Ohio Coal Communities Research Project:

Belmont County, Ohio Case study



Founded in 1801 and tucked between the historical industrial centers of Wheeling, WV, Steubenville, OH, and Moundsville, WV, Belmont County is one of the most heavily industrialized regions in the United States and is the all-time leader in coal production in the state with more than 824.9 million tons produced from the county since 1816. Two centuries later in 2016, Murry Energy closed several of



RE Burger Power Plant at Dilles Bottom. 7 miles downriver from Shadyside and across the Ohio River from Moundsville, WV Photo: Chuck Mauer

the remaining mines in region, some of the largest and most productive mines in the country. By 2020, in spite of a rich history of coal production, one mine still remains, positioning Belmont County as the fourth largest producer of coal in Ohio, just behind Noble County. The focus of this project was the R.E. Burger power plant, a 568 MW coal-fired power plant and was located along the Ohio River on a small bit of land called Dilles Bottom. It was commissioned during World War II to meet skyrocketing industrial demands for electricity and was supplied coal via barge transport on the river. Under threat of closure, and as a means to keep running under increasing environmental regulations, the R.E. Burger power plant was almost converted into a biomass plant in 2009. After that announcement, those plans were ultimately abandoned, and R.E. Burger closed its

doors forever in 2011. The plant would sit immobile for five years until it was finally demolished in 2016 through the combined effort of FirstEnergy, JobsOhio and a new company, PTT Global Chemical, interested in potentially building an ethane cracker plant (a refinery to process natural gas into plastic) atop the same ground that R.E. Burger once operated. However, it has been six years since RE Burger was demolished and a final, official investment from PTT Global Chemical remains to be seen.

Key Takeaways

The lack of transparency around when plants officially close make it difficult for communities to prepare for what is

A regional transition away from an economy rooted in production and towards service is upending traditional socio-economic conditions

The Petrochemical industry is an unsteady bet for the Ohio River Valley, both environmentally and economically

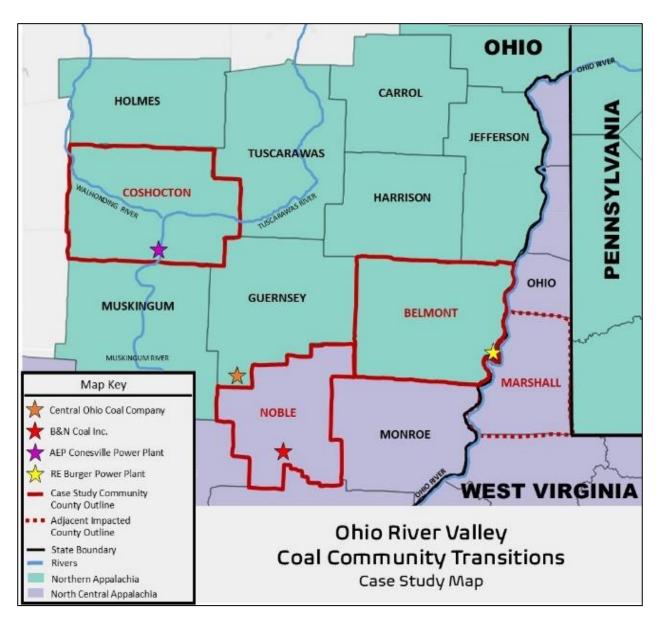
Belmont benefits from its proximity to Wheeling, the highway system and the Ohio River. Leaning on those benefits is crucial to survival



Community Development at Ohio State University Extension

helps communities enhance their well-being and create social, economic and environmental conditions in which they can thrive.

Geographic Overview:



Map by Katie Finneran 2022

- Belmont County is located in the heart of southeastern Ohio's Appalachian region.
- The county is bisected by East/West Interstate 70.
- The Ohio River, with the ability to provide low-cost bulk transportation, is along the county's Eastern border.
- Shadyside was the community in the study, named for a local tree-lined farm, population 3,785.



