Economic Needs Assessment for Coal Communities in Alabama, Kentucky and Tennessee

Developed by the International Economic Development Council as part of the U.S. Economic Development Administration's POWER Initiative

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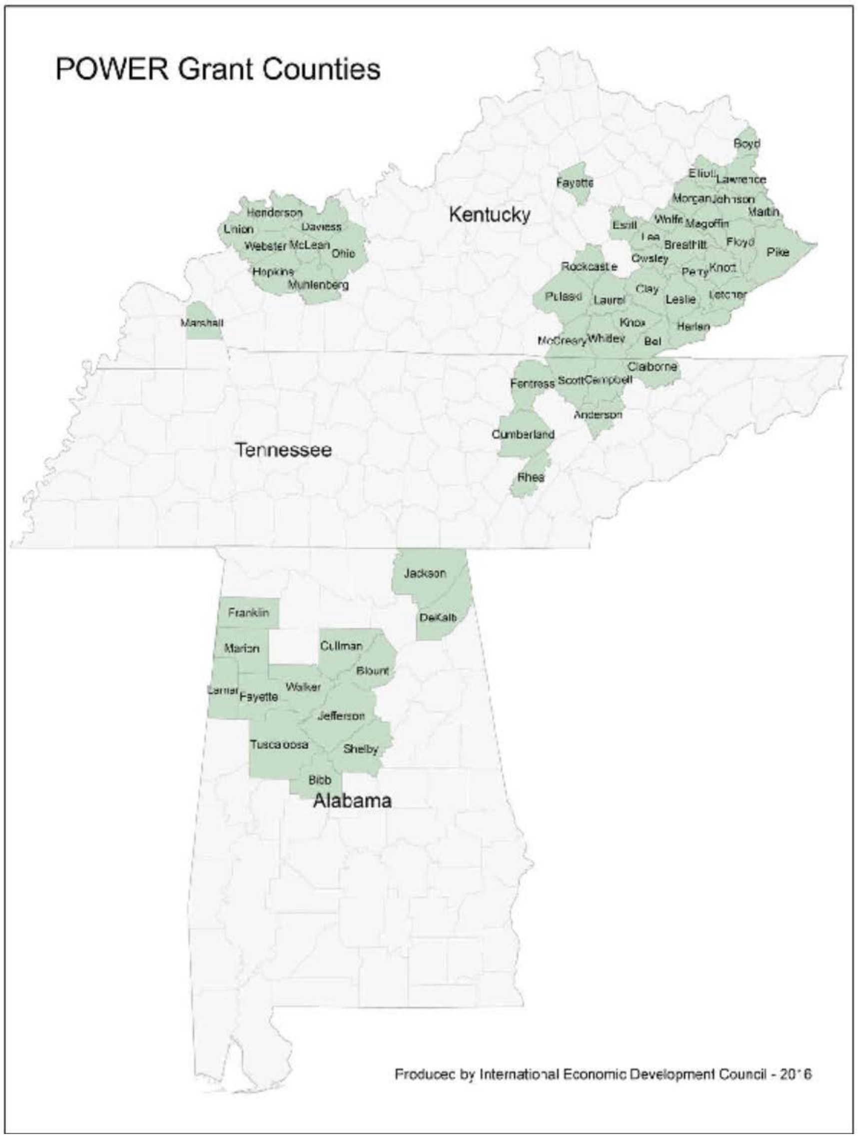
Introduction

The EDA Atlanta regional office provided a grant to the International Economic Development Council (IEDC) to develop and implement a Rural Development Institute for Coal Communities in Alabama, Kentucky and Tennessee as part of the POWER Initiative. The total estimated cost of the project is $375,000, of which $300,000 is the federal share of cost and $75,000 is the recipient share.

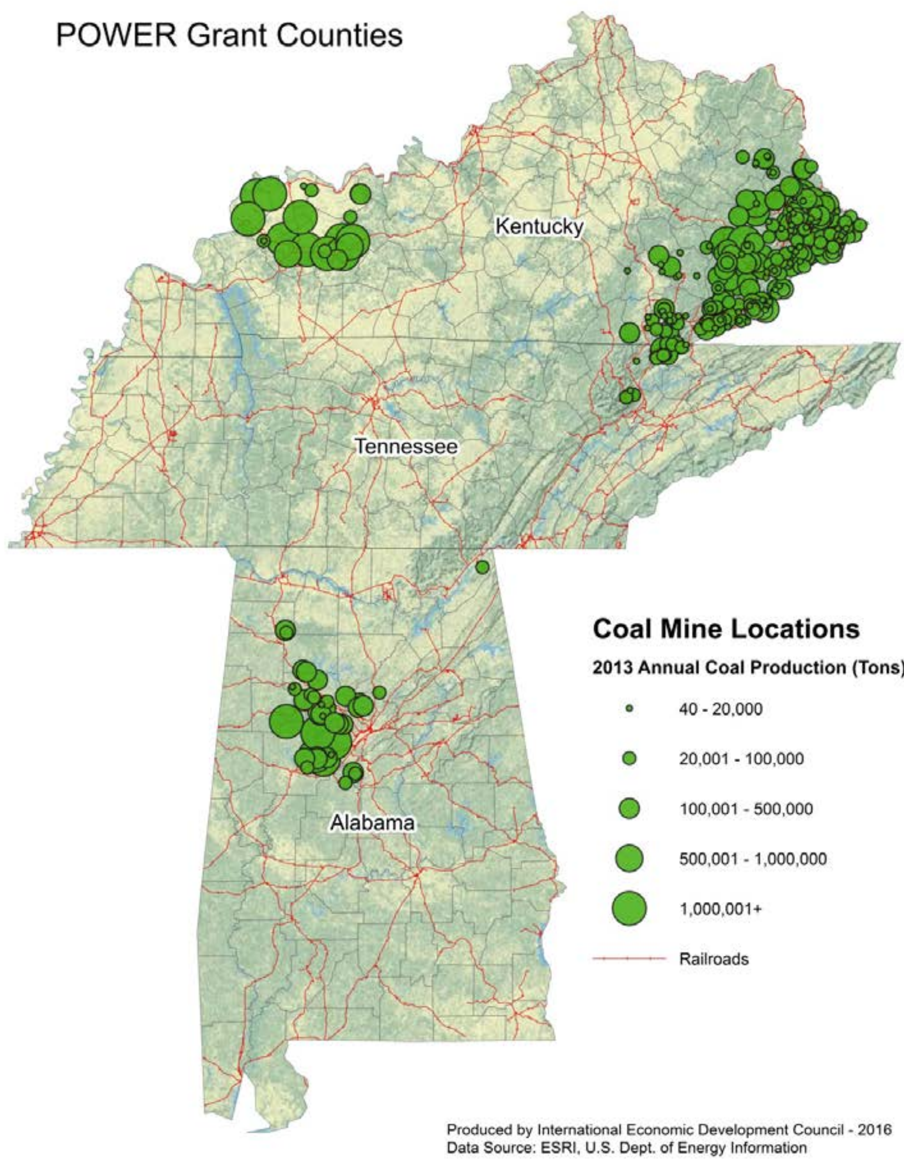
The purpose of this project is to build capacity for economic recovery and diversification in communities that have been negatively impacted by changes in the coal industry. IEDC conducted this needs assessment to understand the economic needs and development priorities of these regions and counties, which are shown on the map below. This assessment identifies the communities hardest-hit by coal industry changes, and will be used to will inform the content of trainings, webinars, and publications to build economic development capacity in these counties and regions.



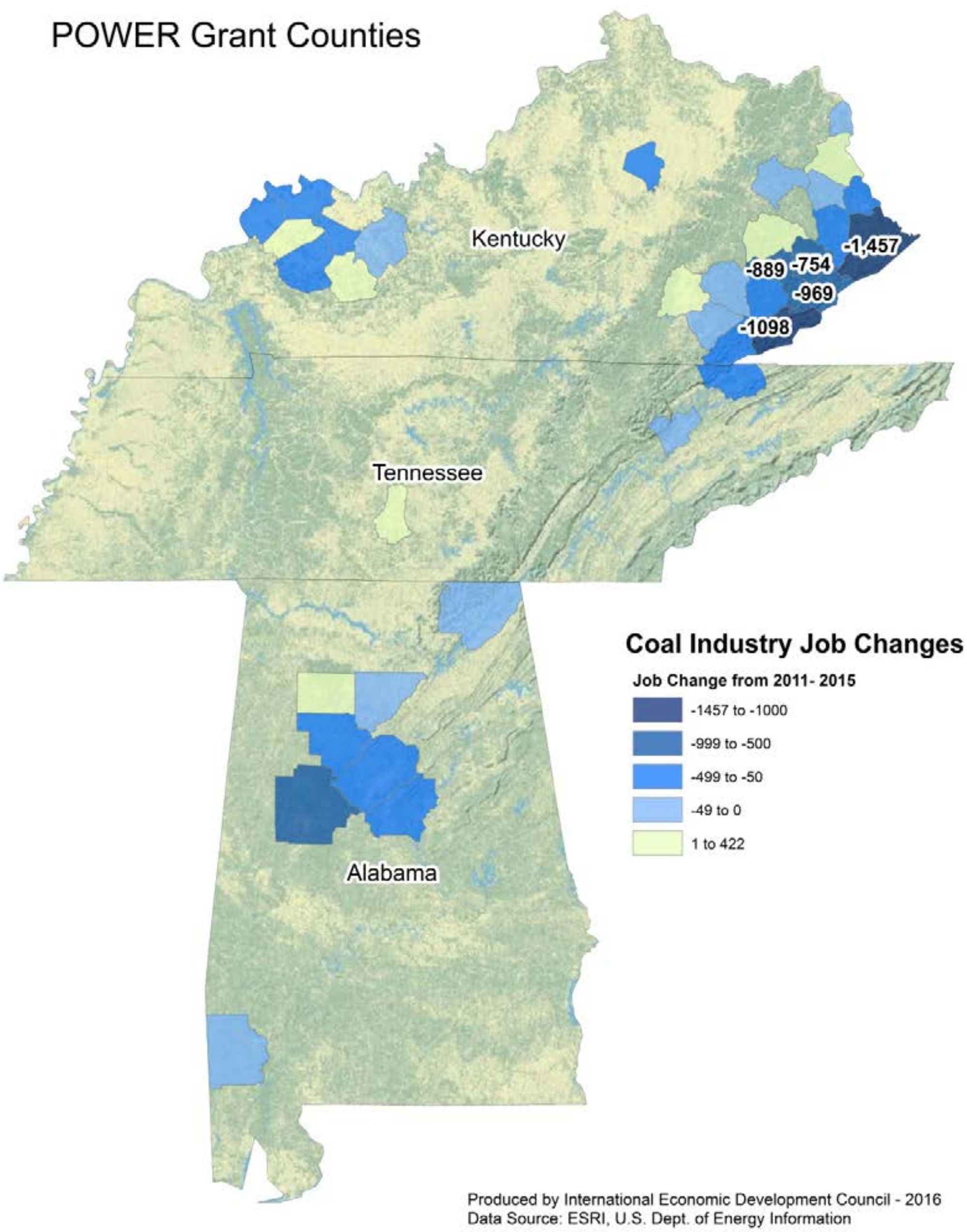
Information for this needs assessment was collected from public and private data sets, news publications, and interviews with a total of 92 local and regional stakeholders. (Data sources are noted in each region's section; the appendix list the stakeholders interviewed.) For each state, the IEDC POWER team examined data at the state and county levels.

The following sections present this information by state, with the exception of Kentucky. Because Kentucky has two separate, distinct coal-mining regions that differ significantly in terms of terrain, demographics and economic development history and capacity, the IEDC team analyzes eastern Kentucky and western Kentucky in separate sections.

Alabama, Kentucky and Tennessee all have experienced declining coal production and employment since 2011-2012. The location of coal mines and production levels as of 2013 are shown below.



As noted above, all three states have lost employment since 2011-2012; however, the impact differs significantly among the regions. Eastern Kentucky has lost the largest number jobs and also experienced the largest percent decline of any of the regions – down 8,651 jobs, or 63 percent, from 2011 to the end of 2015. Alabama has lost 1,638 jobs since its most recent mining employment peak in 2012, down 33 percent. Western Kentucky lost 986 coal-mining jobs between 2012 (the region's most recent employment and production peak) and 2015, 21.5 percent of the region's total. Tennessee's coal mining industry experienced its greatest decline in the late 20th century; from its most recent employment peak in 2011, the industry has lost 230 jobs, declining 42 percent to 314 jobs.



In addition to identifying these regions' economic needs, the IEDC POWER team identified the following economic recovery and diversification strategies as common among several or all of the regions studied for this project:

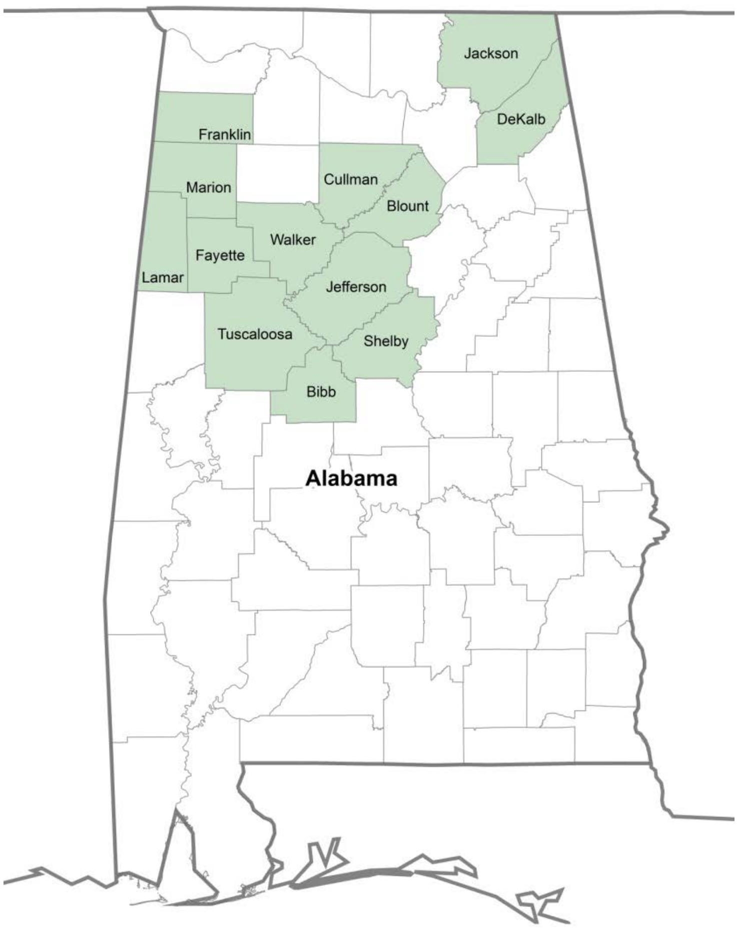
- Business retention and expansion support
- Entrepreneurship and small business support (e.g., incubators)
- Tourism development and promotion
- Economic development strategic planning (e.g., industry diversification, cluster development, targeted industry planning)
- Funding, marketing and branding expertise to attract new businesses and industries
- Workforce retraining and development
- Real estate redevelopment and reuse support
- Technology-led economic development support
- Financing for economic development projects
- Funding for economic development organizations
- Promotion of regional economic development networks
- Investments in infrastructure development
- Economic development training for public officials and community leaders
- Planning for economic resiliency
- Asset mapping

Overall, the IEDC POWER team observed that local economic developers are under tremendous pressure. Many lack experience and expertise to deal with major economic decline; as a result, recovery ideas in some cases are limited to familiar strategies and resources. There are no easy fixes to the loss of these high-paying jobs, and no one-size-fits-all approach can apply. However, the team found commonalities among the regions' needs and strategies, and has begun to identify knowledgeable experts and opportunities to help these communities build their capacity for economic development.

