



**Statement of Charlie Higley,
Research Director,
Public Citizen's Critical Mass Energy Project**

on The Future of Nuclear Energy

**before the Center for Clean Air Policy's
Conference on Promoting Clean Power
in a Competitive Electricity Market,
Washington, D.C.**

December 2, 1999

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Public Citizen, founded by Ralph Nader in 1971, is a non-profit research, lobbying, and litigation organization based in Washington, DC. Public Citizen advocates for consumer protection and for government and corporate accountability, and is supported by over 150,000 members throughout the United States. The Critical Mass Energy Project is Public Citizen's energy policy arm, working to decrease reliance on nuclear and fossil fuels and to promote safe, affordable and environmentally-sound energy alternatives.

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Thank you for this opportunity to discuss the future of nuclear energy and related implications for air quality and climate change.

Society does not need to subsidize the nuclear power industry in order to reduce air pollution. State and federal governments could adopt policies that move our electric industry away from nuclear and fossil fuels and toward renewable energy and energy efficiency, all while greatly reducing the amount of pollution from electricity production and while reducing the economy's total bill for electricity.

Whether nuclear power plants can survive in deregulated electricity markets depends on many factors, such as taxpayer and ratepayer subsidies for nuclear power, taxpayer and ratepayer subsidies for other types of power (fossil fuels, renewables, and energy efficiency), and the competitiveness of electricity markets.

Ratepayer and Taxpayer Subsidies for Nuclear Power

The nuclear power industry claims that nuclear reactors can compete and survive in deregulated electricity markets. The industry points to declining operation & maintenance costs and increased operating times (also known as capacity factors), both of which make electricity from nuclear reactors less expensive.

However, what the nuclear industry is not explaining is how ratepayers are bailing out the costs of owning and operating a nuclear power plant.

In order to sell power in competitive markets, the cost of producing power has to be lower than the market price of electricity (under regulation, there were no competitive markets for electricity, and utilities could recover the cost of owning and operating a power plant regardless of how high the cost was.) The cost of producing power can be broken into two components: financing costs and operation & maintenance costs.

Financing costs include paying off the loans and bonds that were issued to raise the money to build the plant and to replace worn-out components. For nuclear plants that cost hundreds of millions to several billion dollars to build, financing costs are very large.

Operation & maintenance (O&M) costs include paying for nuclear fuel, salaries, maintenance costs, decommissioning costs, and the costs associated with dealing with nuclear waste.

A reactor can profitably sell electricity only if the combination of financing and O&M costs are less than the market price for electricity. Approximately half the U.S. nuclear fleet will not be able to sell electricity at profitable prices because their costs of producing power (financing costs plus O&M costs) are not competitive.¹

However, for many nuclear plants, the financing costs are being paid by ratepayer-funded bailouts that will likely total over \$100 billion. Since the financing costs of nuclear power plants are being paid off by ratepayers, the nuclear power plant owners only have to worry about keeping low the cost of operation and maintenance.

Two components of operation & maintenance are also subsidized by ratepayers and taxpayers: decommissioning costs and the costs of dealing with nuclear waste. When nuclear reactors are shut down, they need to be dismantled, also known as “decommissioning.” The U.S. General Accounting Office estimates that decommissioning each reactor will cost at least \$300 million, although there is a good chance that decommissioning costs have been grossly underestimated.² Even in states that have deregulated, such as California, ratepayers are still required to pay for a nuclear power plant’s decommissioning costs, even if they don’t buy any power from the plant. This represents a massive subsidy to the nuclear industry—when other power plants are dismantled, the owners have to pay for decommissioning expenses out of revenues—they don’t have the luxury of collecting a mandatory decommissioning charge from ratepayers.

Regarding dealing with nuclear waste, the federal government has agreed to take ownership of the nuclear waste produced by nuclear reactors. Because nuclear waste remains toxic for over 200,000 years, the feds have to keep the waste away from people and the environment practically for ever. Although ratepayers of nuclear reactors have been paying billions of dollars into a nuclear waste fund to deal with this 200,000-year-problem, no doubt federal taxpayers will have to make up any shortfall for dealing with this waste for such a long time. Again, owners of other types of power plants do not receive subsidies for disposing of their wastes.

