

**Comments on the Department of Energy's Quadrennial Energy Review
Submitted by Jim Orchard, Senior Vice President for Marketing & Government
Affairs, Cloud Peak Energy
October 9, 2014**

Cloud Peak Energy Inc. is headquartered in Wyoming and is one of the largest U.S. coal producers and the only pure-play Powder River Basin (PRB) coal company. As one of the safest coal producers in the nation, Cloud Peak Energy mines low sulfur, subbituminous coal and provides logistics supply services. The company owns and operates three surface coal mines in the PRB, the lowest cost major coal producing region in the nation. The Antelope and Cordero Rojo mines are located in Wyoming, and the Spring Creek mine is located in Montana. In 2013, Cloud Peak Energy shipped 86 million tons from its three mines to customers located throughout the U.S. and around the world. Cloud Peak Energy also owns rights to substantial undeveloped coal and complimentary surface assets in the Northern PRB, further building the company's long-term position to serve export and domestic customers. These Northern PRB coal assets include substantial coal volumes owned by the Crow Tribe in Montana. Potential expansion of the Spring Creek mine, particularly to supply international coal customers, would substantially increase the likelihood that Cloud Peak Energy would partner with the Crow Tribe to develop these resources. With approximately 1,700 total employees, the Cloud Peak Energy is widely recognized for its exemplary performance in its safety and environmental programs. Cloud Peak Energy is a sustainable fuel supplier for approximately 4 percent of the nation's electricity.

Recognizing that U.S. coal use is projected by the Energy Information Administration (EIA) to continue to supply significant electricity through at least the 2040 forecast period, Cloud Peak Energy submits these comments to the Department of Energy's Quadrennial Energy Review, with a focus on three main points:

1. The value of coal and the existing fleet of coal plants to the U.S.;
2. The impact of future successful development of coal with carbon capture and storage; and
3. Increased coal exports to friendly nations.

1. Existing Fleet

The existing fleet of coal plants in the U.S. provides affordable and reliable electricity to U.S. consumers in compliance with emissions control regulations prescribed by the U.S. Environmental Protection Agency (EPA). The U.S. Energy Information Administration (EIA) projects that coal use will continue to provide 30 percent of our electric generation through the forecasted period of 2040. And with estimated coal reserves of approximately 260 billion tons in the U.S., there is ample long-term supply of coal to generate power for the next 250 years (based on 2013 usage rate). Although low cost natural gas has resulted in increased use of gas

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for electricity generation with further growth projected by EIA, an overreliance on natural gas for power generation could adversely impact future price stability and resource supply. Coal, however, has historically maintained a level of price stability and, given the extensive inground resources and the mature supply infrastructure, represents a reliable long-term source of electric generation. In addition, the U.S. coal generation fleet maintains significant on-site coal stockpiles making it resilient against supply disruptions or other unforeseen disruptions in energy generation. Coal is a highly valuable component of our current and future electric generation portfolio. Cloud Peak Energy submits that DOE consider a significant ongoing role of coal in the QER analysis, including increased reliance upon coal power generation that could be necessary to reliably respond to future price fluctuations, to ensure competitive electricity markets, and/or to respond to energy supply disruptions.

2. Coal with Carbon Capture and Storage ("CCS")

Coal with CCS has been recognized by the International Panel on Climate Change (IPCC) as essential in the mix of technologies necessary to respond to, and mitigate against, climate change¹. This is recognized in the support being provided by the DOE into the development of CCS technology as a mechanism to reduce emissions from fossil fuel power plants. The United States is uniquely positioned to deploy the technology; not only because it is a leader in the development of CCS, but also due to the extensive enhanced oil recovery (EOR) opportunities in certain regions of the country. The Gulf Coast and Texas, in particular, are areas where coal with CCS, although not currently commercially viable, is being technically demonstrated at scale, due in large measure to the economic value provided by tertiary recovery opportunities in the Permian Basin. Southern Company's "Ratcliffe" plant, NRG's "Parish" plant, and Summit Energy's "Texas Clean Energy Center" are all examples of demonstrating CCS on coal power systems in a region of the U.S. that needs significantly more CO₂ today, and in the future, to recover oil from depleting oil fields. Continued and successful deployment of coal with CCS will necessitate ongoing use and potential expansion of existing regional transportation infrastructure to support not just continued coal flow movements, but also increased CO₂ transportation. Given the importance of CCS technology to the reduction of global CO₂ emissions and the support DOE is providing for the development of this technology within the U.S., the QER should factor in the potential for significant and rapid expansion of coal-based CCS deployments particularly in areas where CO₂ can be used for enhanced oil recovery.

