



States Pay the Price for Relying on Nuclear Power

June 12, 2001

One of the primary recommendations of Vice President Cheney's May 2001 *Report of the National Energy Policy Development Group* is for the president to "support the expansion of nuclear energy in the United States as a major component of our national energy policy."¹ When defending this position, Cheney has claimed that generating electricity with nuclear power is "affordable and environmentally sound."² In previous publications, Public Citizen has outlined the environmental hazards of nuclear power. Is nuclear power really the cheap energy panacea that Cheney makes it out to be?

The answer, according to research by Public Citizen, is no. States that rely on nuclear power have significantly higher electricity rates than states that do not. In fact, our research shows that the higher the reliance on nuclear power, the higher the electric rates will be. That's because nuclear power is significantly more expensive than coal or natural gas due to the higher capital, operation and maintenance costs necessary to protect Americans from radiation releases.

In the 20 non-nuclear states³, the 1999 average cost of electricity was 5.52 cents per kilowatt/hour. The average cost of electricity in the 31 states that use nuclear power was 6.88 cents per kilowatt/hour. In other words, consumers in states that use nuclear power pay 25% more for their electricity than consumers in states that do not use nuclear power.

Furthermore, electricity rates increase in proportion to the states' reliance on nuclear power. In the five states that get more than half of their electricity from nuclear power, electricity prices were 37% higher than in non-nuclear states. In the 10 states with the highest reliance on nuclear power, electricity prices were 33% higher than in non-nuclear states. In the 20 states with the highest reliance on nuclear power, electricity rates were 27% higher than in non-nuclear states.

The same pattern is observable even if we limit our sample to residential consumers. The average residential consumer in a state that uses nuclear power pays 20% more for electricity than residential consumers in

¹ Page 5-17.

² *Generation Week* May 30, 2001.

³ Nineteen states and the District of Columbia.

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1999 Weighted Average Electricity Rates (Cents per Kilowatt/hour)		% higher prices than non-nuclear states
FOR ALL CONSUMERS:		
In the 5 states with the highest nuclear reliance (more than 50%)	7.58	+37%
In the 10 states with the highest nuclear reliance (more than 32%)	7.32	+33%
In the 20 states with the highest nuclear reliance (more than 21%)	7.02	+27%
In all 31 nuclear states	6.88	+25%
In the 20 non-nuclear states	5.52	--
FOR RESIDENTIAL CONSUMERS ONLY:		
In the 5 states with the highest nuclear reliance (more than 50%)	9.45	+36%
In the 10 states with the highest nuclear reliance (more than 32%)	8.97	+29%
In the 20 states with the highest nuclear reliance (more than 21%)	8.61	+24%
In all 31 nuclear states	8.37	+20%
In the 20 non-nuclear states	6.95	--
<i>SOURCE: Energy Information Administration <www.eia.doe.gov/index.html></i>		

non-nuclear states. In the five states that get more than half of their electricity from nuclear power, residential electricity prices are 36% higher than in non-nuclear states.

When capital costs are included with operation, maintenance, and fuel costs—which they should be, considering capital costs represent between 60% and 75% of the cost of a nuclear power plant, 25% in coal and 50% in natural gas—nuclear power costs \$2,080 per kilowatt/hour, compared to \$1,200 per kilowatt/hour for coal and \$500 per kilowatt/hour for natural gas.⁴ These higher costs for nuclear power don't include the

⁴ Organization for Economic Co-operation & Development (OECD) - International Energy Agency, Nuclear Power in the OECD April 2001. Page 130-1, <www.iea.org/public/studies/nucpow.htm>.

value of federal government subsidies, such as Price-Anderson (the federal government provides free insurance) and waste disposal.

Nuclear power is so much more expensive than other forms of generation because insuring the safety of nuclear plants is costly. Because public safety and the environment are so egregiously threatened by the release of even minimal amounts of radiation, expensive prevention techniques are required. But the safety of nuclear power plants is not guaranteed by our current regulatory framework, as evidenced by accidents such as the Three Mile Island meltdown in 1979, problems at the Turkey Point and Oyster Creek reactors, and the loss of fuel rods at the Millstone reactor.

Reliance on nuclear power is the primary characteristic of the groupings, and not other criteria such as electricity deregulation. That's because this 1999 data predates the deregulation-related price spikes in the northeast, midwest, and western United States, since the higher prices in deregulated markets began in the summer of 2000. But since most deregulated states are also the highest cost states, 2000 data should produce similar results when it becomes available.

