



Bruce Crummy / The Forum

A conveyor system frames a worker using a dozer to move coal from a long-term outdoor storage pile to indoor short-term storage Dec. 6, 2006, at the Big Stone Power Plant near Big Stone, S.D.

## PRICE: Union of Concerned Scientists say CO2 regulations will hurt coal plants

The controversy reflects the mounting public pressure to confront the role of heat-trapping carbon dioxide emissions in global warming even if it comes at a price. Coal, long a cheap fuel for generating electricity, is poised to cost more if some form of regulation is imposed on carbon dioxide, often called by its chemical shorthand, CO2.

"There is no doubt that the burden of future CO2 regulations will fall heavily on coal plants," a recent report by the Union of Concerned Scientists said. Many utilities, in fact, have begun disclosing to investors and regulators their predictions for increased coal costs.

### Consumers beware

In light of growing pressures to address global climate change, some coal critics contend that utilities planning to build new, conventional coal-burning power plants are taking a costly financial gamble that could saddle their customers for many years.

"These utilities may be betting on their ability to pass the risk on to ratepayers in the form of higher electric rates — the same way they routinely pass through environmental compliance costs today," the Union of Concerned Scientists report said. "Utilities holding this belief have little incentive to assess and avoid the risks of future CO2 regulation."

Increasingly, environmentalists are turning to pocketbook arguments to fuel opposition to new coal-burning plants, as shown in the debate in Minnesota over Big Stone II, where regulators must approve power transmission lines for the project.

"That's something we've tried to raise with the Big Stone II situation," said Cesia Kearns, an organizer for the Sierra Club in Minnesota. "I don't think it's become a reality to most people because energy is still relatively cheap."

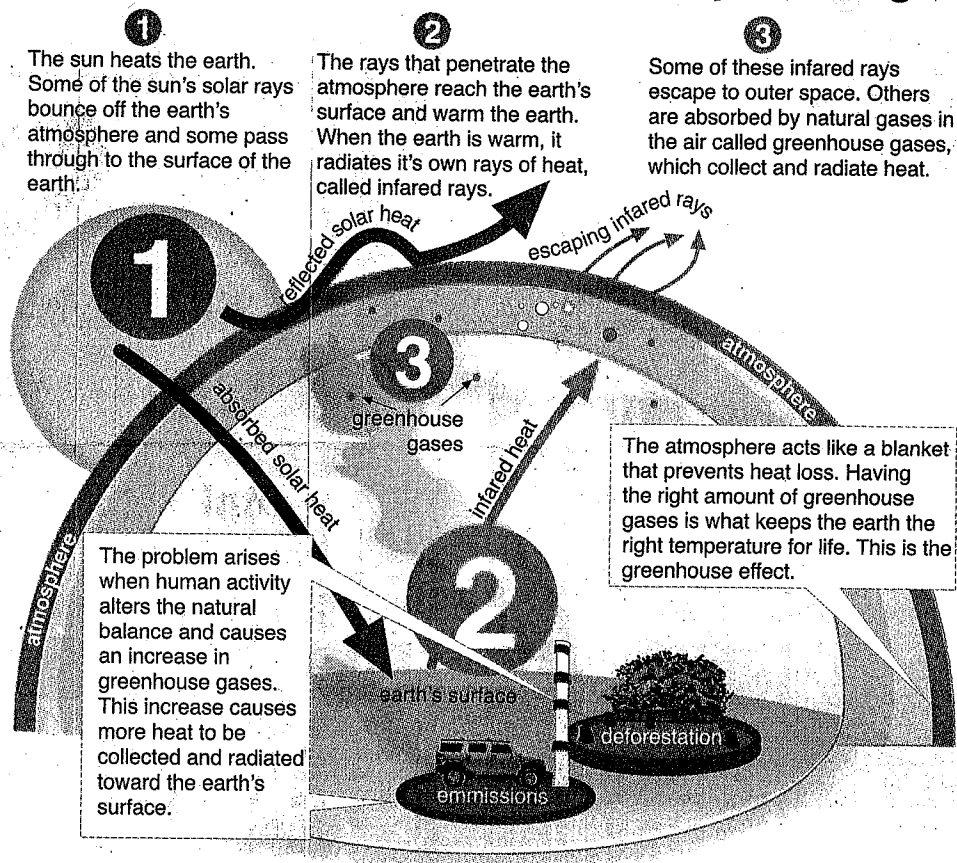
Consumers should pay attention to the decisions of their utilities because they will face the consequences, said Michael Nichols, who leads Fresh Energy of Minnesota, a group that advocates greater use of conservation and renewable energy.

