Arch Coal Foundation Pledges $1.5 Million to Promote Clean Coal Technology Research at University of Wyoming

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CHEYENNE, Wyo. (April 29, 2009) - The Arch Coal Foundation today announced a $1.5 million gift to the University of Wyoming's School of Energy Resources (SER) Clean Coal Technology Center.

"This gift from Arch Coal will help move the University of Wyoming along on its path to becoming a leader in advanced coal technology development," says Governor Dave Freudenthal. "The research and innovation that will take place at UW's Clean Coal Technology Center will be critical to the future of Wyoming's economy, which has long been bolstered by the development of coal and other fossil fuels."

The Arch Coal Foundation's contribution will be doubled to $3 million under the State of Wyoming's matching funds program.

"We are extremely grateful for this gift from Arch Coal," says UW President Tom Buchanan. "It provides UW faculty and students a unique opportunity to partner with industry leaders to explore together the many facets of energy development, particularly resource recovery. This is an excellent example of how university research and industry application can work together."

"We're pleased to support the university's commendable and forward-looking efforts to maximize the value of our energy resources and minimize the impact on our environment," says Steven F. Leer, chairman and chief executive officer of Arch. "Through cutting-edge technical solutions, we will ensure a secure and sustainable energy future for the United States."

The $1.5 million endowment will be used to support students and faculty who are dedicated to the development of improved technologies for the extraction of energy from coal, widely known as clean coal technology.

Such technologies include coal gasification and methanation and carbon dioxide (CO2) capture and sequestration.

Coal gasification and conversion is a way to convert solid coal to gasoline, diesel, natural gas, and other fuels and petrochemicals. CO2 capture and sequestration removes greenhouse gases from industrial processes-including gasification-and stores it underground. CO2 can also be used for enhanced oil recovery.

"The Arch gift is a very, very important gift," says Ben Blalock, President of the UW Foundation. "This is a gift that connects the University of Wyoming in partnership with the coal industry. Arch is really stepping up."

Arch's contribution of $1.5 million lays the groundwork for the Clean Coal Technology Center, a home for UW faculty from across campus who will conduct research under this program. Funds will be used to build the facility and also to create an endowment that will sustain the center while its researchers seek outside grants.

"What Arch really did was break the ice for UW to be able to formalize the creation of this technology center," says Mark Northam, Director of SER. "Arch is the founding donor that will allow us to build that facility."

Arch has been involved in SER from its inception, and two Arch executives serve on the SER's 11-person governing council. Paul A. Lang is Arch's senior vice president of operations, and Wyoming State Representative Tom Lockhart is an Arch director. Additionally, Greg Schaefer, vice president of western affairs for Arch, is a former trustee of the University of Wyoming.

Other energy industry stakeholders have also contributed to the Clean Coal Technology Center, and SER seeks to raise $5 million to $10 million in private funding.

"UW's School of Energy Resources will help drive clean coal utilization research and the next generation of technological advances," says Leer.

In addition, the Wyoming State Legislature has appropriated a total of $17 million to fund the Clean Coal Technologies Research Fund, which was created to stimulate research in clean coal technologies, with an emphasis on the use of sub-bituminous coal.

"We want to build a center on campus that, for the next few years, will allow our research personnel to prepare to use the High

Plains Gasification Advanced Technology Center research facility," says Northam. "They will collaborate across the colleges as a team to do the preliminary work required in order to seek outside funding for the research they're going to do.

The UW/GE High Plains Gasification Advanced Technology Center will consist of a small-scale gasification system that will allow researchers to develop advanced coal gasification technologies for Powder River Basin coal.

SER itself was created in 2006 to facilitate interdisciplinary academic and research programs at UW that address critical energy-related issues.

The mission of SER is to integrate UW's significant energy-related talent and resources to develop tomorrow's energy workforce and technologies to ensure a secure and sustainable energy future for the state, region, and nation. It also communicates with, and brings together, the energy industry stakeholders.

The Clean Coal Technology Center is just one of the research centers that are being established through the efforts of SER at UW. At present there are eight total, with two more in the planning stages. In addition to the High Plains Gasification Center, examples include the Center for Energy Economics, the Enhanced Oil Recovery Institute, and the Coal Bed Methane Research Center.

Basic coal conversion technologies have been around a long time, some since World War I. The reason that clean coal technology is such a focus now, says Northam, is concern over CO2 emissions, the rising dependence upon imported oil, and the desire of coal-producing states such as Wyoming, Illinois, and West Virginia to keep coal in the energy mix.

"The USA derives more than 50% of its electricity from burning coal," says Northam. "If coal were to be eliminated from that market because of concerns over emissions, the whole country would be in dire straights."

Wyoming produces the most coal of any state in the U.S. In 2007, Wyoming produced 453.6 million short tons of coal or 39.6% of the total U.S. production, which was 300 million short tons (nearly 200%) more than its nearest competitor, West Virginia.

"As we look toward the future, which will likely include some form of carbon dioxide regulation, these types of technologies will enable coal to be a viable fuel for the nation and the world for many years to come," says Governor Freudenthal.

"A partnership with the coal industry from a clean coal technology standpoint is an important agenda for the State of Wyoming," says Blalock. "It's an agenda for our governor, and it's critical that UW, from an academic standpoint, partners with industry to ensure an emphasis on research that is critical for the ongoing strength of the coal industry for generations to come, ultimately having a positive impact on the state of Wyoming and the University of Wyoming."

Wyoming also leads the nation in formulating carbon sequestration legislation.

In 2008, legislation established that surface owners control the underground pore spaces where carbon dioxide could be stored or sequestered and that the Wyoming Department of Environmental Quality is the authority to regulate the long-term storage of carbon dioxide.

In 2009, legislation established that mining and drilling rights will be prioritized over geologic sequestration activities; that the ownership and liability for sequestered CO2 belong to the injector; and that pore space rights from multiple parties would be aggregated for the purposes of a carbon storage project as long as 80 percent of the parties approve the project.

"The only thing that's really missing now in our legislative toolbox for sequestration is the liability piece: who is going to be responsible for financial assurance for the process," says Northam. "That's really the stickiest issue because this is a very long term process."

A Carbon Sequestration Working Group, which includes Northam, is currently working on this issue.

The Arch Coal Foundation was formed in December 2005 with an initial endowment from St. Louis-based Arch Coal, Inc. (NYSE:ACI), one of the nation's largest coal producers. Arch Coal's core business is providing U.S. power generators with cleaner-burning low-sulfur coal for electric generation. Through its national network of mines, Arch supplies the fuel for approximately 6 percent of the electricity generated in the United States. Arch's subsidiary operations in Wyoming employ more

than 1,200 and produced 100 million tons of low-sulfur coal in 2008 from its Black Thunder, Coal Creek and Arch of Wyoming mines.