Alabama

A. Introduction

Bituminous coal has been mined commercially in 21 northern Alabama counties for more than 150 years, according to the Alabama Geological Survey.[1] Both surface and underground mining take place in the state.



Data sources: ESRI, Economic Modeling Software Inc.
Map produced by Scott Annis, International Economic Development Council.

Alabama's coalfields stretch from the northeast corner of the state to central-north Alabama and to the west. Most of Alabama's coal is mined in Tuscaloosa, Jefferson and Walker counties, which together were home to 4,624 of Alabama's 4,899 coal mining jobs (94 percent) in 2012, the most recent peak year for the industry in the state. A second tier of counties, including Shelby, Jackson and Cullman, collectively were home to 257 coal mining jobs in 2012 (5 percent of the state's total).

Of the originally designated study area for this project, an additional seven counties have had some coal production at some point since 2001. Blount, Franklin and Marion counties all had fewer than 10 coal mining jobs in both 2012 and 2015. Fayette, Bibb, DeKalb and Lamar counties each had minimal coal mining employment at various points since 2001, but none in 2012 or 2015.

In terms of use, coal can be generally classified as either thermal coal (also called steam coal) or metallurgical coal (also known as met coal or coking coal). Thermal coal is burned to produce electrical power, while met coal is used primarily in the production of coke, which is used to make steel.

Alabama's largest mines produce primarily met coal, which is either exported or used domestically to make steel. Met coal comprises the majority of U.S. coal exports. According to the U.S. Energy Information Administration (EIA), the decrease in coal exports is due to a combination of factors:

[1] Geological Survey of Alabama: http://www.gsa.state.al.us/gsa/coal_sys.html

> Slower growth in world coal demand, lower international coal prices, and higher coal output in other coal-exporting countries contributed to the decline in U.S. coal exports. Lower mining costs, cheaper transportation costs, and favorable exchange rates (compared to the U.S. dollar) continue to provide an advantage to producers in other major coal-exporting countries such as Australia, Indonesia, Colombia, Russia, and South Africa.[2]

The decline in world demand for met coal led several large mining companies to declare bankruptcy in 2015. Most significant for Alabama is Walter Energy, parent company of Jim Walter Resources, which is headquartered in Hoover (near Birmingham). Walter Energy, which filed for bankruptcy protection on July 15, 2015, was the state's 13th largest publicly traded company as of May 2015. Two of its mines – the No. 4 and No. 7 mines in Tuscaloosa County – are the largest in Alabama, responsible for nearly half of the state's coal production annually.

B. Measures of industry change: Production, exports, number of active mines, employment

As is the case in all coal-producing regions, Alabama's coal industry has experienced numerous boom-bust periods over the years. Coal production in Alabama peaked in 1990 at 29 million short tons, according to EIA, and has fluctuated several times since then.

Most recently, Alabama's coal industry has been in a downturn after 2012, as measured by production, number of active mines, exports, and employment.

1. Production

Coal production declined 4 percent between 2012 and 2013, 12.1 percent in 2014, and 20.5 percent in 2015.

Coal production in Alabama, 2012-2015, amount and percent change

Year	2012	2013	2014	2015
Production (thousands of short tons)	19,455	18,628	16,363	13,016
Change from previous year	--	(4%)	(12.1%)	(20.5%)

Source: EIA

2. Number of active mines

The number of active mines in Alabama declined 22 percent between 2012 and 2014.

[2] U.S. Energy Information Administration: http://www.eia.gov/todayinenergy/detail.cfm?id=25252

Active mines in Alabama, number and percent change

Year	2012	2013	2014
Number of active mines	46	39	36
Change from previous year	--	(15.2%)	(7.7%)

Source: EIA

3. Exports

Exports of coal mined in Alabama dropped dramatically in value – 58 percent – between 2012 and 2015.

Coal exports from Alabama, 2012-2015, value and percent change

Year	2012	2013	2014	2015
Bituminous coal exports (value in $ millions)	1,672	1,238	1,114	698
Change from previous year	--	(25.9%)	(10%)	(37.3%)

Source: U.S. Census Foreign Trade Statistics by state

4. Employment

Coal mining employment in Alabama declined by 33 percent between 2012 and 2015. (Job losses by county are discussed in section C1 below.)

Coal mining employment in Alabama, number and percent change, 2012-2015

2012 jobs	2015 jobs	2012-2015 change	Percent change
4,899	3,261	(1,638)	(33%)

Source: Emsi

The following table shows the location, dates, and number of jobs affected by temporary or permanent layoffs between late 2012 and early 2016.

Permanent and temporary layoffs at coal mines in Alabama, November 2012-January 2016

Company name	Mine name	Location	Date announced	Number of jobs
Jesse Creek Mining	Montevallo	Montevallo (Shelby Co.)	Jan. 2016	170
Jim Walter Resources*	No. 4	Brookwood	Dec. 2015	319
Jim Walter Resources	No. 7	Brookwood	Nov. 2015	265
Jim Walter Resources	No. 7	Brookwood	July 2015	180
Jim Walter Resources	Central Shop	Brookwood	July 2015	14
Jim Walter Resources	No. 4	Brookwood	Oct. 2015	129

Cliffs Natural Resources	Oak Grove Mine	Oak Grove	Oct. 2015	220
North American Coal Corp.	(none given)	Jasper	August 2015	118
Jim Walter Resources	No. 7	Brookwood	March 2015	46
Twin Pines	(none given)	Jasper	Sept. 2013	60
Rock Mountain Mining	(none given)	Adger	Sept. 2013	53
Jim Walter Resources	Swann's Crossing Mine	Brookwood	August 2013	67
Drummond	Shoal Creek	Adger	August 2013	425
Jim Walter Resources	North River Mine	Berry (Fayette Co.)	March 2013	176
Rock Mountain Mining	(none given)	Bessemer	Nov. 2012	187
			TOTAL	**2,429****

**Parent company is Walter Energy*
***Number includes temporary layoffs and thus does not match absolute change noted in the previous table*

C. Measures of economic impact

1. Job loss by county and multiplier effect

As noted above, coal mining jobs declined 33 percent in Alabama between 2012 and 2015. Tuscaloosa, Jefferson and Walker counties had, and continue to have, the largest share of coal mining jobs in the region.

Coal mining job change by county, 2012-2015

County Name	2012 Jobs	2015 Jobs	2012 - 2015 Change	2012 - 2015 % Change
Tuscaloosa County	2,351	1,569	(782)	(33%)
Jefferson County	1,666	1,179	(487)	(29%)
Walker County	607	378	(229)	(38%)
Shelby County	151	115	(36)	(24%)
Jackson County	88	12	(76)	(86%)
Cullman County	18	0	(18)	(100%)
Blount County	10	<10	Insf. Data	Insf. Data
Franklin County	<10	<10	Insf. Data	Insf. Data
Marion County	<10	0	Insf. Data	Insf. Data
	4,899	**3,261**	**(1,638)**	**(33%)**

Source: Emsi

The jobs multiplier for coal mining[3] is 3.09, according to Emsi. Using this figure, a loss of 1,638 coal mining jobs in Alabama between 2012 and 2015 translates to the loss of 5,061 jobs when factoring in direct, indirect and induced effects.

The ripple effect of these job losses is supported by anecdotal evidence from stakeholders in the region. They report that secondary industries – such as engineering firms that work almost exclusively for the mining industry, fabrication and machining facilities that maintain mining equipment, and insurance companies, for example – all have been negatively affected by the coal industry downturn.

2. Unemployment rates

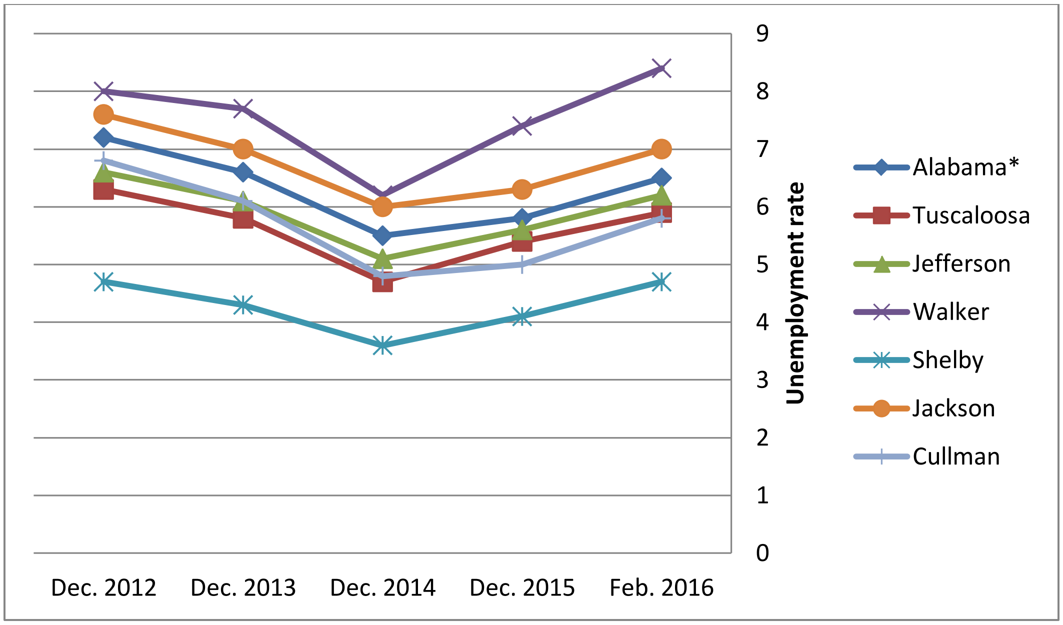
Unemployment rates have risen in Alabama and coal-producing counties since the end of 2014. Walker County, has consistently had the highest unemployment rate compared with other coal-producing counties and the state.

Unemployment rates in coal-producing counties in Alabama, Dec. 2012-Feb. 2016

	Dec. 2012	Dec. 2013	Dec. 2014	Dec. 2015	Feb. 2016
Alabama*	7.2	6.6	5.5	5.8	6.5
Tuscaloosa	6.3	5.8	4.7	5.4	5.9
Jefferson	6.6	6.1	5.1	5.6	6.2
Walker	8.0	7.7	6.2	7.4	8.4
Shelby	4.7	4.3	3.6	4.1	4.7
Jackson	7.6	7.0	6.0	6.3	7.0
Cullman	6.8	6.1	4.8	5.0	5.8

Sources: Alabama Department of Labor; U.S. Bureau of Labor Statistics
**Not seasonally adjusted. Counties and metropolitan areas are comparable to the not seasonally adjusted labor force data.*

[3] Includes, at the 6-digit level, Bituminous Coal and Lignite Surface Mining (212111), Bituminous Coal Underground Mining (212112), and Support Activities for Coal Mining (213113).



3. Severance tax revenues

Alabama has two coal severance taxes: one for $.135/ton and a second for $.20/ton (passed in 1971 and 1977, respectively). Revenues from coal severed within a police jurisdiction or municipal limits are distributed 50 percent to the municipality where severed and 50 percent to the county where severed. Revenues from coal severed other than within a police jurisdiction or municipal limits are distributed 100 percent to the county where severed.

Alabama coal severance taxes receipts and annual change, fiscal years 2011-2015

Fiscal Year	Receipts ($.20/ton and $.135/ton combined)	Change from previous year
2011	$6,415,677	-
2012	$3,452,559	(46%)
2013	$9,141,626	165%*
2014	$5,582,315	(39%)
2015	$4,981,975	(11%)

Source: Alabama Department of Revenue
** Due to processing changes for coal severance taxes, collections that normally would have been credited to FY12 were credited to FY13.*

The change in severance tax revenues does not show a linear decline from 2012 forward (due at least in part to the processing changes in FY 2012/2013, noted above); however, the difference in revenues between 2011 and 2015 shows a 22 percent decrease over five years. Severance tax revenues are allocated to local governments in Alabama, where they are used at least partially to fund economic development efforts (in addition to basic local services).

4. Stakeholder input

In talking with stakeholders in the region, the number one concern regarding the decline in coal mining is the direct loss of jobs and the indirect effect of lost income. None anticipated that the coal industry would rebound and once again be a significant employer.

A related concern is the compensation levels of the available jobs into which displaced miners might transition. Average wages for coal mining can range as high as $80,000 to $120,000, significantly greater than those at many manufacturers (particularly auto suppliers, Alabama's strongest manufacturing sector).

Several stakeholders cited the impact on secondary industries, such as insurance and engineering firms that work almost exclusively for the mining industry, and fabrication and machining facilities that perform maintenance on mining equipment. Economic development organizations in Walker and Jackson counties both cited major budget declines due to the loss of severance tax revenues.

Of the impacted counties, the more rural ones also are experiencing ongoing population loss. Walker County's population declined 2.3 percent between 2010 and 2014, according to the Census Bureau. Marion, Lamar, Fayette, Bibb and Jackson counties also lost population during that time period. (Shelby and Tuscaloosa counties had the largest population growth, 5.93 percent and 3.88 percent, respectively.)