"Who gets stuck with the cost when these inevitable regulations come into force?" Nichols asked. "It's not an environmental question that Minnesota regulators are struggling with. It's an economic one."

### Coal still cheapest

Estimates of future coal costs in an era of carbon

### How the greenhouse gases and human activity warm the globe



Source: Environmental Protection Agency

Gwen Lunsk/ The Forum

### Big Stone II project

The proposed \$1.6 billion Big Stone II power plant is backed by seven regional utilities as the most cost-effective way to meet rising electricity demands for 2.3 million customers in five Upper Midwest states.

The 630-megawatt plant, which would burn Powder River sub-bituminous coal, would be located next to the existing 430-megawatt Big Stone power plant near Milbank, S.D.

The site was chosen because it can take advantage of existing infrastructure and rail access, helping reduce costs.

For example, the two plants would share pollution control systems, significantly reducing emissions of sulfur dioxide, an acid rain pollutant, for the old plant.

### Highlights:

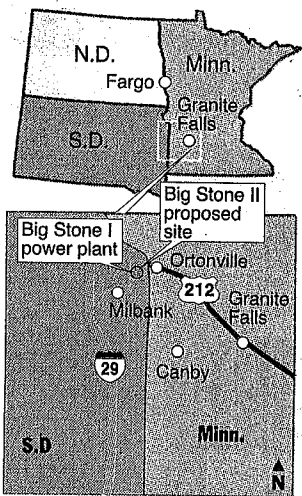
► **Economic impact:** The plant would employ 35 to 40,

restrictions vary widely. One measure rejected by the last Congress would have resulted in added costs of \$6.36 for every ton of carbon dioxide produced. By comparison, Big Stone now pays about \$15.50 per ton of coal, including delivery costs.

The seven utility groups behind Big Stone II — led by Otter Tail Power Co. of Fergus Falls, Minn. — vehemently reject claims that carbon regulations, if imposed, would make the plant a bad choice for consumers.

### Big Stone II

The Big Stone II proposed site is 111 miles south of Fargo and 2 miles from Minnesota.



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with another 28 "spin-off" jobs, with payrolls of \$2.5 million a year, boosting total economic activity by \$3.1 million through

Ward Uggerud, Otter Tail's senior vice president for energy supply, said the Big Stone partners carefully weighed a range of scenarios for more expensive coal resulting from carbon dioxide restrictions, and the proposed plant still emerged as the low-cost power provider.

The Big Stone II analysis concluded that coal still would be economical at much higher costs — up to \$11.10 per ton for investor-owned utilities and up to \$21.70 for public power utilities, which

ripple effects. Income generated to households outside the plant is estimated at another \$1.1 million. Construction would have a peak work force of 1,500, with 2,550 full-time jobs over the life of the project, costing \$513.7 million.

► **Carbon dioxide emissions:** Down 20 percent from existing plants, an estimated 4.5 million tons a year.

► **Utility partners:** Otter Tail Power Co., Central Minnesota Municipal Power Agency, Great River Energy, Heartland Consumers Power District, Missouri River Energy Services, MDU Resources Group, Southern Minnesota Municipal Power Agency.

► **Project timeline:** Contingent on necessary permits, some granted, others pending. South Dakota has primary jurisdiction for the plant, but regulators in North Dakota and Minnesota must approve transmission lines.

have more flexibility in accounting for debt. Both figures are much higher than any likely cost increase, Uggerud said.

