky is also participating in TechHire, a 2015 White House initiative with aspirations to fill more jobs in the information technology sector. TechHire aligns nicely with the state's efforts to increase access to and usage of the internet, particularly as an economic development tool. In June 2016, Western North Carolina and Southwestern Virginia have joined the greater TechHire community as South Central Appalachian TechHire (Vilsack and Zients 2016).

New Mexico

San Juan College in New Mexico received a POWER Grant to help miners and others in the energy sector transition into new fields. The institution plans to use the money to help people working in the energy industry find new jobs (reemployment services) and partner with firms in IT, healthcare, and renewable energy sectors (The White House 2015 a) (Fenton 2016 a,c).

In 2016, San Juan College hosted an Opportunity Expo organized by Four Corners Economic Development Inc. This was a career fair geared toward those impacted by the change in the energy industry. Participating in this career fair were firms interested in the skills of those employed in the coal industry (Fenton 2016 all).

Ohio

The Ohio POWER Dislocated Worker Grant emphasizes training for jobs associated with the oil and gas industry. Grant money can be used for training in jobs such as welding, crane operation, and trucking.

Virginia

Empire Community College in southwest Virginia offers courses on using and building unmanned aerial systems (drones). The drone courses not only give people marketable skills, but potentially attract firms to the area to take advantage of a skilled workforce (Morgan 2016) (Christopher 2015). This program sought to develop a skilled workforce and attract businesses dependent on these skills. Capitalizing on their status as one of a handful of places in the United States where drones are allowed to be flown for "research and development," this initiative is part of Wise County, Virginia's economic development strategy in the wake of coal industry decline (Morgan 2016).

West Virginia

In West Virginia, "homemakers," and in Kentucky, miners' partners, are eligible to take advantage of POWER National Dislocated Works Grants for training and work-based learning.

The West Virginia Coal National Emergency Grant, unlike the grants for Kentucky and Ohio, does not give preference to a particular sector, rather generally provides funding for training for jobs in fields "expected to be in high demand" (United States Department of Labor n.d.).

The Coalfield Development Corporation, a social enterprise based in Wayne County, gives people the opportunity to access on-the-job training in construction. The organization began in 2009 to address the need for “quality, affordable housing” in the county. One of their programs provides paid on-the-job training to program participants who learn to build affordable housing and furniture (Coalfield Development Corporation n.d.).

Wyoming

Wyoming's Department of Workforce Services advertises the state's jobs pipeline, an online application that allows employers to search for workers from the energy sector with the skills they need.

When 500 people in the coal industry lost their jobs in March 2016 in Wyoming, part of the governor's emergency response strategy was to dispatch people from the state's community colleges and other state agencies to the impacted areas to assist people with their next steps. At a press conference detailing the state's response to coal layoffs in March of 2016, Dr. Jim Rose, executive director of the Wyoming Community College Commission, pointed out that “one of the things the community colleges are known for, is the fact that we adapt very quickly to the needs of communities” (Governor Mead Press Conference – Coal Mine Layoffs).

ENCOURAGE ECONOMIC ACTIVITY

Many of the communities struggling with the changes in the coal sector functioned as one-industry towns. The strength of the economy was dependent on the coal industry. Recognizing the vulnerability of having an economy dependent on one industry, there is a push to diversify: attract new businesses and industries, and encourage and support entrepreneurship. People concerned with the development of these communities, especially in Appalachia, are interested in capitalizing on their assets to achieve success in the economic sphere. Communities are looking at what they have, and if they can leverage these assets for economic development, for example by building on natural resources, industries, economic plans, institutions, and other assets already in place.

To explore how coal communities intend to grow their economies, this discussion is divided into two sections: 1) efforts to foster an environment that supports business development, and 2) efforts to support the growth and development of particular industries.

SUPPORTING BUSINESS DEVELOPMENT

Coal communities have worked to become more attractive to businesses by increasing access to capital, ensuring there is adequate public and private infrastructure, and providing space for economic activity. Mentioned below are some organizations, initiatives, and policies that improve the environment of coal communities for businesses—old and new.

Businesses need capital. In much of Appalachia there is not easy access to capital, making it more difficult for entrepreneurs to start and grow their businesses (Appalachian Regional Commission n.d.). The Mountain Association for Community Economic Development (MACED) addresses this issue. MACED serves Eastern Kentucky and Central Appalachia. Through their enterprise development arm, they provide capital and financial and technical assistance to small businesses, entrepreneurs, and nonprofit enterprises (Enterprise Development 2016). ARC and The President's POWER+ Plan are also interested in expanding access to capital in Appalachia and coal communities. They provide funding to projects that open up more opportunities to obtain capital. In the western United States, Carbon County, Wyoming's Economic Development Corporation intends to “creat[e] a micro-loan fund for gap financing” (Carbon County Economic Development Corporation n.d.).