Former Berger Power Plant at Shadyside, Ohio Photo Courtesy of Willie Brown (via Joe Ward)

Noble County Economic Profile



- Belmont's population in 2020 was estimated at 66,497 (down from 70,400 in 2010)
- The median age is 44.6



May 2022 Unemployment = 4 %

Labor Force: 28.300Employed: 27,200Unemployed: 1,100

Total Annual Payroll, 2020/\$1,000 = 697,203

Largest Employment Sectors

- Service
- Trades
- Education & Health
- Leisure & Hospitality
- Natural Resources & Mining



750 Farms

- Land in farms (acres) = 129,364
- Number of farms = 750
- Average size (acres) = 172
- Top Crops & Livestock Acreage: Cow/Calf/Beef; hogs/pigs; Corn for grain; Corn for silage; Wheat for grain; Winter Wheat



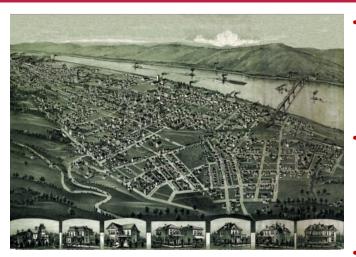
- In 2021, an estimated 8.1% of the total Belmont County population was in poverty
- 23.2% of minors were in poverty
- Medium HH income = \$50,904
- Per Capita Income = \$42,987



- Life expectancy is more than 77 years
- In 2021, 49.5% of the population were aged 50+ years (with 20.3% being 65+ years of age)
- 66 Physicians
- 2 Hospitals, 64 beds
- 92.5% with health insurance

Data from: BHRC & OSU, 2020 and ODOD, 2020

Ohio & Belmont Coal History:



Martin's Ferry, 1899

- Coal was first noted in Ohio as early as 1748 (Crowell, 2005). Coal has been mined in Ohio since 1800. Mining technology has evolved from pick and shovel to the highly automated equipment.
- Surface mining involves removing layers of soil and rock (called overburden) above the coal seam and extracting the coal. This method is used where coal seams lie close to Earth's surface. (Crowell, 2014).
 - In 2021, coal generated 23 percent of the electricity for the United Sates (EIA, 2022).
- The state's top 10 list of highest coal producing counties includes Belmont, Harrison, Jefferson, Perry, Athens, Tuscarawas, Guernsey, Meigs, Muskingum, and Noble Counties with "Belmont as the all-time leader in coal production" (Crowell, 1995).
- Increase in Ohio's coal production is due primarily to larger, more efficient mining equipment.
 "Ohio's industrial growth, variety of commerce, and economic prosperity are a result of the development of her natural resources, especially coal" (Crowell, 1995).
- Reclamation of mine land is the restoration process required by Ohio law, which is one of nation's strictest. Companies must have a plan for how topsoil, water conditions, vegetation, wildlife and other resources will be protected. (Crowell, 2014).
- There were surges in coal production during the 1970s. (Lobao et al., 2021).
- In 2020, Ohio was the fourth largest electricity consumer and one of the top 10 coal consuming U.S. states. (EIA, Ohio Profile 2021)
- According to the United Mine Workers of America, by Dec. 2020, U.S. Coal employment had fallen to 44,100 jobs down from 92,000 in 2011. In the past ten years, more than 60 coal companies have filed for Chapter 11 reorganization or Chapter 7 liquidation. There are still 75 active mines in Ohio (UMWA, 2020).



Heavy equipment mechanic and member of the Ohio Operating Engineers Local 18, District 6., Gale Lumbatis, working on a Caterpillar land mover in Belmont County, Ohio.

Photo provided by: Gwynn Stewart

(photographer, unknown)

West Virginia and Marshall County Coal

- Across the Ohio River from Shadyside in Belmont County Ohio is Marshall County West Virginia. In Marshall South of Moundsville is the Mitchell Power Plant, a 1,633 MW coal fired power station built in 1971 and owned by Appalachian Power Company and Kentucky Power. The WV Public Service Commission voted in 2021 to keep the plant operating until 2040 (Adams, 2021).
- Coal mining was important in Marshall County, including two active mines. Coal has contributed significantly to West Virginia's history since it was discovered in 1742. Today, 25% of coal mined is shipped to foreign markets for us in manufacturing steel, while 15% is used by the U.S. steel industry. The residual of West Virginia's coal generates electric power (Weiser-Alexander, November 2021).