"It still doesn't alter our decision," Uggerud said. "We've been very, very careful."

Dan Sharp, a spokesman for MDU Resources group of Bismarck, another Big Stone II partner, agreed. "The analysis that we made, that coal was the best fuel, stands," he said. But a consultant hired by

environmental groups challenging Big Stone II disputes the partners' analysis, arguing it doesn't allow for the possibility of significantly higher costs, especially after the decade beginning in 2020.

"Our projection for greenhouse gas emissions costs at the end of this decade ranges from \$20 to \$50 per ton of CO2 emissions," the analysis by Synapse Energy Economics Inc. said.

The bottom line for consumers, as calculated by Synapse: Power costs would rise by more than a third, 37 percent, using the consultant's mid-range cost estimate.

The Big Stone II partners' consultant disagrees, saying Synapse's much higher cost projections are based on very stringent regulations unlikely to be imposed.

### Xcel's alternate path

Still, Xcel Energy, which is not involved in Big Stone II, came to a very different conclusion when planning for its future energy needs.

Xcel recently filed a proposal to meet its future electricity needs, beginning in 2015, with a combination of buying more Canadian hydropower and increasing wind energy capacity to supply an additional 375 megawatts of power.

The choice was guided by an analysis that concluded Xcel's coal costs would rise by \$9 per ton of carbon beginning in 2010, rising 2½ percent each year thereafter.

"It would not be prudent for us, both for our shareholders and our customers, to pay that cost," said Betsy Engelking, Xcel's resource planning manager.

"It's not only the lowest cost but also the cleanest," she added, referring to the wind-and-hydro proposal, which requires regulatory approval.

The Upper Midwest, which relies heavily on coal-fired power, is especially vulnerable to increased electricity costs resulting from carbon regulation, which many in the industry agree could come within the next decade.

An estimated 185 new coal plants are on drawing boards around the country, including 50 in the Midwest — a handful in North Dakota, where immense lignite coal reserves fuel more than 90 percent of the state's power generation and \$140 million in economic activity.

As a result, North Dakota has a lot at stake in the debate about climate change policy. It was one of 10 states that recently argued against classifying carbon dioxide as a pollutant in a case now before the U.S. Supreme Court.

Still, many agree that plentiful coal, which fuels half

of the nation's electricity, will continue to be an important part of the nation's energy portfolio for a long time.

Fresh Energy's Nichols, for example, says a wide range of solutions will be needed to solve the carbon dilemma — innovations in energy conservation, renewable energy, solar power and technologies such as coal gasification that could capture carbon dioxide before releasing it into the atmosphere.

Utilities and the U.S. Department of Energy are aggressively looking for "clean coal" technologies to remove carbon dioxide from the smokestack and to develop alternatives such as wind power.

The Big Stone II partners, for example, plan to collectively boost their wind-power supplies by 930 megawatts — a capacity 1½ times larger than the proposed 630-megawatt coal-burning unit. Also, they maintain, the new unit's state-of-the-art boiler design will reduce carbon dioxide emissions by almost 20 percent through greater efficiency.

Ordinarily, wind isn't a viable solution for meeting base-load power needs — electricity demanded around the clock — because the wind doesn't always blow, utilities contend. Xcel's proposal, for example, has a hydropower backup.

And "clean coal" technological breakthroughs remain years in the future — a decade or more, by most estimates. Until then, the coal industry and utilities that depend on conventional coal plants will face increasing pressures of the kind generated by Big Stone II, slated for completion in 2011 or 2012.

### Caught in transition

"There's no question that we're in a transitional period and Big Stone is in that transition," MDU Resource's Sharp said.

In the mean time, he added, no economically viable alternative to coal generation exists for base-load power needs. On average, new power plants take four years to build, following six years of planning and permitting.

"We can't wait for another five years to see if something better comes along," Sharp said. "We have to act. This region needs base-load power."

Regulators in South Dakota, Minnesota and North Dakota, which must approve transmission lines from the plant running through the state, will decide whether Big Stone II is the best choice for meeting those growing power needs.

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