Many coal communities are looking to support agricultural and food related businesses. Nationally, many communities have paid more attention to locally sourced food and the development of distinct food cultures as means to stimulate their economies and provide economic opportunity. Some coal communities are following this lead.

In Mingo County, West Virginia there are efforts to produce food on land that has been reclaimed after coal extraction. To support and grow this industry and farmers within it, the Coalfield Development Corporation and Williamson Health and Wellness Center are working together to support the industry as part of their Regional Economic Diversification Project through mentorship and other “business incubation

services” for their Health Innovation and Food Hub (The White House 2015a; Pigman 2015; Volcovici 2015). They have funding for this through the POWER Grant. Another project concerned with business development, entrepreneurship, and food is FoodLINC, a national project begun in 2016 involving the federal government and private partners. Their aim is to connect urban markets and rural producers of food, while developing jobs that would make this partnership sustainable. Two regions impacted by the changing coal industry participating in this project are Central Appalachia and Louisville, Eastern Kentucky Region (USDA Office of Communications 2016).

People want to know they have access to critical infrastructure to allow their businesses to function optimally. Investment in infrastructure is also used to promote economic development and attract and grow businesses. Coal communities are investing in well-maintained and efficient roads, water and sewer systems, communications, and internet access. Both ARC and the POWER + Plan fund infrastructure projects to help make communities more attractive. To support an existing business, Union Town, West Virginia is connecting UTC Aerospace Systems’ manufacturing plant to the town’s water system (White House 2015a). Several communities have also increased investment in broadband. One shining example is Kentucky.

Kentucky has actively worked since 2010 to improve broadband access and quality for their citizens, particularly those in Eastern Kentucky and rural areas, where access is limited. Kentucky recognizes the benefits and importance of internet access, particularly for economic development initiatives. They established the Office of Broadband Outreach and Development—tasked with mapping where there is a need for broadband internet and promotes the use of broadband internet (Commonwealth of Kentucky). To improve access to internet, the state has invested in infrastructure development to provide comprehensive broadband coverage in the state through KentuckyWired. KentuckyWired is a public organization responsible for building a fiber optic cable network throughout the state. Its strategy is to provide the “backbone” of the network (which will be open-access), so it becomes more economically attractive for other public and private organizations to build out the last mile of the network to reach more (rural) customers (KentuckyWired). This effort began in 2013. Kentucky Communications Network Authority will be responsible for the open access network (Crawford 2015).

Kentucky received POWER Grant funding for their “Unleashing the POWER of the I-Way!” project. It builds on the work Kentucky is doing to provide internet service to more Kentuckians. According to the White House, the state will assist businesses engaged in e-commerce and that utilize the internet and “invest in local internet access centers and will provide e-commerce training and community fiber readiness consulting and support” (White House 2015a).

Coal communities see reclamation as a means of economic development, as well. Reclamation is the process of cleaning up abandoned coal mines and waterways polluted by mines to a more natural, less hazardous state. The Abandoned Mine Land Reclamation Program carries out this task and is permitted to do so by the Surface Mining Control and Reclamation Act, which was passed by Congress in 1977 (OSMRE n.d.). Many states carry out these activities with their own offices dedicated to the reclamation of coal mines. Money for reclamation projects comes from fees on the production and distribution of coal (OSMRE n.d.).

Abandoned coal mines can be hazardous, and discourage economic activity. Reclamation gives the land an opportunity to be used for more productive uses. People in Mingo County, West Virginia seek to use reclaimed land to grow food—as previously noted (White House 2015a). This attitude is present in the proposed RECLAIM Act of 2016 (Revitalizing the Economy of Coal Communities by Leveraging Local Activities and Investing More Act of 2016). The bill was proposed by U.S. Representative Hal Rogers of Kentucky, and the initiative is named in President’s Budget Proposal for 2016, as part of the POWER+ Plan. In the bill, money that has already been collected for reclamation would be disbursed early to promote economic development via reclamation in hurting coal communities. The bill would put money toward projects taking place on land that is already reclaimed or is slotted to be reclaimed. To receive funding, the project should fit within an economic development plan for the community (Smoot 2016; H.R. 4456; The RECLAIM Act).