¹ See, for example, U.S. General Accounting Office, *Nuclear Regulation: Better Oversight Needed to Assure Accumulation of Funds to Decommission Nuclear Power Plants*, RCED-99-75, Washington, DC, May 1999 (hereinafter cited as U.S. GAO); Bruce Biewald and David White, *Implications of Early Nuclear Plant Retirements*, Cambridge, MA: Synapse Energy Economics, January 1999; Roger Gale et al, *A New Nuclear Consensus*, Washington, DC: Washington International Energy Group, October 1998; *Comments of IPALCO Enterprises, Citizens Action Coalition of Indiana, and Public Citizen on the Draft Policy Statement on the Restructuring and Economic Deregulation of the Electric Utility Industry*, before the U.S. Nuclear Regulatory Commission, December 9, 1996.

² U.S. GAO, note 1. For estimates of decommissioning costs, see Steven Mark Cohn, *Too Cheap to Meter*, Albany: State University of New York Press, 1997.

Now the nuclear industry is arguing that it should get credits (a.k.a. money) for not producing any air pollution (even though most nuclear fuel is mined and processed using coal-fired electricity). This totally absurd idea would give nuclear power plants money for nothing. Any type of pollution trading scheme, which we oppose in general, that ends up giving nuclear power plants credit for not producing pollution would represent another massive subsidy.

Ratepayer and Taxpayer Subsidies for Fossil Fuels, Renewables, and Energy Efficiency

Any state or federal program that provides subsidies for making electricity from coal, natural gas, wind, or sun, or that makes saving electricity more affordable, will make electricity in general less expensive. Therefore, the more non-nuclear power supplies are subsidized, the more difficult it will be for nuclear power to compete.

Because of the threat of global warming, and due to the toxic pollution emitted by coal-fired power plants, Public Citizen supports the use of carbon taxes and strict pollution standards in order to internalize the pollution externalities the fossil fuel industry has been forcing on the public for over 100 years. However, since the use of these mechanisms would make electricity from fossil fuels more expensive, they would make nuclear power more competitive. Therefore, along with the use of carbon taxes and pollution standards, we must force the nuclear industry to pay for all of its costs, including capital costs, decommissioning costs, and nuclear waste costs, all of which are being paid (or will be paid for) by either ratepayers or taxpayers.

Will electricity markets really be competitive?

For most of this century, monopoly utilities owned all of the power plants serving a particular region. Although several states have required their investor-owned utilities to sell off some or all of their power plants, these sales have been done to reduce “stranded costs” (or power plants and other assets that are more expensive to own and operate than what the market will bear); few, if any, of these divestitures have been done over concerns of market power (where one owner owns too many power plants). With the exception of Texas, no state has required that there must be a sufficient number of power plant owners in order to create competitive markets.

On a related issue, competitive electricity markets require open access to the nation’s transmission system. Unless power plants can get their product to market, there will be no competition. Since investor-owned utilities still own most of the transmission lines, they are manipulating the operation of the transmission system to favor their own power plants (or those of their affiliates) at the expense of their competitors. Resolving this problem requires the passage of good federal legislation, but the bill currently working its way through the House Commerce Committee (H.R. 2944) is a total disaster with respect to transmission open access. If it were enacted in its current form, H.R. 2944 would actually *reduce* access to the transmission system.

So, given that state and federal governments are not addressing the need to create competitive electricity markets, these markets will likely remain dominated by one or two owners of power plants. These one or two owners may be able to control electricity prices, to the point where power plants that would otherwise be forced to shut down because they can't compete instead stay open. Under the right conditions, the owners of nuclear power plants may be able to manipulate electricity markets (or pliable politicians) in order to keep their plants on-line.

Nuclear Power Is Not Needed to Clean the Air

For decades the nuclear power industry has been forcing ratepayers and taxpayers to pay for its misguided technology. As the electric power industry undergoes fundamental change, the nuclear power industry has been successful in forcing ratepayers (and soon taxpayers) to continue providing massive subsidies for capital, decommissioning, and nuclear waste costs. Now the industry wants new subsidies because it claims it produces no air pollution.

However, society does not need to subsidize the nuclear power industry in order to reduce air pollution. *Energy Innovations*, a study put out several years ago by the Alliance to Save Energy and others, shows how we could move our electric industry away from nuclear and fossil fuels and toward renewable energy and energy efficiency, all while greatly reducing the amount of pollution from electricity production and while reducing the economy's total bill for electricity.³

The nuclear power industry will continue to have a future as long as politicians and regulators force ratepayers and taxpayers to cover nuclear costs that would otherwise shut most of the industry down. Clearly, the policies that favor this polluting and dangerous technology should be reformed in favor of energy efficiency and renewable technologies.

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³ Alliance to Save Energy, American Council for an Energy Efficiency Economy, Natural Resources Defense Council, Tellus Institute, and Union of Concerned Scientists, *Energy Innovations: A Prosperous Path to a Clean Environment*, Washington, DC: Alliance to Save Energy, 1997