¹ Climate Change 2014: *Mitigation of Climate Change*, <http://mitigation2014.org/> and <http://www.globalccsinstitute.com/news/institute-updates/role-ccs-explained-latest-ipcc-report>

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3. Increased Coal Exports

There is a significant opportunity for U.S. coal exports to increase to nations friendly to the U.S., such as Japan and South Korea, as well as to other nations that will need access to U.S. coal and gas resources for geopolitical purposes and to access low-cost, long-term energy options. Cloud Peak Energy is currently exporting approximately 4-5 million tons of coal, mostly to South Korea and Japan, where most of the coal is being used to generate power in highly efficient, ultra supercritical coal power plants, resulting in lower emissions of CO₂ being emitted per ton of coal used. These coal plants are all equipped with advanced emission controls for criteria pollutants.

While there is a popular belief that the majority of the U.S. coal that would be exported from the Pacific Northwest (PNW) would supply China, as a market participant, Cloud Peak Energy's experience is that the commercial opportunity for Powder River Basin coal exports exists with countries, such as Japan and South Korea, for the following reasons:

- (1) Because South Korea and Japan are closer to the U.S. than China and India, seaborne coal transportation costs are lower and hence delivered coal costs are lower for customers in South Korea and Japan than in China and India;
- (2) Indonesia, one of the major coal exporting nations, is facing a growing need to use more of the coal it produces for domestic power generation, meaning less will be available for supply into the seaborne export market; and
- (3) There is a growing demand for coal in South Korea and Japan as new facilities are being built; PRB coal is highly compatible with the generation utilized in those countries; and those countries want to import coal from a geopolitically reliable partner such as the United States.
- (4) Both Japan and Korea are implementing energy policies with a strong emphasis on continuing to develop technical solutions and improvements that will allow coal to be consumed in advanced combustion and generation facilities. There is an opportunity for the U.S. to be an active partner in this work through the export of PRB coal to these key Asian nations.

Because of these factors evidencing significant export potential in the Asian market for PRB coal, the QER should reflect the potential for U.S. coal exports to remain strong and grow over the QER study period.

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Conclusion

DOE has stated that the impetus behind the QER is jobs, the economy, environmental protection, climate change mitigation, and national energy security. The QER should factor in the current and future contribution of coal to each of these pillars, particularly given the fact that coal production and use is integral to the U.S. energy economy. The National Coal Council recently issued a study demonstrating how low-cost power from the nation's existing coal fleet keeps U.S. electricity prices below those of other free market nations.²

Additionally, the potential for increased coal exports can realize significant economic benefits for the U.S. In 2011, total direct, indirect, and induced economic activity related to coal exports contributed an estimated \$16.6 billion of gross value added in the U.S. economy, employed 39,350 people with jobs directly related to coal exports employed by coal mines, averaging approximately \$96,100 annually in total wages and benefits, and an additional 101,920 employees were employed through indirect and induced economic activity.^{3,4} The QER should provide a set of recommended policies and actions that support coal's economic and energy security contributions in the U.S. and international energy future, as well as provide recommendations to support the continued development of CCS technology with coal use for use in global efforts to mitigate against the potential for climate change.

² If the existing coal fleet were replaced with the next cheapest alternative generating source – natural gas combined cycle power plants – a conservative estimate of the impact on the U.S. economy would be a 1.5% drop in GDP and a loss of 2 million jobs by 2040. See *Reliable & Resilient: The Value of Our Existing Coal Fleet, An Assessment of Measures to Improve Reliability & Efficiency While Reducing Emissions*, National Coal Council, May 2014.

³ *U.S. Coal Exports: National and State Economic Contributions*, Ernst & Young, May 2013.

⁴ In Montana alone, an additional 20 million tons of annual coal production and export yields the following permanent contributions to the state economy:

- 1,461 jobs in all regions of the state;
- \$58.8 million in income received each year collectively by Montana households \$50.6 million per year is after-tax income available for household spending;
- Additional 579 people (annually) with population impacts growing in subsequent years as additional people move to Montana; and
- \$55.4 million per year in selected state government revenues, resulting from both the taxes levied on coal production as well as the growth in the base for Montana's other major taxes (excluding the property tax).

See *The Economic Impact of Increased Production at the Spring Creek Mine*, October 2012, Patrick M. Barkey, Director Bureau of Business and Economic Research The University of Montana.