Marshall County, as of 2020, not only produces more coal than any other county in West Virginia (a little more than a fifth of West Virginia's entire coal output) this one county also produces almost four times the amount of coal than the entire state of Ohio (EIA, 2020). While much about the culture of coal seems to be shared between regions and across nations even, in Appalachia there does seem to be something unique about West Virginia. For one, it is the only state that exists entirely inside of the ARC boundaries and is at present the highest coal



Mitchell Power Plant near Moundsville, WV.

Photo by Jeffrey Jacquet



Moundsville, WV., Image from Moundsville Documentary

producing state in the entire Appalachian region. The coal industry's hold on the region seems to be weighted heavily in West Virginia at this point, which likely explains to some extent why the Mitchell power plant is still operating while many others along the Ohio River are slowly but surely being decommissioned. In spite of the fact that the plant itself is nearing the end of its life a deal was struck to save the Mitchell plant and extend its life through to 2040 (Redd, 2021). Ultimately, the plant is getting so old that they need expensive upgrades to operate beyond 2028, and West Virginia regulators forced ratepayers in the state to fund the cost, which will ultimately lead to higher utility costs in one of the poorest states in the country, something that consumer protection groups have been pushing back against (Tate, 2022, Finneran, 2022).

Coal Impacts



RE Burger Power Plant at Dilles Bottom. 7 miles downriver from Shadyside and across the Ohio River from Moundsville, WV. Photo by: Chuck Mauer



The R.E. Burger plant smokestack demolition in 2016.
Photo by Times Leader's Joe Lovell

RE Burger Plant Site

The RE Burger Power Plant was located seven miles south of Shadyside, Ohio, right across the Ohio River from Moundsville, WV, on a small stretch of land called Dilles Bottom. Burger was commissioned in the 1940's to meet the skyrocketing industrial demands. It was originally owned by Ohio Edison, but was owned by FirstEnergy following a 1997 merger between Ohio Edison and Centerior when closed (The Evening Independent, 1947; Salpukas, 1996).

Key Belmont County leaders indicate that part of the success in development planning after the coal plant closure was the success in securing access to the site for future development. Its location along the Ohio River is key.

For Belmont County has weathered the coal transition with resilience – defined by USDA as the ability of a region to anticipate, withstand and bounce back from shocks, disruptions and stresses to its economy (NACO/NACO, 2021).

Since 2013, the former site of the R.E. Burger coal powered plant was remediated with \$50 million by JobsOhio (JobsOhio, 2021). In 2016, the former stacks were demolished in the site remediation efforts.

"The only people who can save a community are the people in the community!"

~ After Coal Documentary

"Appalachia has been struggling with the transition from coal for more than 70 years. One lesson to emerge is there's no one-size-fits-all answer for coal communities."

(Adams & Bleizeffer, 2020)

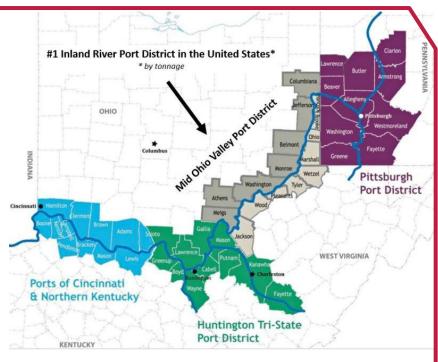
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Lessons Learned

Community Resilience & Economic Development Planning

The Ohio Department of Transportation (ODOT) completed the Economic Impacts of Ohio River Maritime Activity study in 2019. The results showed that cost savings of barge transportation over trucking and rail for the 41.2 million tons of cargo shipped/received via the Ohio River in 2018 is estimated at \$545.1 million annually. The Mid-Ohio Valley Port district is the #1 inland river port district in the United States (out of 133) in terms of tonnage. (Current, 2021)