Throughout the United States localities utilize incentives, often tax-based, to attract businesses to their communities. Many coal communities are eligible for New Markets Tax Credits, which encourage people to invest in places with high levels of poverty through providing tax credits (New Markets Tax Credit Fact Sheet). Secretary Hillary Clinton proposed, in her presidential platform, to make all communities impacted by the downturn of the coal industry eligible for New Markets Tax Credits (Fact sheets: Hillary Clinton's Plan for Revitalizing Coal Communities n.d.). At the top of their business incentives page, the Wyoming Business Council highlights the lack of a corporate sales tax and personal state income sales tax in the state. Wyoming also has two sales tax exemptions which benefit the manufacturing industry. The Manufacturing Sales Tax Exemption and the Sales Tax Exemption on Electricity Used in Manufacturing allow businesses to purchase and lease machinery, electricity, and fuel without paying sales tax. The agricultural industry is also able to benefit from the Sales Tax Exemption on Electricity Used in Manufacturing exemption (Incentives n.d.)

The federal government and states have identified communities they would like to see attract additional investment. One program at the federal level is the Promise Zone Initiative which aims to “revitalize” communities with high poverty levels by addressing issues of education, economic opportunity, and crime. Communities are designated Promise Zones, and receive federal support for their work. The first Promise Zones were designated in 2014, Kentucky Highlands is one area which received the designation. The designations are in effect for ten years (U.S. Department of Housing and Urban Development n.d., b; U.S. Department of Housing and Urban Development n.d., c). A bill has been proposed in the House of Representatives, Promise Zone Job Creation Act of 2016, to strengthen the Promise Zone designation by offering tax credits to businesses to incentivize employment of Promise Zone residents and allow for more communities to become promise zones—there are currently 22. (U.S. Department of Housing and Urban Development n.d., a). Virginia has established Enterprise Zones throughout the state and offers a Job Creation Grant and Real Property Investment Grant to attract jobs and investment in commercial and industrial real estate in these designated zones (Virginia Enterprise Zone (VEZ)).

DEVELOPMENT OF SPECIFIC INDUSTRIES

Communities are interested in developing specific industries in their towns and regions based on how they view their community, and what they hope to see it become. In some cases communities are emphasizing or continuing what already exists. A number of communities are developing economic clusters, groups of related firms located in the same region. The idea is that industries can sustain each other and promote innovation. Capitalizing on the existing forestry industry in Ohio, a Wood Products Industry Cluster is being promoted in Appalachian Ohio. The project received grant funding from the Small Business Administration via the POWER + plan to develop this cluster (White House 2015). Part of the idea is the industries involved in the cluster could employ former miners whose skills are transferrable to the industries part of this cluster specifically, in the manufacture of wood products (Ison 2015). Friends of Southwest Virginia is another a Power Grant recipient. They are working with stakeholders in their community to continue to strengthen and grow the tourism and recreation cluster in the region (White House 2015a) (Virginia Office of the Governor & Department of Housing and Community Development 2015).

Many of the communities struggling under a changing energy landscape can look to their natural and cultural assets to promote tourism as another economic driver for their community. To diversify their economies, regions and towns are investing in marketing what their community has to offer and making their community one outsiders would want to visit. ARC has identified tourism as a potential economic tool for Appalachian communities. ARC supports projects promoting tourism development.

Southwest Virginia has worked to bring more attention to their corner of the state. They recently unveiled a new slogan as part of their marketing efforts, “Southwest Virginia: A Different Side of Virginia” (Burchette 2016). In Morgan County, Ohio a community with a history of coal extraction, but no longer involved in coal production is capitalizing on their rural and tranquil character (Ezzell, et al. 2012). They worked with ARC to produce marketing materials for their county, and created an engaging tourism webpage which highlights their rural quality, and provides information on what the county has to offer. They call themselves the “Front Porch to the Great Outdoors.” Communities outside of the Appalachian Region, such as Rio Blanco

County in Colorado, are also interested in marketing themselves as tourism destinations. The county's Economic Development Director explains, the county offers outdoor recreational opportunities such as ATV trails and the White River that could bring people into the county if marketed (Morgan 2016).

In a piece for *The Atlantic*, Whitesburg, Kentucky is described as a small town that has seen an increase in activity. More young people are around and shops have been opening up. The author, Alana Semuels, attributes this to the draw of Whitesburg's Appalshop, a cultural institution begun in 1969 during the Great Depression and the cultural scene that grew around it (Semuels 2015). Together with Lafayette College's Economic Empowerment and Global Learning Project, Appalshop is working to trigger economic activity using the arts and cultural communities, when brought together with the business community. They call it creating a "Culture Hub" (Appalshop n.d.) (Lafayette n.d.). This follows a national interest in the role of the arts in economic development.

Wyoming and other states recognize the energy sector as one of their primary and more important economic sectors. As we saw earlier, in Ohio, while the coal industry contracts, coal workers are encouraged to train and find work in the stronger oil and gas industries through the POWER Dislocated Worker Grant. Wyoming intends to maintain the energy sector as a leading economic sector in the state. Wyoming's Action Plan for Energy, Environment, and Economy from 2013 by Wyoming's Governor Matthew H. Mead, shows the state has been and continues to be open to renewable energy sources, such as wind energy production.