Multiple stakeholders mentioned concerns about the heavy focus of local economic development strategies on industry recruitment, and perhaps over-reliance on auto manufacturing. They stated the need for the state and localities to expand support for a broader range of economic development strategies.

Also frequently mentioned was the need for economic development training for public officials to help them respond effectively and create a more resilient economy. Stakeholders with regional or state perspectives noted that many communities do not have an agreed-upon, community-wide strategy. Leadership is needed to bring disparate groups together to create plans for communities' futures.

Several stakeholders also mentioned reluctance on the part of auto suppliers to hire former mine workers who were unionized.

D. Economic recovery and development initiatives

1. Local strategies

To date, the primary public-sector strategy to deal with the loss of coal jobs has been workforce development. These initiatives have taken the form of job fairs, retraining opportunities, and a new, demand-driven Career Connect system created by West Alabama Works, the workforce development council for Region 3 (Bibb, Fayette, Greene, Hale, Lamar, Pickens and Tuscaloosa counties).

- **Job fairs**: One was held in Walker County in January 2016, with 46 hiring companies and over 1,000 attendees. Another job fair, focused on both laid-off coal miners and steelworkers, was held in Brookwood in February 2016 and had 604 attendees.
- **Career Connect:** The Career Connect system registers those who are seeking work in a system that a wide range of West Alabama employers uses to find qualified employees. The system also connects participants with job training and educational opportunities, including GED classes, degree tracks and special certifications. Designated "navigators" follow up with registrants from job fairs and inform them about possible job opportunities, specialized job training, job programs and more.
- **Retraining:** Retraining and retooling individuals to work in the auto industry is the focus in West Alabama Works region. West Alabama Works is focused on five workforce clusters: automotive, manufacturing, healthcare, construction, and professional services. Birmingham is a site of the White House's TechHire program, which provides training for unemployed individuals to work at technology companies.

Apart from workforce development, our research did not identify any economic development strategies planned specifically to offset the loss of coal industry employment, but rather a continuation of existing strategies to replace lost coal jobs.

Industrial recruitment is the primary economic development strategy for both the state of Alabama and for many local governments. Because of the significant presence of auto manufacturers, the recruitment of auto suppliers and related firms is a strong focus throughout the state, but particularly in central Alabama, due to the presence of Mercedes Benz U.S. International (MBUSI) in Tuscaloosa County, Hyundai Motor Manufacturing in Montgomery County, Honda in Talladega County, and Toyota in Madison County.

MBUSI is currently undergoing a $1.3 billion expansion. An initiative is currently under way with auto supplier to convert an old high school in Brookwood (the epicenter of coal mining in the state) to an automotive training center for manufacturing and logistics. A new partnership is underway with Shelton State Community College that will teach night classes in logistics.

Aerospace recruitment also is a target industry for the state and among numerous economic development organizations in central/north Alabama (due in part to proximity to Huntsville).

In regard to individual counties, Jefferson County, home to Birmingham, has the largest and most diversified economy in the state. The Birmingham Business Alliance (BBA) is the primary economic development agency serving the region, and includes seven counties in its service area (Jefferson, Shelby, Walker, Bibb, St. Clair, Chilton and Blount). Its targeted industries for recruitment and retention include banking and insurance; health care services; logistics and transportation; innovation and technology; and metals and steel manufacturing. The BBA and partner organizations also are active with workforce development and entrepreneurship initiatives.

Tuscaloosa County's economy is smaller than that of Jefferson County, but is boosted significantly by the presence of the University of Alabama and a Mercedes-Benz plant that directly employs 3,500 and is responsible for capital investment of over $4.5 billion. Though there have been discussions about the need to diversify the region's economy to lessen its dependence on auto manufacturing, auto supplier recruitment remains a key strategy. Target industries for the Tuscaloosa Industrial Development Authority include automotive; advanced manufacturing; healthcare; aerospace; alternative energy; and business services.

The Tuscaloosa Chamber of Commerce, another key economic development partner, is also the administrator of the local workforce council, West Alabama Works. West Alabama Works became a regional collaborative partner with the National Fund for Workforce Solutions in 2015 as it developed the Career Connect, the demand-driven system mentioned above.

Walker County is rural by comparison with Tuscaloosa and Jefferson counties. The county's economic development entity is the Walker County Economic and Industrial Development Authority (WCEIDA), which focuses primarily on industrial recruitment and retention (mainly auto suppliers/metal fabrication, but also wood products, and aerospace potentially). WCEIDA's biggest challenge is the cost of developing and maintaining product. Downtown Jasper – the county's largest town – is currently engaged in revitalization initiatives through the Alabama Communities of Excellence program and the Alabama Main Street program. The Walker County Chamber of Commerce promotes tourism in the county, and works with WCEIDA on retail and commercial development.

Shelby County, though it has lost coal mining jobs over the past three years, had the lowest unemployment rate in Alabama as of February 2016. The county has been one of Alabama's fastest-growing since 2010. As a suburb of Birmingham, Shelby County has a diverse economic base with a rapidly growing commercial area along Highway 280 and extensive Class A office space. The county also has higher per capita, household, and family median incomes than the United States. Jackson County, while more rural and less prosperous than Shelby County, is the site of new, $600 million Google data center on which construction is beginning this year at the site of the retiring TVA Widows Creek Fossil Plant.

2. Regional strategies

<u>Interstate 22 Alliance</u>

Interstate 22 is a new federal highway that runs from Birmingham to Memphis through Jefferson, Walker, and Marion counties. The road is complete and open to traffic, but is not officially an interstate until the final connection and interchange with I-65 is open (scheduled to take place in 2016). The I-22 Alliance is a collaboration of economic development groups among six counties that are either part of or adjacent to the I-22 corridor (Fayette, Franklin, Lamar, Marion, Walker and Winston). The alliance aims to promote the corridor for industrial recruitment.

Tourism

Several entities are working on the development of tourism and outdoor recreation amenities and strategies in the region. The Government and Economic Development Institute at Auburn University has been contracted by the Tennessee Valley Authority to conduct tourism planning in the region, and the University of Alabama's Center for Economic Development has worked with the Appalachian Regional Commission on the development of outdoor recreation destination development and capacity-building.

Comprehensive Economic Development Strategies (CEDS)

The primary coal-producing counties in the region are covered by the Regional Planning Council of Greater Birmingham (RPCGB) and the West Alabama Regional Commission (WARC).

RPCGB covers six counties, including Jefferson, Walker, Shelby, Blount, Chilton and St. Clair. Its latest CEDS, entitled "Think Prosperity," lists the following goals:

I. Empowerment and Implementation
- a. Community Education
- b. Leadership Development
- c. Funding
- d. Coordination and Cooperation

II. Infrastructure Development and Service Improvements
- a. Fixing What We Already Have
- b. Making What Works, Work Better
- c. Rethinking Service Delivery
- d. Investing Strategically

III. Improving Access to Opportunities
- a. Transportation Choices
- b. Cultivating Competitive Economic Assets

WARC covers seven counties: Bibb, Fayette, Greene, Hale, Lamar, Pickens and Tuscaloosa. Its latest CEDS notes that major employment groups in the district are manufacturing, health care, education, retail trade and accommodation and food services. Its most recent CEDS lists the following goals:

I. Quality Leadership: through increasing the capacity of local and regional leaders, achieving greater regional focus and collaboration, addressing planning needs across a broad range of topics, and encouraging leaders to exert the political will needed to implement plans and achieve progress over the long term.

II. Improved Assets: through addressing the need for both infrastructure and human capital capable of supporting a healthy, thriving economy (community development and other investments and improvements to education and training and activities that increase the quality, availability and accessibility of programs and services).

III. Economic Diversity: through an economic base that includes varied enterprises, ensuring the availability of jobs at many skill levels. Activities that introduce new companies or expand existing industries and encourage innovation and increased exporting activity also support this goal.

IV. Disaster-resistant Communities: through activities that improve preparedness, supported by the implementation of identified mitigation actions and projects. Plans and projects that promote and incorporate safety into design concepts and that preserve and enhance the important functions of the District's ecosystems, such as wetlands and flood plains, make this goal necessary to achieve resilience throughout the region.

E. Conclusion

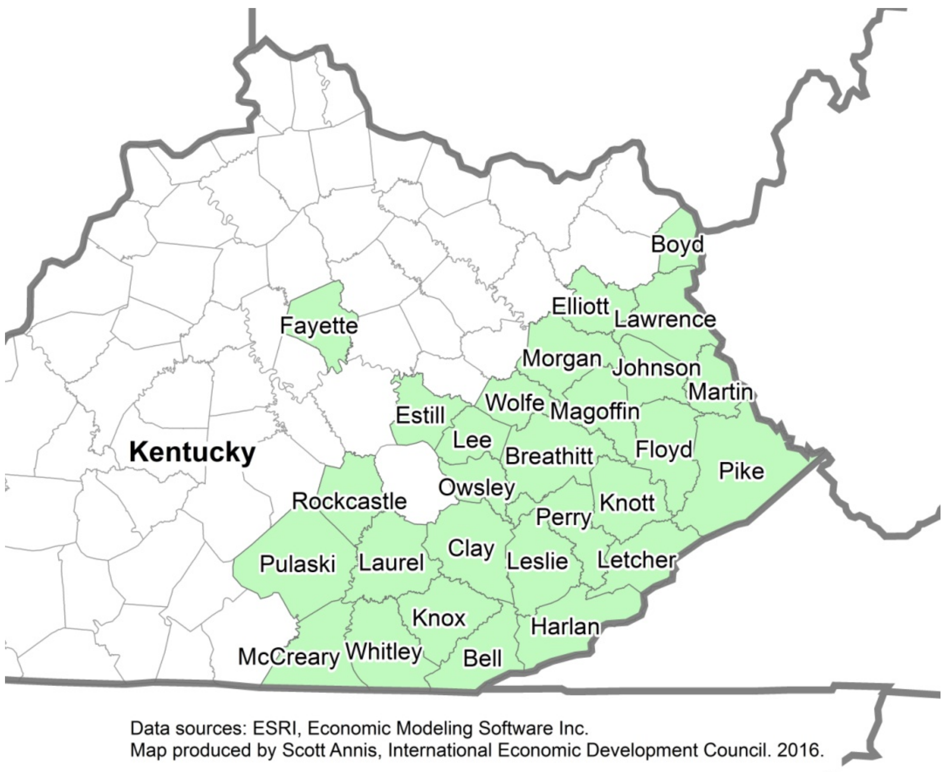
The decline of coal mining in Alabama has by far had the most significant impact in Jefferson, Tuscaloosa and Walker counties. Workforce development assistance to displaced miners – in the form of job fairs, retraining, and "high-touch" services to help improve their capacity to find new work – is the primary approach to mitigate coal job losses. Other economic development needs cited by stakeholders in impacted communities include:

- Training for elected officials and other community leaders
- Retraining for displaced miners
- Funding and training for marketing, industry recruitment, and site preparation
- More diverse approaches to economic development – e.g., entrepreneurship, tourism
- Revitalization of smaller communities
- Strategies to build more resilient economies and communities over the long term
- Retail development

Eastern Kentucky

A. Introduction

The coal industry has been a mainstay of Kentucky's economy for more than a century. In eastern Kentucky in particular, coal mining jobs have provided good wages and opened up economic opportunities for generations of families in a historically poor, geographically isolated region. However, the competitiveness of eastern Kentucky coal is in decline relative to other parts of the country due to the diminishing reserves of thick and easily accessible coal seams, requiring more labor and leading to higher production costs.



Eastern Kentucky coal mines, which are part of the Central Appalachian Basin, produce bituminous, mostly thermal coal through both underground and surface mining. In 2014, according to the Kentucky Energy and Environment Cabinet, over 33 percent of the coal produced in Kentucky was consumed within the Commonwealth. The largest market for Kentucky coal is the generation of electrical power across the United States, primarily in the southeast.

While coal miners earn on average $70,000 working in the mines, many of the workers have not pursued formal education beyond high school, and most were trained on the job. The unemployment level in the region as a whole is well above the national average (detailed in Section C2), and options for a new job with an equivalent salary are slim. The ripple effects have been disastrous and have resulted in population loss (especially younger people) and a decreased tax base. While mining families face the immediate fear of losing their cars, homes, and health insurance — as well as enduring long separations from their families as they search for jobs in other regions — ancillary industries are also impacted as they lose revenue or are forced to shut down.

Despite these challenges, local and regional leaders began to mobilize in recent years to diversify and grow their economies and provide new opportunities for residents. There is an increased acknowledgement that the region's economy will no longer be able to depend on coal and an eagerness on the part of some community members to explore new strategies through regional collaboration.

B. Measures of industry change

Eastern Kentucky was the top-producing coal region in Kentucky from 1912 until 2013, when western Kentucky surpassed it, according to the Kentucky Energy and Environment Cabinet. As of the fourth quarter of 2015, eastern Kentucky accounted for 46 percent of the commonwealth's coal production. The eastern counties of Pike, Perry, and Harlan produce 29 percent of all of Kentucky's mined coal.

Coal production in eastern Kentucky peaked in 1990 at 131 million tons and, despite periodic boom years, overall has trended downward since. Declines in production and employment have accelerated steeply since the end of 2011.

1. Production

In 2015, coal production in eastern Kentucky declined 25.4 percent from 2014 levels, and 58.9 percent from 2011.

Coal production in eastern Kentucky, 2011-2015, amount and percent change

	2011	2012	2013	2014	2015
Production (thousands of short tons)	67,930	48,798	39,501	37,390	27,907
Change from previous year	--	(28.2%)	(19.1%)	(5.3%)	(25.4%)

Source: U.S. Energy Information Administration (EIA)

2. Number of active mines

The number of active mines in eastern Kentucky declined 38.4 percent between 2011 and 2014 (data from 2015 are not yet available).

Active mines in eastern Kentucky, number and percent change

	2011	2012	2013	2014
Number of active mines	375	330	246	231
Change from previous year	--	(12%)	(25.5%)	(6.1%)

Source: EIA and the U.S. Mine Safety and Health Administration

3. Employment change

Coal mining employment in eastern Kentucky declined by 63 percent between 2011 and the fourth quarter of 2015 (job losses by county are discussed in section C1 below).