"The six coal-fired operating power plants located along the Ohio River within Ohio



Mid Ohio Valley Port District Map

generate 9,991 MW, or 39.7 percent of the state's total generation capacity. The ability of these power plants to receive coal by barge have allowed for continued low-cost power generation. Coal has the second-largest direct employment impact in terms of commodity groups." (Current, 2021)

Broadband Planning

Belmont County Commissioners are actively working with the Belmont Port Authority and a company called OhioGig to develop the essential broadband infrastructure in the county. Initial efforts have

Top photo of Ohio River in Belmont County by Belmont Co. Tourism. Coal barges are a common site on The Ohio River in Belmont County Photos by: William Sharp

focused on Belmont College and building out the county schools' capacity.

"There's a lot of very intelligent, highly motivated people in this area, a lot of our challenges are the rural areas that are involved in Appalachia getting, for instance, even in my little area a 22-mile school district - we had to purchase over 70 hotspots to be able to ... because right now, as I am sitting here talking to you our students are learning remotely and to be able to get internet access to our rural areas. So, one of our biggest challenges is biggest challenges is not having the internet access that the rest of the world has ya know." (Shadyside Interviewee)

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Lessons Learned



Photo courtesy of ohiohillshealthcenters.com



Shifting Economies: From Production to Service

Belmont County is home to a variety of health care assets for the great Ohio Valley region including Barnesville Hospital (operated by WVU Medicine) and Martins Ferry's East Ohio Regional Hospital (EORH). In addition, Barnesville is also home to the regional headquarters of the federally qualified health care center system, Ohio Hills Health Centers which employs more than 85. Creation of jobs at a hospital is also significant. EORH has added more than 500 jobs.

"In Martin's Ferry, which is 15 minutes North of us. WVU has partnered with a couple local hospitals. So, you know, our health care is transitioning to a broader base you know, one of our concerns." (Shadyside Interviewee)

Since 1928, Barnesville Hospital has served Belmont County and the surrounding areas. In early 2019, Barnesville Hospital entered into a management agreement and clinical affiliation with West Virginia University Hospital System (Bias et al, 2020). The hospital also serves Monroe County, which has no local in-county hospital and employs nearly 250 people. Photo above of Barnesville Hospital courtesy of wvumedicine.org/Barnesville.

"I mean, for lack of a better word we've learned how to survive. When I was a teenager, everyone graduated high school and got a job at Wheeling-Pitt. Wheeling-Pitt's gone, and you know, either that or a coal mine and we've got very few coal mines left. So, you know, the brain drain is almost become a survival way." (Shadyside Interviewee)

At left: Photo Provided by East Ohio Regional Hospital recognized as a reemerging business in 2021 by the Eastern Ohio Development Alliance. Shown, from left, are Matt Abbott, president of the EODA; Belmont County Commissioner J. P. Dutton; Bernie Albertini, chief operating officer with EORH; John Johnson, owner of EORH; Commissioner Jerry Echemann; Sherri Butler of the Belmont County Port Authority; and Larry Merry, executive director of the Belmont County Port Authority.



Post-Coal Possibilities

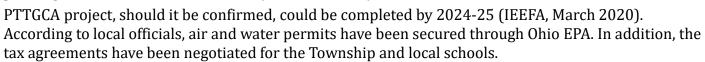
"When the Belmont power plant shut down in 2010, its closure decimated the local community as it was the area's largest employer and the community's and the Shadyside School District's biggest taxpayer" (JobsOhio, 2021).

Since 2013, the plan for the site has been focused with developers and the Thailand-based PTT Global Chemical Public Company Limited for siting of an ethane cracker as well as on some additional acreage to the southwest owned by Ohio-West Virginia Excavating (Junkins, 2016).

