



Committed to Coal

World Energy interviews Ron Wood, President and CEO of Black & Veatch's energy business

From Asia to South Africa to America, coal continues to play a vital role in meeting global energy needs. In the United States, the need for base-load generation, coupled with sustained high prices for natural gas, has resulted in a flurry of coal-related project development activity. World Energy recently talked to Ron Wood, President and CEO of Black & Veatch Corporation's energy business, about the country's growing interest in, and need for, coal-fueled power plants.

World Energy: What's the strategic importance of coal?

Ron Wood: Reliable, affordable electricity is central to the growth of the U.S. economy and our standard of living. In fact, the expectation of reliable and affordable power, combined with the constantly rising demand for electricity and the anticipated retirement of older power plants, will help drive the need for new base-load generating capacity in the United States in the next 10 years. By 2025, we will need 55 percent more electricity than we generate today.

There is no silver bullet to answer this challenge. But I can tell you that a balanced mix of fuels for power generation – including nuclear, natural gas and renewables – will be necessary to avoid fuel shortages and price shocks. Energy conservation needs to be another area of focus. Ultimately, however, if the country intends to maintain its standard of reliable and affordable electricity while addressing the goal of energy independence, we'll need to develop a new generation of commercially viable, environmentally conscious and advanced coal-fueled power plants.

World Energy: What would such an effort entail?

Ron Wood: Well, in my opinion the United States needs the equivalent of the Apollo space program, in terms of national vision and will power, to realize the full potential of coal. Coal comprises 90 percent of our domestic fossil fuel reserve. At current recovery and usage rates, we have enough of it

to last around 200 years. To make the most of this resource, a number of things need to happen. We must collectively recognize that many of our U.S. coal plants are becoming outdated. These aging facilities need to be replaced with new ones that utilize advanced technologies that offer significantly better fuel efficiency and greatly reduced emissions. This requires the federal government, in particular, to serve as a backstop. In some ways, government is helping to lead the change with the recent passing of the clean-coal provisions of the Energy Act of 2005. The key will be how fast we can establish a stable regulatory environment that is less onerous and makes financial risk more predictable for developers.

World Energy: This past March, the U.S. Energy Department announced \$62 million for 32 clean-coal research projects. Is it enough?

Ron Wood: While \$62 million is a welcomed development, much more is needed. Government and industry need to work together not just on researching, but also on implementing a full-scale infrastructure that utilizes clean-coal technologies. This will help us meet our multiple goals of low-cost power, energy independence and reduced emissions.

World Energy: What does "clean coal" actually mean?

Ron Wood: Even modern conventional coal-fueled power plants that use pulverized coal are much cleaner than their predecessors. However, when people say "clean coal" they

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are typically referring to a basket of advanced technologies, including supercritical cycles, which are very-high-temperature versions of a conventional pulverized coal plant. Another clean-coal initiative receiving much interest is integrated gasification combined cycle, or IGCC, technology. The potential of IGCC to help meet U.S. energy demand has prompted many companies, such as Black & Veatch, to invest significant resources in developing viable applications for the technology. With each clean-coal technology, emissions are greatly reduced, hence the term "clean." These technologies are well along in terms of development, but they have not yet been shown to be commercially viable.

World Energy: Is there a technology you would say is the best or most promising?

Ron Wood: Again, there is no silver bullet. Because coal has varying properties, depending on its geological origin, each technology deserves careful consideration. IGCC, for example, works well with bituminous coals plus petroleum coke. IGCC systems produce the cleanest power available from coal, approaching the low emissions of gas turbine power plants. A disadvantage of IGCC, however, is its high capital cost.

The highest-efficiency units are advanced supercritical coal plants. They are ideally suited to produce reliable, cost-effective power on a continual basis, with a net power plant efficiency of 40 percent – well above the 36 percent efficiency of today's commercial plants and the 32 percent efficiency of plants that went into operation before 1970.

Ron Wood has been a member of the board of directors of Black & Veatch since its establishment in 1999. Since January 2005, he has served as president and CEO of B&V Energy, the division providing engineering, procurement, construction and related services for all energy-related projects, including electric power stations, power delivery and gas, oil and chemical projects. Mr. Wood has overall responsibility for all aspects of division operations, including planning, policy and financial results.

Mr. Wood joined Black & Veatch in 1964 and has been associated with projects for electric utilities throughout his career. He also serves as chairman of the programme committee of the World Energy Council.

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Black & Veatch Corporation is a leading global engineering, consulting and construction company specializing in infrastructure development in energy, water, information and government markets. Founded in 1915, Black & Veatch develops tailored infrastructure solutions that meet clients' needs and provide sustainable benefits. Solutions include conceptual and preliminary engineering services, engineering design, procurement, construction, financial management, asset management, information technology, environmental, security design and consulting, and management consulting services. The employee-owned company has more than 90 offices worldwide. Black & Veatch is ranked on the Forbes listing of the 500 largest private companies in the United States.



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