Coal mining employment in eastern Kentucky, number and percent change, 2011-2015

2011 jobs	2015 jobs	2011-2015 change	Percent change
13,728	5,077	(8,651)	(63%)

Source: Kentucky Energy and Environment Cabinet

For illustrative purposes, the following table is a partial list of temporary or permanent layoffs that occurred from January 2015 to April 2016. Since 2011, at least 4,030 permanent or temporary layoffs have occurred in eastern Kentucky.

Permanent and temporary layoffs at coal mines in Eastern Kentucky, 2015 to April 2016

Company name	Mine name	Location (County)	Date announced	Number of jobs	Layoff or closure
Blue Diamond Mining	Buckeye Mine Complex	Perry, Leslie	11/19/2015	159	Closure
Arch Coal, Inc.	Cumberland River Coal Company Complex	Letcher	10/30/2015	8	Layoff
RHINO CAM Mining	Deane Preparation Plant, Access Energy Mine, Jamboree Load Out & Tipple, Mine 28 and Rob Fork Prep Plant, Three Mile Surface Mine and High Wall Miner	Letcher, Pike	8/31/2015	92	Layoff
MillBranch and North	Panther Mine No. 1,	Harlan,	7/8/2015	292	Closure

Fork Coal Corporation	Stillhouse No. 1 Mine	Letcher			
Straight Creek Coal Mining	#6 Mine, #7 Mine, #9 Mine, Brittain Prep Plant, and Viall Loadout	Bell, Clay	6/16/2015	70	Closure
RHINO CAM Mining	Deane Preparation Plant, Access Energy Mine, Jamboree Load Out & Tipple, Mine 28 and Rob Fork Prep Plant, Three Mile Surface Mine and High Wall Mine	Letcher, Pike	6/2/2015	58	Layoff
Licking River Mining	West Liberty Mine	Morgan	2/10/2015	127	Closure
Licking River Resources, Inc.	West Liberty Mine	Morgan	2/10/2015	8	Closure
JAD Coal Company	Coldiron Mine	Harlan	1/30/2015	9	Closure
Fox Knob Coal Company, Inc.	Coldiron Mine	Harlan	1/30/2015	86	Closure
			TOTAL	**909****	

Source: Kentucky Career Center WARN Notices

***Number includes temporary layoffs and thus does not match absolute change noted in previous table*

C. Measures of economic impact

1. Job loss by county and multiplier effect

As noted above, coal mining jobs in eastern Kentucky declined 63 percent between 2011 and the end of 2015. Due to their large numbers of employees in the industry, Pike, Harlan, and Perry counties have experienced the largest declines in job numbers, accounting for 61 to 64 percent of total coal mine employment in each county.

Coal mining job change by eastern Kentucky county, 2011-2015

County	2011 jobs	Q4 2015 jobs	Number change	Percent change
Pike	3,527	1,285	-2,242	-64%
Harlan	2,310	898	-1,412	-61%
Perry	2,158	812	-1,346	-62%
Letcher	1,016	101	-915	-90%
Knott	1,004	227	-777	-77%

Martin	1,124	363	-761	-68%
Leslie	872	251	-621	-71%
Bell	692	331	-361	-52%
Magoffin	339	45	-294	-87%
Floyd	599	346	-253	-42%
Breathitt	206	16	-190	-92%
Clay	133	19	-114	-86%
Whitley	212	112	-100	-47%
Knox	169	96	-73	-43%
Boyd	78	34	-44	-56%
Owsley	35	0	-35	-100%
Johnson	81	52	-29	-36%
Elliott	11	0	-11	-100%
McCreary	0	4	4	N/A
Laurel	0	5	5	N/A
Lawrence	34	43	9	26%
Estill	0	37	37	N/A
Fayette	N/A*	N/A	N/A	N/A
Lee	N/A	N/A	N/A	N/A
Morgan	N/A	N/A	N/A	N/A
Pulaski	N/A	N/A	N/A	N/A
Rockcastle	N/A	N/A	N/A	N/A
Wolfe	N/A	N/A	N/A	N/A

Source: Kentucky Energy and Environment Cabinet

** N/A: detailed data not available for counties with fewer than 10 employees*

The jobs multiplier for coal mining[4] is 3.09, according to Emsi. Using this figure, a loss of 8,651 coal mining jobs in eastern Kentucky from 2011 to 2015 translates to the loss of 26,732 jobs when factoring in direct, indirect, and induced effects.

2. Unemployment rates

Unemployment rates have risen in Kentucky and in the eastern counties since the end of 2014, even while the U.S. rate declined. The median unemployment rate in eastern Kentucky was 12 percent as of February 2016, and average unemployment was 11.4 percent — more than twice the national average of 4.9 percent. Within the region, the lowest level of unemployment is seen in Fayette County at 4.3 percent, while several counties — Elliott, Floyd, Harlan, Leslie, Letcher, Magoffin, and Wolfe — have

[4] Includes, at the 6-digit level, Bituminous Coal and Lignite Surface Mining (212111), Bituminous Coal Underground Mining (212112), and Support Activities for Coal Mining (213113).

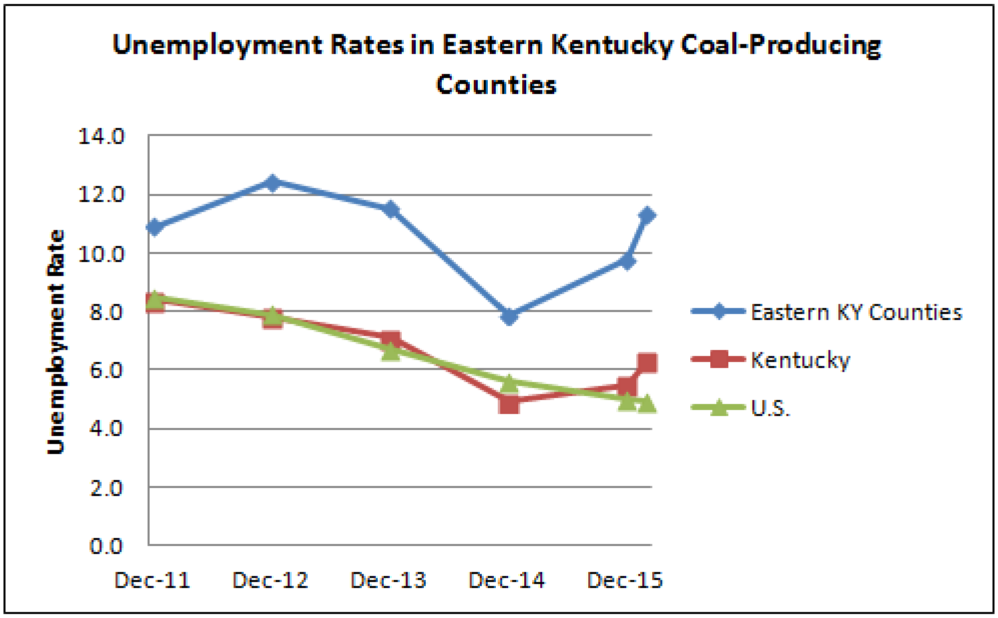
unemployment rates greater than 13 percent. In Magoffin County, more than one-fifth of the labor force (21.6 percent) was unemployed as of February 2016.

Unemployment rates in POWER counties in eastern Kentucky, December 2011 to February 2016

	Dec. 2011	Dec. 2012	Dec. 2013	Dec. 2014	Dec. 2015	Feb. 2016
Kentucky*	8.4	7.8	7.1	4.9	5.5	6.3
Bell	11.2	12.2	12	7.3	9.2	10.8
Boyd	9.2	9.1	8.4	6.1	7.4	9.6
Breathitt	12.3	15.2	13.6	9.4	10.3	12
Clay	13.6	13.7	12.7	8.4	10.7	12.6
Elliott	14	15	13.1	9.5	11.7	13.1
Estill	10.8	9.7	8.6	5.5	6.4	7.5
Fayette	5.9	5.5	4.9	3.4	3.8	4.3
Floyd	9.6	13.8	12	7.8	10.9	13.5
Harlan	10.3	15.7	17	10.6	12.7	13.6
Johnson	9.2	10.7	10.1	7.6	9.2	11.3
Knott	11.2	15.7	14.4	8.3	11	12.9
Knox	12	12.9	11.3	7.4	8.6	9.7
Laurel	10.1	9.7	8.6	5.7	6.5	7.5
Lawrence	9.7	11.1	10.9	7.9	11.2	12.8
Lee	12.8	12.4	11.1	7.7	9.9	12
Leslie	12.3	16	16.4	9.1	11.9	13.7
Letcher	9.8	15.6	15.4	10.1	12.8	13.4
Magoffin	15	18.3	15.6	11.8	16.5	21.6
Martin	8	9.9	9.3	7.8	10.9	12.6
McCreary	13.9	13.2	12.3	8	8.7	10.1
Morgan	10	10.9	10	7.9	8.6	10.7
Owsley	11.5	13.3	11.6	8.4	11.9	12.8
Perry	9.6	13.8	12.9	8.2	9.8	11.6
Pike	7.9	11.6	11.6	8.2	11.3	12.6
Pulaski	9.9	9.2	8.3	5.8	6.2	6.7
Rockcastle	10.5	9.3	7.8	6	6.7	7.8
Whitley	10.6	10.4	9.7	6.4	7.1	8.1
Wolfe	14.6	15.5	13.1	10.1	12.4	13.3

Source: U.S. Bureau of Labor Statistics

**Not seasonally adjusted*



3. Severance tax revenues

According to the Kentucky Office of the State Budget Director, Kentucky's Coal Severance and Processing Tax is assessed on the severance (removal) and processing of coal at the rate of 4.5 percent of the gross value of the coal, with a minimum of 50 cents per ton. Of the total coal severance and processing tax receipts, 35 percent is allocated to the Local Government Economic Development Fund (LGEDF) to be spent as grants to coal-producing counties for economic development, public health and safety, public infrastructure, information technology, or public water and wastewater, according to the Kentucky Department for Local Government. The goal of the LGEDF is to assist eligible counties in diversifying their economies beyond coal production and to meet other community development needs. An additional 15 percent is transferred to the Local Government Economic Assistance Fund (LGEAF), a separate and distinct tax-sharing program for cities and counties. Declining severance tax revenues have strained local government budgets in many eastern Kentucky counties.

Kentucky coal severance tax receipts and annual change, fiscal years 2011-2015

Fiscal Year	Receipts	Change from previous year
2011-12	$298,263,637	0.8%
2012-13	$230,540,150	(22.7%)
2013-14	$197,525,899	(14.3%)
2014-15	$180,283,352	(8.7%)

Source: Kentucky Department of Revenue

4. Population

In the POWER counties in eastern Kentucky (excluding Fayette, which is home to Lexington, Kentucky's second largest city), the total population declined an estimated 2.4 percent, or 16,382 people, from 2011 to 2015. The average decrease in population by county was 3.1 percent, or 607 people. All but four of the 28 counties experienced population decline even as Kentucky's population as a whole increased. Seven counties (Bell, Floyd, Harlan, Lee, Leslie, Letcher, and Owsley) lost nearly 5 percent or more of their population during this period. Notably, Pike and Floyd counties lost 2,874 and 2,038 residents from 2011 to 2015, respectively.

Population estimates and change for POWER counties in eastern Kentucky, 2011-2015

	2011	2015	Absolute change	Percent change
Kentucky*	4,367,882	4,425,092	57,210	1.3%
Bell	28,634	27,337	-1,297	-4.5%
Boyd	49,400	48,325	-1,075	-2.2%
Breathitt	13,830	13,484	-346	-2.5%
Clay	21,604	21,013	-591	-2.7%
Elliott	7,915	7,648	-267	-3.4%
Estill	14,634	14,375	-259	-1.8%
Fayette	301,291	314,488	13,197	4.4%
Floyd	39,794	37,756	-2,038	-5.1%
Harlan	29,163	27,703	-1,460	-5.0%
Johnson	23,437	23,175	-262	-1.1%
Knott	16,281	15,693	-588	-3.6%
Knox	32,070	31,730	-340	-1.1%
Laurel	59,352	60,094	742	1.3%
Lawrence	15,910	15,745	-165	-1.0%
Lee	7,687	6,752	-935	-12.2%
Leslie	11,273	10,711	-562	-5.0%
Letcher	24,419	23,123	-1,296	-5.3%
Magoffin	18,272	17,878	-394	-2.2%
Martin	13,208	12,808	-400	-3.0%
McCreary	12,879	12,307	-572	-4.4%
Morgan	13,721	13,275	-446	-3.3%
Owsley	4,823	4,461	-362	-7.5%
Perry	28,730	27,565	-1,165	-4.1%

Pike	64,666	61,792	-2,874	-4.4%
Pulaski	63,415	63,782	367	0.6%
Rockcastle	17,114	16,942	-172	-1.0%
Whitley	35,651	36,129	478	1.3%
Wolfe	7,362	7,259	-103	-1.4%

Source: U.S. Census Bureau

4. Stakeholder input

In speaking with a diverse array of stakeholders throughout eastern Kentucky, it was evident that there is increasingly widespread acceptance that the coal industry will not return to previous boom levels. There is movement towards a regional approach to economic development and diversification, with most stakeholders citing SOAR as a leader (discussed in section D2). Multiple stakeholders stated that capacity-building efforts should be coordinated and aligned with SOAR's goals.

Many stakeholders cited the direct impact of lost coal mining jobs and the lack of comparable employment options to replace such well-paid jobs. Many of the 8,000 miners who have lost their jobs since 2011 will need to be retrained. Also mentioned was the impact on indirect jobs related to the coal industry; while many retail and other small businesses have managed to weather the situation thus far, if local economies do not show improvement, closings will likely increase in 2016 and 2017.

Others noted the impact of coal's decline on local population numbers, the tax base, and the amount of severance tax revenues that are returned to localities, the latter sharply constraining local governments' ability to invest in economic development and public services.

Several stakeholders noted that the decline of coal mining is contributing to a loss of identity and pride for the region. One possible tool to assist with this, according to local leaders, would be capacity-building for marketing and branding efforts. They believe this could help promote a more positive image of eastern Kentucky both within and outside of the region. Some stakeholders expressed concern about a sense of apathy or hopelessness among community members and believe a shift in mindset is required.

Despite the growing recognition of the need to diversify the regional economy beyond coal, multiple people mentioned the lack of expertise in how to achieve this goal. Many communities do not have full-time economic development professionals or the resources to carry out such activities. Several stakeholders cited the importance of local elected officials' role in economic development, but explained that there are gaps in their understanding of how to spur job growth and increase prosperity. There were also some concerns expressed about the usefulness of more traditional economic development methods such as industrial parks and business attraction, as opposed to cultivating local assets.