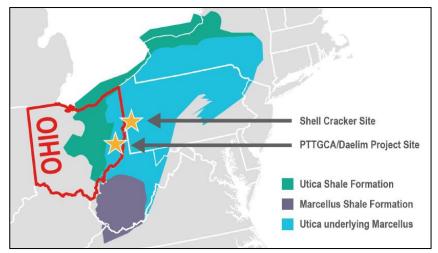
An ethane plant sited in Monaca, PA, was the first of its kind outside of the Gulf Coast Region in 20 Years. The Belmont County, Ohio, planned site was an additional site planned to follow.

According to JobsOhio, a variety of factors support the petrochemical plan siting include: the region's abundant natural gas supply; access to water on the Ohio river; proximity to market demand; and a skilled labor force.

"PTTGCA has already invested \$300 million in the project and could invest more than \$8 billion in the construction of the plant pending their final decision in 2022," (JobsOhio, 2021). The



"[Schools] negotiated an 18-year, \$38 million enterprise zone agreement in lieu of taxes. When they make their final investment decision, in other words when PTT says we're building this plant. One







Shadyside's Tiger Field Photo by: Gwynn Stewart



month later a check for \$4 million is coming into our school district and then we can use that \$38 million agreement we have signed with PTT right now and we can go out and borrow money and build ourselves a brand new \$30 million pre K-12 School District." (Shadyside Interviewee)

"A Thailand-based oil and gas company had offered to pay for a new school in Shadyside, Ohio. But with its local project now on hold, superintendent John Haswell says all he can do is "wait and wait." Photo by Reid Frazier

Post-Coal Possibilities



Duke Energy engineers and contractors survey the site of a coal ash spill.



East Ohio Regional Industrial Park in Belmont County serving oil/gas industry.



An Appalachian Marcellus/Utica shale Drilling Rig and pad. Photo by Ohio Oil & Gas Association

Minerals from Coal Waste

There are many different coal transitions happening, yet some coal infrastructure may remain indefinitely.

Some researchers from Penn State, funded by a \$1.2 million US Department of Energy grant, are looking at whether critical minerals may be extracted from Appalachian coal mining waste (Carey, 2021). The study's goal is to see if there could be a domestic resource for materials.

Oil & Gas Development

Helping meet the demand for Ohio's natural gas needs, the region is home to the Utica and Marcellus shale formations, which have accounted for 85 percent of U.S. shale gas production growth. More than 70% of Ohio households depend on natural gas to heat their homes (OOGA, 2022).

According to OhioSE, the Belmont County JobsOhio partner, the Ohio Southeast region is "home to over 3,300 permitted wells with 2,800 drilled and 2,500 producing." Oil and gas companies paid more than \$36 million in property taxes from 2011-17, as well as \$300 million in road repairs to bolster the region's transportation system. (OhioSE, 2022).

According to the Ohio Department of Natural Resources, as of Jan. 2022, Belmont County had 655 drilled wells with 615 producing; an additional 74 wells are permitted.

Ohio Coal Transitions: Pathways for Community Resilience Research Team

A research and arts project that blends social science, fine arts photography, library and archival research, theatre, and Extension to tell the stories and animate community-centered discussion around coal transition

For the study, in order to understand the political, socio-cultural, psychological, and traumatic impacts of coal facility closures amidst multifaceted processes around the transition away from coal, the focus narrowed in on three case study communities in southeastern Ohio along the Northern Appalachian foothills: Caldwell (Noble County), Shadyside (Belmont County) and Conesville (Coshocton County).



On a Site visit in Noble County, from left: Max Woodworth; Katie Finneran; William Sharp (in mirror); Gwynn Stewart: Jeffrey Jacquet and Jeffrey Bielicki. Photo by William Sharp.

