Coal Communities Looking Towards the Future:
Case Studies of Towns and Counties in Colorado, Montana, and Wyoming

Introduction:

Across the United States, coal mining and coal-fired power plants have been a source of economic windfall and civic pride for decades. In some communities, members of local families have worked in the mines and operated the plants for generations, so long that it has become an integral part of their identity and their family's legacy. And while the members of these communities are no strangers to cycles of relative boom and bust, the decline of coal over the past fifteen years in particular – and its dwindling future prospects – is often seen as the most existential threat to their livelihoods yet.

In 2008, 48% of electricity generated in the United States came from coal. Just 13 years later, that figure was just 22%. Federal and state policies, along with increasing public sentiment about the damaging environmental impact of fossil fuels, will see coal-fired electricity continue to decline in the coming years and decades before it eventually falls to zero. Coal communities are being forced to adapt in order to mitigate the impact of these changes, shifting their perspectives and their economies as they explore opportunities and plan for a more diverse economic future. In this paper we will present case studies of three communities in Colorado, Montana, and Wyoming, examining the importance of their coal industries, the crises that the decline of coal has precipitated, and the various avenues that committed local leaders are using to lead their communities through change and uncertainty to growth and sustainability.

Craig, Moffat County, Colorado

Craig, the Moffat County seat, sits in the northwestern corner of Colorado, a four hour drive from Denver. Past world-class ski resorts and recreational activities in Steamboat Springs, an arrival into Craig is indicated by the billowing clouds released from a row of three smokestacks rising from the power plant. But that water vapor – it is an important distinction for many of those that rely on the coal industry, that so-called smokestacks are not actually pouring coal smoke into the air – will end with the closure of the power plant and the coal mines by the end of the decade.

The Craig Station is a three-unit coal-fired power plant that produces nearly 1300 megawatts of energy. Unit 1 is scheduled to close in 2025, Unit 2 in 2028, and Unit 3 in 2029 or 2030. The mine that feeds the plant is slated to close alongside it. The power plant has around 180 employees and the mine employs another 115 people. These have been steady, well-paying jobs for decades, often providing salaries that are significantly higher than the county average. The loss of those jobs will obvjously affect the workers and their families most directly. But it will also impact other small business owners, the local shops, restaurants, and bars that depend on the higher level of disposable income coal industry workers often have compared to the average. Local experts note that workers will end up in one of four categories: those who are fortunate enough to be able to retire between now and the closure of the plant and mine; those who are able to move to find similar work in the energy industry elsewhere; those who are able to change industries, either retraining or starting their own business; and those who may become chronically unemployed. Because of these individual challenges, there is an increasing risk of significant population loss that would exacerbate the economic challenges at the city and county levels as well.

In 2020, Moffat County's total assessed value was roughly $430 million. The coal industry accounts for half of this as well as for half of the total tax revenues, mainly from property taxes. When the power plant shuts down and the mine ceases operations in 2030, Craig and Moffat County will essentially have half as much money coming in as they did at the beginning of the decade. The loss of that tax revenue will mean a significant

challenge in paying for infrastructure, critical government services like fire and emergency response, as well as funding schools and paying teachers. If the end of the coal industry in Moffat County drives an exodus of people, the shortfall of tax revenue will be even greater. The loss of the coal industry will hit Craig and Moffat County hard in a number of potential ways. The question is how hard and what government officials and community leaders can do to mitigate the impact.

What's next?

Officials from Craig and Moffat County are already hard at work exploring where new economic opportunities might arise; they know they cannot afford to take a wait and see approach. There are now several new projects and exploratory initiatives being implemented around the county that could facilitate a just transition away from the coal industry.

- Two power lines for wind and solar projects running from Wyoming to Nevada will pass through Moffat County. This has been a lengthy developmental process already and is still ongoing: the land use agreements for the entire path of the power line needed to be in place before construction could begin and numerous right-aways needed to be engineered along the line. But by the end of the decade, the construction process should bring short-term jobs and revenue, while the taxes levied on the use of the land will continue to bring in money in the longer term.
- Along the Yampa River five miles outside of town, a pumped-storage hydro project is also in the planning stages. This closed-loop project would generate 600 megawatts of electricity and would connect with the transmission lines that currently run from the power plant in Craig. Currently in the socio-economic assessment process, the project would provide 30 full-time jobs and roughly 300 temporary construction jobs.
- Officials are also currently conducting a feasibility study to explore options for repurposing the power plant facility, in particular looking at the possibility of transforming it into an industrial park. Officials are considering targeting the aerospace industry or the recreational industry, or tapping into a startup ecosystem with the rise of remote work, and are looking to welcome business leaders from around the state for an exploratory tour in the near future.
- Further looking to take advantage of the opportunities for outdoor recreation activities in the area and tap into the tourism industry, Craig officials are looking to develop a riverfront park that, while it may not provide many direct jobs, should provide a boost to local businesses.

