

# BACON'S REBELLION

The Op/Ed Page for Virginia's New Economy

## Voltage Hogs

**Virginia has one of the most electricity-intensive economies on the planet. One reason: State energy policies don't foster conservation and energy efficiency.**

By James A. Bacon

**I**f Virginia were a country, it would rank among the lustiest guzzlers of electricity in the world. On average, we seven million Virginians each consumed 13,700 kilowatt hours per year of electricity in 2000. That would have ranked us as the 8th most electricity-intensive economy in the world, considerably ahead of the United States, which averages around 12,250 kilowatt hours yearly -- not to mention such advanced yet parsimonious nations as Japan (7,400 kilowatt hours), France (7,100 kilowatt hours) and Germany (6,200 kilowatt hours).

Indeed the citizens of our commonwealth, blessed though it may be with a moderate climate, imbibe only slightly less juice than the oil-rich United Arab Emirates (14,700 kilowatt hours), which can afford the world's most lavish air conditioning -- including an indoor ski resort, Ski Dubai, where temperatures amidst the desert heat are maintained at a nippy one to two degrees below freezing all year round!

One reason Virginia consumes so much electricity is that we make so little effort to conserve it. According to the American Council for an Energy-Efficient Economy, Virginia was one of only three states in the U.S. in

2004 whose utilities spent nothing -- absolutely *nothing* -- on energy-efficiency programs. Compare that to states like California, which invested \$380 million, and New York, which spent \$147 million.

Far from curbing its consumption, Virginia's appetite is likely to continue growing. The General Assembly has approved a re-regulation bill that would make it more remunerative for Dominion, Appalachian Power and smaller electric utilities to build new, large-scale electric



power plants (see "[Power Politics](#)," Feb. 5, 2007) than to invest in conservation, energy efficiency or renewable fuels.

The re-regulation bill actually displaces a piece of legislation that would have mandated a Renewable Portfolio Standard setting ambitious targets for conservation and renewable fuels. Although the Dominion-sponsored re-regulation initiative pays lip service to energy efficiency, its provisions are so watered down that they would accomplish very little, says Diana Dascalu, staff attorney for the Chesapeake Climate Action Network who helped draft the RPS bill patroned by Sen. Mary Margaret Whipple, D-Arlington.

Dascalu says she is working with Gov. Timothy M. Kaine's office to modify the re-regulation bill.

Says she: "Our goal is to get it from an F to a C-."

At stake is the vision for Virginia's energy future. No one denies that a growing population will place greater stress on the state's electric-power infrastructure. The question is how we accommodate that growth. Do we pursue the path favored by the electric utilities -- building large-scale coal-fired and nuclear facilities in isolated areas and connecting them to population centers with giant transmission lines? Or do we balance Big Grid with a "small is beautiful" approach that relies upon conservation, energy-efficiency and a multitude of small power sources, often using renewable fuels, located closer to the consumers?

Don't mistake me for an Al Gore fan. I don't lose sleep over global warming melting the ice-caps, inundating our coastlines and resurrecting plagues like malaria, yellow fever and scrofulous sores. All those terrible things may conceivably happen, but I see such an alarmist, one-sided presentation of the facts by journalists and public policy gurus that I'm quite certain that there is less "consensus" about the hard science of climate change than we're being told.

However, I do worry about mundane but well-documented threats like acid rain, nitrogen deposition and the release of mercury and other toxic chemicals into the environment, all of which result from burning coal, as well as the piling up of spent radioactive fuel rods from nuclear power plants. I also worry about the unsustainable trajec-

tory of massive countries like India and China embarking upon the same energy-intensive growth path as the United States. China, it is said, plans to build more than 2,000 coal-fired power plants, putting incredible price pressure on petroleum, natural gas and coal. Prudence dictates that we strive to reduce pollution and insulate ourselves from the inevitable rising cost of fossil fuels.

I'm not convinced that the Renewable Portfolio Standard legislation is the best way to go, but I do think it's worth serious consideration.

The RPS is simple in concept: Whipple's bill, SB 278, would require Virginia's electric utilities to derive 12 percent of their electricity from renewable energy sources such as wind, solar, hydro, geothermal or biomass by 2020. It also would mandate conservation and energy-efficiency measures accounting for another five percent of electric consumption by 2020.

That would compare to goals of 7.5 percent renewables in 2020 adopted by Maryland and 11.5 percent in 2011 required by Washington, D.C., Daskalu says. At least 23 states have passed renewable portfolio standards, and many others are debating the issue. "This is the norm," she says. "We're not asking for some big, lofty environment concept."

The reason I'm leery of the RPS is that I don't like the idea of arbitrary government mandates. Twelve percent of Virginia's electric power supply represents a whole lot of electric power. And as much as I love the idea of renewable energy, I'm not sure we can bring that much online except at great expense.

Dr. Michael Karmis, director of

the Virginia Center for Coal & Energy Research at Virginia Tech, is skeptical, too. "We find people predicting enormous amounts of renewables -- but the costs are exorbitant," he says.

Of all the renewable energy sources, hydro is the most economical, but it's also fully exploited in Virginia. Wind power is close to being commercially competitive with fossil fuels, but Virginia has limited potential. A wind farm proposed on mountaintop ridges in Highland County would provide about 39 megawatts of electricity, enough to serve 39,000 homes. (That compares to a coal-fired power plants, which are capable of generating 1,000 megawatts or more.) But there are only a handful of ridge-top locations worth considering in Virginia. Virginia is well situated to generate wind power off-shore (see "[Wind Shear](#)," Nov. 20, 2006) but development on the continental shelf could be at least a decade away.

"The problem is one of cost," says Karmis. The best wind-farm locations are remote. While the cost of generating the electricity might be competitive, the cost of transmitting it could be prohibitive. "Are we in Virginia willing to pay more to have green power?"

Daskalu responds this way: "We're going to see the renewables come down in price." As more countries in Europe and states in the U.S. commit to wind, solar and biomass and as more projects get funded, economies of scale begin to kick in. Suppliers will have longer production runs. Innovators will attract investment capital. Promising technologies will be adopted more quickly. In the not-too-distant future, renewables *will* be economically com-

petitive.

I am even more optimistic about the potential for conservation. Virginians could reduce their electricity consumption significantly by installing energy-efficient appliances, monitoring and managing heating and air conditioning, and embracing new technologies such as compact fluorescent light bulbs and light-emitting diodes. The computer industry, a major source of increased electricity consumption, especially in the server farms of Northern Virginia, is investing heavily in energy-efficient microchips and other technologies to curtail the industry's electricity consumption. The electric utility industry itself has room to improve its efficiency; at present, only 30 percent of the BTU content of fossil fuels is converted into electricity.

The problem is that power companies make money selling electricity, not conserving it. Under Virginia's electric re-regulation bill, the power companies have no incentive to invest in conservation and energy efficiency. Whipple's conservation mandate would compel them to look for efficiencies they would not otherwise seek.

Is government compulsion the best way to achieve conservationist goals? Are there no market-oriented approaches to this dilemma? I would like to think there are. But if there are, I haven't encountered them yet.

Until such time as we can devise free-market incentives to conserve, the potential savings are too enormous to ignore. Just think, if Virginia could trim its per capita electricity consumption to the U.S. average, we could reduce demand by more than 10 percent. If we could achieve French and German levels of energy efficiency, we

could cut our electric consumption *in half*. If you factor in the potential of renewable fuels, Virginia could go decades without the need to add another power plant or erect another high-voltage transmission line. As a rate payer and a friend of the environment, I would be perfectly happy with that.

-- **March 5, 2007**

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