Recognizing the many challenges, several stakeholders noted efforts that are under way to promote economic growth in the region. KentuckyWired, also known as the Kentucky I-Way, is an initiative to bring "middle mile" fiber optic broadband infrastructure to the state, starting in eastern Kentucky. There is significant interest in how local governments, businesses, and residents can leverage this new technology to encourage economic development.

Many communities are seeking to develop the tourism sector through promoting Appalachian culture and heritage, the arts, music, theater, and outdoor recreation. Other stakeholders are focused on cultivating a local foods movement by providing support to small farmers, developing supply chains, and supporting farmers' markets. Another common initiative mentioned by stakeholders is creating a culture of entrepreneurship. There is interest in creating and growing small businesses; some communities are more advanced than others in providing the necessary tools and support for entrepreneurship.

D. Economic recovery and development initiatives

1. Local strategies

There is a growing acknowledgement of the importance of regional approaches to economic development for eastern Kentucky. Local leaders are increasingly emphasizing coordination with their peers and regional organizations. Due to the eastern Kentucky POWER region's large footprint, small county populations, limited existing capacity for local economic development, and new efforts to collaborate regionally, this report focuses on regional strategies and initiatives.

2. Regional strategies

Economic Development

The most significant regional strategy is SOAR, a group that serves 54 counties in Eastern Kentucky. SOAR, an acronym for Shaping Our Appalachian Region, is a recently formed regional initiative with the mission to expand job creation; enhance regional opportunity, innovation, and identity; improve the quality of life; and support all those working to achieve these goals in Appalachian Kentucky.

The initiative started in the early fall of 2013 when then-Kentucky Governor Steve Beshear and Kentucky 5th District Congressman Hal Rogers began discussing the possibility of collaborating across political party lines to create an initiative to address the challenges facing eastern Kentucky. In its third year of existence, the initiative has become the strategic vehicle that many see as capable of fulfilling the region's vision; it enjoys support from a range of stakeholders in eastern Kentucky, as well as the new state leadership headed by Governor Matt Bevin.

SOAR has 10 areas of focus with working groups; however, SOAR's overall role includes:

1) Public relations and promoting a positive image both in and out of the region;
2) Infusing a broadband perspective into everything (business, education, workforce development, healthcare, etc.);

3) Supporting local strategies that fit into a regional vision (partially through the Kentucky Appalachian Regional Development [KARD] grant fund, which comes out of coal severance revenue and is $2 million per year);
4) "Growing the team," which includes capacity-building for local, qualified leaders in economic development; hosting expositions for local EDOs, and formalizing an economic developer network and social networking site. SOAR sees its role more as a supporter of economic development efforts, rather than implementer.

SOAR's Business Recruitment, Retention, and Expansion Committee has identified actionable strategies that include identifying competitive advantages unique to eastern Kentucky; infrastructure improvements; and establishing permanent economic development funding.[5]

Toward this end, AEP Kentucky Power commissioned a reputable economic development site consultant (InSite Consulting, LLC of Greer, South Carolina) in January 2013 to complete a S.W.O.T. analysis for an 8-county region of eastern Kentucky (Floyd, Knott, Johnson, Lawrence, Letcher, Magoffin, Martin, and Pike counties). InSite Consulting also was asked to evaluate all of the multi-county industrial parks within that footprint, plus Perry and Boyd counties.

The results of the S.W.O.T. analysis revealed vast potential for industrial development in the region with assets like ample potential properties, excellent support services in and around the population centers, and a good potential labor pool. In order to capitalize on those opportunities, two recommendations were made:

1. To form a fully funded, dedicated regional economic development organization that includes professionally trained staff and the necessary resources to practice business recruitment, retention, and expansion. As a result, One East Kentucky was established, a nine-county regional organization comprised of private businesses and local chambers of commerce tasked to recruit industry and investment.
2. The second recommendation was to develop "shovel-ready" properties that have excess utility capacity (water, sewer, data, and electricity), proper road access, and are free of any other "fatal flaws" to business prospects. Kentucky Power continued to work with InSite Consulting on a Phase II assessment of the readiness of the industrial parks.

Another relevant strategy regarded capacity-building for economic development, proposing that a regional economic development specialist be located in each of eastern Kentucky's Area Development District offices.

Outside of SOAR, the Southeast Kentucky Economic Development Corporation (SKED) is a non-profit economic development organization that serves 45 counties in Southeast Kentucky. SKED is a one-stop resource for businesses and site selectors offering an array of economic development services, such as

[5] 2014 Regional Working Group Priorities: Final Report to the Executive Board, SOAR, September 23, 2014. http://www.soar-ky.org/about-us

site selection assistance, incentive and business tax information, business financing, key contacts in business and local government, diversified loan programs, permitting, and more. SKED is also designated a Certified Development Corporation (CDC) by the U.S. Small Business Administration, which allows it to administer SBA loans. SKED works with local and subregional chambers in their economic development efforts. It is currently assisting Jackson, Lee, Perry and Clay counties to hire a designated economic development professional.

One of SKED's recent successful programs is Link Southeast Kentucky, intended to give entrepreneurs and small business owners information and guidance to grow their businesses and form lasting relationships. Link is a spinoff of SKED's highly successful Entrepreneurial SMARTS training course funded by the Appalachian Regional Commission (ARC).

The Kentucky Promise Zone was designated on January 7, 2014, by President Barack Obama as the first and only rural Promise Zone in the nation. The Promise Zone includes eight POWER counties (Bell, Harlan, Letcher, Perry, Leslie, Clay, and Knox counties, and part of Whitley County). The Kentucky Highlands Investment Corporation (KHIC) coordinates resources and implements the Promise Zone goals of diversifying the economy, creating jobs, growing small business, and improving education and retraining. The group also oversees partnerships between local, state and federal governments; the non-profit sector; schools, colleges and universities; law enforcement; and, private-sector investment.

The Kentucky Innovation Network is a statewide organization with a focus on entrepreneurship. The Network is managed in partnership with the Kentucky Cabinet for Economic Development and Kentucky Science and Technology Corporation, along with local partners, and provides assistance with business development, growth strategies and funding sources. In 2014, The Kentucky Innovation Network established an office at the University of Pikeville that serves POWER counties Breathitt, Floyd, Johnson, Knott, Letcher, Magoffin, Martin, Perry, and Pike. The office provides assistance to entrepreneurs who are starting a business as well as existing small businesses. Their services include free business-model coaching, strategic planning, and professional networking.

The Entrepreneurship for the Public Good (EPG) Program at Berea College creates a multi-year learning experience for undergraduate students to practice and implement "entrepreneurial leadership" in rural communities of Central Appalachia. The program connects students with local and regional businesses from eight counties, enabling students to practice and execute their entrepreneurial abilities while contributing to Eastern Kentucky's rural economic development.

Comprehensive Economic Development Strategies (CEDS)

Kentucky is served by 15 area development districts (ADDs), which guide and coordinate regional and local economic development planning. POWER counties in eastern Kentucky comprise all of the Big Sandy and Kentucky River ADDs, most of the Cumberland Valley ADD, and part of the Bluegrass, FIVCO, Gateway, and Lake Cumberland ADDs.

- The 2015 CEDS update for the Big Sandy ADD, which comprises Floyd, Johnson, Magoffin, Martin, and Pike counties, emphasizes the importance of basic infrastructure, housing options, and recreation. Economic development focuses on the sectors of energy, healthcare, and tourism, as well as workforce development activities that will prepare individuals for today's job requirements. They note that the layoffs in the coal industry have resulted in a highly skilled, marketable workforce with a strong work ethic that can be leveraged to bring suitable industry to the region.

- The Kentucky River ADD (KRADD) serves Breathitt, Knott, Lee, Leslie, Letcher, Owsley, Perry, and Wolfe counties. Its 2015 CEDS update also highlights the potential to leverage the skilled coal workforce in order to attract new industry. It focuses on growing a diverse economy, development and expansion of the region's infrastructure, healthcare, and capitalizing on potential economic opportunities related to healthcare, responsible resource utilization, and tourism development.

- The CEDS for the Cumberland Valley ADD, which covers the POWER counties of Bell, Clay, Harlan, Knox, Laurel, Rockcastle, and Whitley, prioritizes clusters in agriculture, tourism, information processing/call centers, and healthcare. Its action plan aims to create a more competitive business climate; attract, develop, and retain businesses; create and market their brand; work towards sustainability; foster innovation; and create an entrepreneurial culture.

- The Bluegrass ADD covers 17 counties, only two of which (Fayette and Estill) are part of the POWER project region. Their 2015 CEDS is designed to bring together the public and private sectors in the creation of an economic roadmap to diversify and strengthen the regional economy. The CEDS planning process identified three vital projects for the region: improving transportation connectivity, laying the foundation for the reuse of the Department of Defense's Blue Grass Army Depot Chemical Demilitarization Facilities, and creating the Bluegrass Higher Education Consortium among 12 colleges and universities in the region.

- The FIVCO ADD's five-county service area includes three counties that are in the POWER project region — Boyd, Elliott, and Lawrence. Its 2015 CEDS update profiles each county of the region before laying out an action plan based on 10 target areas. Some of FIVCO's goals include regional marketing, supporting entrepreneurs, promoting a large industrial park, supporting local education entities, increasing the marketable skills of the workforce, linking population centers with accessible transportation, improving water infrastructure, establishing a regional technology committee, and helping make local economies more resilient.

- Morgan County is part of the Gateway ADD, which also includes four other counties in eastern Kentucky. To increase the global competitiveness of the communities and businesses in the region, the Gateway ADD is focusing on developing high-speed internet infrastructure. It also prioritizes improvements to basic infrastructure and transportation, strengthening the education system, promoting health and safety, and facilitating responsible, performance-oriented governance.

- The 10-county Lake Cumberland ADD includes the POWER counties of Pulaski and McCreary. Its 2015 CEDS provides an update on the progress of the ADD's projects against targets laid out in the 2013 CEDS. Those goals include promoting a diverse regional economy, increasing jobs in the manufacturing sector, expanding tourism, developing a well-trained workforce, improving transportation and infrastructure networks, promoting health of citizens, and enhancing community and social services.

Workforce Development

Workforce development has been at the forefront of local and regional economic recovery efforts. Eastern Kentucky Concentrated Employment Program (EKCEP) is the prime workforce program in eastern Kentucky that administers Workforce Innovation and Opportunity Act (WIOA) programs in 23 mountain counties and also manages the Kentucky Career Center Jobsight network of workforce centers. EKCEP provides services to individuals who have been affected by layoffs from the coal mining industry, including the Hiring Our Miners Everyday (H.O.M.E.) program, jobseeker services, job clubs, Kentucky Career Center Get Opportunity! (KCCGO), Teleworks USA, and employer services.

EKCEP is actively engaged in regional economic development efforts and is collaborating with SOAR on additional workforce training opportunities for youth and unemployed coal miners. The expansion of broadband and the ensuing economic opportunities is a particular focus. Building on the TECH Hire designation (focused on information-technology skill development) a year ago and inspired by the success of Bit Source, the first coding firm of its kind in the region, EKCEP is committed to creating a thriving IT ecosystem where the needs of employers and job seekers are matched.

Food and Agriculture

Kentucky Agricultural Development information System (KADIS) is the first interactive agriculture asset map in the state. It is a project of the state's 15 Area Development Districts that aims to diversify and add value to the state's agriculture development efforts. Grow Appalachia, housed in the region at Berea College, is a multi-state program created in 2009 to address the problem of food security in Appalachia. What started in 2010 as a small program with four partner sites in Kentucky expanded to a total of seven sites across Kentucky, Tennessee, Virginia, and West Virginia in 2011, and is currently distributing resources to about 40 partner sites in more than 50 counties.

E. Conclusion

To be consistent with the existing vision outlined for the region, IEDC's POWER work should align around SOAR's strategic priorities, which have been embraced by many local and regional stakeholders. Other important partners for the design and implementation of trainings and peer learning include the

Kentucky Association for Economic Development, Kentucky Power, Kentucky Highlands Investment Corporation, Eastern Kentucky Concentrated Employment Program, Southeast Kentucky Economic Development Corporation, and One East Kentucky. Representatives from these organizations (in addition to others) have provided input into this needs assessment and can continue to offer valuable insight into the local context and suitability of trainings. They have extensive networks and trusted relationships throughout the region which IEDC can leverage.

There are several ongoing federal, state, and local capacity-building initiatives in eastern Kentucky region that IEDC will work to complement, rather than duplicate. For example, KAED, the National League of Cities, and some local chambers conduct "Economic Development 101" trainings for elected officials.

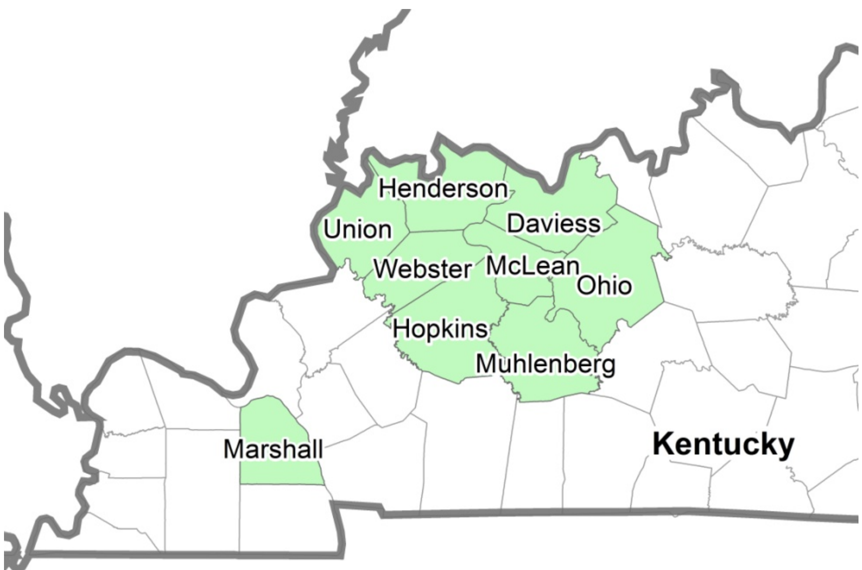
Recommended topics for training and mentorship include:

- Asset mapping
- Technology-led economic development
- Economic development training for local officials
- Tourism development and promotion
- Business retention and expansion
- Branding and marketing

Western Kentucky

A. Introduction

Western Kentucky counties have a long history of productive coal mining. Coal production was first recorded in Daviess County in 1825. About 40 years later, Hopkins County was Kentucky's leading coal producing county for 18 consecutive years. In 1911, western Kentucky produced more coal than eastern Kentucky (also a region with a long coal-mining history). Since that time, the eastern region dominated the state's coal production until 2013, when total coal production in western Kentucky surpassed it. Western Kentucky now accounts for 54 percent of total coal production in the Commonwealth.[6]



Data sources: ESRI, Economic Modeling Software Inc.
Map produced by Scott Annis, International Economic Development Council. 2016.