In the meantime, the Department of Workforce Education and Economic Development at Colorado Northwestern Community College has been working to put together courses and apprenticeship programs for workers who are or will be affected by the energy transition. None of these new approaches will be able to replace the coal industry on its own. But the diversification of the economy and the multi-pronged approach to developing a new economic future for Moffat County will serve the community well.

Hardin, Big Horn County, Montana

An hour's drive from the biggest city in Montana, Big Horn County covers a large swath of more than five thousand square miles in the southeastern part of the state. Two-thirds of the county is made up of the Crow Reservation, the residents of which also account for two-thirds of the county's population. Of the nearly eight thousand residents living on the reservation, 3,200 live in Crow Agency, the largest tribal community in the area; Hardin, the county seat, has an additional 3,800 residents. In addition to the coal mines, Big Horn's economy is further built on agriculture and government services, but it remains a persistent poverty county according to several metrics. This is due in no small part to the challenging economic conditions faced by residents of the Crow Reservation, where 43% of adults were not formally employed as of 2019. The closure of

coal mines and power plants – which has already begun and continues looming into the near future – will further impact the economic status of the county as a whole, Native and non-Native alike.

Between 2010 and 2019, 60% of Montana's coal was sourced from four mines in Big Horn County before being shipped to power plants across the Great Plains and the Midwest. The closure of a number of those power plants sent the first wave of economic tremors through the area. One of those four mines closed in 2016 and a second followed in 2021 after the company that owned them filed for bankruptcy in 2020. This filing cost workers and the local government dearly. Workers were out $2.7mm in pension funds, while combined losses in at the county and state levels totaled $15mm in unpaid taxes.

The county and state economies were further impacted – as was the case in Craig and Moffat County – by a loss of royalties. All mining companies are required to pay royalties to the US Department of the Interior, which passes half of those onto the states who then pass a portion further down to the counties holding the mines. In 2022, Big Horn County saw its royalties fall to just $1.2mm, barely more than a quarter of the total from a decade earlier. Critical local institutions that also rely on coal grant money like the hospital in Hardin are feeling the effects as well. The sharp decline in tax revenue has forced the Big Horn County government to lay off staff and cut services at the same time that they are forced to raise taxes on individuals, families, and small businesses, burdening the already economically vulnerable local population with the responsibility for making up those losses. Government leaders and staff at all levels – county, city, and tribe – are overburdened as a result and routinely lack the capacity to secure and utilize additional government and non-government funding, especially when it comes to overly complex process surrounding federal grants. That these grants unintentionally become biased towards less-vulnerable communities that have either the staffing and expertise to make it through the application process and utilize the grant funds or that have the funding to hire outside consultants to facilitate the process can only be seen as adding insult to an ongoing and worsening injury.

On top of the hardships exacerbated by an uncertain energy future, Big Horn County and the Crow Reservation in particular struggle with other issues of housing quality, availability, and affordability and overall infrastructure shortcomings, including unreliable internet access and cell phone service. Economic activity is drawn outside of the county, Hardin, and the Crow Reservation to Billings in particular; local residents' money is increasingly rarely recirculated in their local economies. Vital local businesses in Big Horn County often struggle to secure the crucial lines of credit or loans that would help them become established sources of local economic activity. This is even more true for entrepreneurs on the Crow Reservation. The divisions between tribal and county governments, as well as state and federal agencies, provide another layer of bureaucracy and red tape; tribal regulations and institutions are often particularly unfamiliar to private sector companies or lending agencies, dampening their willingness and ability to invest or operate in the area.

The loss of well-paying mining jobs underscores all of these challenges, which will continue to mount in the coming years: one of the remaining mines, which extracts coal on Crow land and remains the tribe's largest single source of revenue, was estimated to have just five more years of viable reserves as of 2021.

What's next?

Alongside ongoing efforts to explore a renewable energy transition, with a focus on the potential for wind farms and hydro power on the Bighorn River, leaders are looking to develop the tourism industry. The Little Big Horn Battlefield National Monument sees several hundred thousand visitors in some years; harnessing the draw of this historic area to generate further activity in outdoor recreation, hunting, and fishing could provide a much needed economic boost to the area. Other leaders have begun to emphasize the importance of workforce development programs, providing apprenticeship opportunities and trade education for workers struggling to find steady employment. Local institutions like Little Big Horn College and the non-profit Plenty Doors are

building the capacities of young people while working to meet the basic needs of families across the reservation and the county. Lastly, a new economic development position for Hardin and Big Horn County was recently funded by the federal government with the aim of focusing on business and housing development.