- Jeffrey B. Jacquet, PhD | Associate Professor School of Environment and Natural Resources, The OSU Sustainability Institute
- **Gwynn Stewart, MS** | Community Development Educator IV, Ohio State Extension Noble Co.
- Max D. Woodworth, PhD | Associate Professor Department of Geography
- **Jeffrey M. Bielicki, PhD** | Associate Professor Department of Civil, Environmental & Geodetic Engineering, The OSU Sustainability Institute, and the OSU John Glenn College of Public Affairs
- Thomas Dugdale, MFA | Assistant Professor Department of Theatre, Film & Media Arts
- Mandy Fox, MFA | Associate Professor Department of Theatre, Film & Media Arts
- Katie Finneran, MS | Graduate Student, School of Environment & Natural Resources
- Elena Musser | Honors Student, School of Environment & Natural Resources
- Brian Capobianco, MA | Graduate Student, School of Environment & Natural Resources
- William Sharp | Research Photographer, Curator, Archivist, School of Environment & Natural Resources

References:

Buckeye Hills Regional Council (BHRC) and The Ohio State University Extension Noble County, (2020). Rural Economic Development Innovation Plan

Adams, Steven Allen. (Aug. 5, 2021). PSC Approves Plan to Keep Mitchell Plant Open – The Intelligencer

Adams, Mason and Bleizeffer, Dustin, (2020). Reckoning in Coal Country Lessons from Wyoming and Appalachia on planning for a future without coal

After Coal Documentary Wales. (2015, April 1). Retrieved from https://aftercoal.com/documentary/

Bias, Thomas; Abildso, Christiaan and Sarkees, Emily. (March 12, 2020) *Barnesville Hospital 2020 Community Health Needs Assessment* (CHNA) West Virginia University Health Research Center

Bowen, Eric, Ph.D., Christiadi, Deskins, John, and Lego, Brian. (2020). *An Overview of Coal and the Economy in Appalachia*. West Virginia University - Commissioned by the Appalachian Regional Commission

Carey, Liz, (2021). Consortium to Look at Pulling Critical Minerals from Appalachian Coal Waste

Crowell, Douglas L., 2005. *GeoFacts No. 14.* Ohio Department of Natural Resources – Division of Geological Survey

Crowell, Douglas L., 2014. *GeoFacts No. 15.* Ohio Department of Natural Resources – Division of Geological Survey

Crowell, Douglas L., 1995. Bulletin 72 - History of the Coal-Mining Industry in Ohio

Current – March 2021 - Ohio's Electric Cooperatives Available online at: https://www.ohioec.org/ohios-electric-cooperatives-current-march-2021

EIA. (2020) Dept. of Energy, Annual Coal Report. Washington D.C

Frazier, R. (2020, October 17). Appalachian Town Must "Wait And Wait" As Pandemic Puts Plastics Plant On Hold October 17, 2020. *The Allegheny Front*. Retrieved from https://www.npr.org/sections/coronavirus-live-updates/2020/10/17/924557817/appalachian-town-must-wait-and-wait-as-pandemic-puts-plastics-plant-on-hold

Institute for Energy Economic and Financial Analysis - IEEFA, (March 2020). *Proposed PTTGC Petrochemical Complex in Ohio Faces Significant Risks*

JobsOhio, (2021). PTTGCA Ethane Cracker Project: Crucial to Belmont County, the Region, and Ohio. Available online at: https://www.jobsohio.com/blog/pttgca-ethane-cracker-project-crucial-to-belmont-county-the-region-and-ohio/

Junkins, Casey - The Times Leader (July 26, 2016). Burger plant smokestack demolition set Local venues hope to capitalize on tower coming down Available online at: https://www.timesleaderonline.com/news/local-news/2016/07/burger-plant-smokestack-demolition-set/

NACO/NADO Webinar Coal Reliant Communities 2021

New renewable power plants are reducing U.S. electricity generation from natural gas - Today in Energy - U.S. Energy Information Administration (EIA)". www.eia.gov. Retrieved February 16, 2022.

Ohio Department of Development, Office of Research (2020). Ohio County Profile – Belmont County

Ohio Department of Transportation, (2019). Economic Impacts of Ohio River Maritime Activity study

Outdoor Business Alliance Network, (2021). *Inspiring the Future of the Outdoor Recreation Economy*

Patterson, Brittany (2019) Powering Down: Ohio Community Reckons with Coal Plant Closure (2020, December). United Mine Workers of America Newsletter.

U.S. Department of Energy, Energy Information Administration (July 15, 2021). Ohio State Energy Profile.