The western coal fields are located in west-central Kentucky at the southeast edge of the Illinois Coal Basin. Given the region's topography and basin structure, surface coal initially was more accessible and cost-effective to mine. After regional surface production peaked in 1972, underground mines have become the primary source of coal.

Union County was the largest coal-producing county in Kentucky in 2015.[7] The River View Mine in Union County now produces more coal than any Kentucky county and more than double the quantity of coal produced by the second-largest coal mine, Dotiki, in Webster County.

[6] Kentucky Quarterly Coal Report: October to December 2015, published by the Kentucky Energy and Environment Cabinet
[7] Ibid.

In 2015, Union, Ohio and Hopkins counties produced the most coal in the region and provided 2,067 coal-mining jobs – 62 percent of the regional total and 25 percent of the state total.[8]

Of the originally designated study area for this project, Marshall County is an outlier. Coal has not been mined in the county, but the Calvert City Terminal is located there, where coal that was mined in neighboring counties is prepared and shipped. At the end of 2015, the county employed 45 individuals in coal-related jobs.

Until recently, there was little cause for concern in western Kentucky regarding the decline of the coal industry. As eastern Kentucky experienced decreased production and employment, western Kentucky experienced an upswing – so much so that coal miners from eastern Kentucky relocated to the west for mining jobs. In first quarter 2015, however, Patriot Coal closed its two mines in Union County. The closures impacted more than 600 people – 14 percent of the coal jobs in the western region.[9] Since then, several other reductions in production or closures were announced. In April 2016, Hopkins County Coal and Warrior Coal announced that 253 and 150 jobs (respectively) would be eliminated.

B. Measures of industry change: Production, number of active mines, employment

Western Kentucky's coal production experienced its most recent peak in 2012 and has declined since.

1. Production

Coal production in western Kentucky declined moderately in 2013 and 2014, then more drastically in 2015 (16.4 percent). Total coal production between 2012 and 2015 declined 21 percent.

Coal production in Western Kentucky, 2012 -2015, amount and percent change

Year	2012	2013	2014	2015
Production (thousands of short tons)	42,046	40,878	39,969	33,424
Change from previous year	--	(2.8%)	(2.2)	(16.4%)

Source: Kentucky Coal Facts - 15th Edition (2015)

2. Number of active mines

The number of active mines in western Kentucky peaked in 2012, declining 22 by 2014.

Active mines in Western Kentucky, number and percent change

Year	2012	2013	2014
Number of active mines	27	24	21
Change from previous year	--	(11%)	(12.5%)

Source: EIA

[8] Kentucky Coal Facts, 14th Edition
[9] The Lexington Herald-Leader: http://www.kentucky.com/news/business/article44551737.html

3. Employment

Coal mining employment in Western Kentucky peaked most recently in 2012 at 4,583, declining 21.5 percent to 3,597 workers by 2015. The largest loss, 760 jobs, occurred between 2014 and 2015. (Job losses by county are discussed in section B1.) The Kentucky Coal Facts Report for Q1 2016 indicated that the region had lost still more jobs, listing the regional total at 2,919 coal jobs.

Coal mining employment in Western Kentucky, number and percent change, 2012-2015

2012 jobs	2013 jobs	2014 jobs	2015 jobs	2012-2015 change	Percent change
4,583	4,384	4,357	3,597	(986)	21.5%

Source: Kentucky Coal Facts - 15th Edition (2015)

The following table shows the location, dates, and number of jobs affected by selected temporary or permanent layoffs between 2012 and 2016.

Permanent and temporary layoffs at coal mines in Western Kentucky, 2012- 2016

Company name	Mine/ Prep. Plant name	Location (county)	Date announced	Number of jobs
Patriot Coal	Freedom Mine	Henderson	Nov. 2012	156
Patriot Coal	Bluegrass Surface Mining	Henderson	-	119
Ohio County Coal Company	Grand Eagle Mining Prep. Plant	Ohio	-	196
Oxford Resource Partners	(none given)	-	2012	191
Heritage Coal Company	Heritage Camp 9 Prep Plant and Heritage Camp 530	Union	Feb. 2015	110
Highland Coal Company	Highland Mine 9	Union	Dec. 2014	483
Dodge Hill Mining Company, LLC	Dodge Hill Mine No. 1	Union	Feb. 2015	135
Armstrong Coal	Parkway Prep. Plant	Muhlenberg	Nov. 2015	6
Armstrong Coal	Coal-Parkway Mine	Muhlenberg	Nov. 2015	52
Warrior Coal LLC	(none given)	Hopkins	Feb. 2016	150
Hopkins County Coal LLC	(none given)	Hopkins	Feb. 2016	253
Patriot Coal Company	(none given)	Henderson	2015	500
Total				**2351***

Sources: Kentucky Career Center WARN Notices by year and Green River Area Development District 2015 Comprehensive Economic Development Strategy

**Number includes temporary layoffs and thus does not match absolute change noted in the previous table*

C. Measures of economic impact

1. Job loss by county and multiplier effect

Coal mining jobs declined 25 percent overall in Western Kentucky between 2012 and 2015. Union County lost the most jobs in absolute terms, while Henderson County showed the high percentage loss. The only county to gain coal employment was McLean (by 151 jobs, nearly 2000% percent). At the time of writing, new mines were being planned in McLean County.[10]

Coal mining job change by county, 2012-2015

County	2012 jobs	2015 jobs	2012-2015 change	2012-2015 % change
Union	1,292	697	(595)	46%
Henderson	108	1	(107)	99%
Muhlenberg	576	459	(117)	20%
Webster	671	551	(120)	18%
Hopkins	997	741	(256)	26%
Daviess	43	28	(15)	35%
Marshall	50	45	(5)	10%
Ohio	710	629	(81)	11%
McLean	8	159	151	1888%
Western Kentucky	**4,543**	**3,324**	**(1,145)**	**(25%)**

Source: Kentucky Coal Facts (13th through 15th Editions)

The jobs multiplier for coal mining is 3.09, according to Emsi. Using this figure, a loss of 1,145 coal mining jobs in western Kentucky from 2012 to 2015 translates to the loss of 3,583 jobs when factoring in direct, indirect and induced effects.

Stakeholders in the region report that secondary industries – such as engineering firms that work almost exclusively for the mining industry, fabrication and machining facilities that maintain and produce mining equipment, and restaurants, for example – all have been negatively affected by the coal industry downturn.

2. Unemployment rates

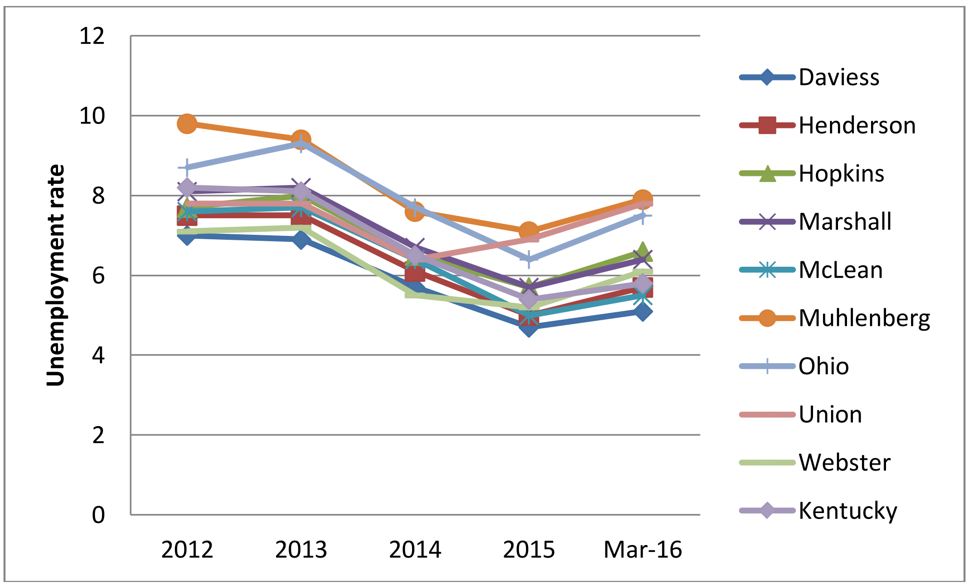
Overall, unemployment rates have declined in Kentucky and coal-producing counties in the west since 2012. Since 2015, however, unemployment rates have increased in western Kentucky's coal-producing counties. Muhlenberg and Union counties have consistently experienced the highest unemployment rates compared with other coal-producing counties in the region and the state.

[10] http://www.14news.com/story/28594018/hundreds-of-jobs-expected-with-new-mclean-co-mine

Unemployment rates in coal-impacted counties in Western Kentucky, Dec. 2012-Feb. 2016*

County	2012	2013	2014	2015	March 2016
Daviess	7	6.9	5.7	4.7	5.1
Henderson	7.5	7.5	6.1	5	5.7
Hopkins	7.7	8	6.5	5.7	6.6
Marshall	8.1	8.2	6.7	5.7	6.4
McLean	7.6	7.7	6.4	5	5.5
Muhlenberg	9.8	9.4	7.6	7.1	7.9
Ohio	8.7	9.3	7.7	6.4	7.5
Union	7.8	7.8	6.4	6.9	7.8
Webster	7.1	7.2	5.5	5.2	6.1
Kentucky*	8.2	8.1	6.5	5.4	5.8

Source: U.S. Bureau of Labor Statistics
Not seasonally adjusted.



3. Severance tax revenues

Severance tax revenues – discussed in more detail in the eastern Kentucky section – rose slightly in 2013, declined in 2014 and are expected to continue declining. The reduction in coal severance revenue directly impacts economic development in Western Kentucky as this revenue has been used to fund economic development offices, develop industrial parks, and finance studies, along with business attraction and retention activities.

Union, Henderson, Webster, and Ohio Counties, for example, rely heavily on coal severance funds from the state. In some instances, as much as a 50 percent of coal severance funds are distributed back to these counties.

Western Kentucky coal severance tax receipts and annual change, fiscal years 2012-2014

Fiscal Year	Receipts	Change from previous year
2012	$88,157,279	--
2013	$88,595,187	0.5%
2014	$86,747,783	(2.1%)

Source: Kentucky Coal Facts 13th- 15th Editions

According to Kentucky's Office of the State Budget Director, coal severance taxes for the state as a whole fell 8.7 percent, or $17.2 million, in fiscal year 2015: "Total collections for the fiscal year were $180.3 million and are the lowest since FY04 when receipts totaled $147.5 million. Collections for the state have now fallen in 13 consecutive quarters and dropped almost 40 percent since peaking in FY12—just three years ago."[11]

4. Stakeholder input

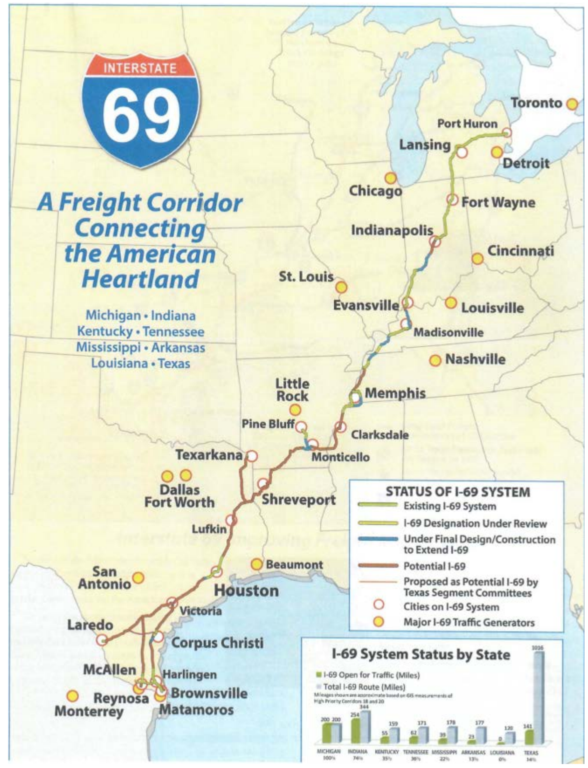
The common concern of stakeholders across the region is the direct loss of coal mining jobs and the indirect and induced effects of this loss on other businesses, employees, schools and tax revenue. The decline in coal mining is relatively new to the western portion of Kentucky. Most economic developers are in the response stage and in the early stages of planning for economic recovery. Muhlenberg and Hopkins counties, for example, were recently awarded a POWER grant to engage in strategic planning. At the time this report was written, a Request for Proposals had been released seeking a strategic planning consultant.

The primary response efforts of local economic developers pertain to workforce development and retraining. Workforce development and retraining have proven difficult, however, for several reasons. One of these challenges is the dominant perception among workers that coal jobs will return. As a result, some dislocated workers have relied on their severance pay to wait out the downtown in coal production.

Another challenge is pay of available jobs for former miners, which typically is significantly less than coal mining. Wages for coal mining can range from $70,000 to over $100,000, two to three times the amount earned in other positions that require only a high school diploma.

[11] Office of State Budget Director: http://osbd.ky.gov/Publications/Tax%20Receipt%20Reports%20%20Fiscal%20Year%202015/1506TaxReceipt.pdf

Several stakeholders in the region identified manufacturing, logistics and distribution, and agriculture as key target industries. For example, the Green River Area[12] targets aluminum, paper, plastics, and automotive manufacturers. Green River's automobile industry comprises 35 firms that employ over 3,500 individuals. Toyotetsu Mid-America, which supplies several Toyota facilities (including Toyota Motor Manufacturing Indiana), is one of the largest employers in Green River.