The governor acknowledges state opportunities in wind energy production, "Research shows that Wyoming has some of the nation's greatest high-class wind resources" (Mead 2013, 20). Carbon County, Wyoming seeks to attract wind energy production to their community (Carbon County Economic Development Corporation n.d.). Chokecherry and Sierra Madre Wind Energy Project, planned by Anschutz Corporation in Wyoming, is expected to be the largest wind farm in the country (Davenport, 2016). The *New York Times* article reports "Mr. [Bill] Miller [the senior vice president of energy and land resources for Anschutz and listed as the President and CEO of the Power Company of Wyoming LLC] estimates that the construction of the wind farm will create about 900 seasonal jobs over the decade it will take to build it, and about 150 full-time

jobs to operate and maintain it" (Davenport 2016 par 28). Although there is opportunity for the state through wind energy production, wind energy is not expected to support communities the coal industry has historically supported.

DIRECT SUPPORT FOR COAL INDUSTRY

In response to a world that may demand less coal, some states are working to reverse this trend by lending support to the coal industry. Wyoming is both diversifying its economy and working to buck the trend. They established the School of Energy Resources at the University of Wyoming to complete research to make coal more competitive with natural gas and other energy sources that are more environmentally friendly and becoming cheaper, and to find new applications for the resource (Patterson 2016). Wyoming is not the only state to invest in the future of coal. The Illinois Clean Coal Institute (ICCI) Research and Development (R&D) Program's role is to "promote the development and application of new and/or improved technologies that contribute to the economic and environmentally sound use of Illinois coal." (Illinois Clean Coal Institute: Mission Statement). Investment in finding new markets and uses for coal, as well as making it a cleaner and more competitive energy source is an investment in saving coal extraction jobs.

Political actions have been taken as well to assist the coal industry. The EPA's Clean Power Plan, which aims to reduce carbon emissions from U.S. electric power sectors, is being contested in court by states (many of which have a coal mining tradition) as well as the coal industry and other organizations in favor of coal (E&E's Power Plan Hub n.d.). The governor of Wyoming has encouraged the state's legal department to challenge increased regulation of the coal industry (Mead 2016). In Montana, with the threat of closures of coal power plants in the city of Colstrip, due to changes in demand and policies of two states (Washington and Oregon) served by the plant, the Montana legislature seeks to find new users of the energy produced by the plant, such as their "industrial customers" (Harball 2016). Campbell County plans to "Advocate for State and national energy policies and regulations that are favorable to the coal industry" in their Comprehensive Plan (Campbell County Division of Planning and Zoning 2013).

CONCLUSION

CHANGES IN THE ENERGY INDUSTRY ARE FORCING MANY COAL COMMUNITIES TO RE-THINK WHAT THEY WILL BE IN THE FUTURE.

In Kentucky, they envision a more connected future. In Wyoming, they project a future where energy continues to dominate their economy. However, many of the investments being made for the future of these coal communities will not assist all of the coal workers today who are laid off from work and looking to support their families. These investments will require time to yield results. The assistance offered to coal miners today provides them with a way to pivot their careers or keep their coal jobs, and also ensures they receive at least part of what their struggling or bankrupt employers owe them in health and retirement benefits.

While coal workers may be qualified for other jobs, they may not find these jobs in the towns they live. This is a fact many involved in economic development recognize. Despite the work the government does to retrain people and attract businesses, people will likely be propelled to leave their communities to find jobs (a trend that is already happening), and this population is not likely to be replaced (due to a lack of jobs). Still others may choose to leave the labor force altogether. In Eastern Kentucky 900 people applied to learn to code with BitSource which provides on-the-job training. Only ten people were chosen and accepted the training opportunity (Smiley 2015). People leaving these communities or opting out of the workforce will add additional strain to the local governments left behind and the services these communities can provide. Despite these challenges, programs which assist both the miners and their partners are beneficial, as they hopefully increase or maintain the earning potential of the household as a whole.

Putting money into saving the coal industry may not be the best use of tax dollars. Especially as the tax base of states reliant on coal shrinks. This is because tax dollars may not be able to overcome powerful economic drivers, such as enhanced competition from non-coal energy sources. Money may be better spent on education and support for the infrastructure and

initiatives in place to move these communities forward. As energy systems transition, there is the real potential for coal to continue to be marginalized.

The devotion people have for the place they call home is an advantage a number of these communities have. People want to see their communities thrive. Helping people stay where they are by making it the best place it can be is an investment that provides dividends. Investing today in our struggling coal communities, will hopefully result in sustainable solutions for tomorrow.

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