While there will be difficult years ahead for the residents of Hardin, the realities of life on the Crow Reservation and the marginalization of Native Americans that has persisted throughout the history of the United States and shows few signs of meaningful amelioration to this day make Big Horn's future prospects even more challenging than those faced by some other coal communities. Local leaders in the government, in the communities, and on the reservation remain committed to steering their constituents and neighbors through to a more stable and sustainable future, however.

Gillette, Campbell County, Wyoming

Gillette, the seat of northeastern Wyoming's Campbell County, is in somewhat of a unique position for a community that has historically been heavily dependent on fossil fuels. The area has persisted through cycles of boom and bust for a century, yet the city of Gillette is five times as large as it was in 1970 and has doubled in population since 1990. Referred to as the energy capital of the country, Gillette and Campbell County provide almost 40% of the coal used for electricity generation across the country, in addition to being a significant provider of oil and natural gas.

After the first coal mine opened in 1923, the area saw an oil boom that began in the 1950s and 1960s, fueling decades of economic growth through to the early 2000s. The mining and energy industry provided generational employment and the foundation of the community and by 2008, nearly seven thousand people were employed in the Campbell County coal mines. The North Antelope Rochelle Mine, owned by Peabody Energy, and the Black Thunder Mine, owned by Arch Resources, traded spots as the most productive coal mine in the country; seven other mines in the county have ranked among the top 15 since opening in the 1970s and 1980s. Each one of these provided well-paying jobs, often at salaries almost double the state average. This would not last, however. Upwards of 97% of Wyoming's coal was mined and shipped for use in the energy sector, but with the market for coal declining for more than a decade now, Gillette is bracing itself and preparing for change.

After the industry peaked in 2008, coal production fell by half by 2021 and the number of people employed declined by one-third. Half of Wyoming's annual revenue comes from the energy sector; losses related to the sector have totaled between $300-$400mm in each of the last few years. Campbell County's assessed value declined by $850mm between 2020 and 2021. While a portion of this is due to pandemic-related shutdowns and economic challenges, it remains indicative of the important role that coal mining holds in the economy. Again, as in other coal communities, the impacts will be felt not only in employment but in education funding, infrastructure, and critical government services.

Despite the market shifts and policy changes around the country that prioritize renewable energy, Campbell County is still home to six coal-fired power plants and twelve mines shipping coal to 26 different states. The first planned decommission is further off than in other coal communities, scheduled for 2039, though it is possible that it happens sooner rather than later. This is Gillette's unique position, then: heavily invested in coal, yet so important to energy for so much of the country that it has more time and more resources to pave the way for its future.

What's next?

This position is clearly beneficial for Gillette and Campbell County because the runway to a stable economic future is longer and could be smoother than in other areas. But it could also make it easier to become

complacent and push transition efforts further down the line as buy-in from community members who take such pride in their role as energy providers for the country proves more challenging without the immediate looming threat of shutdowns and economic falloff. Fortunately, local leaders in Gillette and Campbell have chosen instead to start positioning the area on the cutting edge of the energy sector once again.

Carbon capture, utilization and storage (CCUS) technologies are being brought to the forefront of Campbell County's energy industry. The University of Wyoming and the Carbon XPRIZE have become leaders in the CCUS field while the Wyoming Integrated Test Center allows CCUS companies to test their technology on the Dry Fork Station power plant. Gillette has also begun to help facilitate private-private partnerships through which they connect a CCUS company looking for a testing site with a coal company that has that infrastructure in place in the area. Research being conducted as part of the Carbon Safe Project is also ongoing; once the current third phase is complete, the next phase will be full-scale carbon capture. Officials continue exploring other energy options as well including advanced nuclear technologies, manufacturing of activated carbon products, reclamation of mining and power plant infrastructure including railways and shipping capabilities, and the development of industrial parks to further the advancement of the sector. Overall, the idea is that Gillette will continue to support its coal industry going forward while positioning it to be a part of the new energy economy in the future. Retrofitting coal-fired power plants with CCUS technology, for example, should at the very least be a stopgap measure that allows Campbell County to continue producing and shipping coal by slowing the timeline of expected power plant closures until new facilities designed specifically with in-built CCUS technology are developed and opened for use.

Gillette has also established itself as a hub for sporting events and tournaments, with heavy investment in state-of-the-art facilities, and government leaders are further investing in Gillette College and an expansion of its workforce training programs. The Gillette College Foundation is also seeking to create an office of transformation that will study the feasibility of different approaches to economic diversification. And while the Wyoming Energy Authority and the Wyoming Business Council work to help coal communities across the state apply for and secure federal funding for their own diversification programs, the establishment of Gillette's new grant-funded office of economic transformation will continue to help the area secure its position as not only a vibrant community but possibly as the future energy capital of the country.