Source: https://web.saumag.edu/news/files/2016/05/I-69-map.jpg

In term of potential opportunities, numerous stakeholders expressed interest in maximizing the benefits of Interstate 69. (I-69 connects the region as far south as Mexico and as far north as Canada, but only parts of the corridor through Kentucky currently have official interstate designation.) It is hoped that this connectivity will position the region well for distribution companies such as UPS. While the completion of I-69 is promising, a key obstacle is constructing a bridge across the Ohio River from Henderson, Ky., to Evansville, Indiana. Currently, there is a $170 million gap in financing for the construction. Groups formed to overcome this challenge – C-LINK and BridgeLink – are discussed in section C1 below.

Stakeholders believe that the interstate will create an international trade corridor and a stronger regional connection to Indiana. The regional collaboration discussions with Indiana currently are based primarily on workforce development. Workforce and economic developers from both areas are working together to develop four-year training agreements.

D. Economic recovery and development initiatives

The statewide early intervention service for dislocated coal miners in the area is the Rapid Response program. Rapid Response is administered by the Green River and West Kentucky workforce investment boards. Both workforce boards work directly with employers and newly displaced workers. Some of the services offered through the Rapid Response program include: job search and job placement assistance; job counseling; labor market information; job search workshops, interviewing techniques and resume writing assistance; and career and aptitude assessment.[13]

Stakeholders in Muhlenberg County noted that some displaced workers are interested in entrepreneurial ventures. Rather than retrain for available manufacturing jobs, some former coal miners

[12] Daviess, Hancock, Henderson, McLean, Ohio, Union and Webster counties
[13] West Kentucky Workforce Board: http://www.wkworkforce.work/#!dislocated-worker-services/c24wo

have chosen to start businesses. Currently, the Muhlenberg Alliance for Progress (MAFP), Greater Muhlenberg Chamber of Commerce and the West Kentucky Workforce Investment Board are partnering to provide entrepreneurial development support. With funding from the Felix E. Martin Foundation, MAFP is in the beginning stages of providing additional support to include a revolving loan fund and training for entrepreneurs.

In Daviess County, the Buck$ for Bright Ideas competition gives residents the opportunity to win $30,000 in prizes to advance their business ideas, with the help of local business development experts. The free services offered by participating firms include market and patent research, accounting support and product design assistance.

Another local economic response strategy mentioned by stakeholders is tourism development. Economic developers and other community leaders are looking to leverage outdoor and historic tourist attractions in the Pennyrile area (which includes Muhlenberg and Hopkins counties). According to the Kentucky Tourism Cabinet, the 2014 total travel expenditures for Hopkins County and Muhlenberg counties were $51.7 million and $24.4 million, respectively. In the Green River area, Bluegrass music and Daviess County barbecue are central to the tourism industry.

Similar to what has been observed in Alabama, our research did not identify local economic development strategies planned specifically to offset the loss of coal industry employment, apart from workforce development. However, existing regional approaches to economic development apply and are discussed below.

<u>Comprehensive Economic Development Strategies (CEDS)</u>

The primary coal-producing counties in the region are covered by the Pennyrile and Green River Area Development Districts (PADD and GRADD).

PADD is the regional planning and development organization for western Kentucky's Pennyrile region and includes the coal-impacted counties of Hopkins and Muhlenberg. The *Pennyrile Area Development District Comprehensive Economic Development Strategy 2015* lists the following core goals:

- **Advance the Pennyrile region’s talent pipeline** by enhancing the region’s educational and workforce development resources, and aligning training with target industry needs.
- **Build the Pennyrile region’s entrepreneurship infrastructure** by creating a regional entrepreneurship initiative that provides the networks and assets necessary to support the creation of new companies.
- **Promote growth of the Pennyrile region’s target industries** by improving the region’s business climate and encouraging the participation of private industry in economic development.
- **Engage in marketing activities that promote the region as a destination for business** by building awareness and strengthening internal collaboration.

PADD’s priority action items are as follows:

- Expand 4-year degree options;
- Build the region's entrepreneurship infrastructure;
- Organize a private-sector task force to support and advise each target industry initiative; and
- Invest in a highly professional online presence for the region.

The Green River Area Development District (GRADD) is the regional planning agency for Daviess, Hancock, Henderson, McLean, Ohio, Union and Webster counties. According to GRADD's 2015 CEDS, the organization's current goals include:

- Develop and promote the tourism industry;
- Promote the preservation of historic buildings, sites, and districts;
- Attract and maintain industry;
- Continue the utilization of agricultural resources for economic growth; and
- Improve the quality and qualifications of the workforce and expand opportunities for the workforce.

Kentucky Network for Development, Leadership and Engagement (Kyndle)

The Kentucky Network for Development, Leadership and Engagement (Kyndle) is the economic development organization for Henderson, McLean, Union and Webster counties. According to its 2015 Action Plan, Kyndle's key industry targets are metals, logistics, prepared foods and automotive. The organization's current objectives include:

- Marketing;
- Strengthening its existing industry program;
- Strengthen workforce development program;
- Enhance partnerships and communication among stakeholders, the community and region;
- Create a local revolving loan fund/incentive program for new and existing industry.[14]

The leadership at Kyndle is also collaborating with the Chamber of Commerce of Southwest Indiana to advocate for building a new I-69 bridge between Henderson, Ky., and Evansville, Indiana.

C-LINK

The Chamber Leadership Initiatives for Northwestern Kentucky (C-LINK) is a regional advocacy group comprised of 12 chambers of commerce in 10 western Kentucky counties. As mentioned above, one of priority items is "maintaining the momentum toward the total completion of Interstate 69 from a new Ohio River bridge in Henderson County."[15]

[14] The Gleaner: http://www.thegleaner.com/business/kyndle-unveils-5-year-economic-development-strategic-plan--30c7bbf3-3839-0595-e053-0100007f0738-376292921.html

[15] Kyndle wesite: http://www.kyndle.us/what-is-kyndle/c-link-kyndle-connects-to-the-region.html

West Kentucky Future

In 2010, The West Kentucky Workforce Board commissioned the West Kentucky Future initiative, a workforce development strategy for the Pennyrile and Purchase areas (Muhlenberg, Hopkins and Marshall counties, for the purposes of this report). Consultants facilitated a four-month strategic planning process that included an analysis of the regional workforce, identification of industry opportunities, and development of a strategic action plan.

In 2016, the workforce board announced the development of an updated report. The workforce analysis is currently underway and will be followed by area-specific sector analyses and strategic action plans.

E. Conclusion

The decline of coal mining in western Kentucky has had the most significant impact in Union, Henderson, Muhlenberg, Hopkins and Webster counties. While workforce development is currently the primary response to the loss of coal jobs, regional stakeholders are in the early stages of exploring other strategies to offset this loss. Economic developers in Western Kentucky have identified the following primary training needs:

- Entrepreneurship and small business development
- Workforce and economic development alignment and talent attraction
- Diversification of funding for economic development organizations and activities
- Business attraction and marketing (especially image making and branding)
- Training for public officials, particularly at the municipal level
- Tourism development
- Exporting

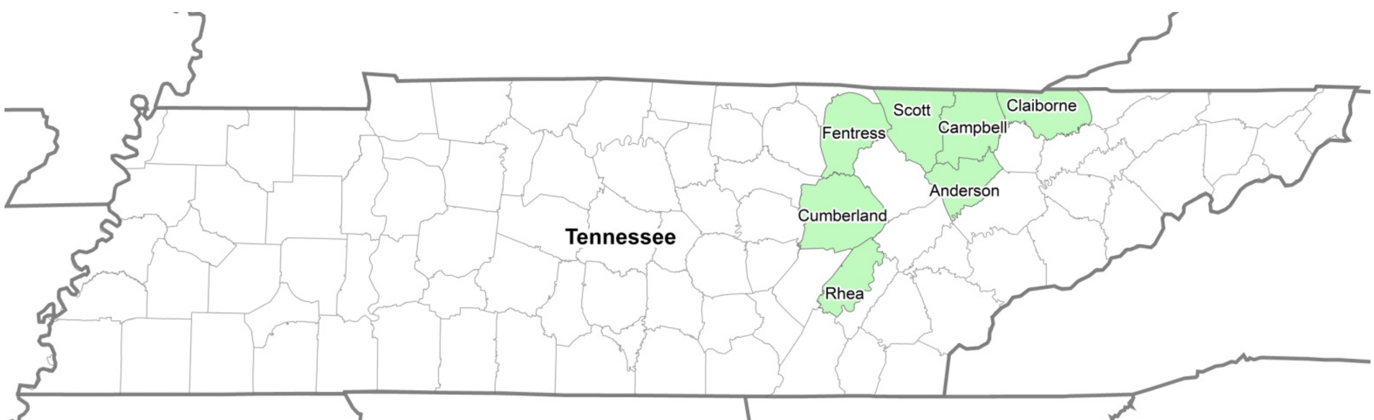
Tennessee

A. Introduction

Eastern Tennessee has a rich history in mining bituminous coal. In fact, the Coal Creek War of 1891-1892 in Anderson County began after coal mine operators started using convict laborers over free miners following the American Civil War. After the war, the state of Tennessee led the south in stopping the use convicted laborers.[16]

According to the U.S. Energy Information Administration, Tennessee coal accounts for less than 0.1 percent of the nation's total coal output. Coal production in the state peaked at around 11 million tons in 1972 and has fallen since then, decreasing to less than 1 million tons per year in 2014 and 2015. Nearly all the coal produced in Tennessee is shipped out of state.

Historically, the mining industry has stretched from Claiborne, Campbell and Scott counties on the Kentucky border down to Marion County on the border of Alabama and Georgia. Today, Claiborne and Anderson counties have significantly more coal-related employment than any of the other counties originally designated as the study area for this project. Those additional counties – Anderson, Cumberland, Fentress, Rhea and Scott – each had roughly two dozen or fewer mining or mining support jobs between 2011 and 2015.



Data sources: ESRI, Economic Modeling Software Inc.
Map produced by Scott Annis, International Economic Development Council. 2016.

The Tennessee Economic and Community Development department identified 21 counties it considers the most economically disadvantaged in the state, and Campbell, Claiborne, Fentress, Rhea and Scott counties all have been included in the list. These counties face many of the challenges common to rural

[16] Coal Creek Watershed Foundation, Inc. http://www.coalcreekaml.com/history.htm

and remote communities. At the same time, many of the stakeholders interviewed for this report expressed great pride in and hope for their communities.

B. Measures of industry change

Similar to Kentucky and other coal states, Tennessee's coal industry has experienced fluctuations in productivity and employment over time.

1. Production

As recently as 1989, Tennessee produced nearly 6.5 million short tons of coal. The state's coal industry experienced a 54 percent decline in production during the five-year period between 1989 and 1994. In the 25 years from 1989 to 2014, coal production in the state declined by 87 percent. The most recent peak in the state's coal production occurred in 2010, at nearly 1.8 million short tons – down 53 percent since 2010.

Coal production in Tennessee, 2010-2014, amount and percent change

	2010	2011	2012	2013	2014
Production (thousands of short tons)	1,780	1,210	1,090	1,098	839
Change from previous year	--	(32%)	(10%)	1%	(24%)
Total change, 2010-2014					(53%)

Source: EIA

2. Number of active mines

In 1989, there were 98 mines in Tennessee. By 2014, there were just seven mines. A significant decline occurred between 1989 and 1994, where the number of mines dropped from 98 to 24. Over the following ten years, the number of mines fluctuated slightly, reaching a new high of 32 in 2004. The most recent peak in the number of mines occurred in 2011, and had declined 35 percent by 2014.

Active mines in Tennessee, number and percent change

	2011	2012	2013	2014
Number of active mines	21	14	11	7
Change from previous year	--	(33%)	(21%)	(35%)

Source: EIA

3. Employment change

The most recent peak for coal mining employment in Tennessee was in 2011 at 544 jobs, including both coal mining and support activities. That declined to 314 jobs by 2015. Prior to 2011, the most recent peak in coal mining employment in the state was in 2006, with 432 jobs.

Coal mining employment in Tennessee, number and percent change, 2011-2015

2011 jobs	2015 jobs	2012-2015 change	Percent change
544	314	(230)	(42%)

Source: Emsi

C. Measures of economic impact

1. Job loss by county and multiplier effect

Since 2011, at the county level, Claiborne and Anderson counties lost the most jobs in terms of absolute numbers. Scott County held steady, while Campbell and Cumberland counties gained a small number of jobs.

Coal industry job change by county, 2011-2015

County	2011 jobs	2015 jobs	2011 - 2015 change	2011 - 2015 percent change
Claiborne	257	217	(40)	(16%)
Anderson	237	41	(196)	(83%)
Scott	25	25	0	0%
Campbell	14	22	8	57%
Fentress	10	<10	Insf. Data	Insf. Data
Rhea	<10	0	Insf. Data	Insf. Data
Cumberland	0	<10	Insf. Data	Insf. Data

Source: Emsi

The jobs multiplier for coal mining is 3.09, according to Emsi.[17] Using this figure, a loss of 230 coal mining jobs between 2011 and 2015 translates to the loss of 710 jobs when factoring in direct, indirect, and induced effects.

2. Unemployment rates by county

Unemployment rates have declined in the coal-producing counties in Tennessee since 2011, a time during which the state and the United States as a whole also experienced job recovery following the Great Recession. At the same time, local stakeholders indicated that some citizens have moved in search

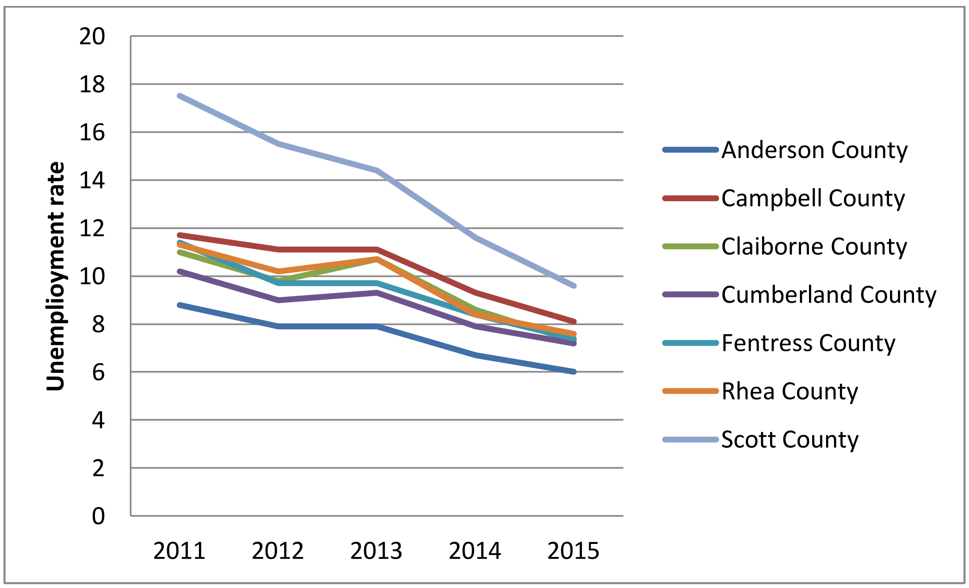
[17] Includes, at the 6-digit level, Bituminous Coal and Lignite Surface Mining (212111), Bituminous Coal Underground Mining (212112), and Support Activities for Coal Mining (213113).

of work, some residents travel on a monthly basis to other coal regions to work, and that others became discouraged and dropped out of the workforce altogether.

