



# Basin Electric takes step toward innovative carbon capture project

By Daryl Hill

**B**asin Electric has taken another step forward in its efforts toward the development of an innovative carbon capture and storage project. The project, designed to test the capture of carbon dioxide (CO<sub>2</sub>) from a conventional coal-based power plant, is viewed as a potential technical solution to address climate change while keeping coal-based electricity as an integral part of our nation's energy footprint.

Basin Electric's board of directors authorized an agreement with technology providers, HTC Pureenergy and Doosan Babcock Energy, to conduct a Front-End Engineering and Design (FEED) study. The FEED study will evaluate the feasibility of adding CO<sub>2</sub> capture equipment at the Antelope Valley Station near Beulah, ND. A resolution was unanimously passed by the directors of Basin Electric during their regular monthly board meeting in December.

Ron Harper, Basin Electric CEO and general manager, says choosing a technology provider is one part of this process. "This decision is yet another step in the long process of identifying

solutions to successfully address the challenges of a clean energy future," Harper says. "I applaud our board's vision in these very dynamic times. This was a major decision."

Harper emphasizes the board's action does not authorize the ultimate project – it simply directs Basin Electric to conduct the FEED study.

Harper also says HTC has a proven technology that has been used for many years in a variety of applications to successfully capture CO<sub>2</sub>. The cost of the FEED study is estimated at \$6.24 million, of which \$2.7 million is being funded by the North Dakota Industrial Commission.

The FEED study will focus on the costs and engineering of retrofitting Antelope Valley to add the CO<sub>2</sub> capture equipment and technology to one of the plant's two, 450-megawatt units. It's anticipated the retrofit would capture the equivalent of a 120-megawatt slipstream from exhaust gases.

HTC Pureenergy's proprietary CO<sub>2</sub> capture technology, supported by Doosan Babcock, is designed to capture 90 percent of the incoming CO<sub>2</sub>.

Iain Miller, CEO of Doosan Babcock, says, "I am delighted that Doosan Babcock in partnership with HTC Pureenergy has been chosen to conduct this project for Basin Electric Power Cooperative. This illustrates Doosan Babcock is at the cutting-edge of carbon capture technology, and this project is an important milestone in the commercial implementation of carbon capture."

Lionel Kambeitz, chairman and CEO of HTC Pureenergy, adds Basin Electric is a recognized leader in CO<sub>2</sub> management through its high-profile CO<sub>2</sub> capture project at the Great Plains Synfuels Plant. "In this new project, Doosan Babcock and HTC will provide and integrate world leading carbon capture technology into the Basin Electric Antelope Valley Station coal-fired power plant."

In January 2009, the Rural Utilities Service, committed to financing about \$300 million toward development of CO<sub>2</sub> capture technology to Antelope Valley. In July 2009, the U.S. Department of Energy announced its intention to enter into a cooperative agreement with Basin Electric for the potential of a \$100-million grant to develop a CO<sub>2</sub> capture technology.