

NEW GENERATION COAL-FIRED POWER PLANTS: INNOVATION AT THE DRY FORK STATION, GILLETTE, WYOMING¹

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Abstract: Coal-fired power generation provided 30% in 2017 of the electrical demand for the United States (U.S.). Twenty-seven gigawatts from a total of 175 gigawatts produced by coal-fired power plants were retired between 2012 and 2016 due to challenges meeting current emission standards, power generation efficiency, and competition from natural gas. New technology in coal-fired power plant construction addresses two of these three challenges, i.e., emissions and efficiency. Basin Electric's Dry Fork Station near Gillette Wyoming went commercial in 2011, one of few coal-fired power plants built in the U.S. since 2010. This power plant is part of a rural cooperative rather than a "for profit" generator. At the Dry Fork Station, a public-private partnership is working to promote innovation in coal-fired electrical generation to develop commercially viable uses for carbon dioxide emissions. In 2014, the Wyoming State Legislature allocated \$15 million for the design, construction, and operation of the Innovative Test Center (ITC) at Dry Fork Station. An NRG COSIA Carbon XPRIZE sponsored a \$20 million prize to a commercially viable technology developed from this effort. Dry Fork Station receives its coal from the nearby Dry Fork Mine. Reclamation of ash associated with power generation is handled onsite. Information will be presented on: the status of coal-fired power generation in the U.S., and how the Dry Fork Station is unique in that effort; status of the ITC; and reclamation of ash.³

Additional Key Words: CO₂ reduction, collaboration, ash reclamation.

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