Weiser-Alexander, Kathy, (November 2021) - Legends of America West Virginia Coal Mining https://www.legendsofamerica.com/west-virginia-coal-mining/

Belmont County Convention & Visitors Bureau - https://www.visitbelmontcounty.com/

Belmont County Port Authority - http://belmontcountyportauthority.com/

OhioSE Economic Development, JobsOhio Partner in Appalchia - https://ohiose.com/

The Ohio Oil & Gas Association - https://www.ooga.org

East Ohio Regional Hospital – https://www.eohospital.com/about#history

Burger, Beth, Sept. 5, 2019 – CCU Coal to cut 205 jobs from eastern Ohio because of power plant closure - Columbus Dispatch

Ezzell, T. and all (March 2020) Extending Our Welcome, Trends and Strategies for Tourism in Appalachia, an ARC Tourism Report

Finneran, K.J. (2022). Reclamation of Agency in the Ohio River Valley: Towards an Eco-Crip Theory of Critical Trauma (Master's Thesis, The Ohio State University).

Gioglio, R., Sohngen, B., Haab, T. and Bruskotter, J. (2019). *Economic Value of Natural Areas in Ohio Report -* The Ohio State University CFAES

Initial Report to the President on Empowering Workers Through Revitalizing Energy Communities – Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization – April 2021

Kowalski, Kathiann, (2021) Ohio's Solar project queue on pace to surpass coal capacity this decade, Energy News Network - energynews.us

Linda Lobao, Mark Partridge, Oudom Hean, Paige Kelly, Seung-hun Chung, & Elizabeth Ruppert Bulmer, (October 25, 2021) Socioeconomic Transition in the Appalachia Coal Region: Some Factors of Success

Michaud, Gilbert. and Wilson, Natalie. (2019). *Economic impacts of The Wilds.* Ohio University's Voinovich School of Leadership and Public Affairs.

Mills, Mark P., (July 2020) Mines, Minerals, and "Green" Energy: A Reality Check - The Manhattan Institute

Redd, D. (2021, October 16). Mitchell Plant Can Remain In Operation Until At Least 2040. The Intelligencer .

Tate, C. (2022, February 1). Consumer Groups Ask Feds to Weigh in on Future of Coal Plant. West Virginia Public Broadcasting. National Public Radio (NPR).

Tourism Economics (2019). The Economic Impact of Tourism in The Appalachian Region of Ohio

U.S. Energy Information Administration, 2018 - *U.S. coal consumption in 2018 expected to be the lowest in 39 years – found online at:*www.eia.gov/todayinenergy/detail.php?id=37817

US EPA - www.epa.gov/brownfields

AEP Mitchell Plant - www.aep.com/environment/ccr/Mitchell

Interview Source Category	n = #	Code Format	Breakdown of Participants	
Noble County (Case Study One)	n = 9	CA Interviewee # (CA for Caldwell)	Former Coal Mine Workers Elected Local Officials Unelected Local Officials Economic Developers Historian Educator	*2 *5 1 1
Belmont County (Case Study Two)	n = 7	S Interviewee # (S for Shadyside)	Former Power Plant Workers Elected Local Officials Local Business Owner Economic Developers Historian Public School Administrator	*2 *3 1 1 1
Marshall County (Sub-Case Study A)	n = 6	M Interviewee # (M for Moundsville)	Elected Local Officials University Extension Non-Profit Admin/Employee Family of Plant Employee	3 1 *2 *1
Coshocton County (Case Study Three)	n = 17	C Interviewee # (C for Conesville)	Former Power Plant Workers Elected Local Officials Coal Transport Worker Economic Developers Historian Public School Administrator Non-Profit Admin/Employee Coal Mine Worker	8 2 1 2 *1 2 1 *1
Miscellaneous Interviews	n = 5	MISC Interviewee # (MISC for Miscellaneous)	Regional Non-Profit Employee Generalized Coal School National Non-Profit	3 1 1

Learn more at:

https://energizeohio.osu. edu/fossil-energyresources/ohio-coalcommunities

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