It is important to note that those states that pushed for deregulation did so to get out from under the massive debts compiled by utilities for expensive nuclear power plants. New nuclear power plant construction projects across the country experienced cost overruns as much as 700 percent in the 1980s.⁵ These boondoggles saddled utilities with the majority of their debt. As the deregulation debate raged in America's state legislatures, utilities were able to convince lawmakers to have consumers pay 100% of these nuclear-related debts, estimated at \$86 billion.⁶ In exchange, the utilities agreed to allow electric rates charged to consumers to be frozen until these so-called "stranded cost" debts were paid off. This bailout of the utilities nuclear capital costs allowed for the recent fall in electricity prices in the western United States wholesale electricity market.

Clearly, nuclear power is not as inexpensive as the Bush administration would like us to believe. Electricity deregulation has already resulted in significantly higher electricity prices across America. Increasing our reliance on nuclear energy will only make our electricity more expensive.

Methodology

Public Citizen collected state-by-state data from the U.S. Department of Energy's Energy Information Administration concerning sales of electricity and the revenue collected from those sales. The states were grouped according to their degree of nuclear reliance, and weighted average electricity rates were then calculated for each group. The weighted average electricity rate is the sum of the electric revenues collected, divided by the total number of kilowatt/hours of electricity sold in those states. By using weighted averages we account for these differences, giving more weight to states that sell more electricity. The database used for this analysis is on the following page.

⁵ Wallace Roberts, The American Prospect, January-February 1999, page 71.

⁶ Tim Rice and Leslie Weiss, Mother Jones, January 1998, No. 1, Vol. 23, page 62.

Revenue & Sales per Kilowatt Hour for Residential Consumers, and			
1999	Nuclear Reliance	Revenue for all electric sales, nuclear & non- nuclear (thousands)	# of Sales, nuclear & non-nuclear (million kilowatt-hours)
Vermont.....	72%	\$ 243,174	1,999
South Carolina.....	57%	1,790,295	23,699
New Hampshire.....	53%	494,489	3,572
New Jersey.....	51%	2,797,622	24,550
Illinois.....	50%	3,500,292	39,623
Connecticut.....	45%	1,331,601	11,619
Virginia.....	38%	2,677,381	35,779
Pennsylvania.....	37%	3,789,617	41,244
Arizona.....	36%	1,921,783	22,517
Nebraska.....	32%	517,099	7,929
North Carolina.....	32%	3,486,165	43,648
Tennessee.....	29%	2,246,612	35,425
Arkansas.....	27%	1,042,900	14,045
Minnesota.....	27%	1,334,265	17,998
Georgia.....	26%	3,158,846	41,767
Maryland.....	26%	1,959,318	23,342
New York.....	26%	5,665,031	42,538
Alabama.....	26%	1,901,352	27,048
Mississippi.....	24%	1,102,038	16,321
Kansas.....	22%	867,435	11,347
Wisconsin.....	19%	1,425,681	19,502
California.....	18%	7,978,446	74,490
Florida.....	17%	7,253,310	93,846
Louisiana.....	15%	1,881,756	26,426
Michigan.....	14%	2,676,360	30,661
Missouri.....	12%	1,976,459	27,766
Ohio.....	12%	4,045,743	46,629
Massachusetts.....	11%	1,754,839	17,392
Texas.....	10%	8,201,199	108,591
Iowa.....	10%	991,100	11,867
Washington.....	5%	1,673,433	32,817
Alaska.....	0%	208,179	1,866
Colorado.....	0%	968,893	13,131
Delaware.....	0%	323,774	3,532
District of Columbia.....	0%	131,395	1,643
Hawaii.....	0%	384,432	2,689
Idaho.....	0%	358,072	6,806
Indiana.....	0%	2,005,285	28,806
Kentucky.....	0%	1,257,441	22,548
Maine.....	0%	484,235	3,704
Montana.....	0%	248,557	3,664
Nevada.....	0%	597,709	8,386
New Mexico.....	0%	400,587	4,645
North Dakota.....	0%	214,782	3,307
Oklahoma.....	0%	1,208,052	18,301
Oregon.....	0%	1,038,068	18,058
Rhode Island.....	0%	269,654	2,663
South Dakota.....	0%	245,035	3,302
Utah.....	0%	391,213	6,236
West Virginia.....	0%	593,022	9,452
Wyoming.....	0%	128,341	2,025
U.S. Total.....	20%	\$ 93,142,367	1,140,761
SOURCE: Energy Information Administration < www.eia.doe.gov/index.htm >			