Annual unemployment rates in coal-producing counties in Tennessee, 2011-2015

	Anderson County	Campbell County	Claiborne County	Cumberland County	Fentress County	Rhea County	Scott County
2011	8.8	11.7	11.0	10.2	11.4	11.3	17.5
2012	7.9	11.1	9.8	9.0	9.7	10.2	15.5
2013	7.9	11.1	10.7	9.3	9.7	10.7	14.4
2014	6.7	9.3	8.6	7.9	8.4	8.4	11.6
2015	6.0	8.1	7.3	7.2	7.4	7.6	9.6

Source: FRED Economic Data, Federal Reserve Bank of St. Louis



3. Severance tax revenues

Tennessee, like other states, imposes a severance tax on mined coal. In recent years, the severance tax rate has varied from $0.50 per ton (between July 2009 and July 2011) to $0.75 per ton (July 2011 to June 2013) to $1 per ton (July 2013 to the present). Revenues collected are returned entirely to the local governments where the coal was severed, except deductions for administration and collection.

As severance tax revenues have been used to fund basic local government operations, education and road maintenance, affected counties have been challenged to find other sources to make up for the lost revenue and to maintain services.

Tennessee coal severance taxes receipts and annual change, fiscal years 2012-2015

Fiscal Year	Receipts	Change from previous year
2012	954,645	--
2013	971,110	1.72%
2014	932,345	(3.99%)
2015	762,163	(18.25%)

Source: Tennessee Department of Revenue

4. Stakeholder input

Stakeholders in Tennessee have had varied experiences with the decline in the coal industry. Counties with strong local assets and accessible locations have been better positioned to respond to the fluctuation than more rural and remote communities. For instance, Anderson County benefits from the Oak Ridge National Lab and Interstate 75. At the same time, other counties have struggled with limited alternative employment options for displaced miners, especially given pay levels for those jobs that often are half or less of what miners previously earned. A number of stakeholders mentioned a lack of interest among some workers who receive public assistance to work at jobs that pay $8 to $10 an hour, even if they include health and retirement benefits.

Workforce skills are a challenge in the region. Former miners require retraining to prepare them for positions in other industries, such as manufacturing. Several stakeholders mentioned other workforce challenges in the region, primarily related to soft skills – e.g., how to behave in a job interview, or the importance of showing up for work. They also noted concern that more rural communities do not possess the skilled workers or infrastructure necessary to attract high-skill, high-paying jobs. Many skilled workers travel up to an hour to work outside of these counties. Some counties do not have the broadband or power grid capacity to support manufacturers or other industry. Though Scott County has broadband service, it is offered at a rate too high for many to afford.

Several communities see opportunities in the tourism industry, but recognize the need for new amenities such as retail and restaurant options. Average household incomes in the region are below that necessary to attract retailers, but some stakeholders believe this could change with increased tourism.

Recently in Rhea County, a company considered opening a mine. However, it had difficulty gaining traction, as the decline in coal prices would not cover the costs of laying the infrastructure for the mine and shipping the coal to China. The company was expected to hire a couple of hundred people and the coal severance tax would have greatly aided the county.

D. Economic recovery and development initiatives

1. Local strategies

Workforce development programs were mentioned by stakeholders in almost every county as the primary local strategy to address employment challenges. Community and technical colleges are local partners though the Promise, Reconnect and LEAP initiatives. The Tennessee Promise initiative is a last-dollar scholarship program that provides funding for high school graduates to attend a community or technical college for two years. The Tennessee Reconnect initiative allows citizens with some college but no degree to return to school at one of Tennessee's Colleges of Applied Technology to complete their degree. The Tennessee LEAP initiative focuses on eliminating skills gaps to ensure that the postsecondary trainings meet employers' workforce needs.

Many stakeholders cited opportunities in industries including manufacturing, ceramics, tourism, and technology. Proximity to I-75 has presented several opportunities to attract suppliers to the automotive industry and other manufacturers. Ceramics is a focus in Cumberland County, while Campbell, Scott and Claiborne counties are focused on exploring tourism opportunities. (The region sees many tourists from Ohio and other points north to take advantage of the region's lakes, hiking trails, ATV trails and resorts.) With Oak Ridge National Lab in Anderson County, nearby counties hope to use this asset to attract firms that want to be near the research facility.

Both the Tennessee Valley Authority (TVA) and the University of Tennessee, Knoxville (UT) offer trainings and certifications to local economic development stakeholders. TVA provides data resources and trains local leaders how to use the data. Additionally, TVA works with economic development stakeholders on their websites. UT provides a certification for Tennessee economic developers and conducts training courses in marketing and attraction; business retention and expansion; managing economic development organizations; small business and entrepreneurship development; and finance. Additionally, UT offers the Basic Economic Development course in accordance with IEDC's Certified Economic Development program.

Stakeholders spoke highly of their trainings, yet noted that Tennessee's certification for economic developers is not recognized outside of the state. In addition, training often are held in larger communities an hour's drive or more away. Local stakeholders expressed interest in additional trainings on workforce development, economic development for community leaders, retail and tourism, as well as one-on-one mentoring on leveraging local assets.

2. Regional and Comprehensive Economic Development Strategy (CEDS)

Anderson, Campbell, Claiborne and Scott counties fall under the purview of the East Tennessee Development District (ETDD). According to its 2015-2017 CEDS, ETDD sees the downturn in the coal industry as a threat to the region despite having only a "handful of active mines."[18] Furthermore, ETDD recognizes the needs in workforce and infrastructure development in the rural communities (where

[18] East Tennessee Development District CEDS 2015-2017

many of the mines are or were located) to support industrial growth. This includes broadband access in Campbell County and public water/wastewater access in rural communities. The ETDD focuses on tourism, technology, and automotive manufacturing clusters, which were also seen by local stakeholders as areas for growth in the region.

Cumberland and Fentress counties are part of the Upper Cumberland Development District (UCDD). The 2015-2020 CEDs focuses on four goals – workforce development and education, resiliency, telecommunications, and tourism. Similar to other counties, the UCDD sees the addition of hotels and restaurants as an opportunity that would prompt tourists to stay longer and spend more money in the region.

Also through the region is a focus on improving the number of residents with postsecondary training through the TN Promise and TN Reconnect initiatives. Other overall strategies common throughout the region include economic diversifications, resilience, and access to broadband technology.

E. Conclusion

The downturn in the coal industry in the Tennessee has had a diverse impact. Some counties, such as Anderson, have rebounded faster due to their location on I-75 and near the Oak Ridge National Laboratory. Other, more remote counties have fewer options for miners and their families. Despite the wealth of training programs offered by UT and TVA, opportunities for customized trainings and mentoring to assist these communities in strengthening and diversifying their economies remain. There is a strong interest in holding trainings in the rural counties so that local stakeholders have better access. Overall, economic development stakeholders expressed interests in training and mentoring on the following topics:

- Retail recruitment
- Downtown revitalization
- Tourism
- Workforce development
- Broadband infrastructure
- Industrial site analysis
- Incorporating soft skills and work ethics
- Strategies to transition from vision to implementation
- Asset mapping
- ED 101 for rural elected leaders
- Becoming an ambassador for the community
- Behavioral gap analysis
- Leadership training
- FDI Attraction
- Economic diversification strategies

Appendix: List of Stakeholders Interviewed

The IEDC POWER team conducted interviews with the following stakeholders during late winter and spring 2016.

Stacey Webb, Economic Development Representative (EDR) – Alabama, EDA
Jim Searcy, Executive Director, Economic Developers Association of Alabama
Dr. Sam Addy, Associate Dean for Economic Development Outreach & Sr. Research Economist, Center for Business & Economic Research, University of Alabama
Lisa Rollan, Regional Workforce Council Liaison, Alabama Department of Commerce
Nisa Miranda, Director, University of Alabama Center for Economic Development
Joe Sumners, Director, Economic & Community Development Institute, Auburn University
Ken Novak, VP, Community & Economic Development, Alabama Power
Warren Hicks, Economic Development Project Manager, TVA
Millie Callaway, Program Manager, Community Development, TVA
Aaron Stewart, Senior Program Manager for Rural Strategies and Special Projects, TVA
Cory Johnson, Director of Community & Economic Development, West Alabama Regional Commission
Yvonne Murray, Director of Economic Development, RPC of Greater Birmingham
Cindy Burns, CEcD, Vice President, North Alabama Industrial Development Association
Donny Jones, Chief Operating Officer, West Alabama Chamber of Commerce
Waymond Jackson, Vice President, Workforce Development, Birmingham Business Alliance
Goodrich "Dus" Rogers, President & CEO, Jackson County Economic Development Authority
David Knight, Executive Director, Walker County Development Authority
Paul Kennedy, President, Walker Area Community Foundation
Keith Strother, Economic Development Manager, Jefferson County Community & Economic Development
David Thornell, President & CEO, C3 of Northwest Alabama
Forrest Davis, Director of Economic Development, City of Bessemer
Names misplaced (2), Alabama Industrial Development Training
Pamela Farmer, Economic Development Representative (EDR) – Kentucky, EDA
Kitty Dougoud, Main Street State Coordinator, Kentucky Main Street program
Jared Arnett, Executive Director, SOAR
Chuck Sexton, President & CEO, One East Kentucky
Ian Mooers, EKU Center for Economic Development, Entrepreneurship & Technology
Jacob Colley, President, Southeast Kentucky Chamber of Commerce
Terri Cutright, former Main Street Manager, Prestonsburg
Regina Becknell, Enterprise Development Specialist, Mountain Association for Community and Economic Development (MACED)
Paul Wright, VP of Enterprise Development, MACED
Justin Maxon, Mary Reynolds Babcock Foundation
Timothy McNeilly, United States Department of Agriculture
Denise Thomas, Big Sandy Area Development District
Stephen Taylor, Kentucky Highlands Investment Corporation
Brad Hall, AEP Kentucky Power Co
Tim Gibbs, President/CEO, Ashland Alliance
Peter Hackbert, Director, Entrepreneurship for the Public Good (EPG), Berea College
David Cooke, Grow Appalachia

Sandi Curd, Kentucky Highlands Investment Corporation
Frank Fitzpatrick, Middle Creek National Battlefield Foundation
Joe DePriest, Director, Letcher County Economic Development
Betsy Clemons, Executive Director, Hazard/Perry Chamber of Commerce
Melissa Frazier, Public Health and Regional Workforce Analysis Researcher, KYCOM, University of Pikeville
Ben Haydon, Director of Business & Member Development, Kentucky Association of Manufacturers
Joshua Huffman, City Commissioner, City of Pikeville
Franklin D. Justice, II, City Commissioner/Former Mayor (2003-2014), City of Pikeville
Fran Jarrell, Executive Director, Paintsville Johnson County Chamber Of Commerce
Chuck Summers
Stephen Taylor, Development Director, Kentucky Highlands Investment Corporation
Brett Traver, Executive Director, Southeast Kentucky Economic Development
Jeff Whitehead, Executive Director, Eastern Kentucky Concentrated Employment Program (EKCEP)
Jake Weir, Industrial Development Manager, Norfolk Southern Corporation
Dr. Walter "Doc" Blevins, Judge/Executive, Rowan County
Ian Mooers, Economic and Entrepreneur Liaison, EKCEP
Dr. David D. Snow, Director, Kentucky Innovation Network Office, University of Pikeville
Lynn Allen, President & CEO, Bluegrass International Fund
Nathan Mick, Vice President, Statebook
Hal B. Goode, President/CEO, Kentucky Association for Economic Development
Kathy King Allen, Executive Director, Floyd County Chamber of Commerce
Brad Thomas, Economic Development, Associate Manager, East Kentucky Power Cooperative
Bob Helton, Economic Development Manager, RJ Corman Railroad Group,
Jim Tom Trent, Mayor, Morehead, Kentucky (Rowan County)
Trish Adams, Industy Liaison & Trainer, EKCEP
Michael Cornett, Director of Agency Expansion & Public Relations, EKCEP
Jody A. Lassiter, President/CEO, Danville Economic Development Partnership
Tonita Goodwin, Assistant Director, Richmond Office at EKU, Kentucky Innovation NetworkDonna Crooks, CEcD, Vice President of Economic Development, Kentucky Network for Development, Leadership and Engagement
Joanna Shakem, Executive Director, Green River Area Development District
Jason Vincent, Executive Director, Pennyrile Area Development District
Brad Davis, Purchase Area Development District
Debbie Gray, Economic Development Executive, LGE-KU Energy, LLC
Ken Robinson, President and CEO, Muhlenberg Alliance for Progress
Lee Lingo, President and CEO, Madisonville-Hopkins County Chamber of Commerce
Ruthann Padgett, VP of Entrepreneurship, Madisonville-Hopkins County Economic Development Corporation
Garrick Thompson, Director, Union County Economic Development Foundation
Patty Osborne, Vice President, Greater Owensboro Economic Development Corporation
Robert Cook, Sales Representative, Atmos Energy Corporation
Bertha Partin, Economic Development Representative (EDR) – Tennessee, EDA
Heidi Smith, General Manger, Marketing Development and Field Operations, TVA
Ann Thompson, Director, Workforce Development, Tennessee Economic and Community Development
Kim Denton, Beth Phillips, Associate Director of Corporate and Foundation Relations, University of Tennessee

Alan Neel, President and CEO, East Tennessee Economic Development Agency
Tim Thompson, President, Anderson County Economic Development Association
Andy Wallace, Campbell County Economic Development
Brooke O'Dell, CEO, Claiborne Economic Partnership
Stacey Kidd, Executive Director, Scott County Chamber of Commerce
J. Bradley Allamong, President, Crossville-Cumberland County Chamber of Commerce
Dennis Tumlin, Executive Director, Rhea Economic & Tourism Council