

## Promoting “Green Energy” Investments for Electric Utilities: An Historical Perspective

*Robert V. Percival<sup>1</sup>*

Improvements in energy efficiency and the development of new sources of clean energy are critical priorities for China and the rest of the world. China’s rapid growth cannot continue if energy shortages persist, but if a “green energy” path is not pursued, environmental conditions in China and the world will deteriorate even further, causing substantial harm to public health.<sup>2</sup> These conclusions are well understood; the challenge is to determine the best means for pursuing a “green energy” path.

Three decades ago, the United States faced a situation of rapid growth in energy demand similar to that now facing China. Plans were drawn up for massive investments in the construction of expensive, new nuclear and coal-fired central station power plants to meet this projected demand. Recognizing the enormous environmental costs of such development, Environmental Defense Fund (EDF) launched an alternative energy project that sought to demonstrate that utility investments in energy efficiency improvements and renewable energy sources would be a far more economical approach to satisfying future energy needs.<sup>3</sup>

As a young staff attorney for EDF during the early 1980s, I had the privilege of working with the organization’s talented economists, scientists and lawyers on this alternative energy project. This paper reviews some these experiences and the lessons they may hold for future efforts to promote a “green energy” path. In particular, it discusses EDF’s efforts to convince electric utilities in the state of New York to abandon the construction of a costly nuclear power plant project in favor of direct investments in energy efficiency improvements and clean, alternative sources of energy.

---

<sup>1</sup> Robert V. Stanton Professor of Law and Director of the Environmental Law Program, University of Maryland School of Law. The author would like to express his appreciation to Lauren Charney and Ian Ullman for research assistance with this paper. This paper is adapted from Robert V. Percival, “Conservation and Renewable Energy Sources as Supply Alternatives for New York’s Electric Utilities, in in Saltzman & Schuler (eds.), *The Future of Electrical Energy: A Regional Perspective of an Industry in Transition* 126 (1986).

<sup>2</sup> For example, it is estimated that 30 percent or more of the mercury found in the western half of the United States originates in China, most of it in emissions from coal-fired powerplants there. Matt Pottinger, Steve Stecklow & John J. Fialka, *Invisible Export – A Hidden Cost of China’s Growth: Mercury Migration*, *Wall St. J.*, Dec. 20, 2004, at A1. China is expected to double its production of electric power by the year 2020. If this is not done through investments in clean sources of energy, mercury emissions from China will become an even larger source of mercury exposure in the U.S.

<sup>3</sup> The story of EDF’s efforts to persuade electric utilities to embrace direct investments in energy efficiency improvements and renewable energy sources as alternatives to central station power plants is described in David Roe, *Dynamos and Virgins* (New York: Random House, 1984).

The environment in which New York's electric utilities operate changed dramatically during the late 1970s. Like many other utilities throughout the United States, New York utilities in the early 1970s launched ambitious plans to construct additional power plants based on projections of rapid growth in demand for electricity. These plans later had to be sharply scaled back when the projected demand failed to materialize following the Arab oil embargo. But at no time did the utilities question whether their customers' energy needs could be satisfied more economically through investments in alternatives to central station power plants. This failure to consider alternatives cost consumers dearly; however, EDF's project helped convince New York utilities and their regulators to endorse the pursuit of conservation and renewable energy investments as more economical alternatives to construction of central station power plants.

## **THE CONSERVATION INVESTMENT CONCEPT**

When utilities operated in an environment of declining marginal costs, expanding demand for electricity was accompanied by reductions in the real price of electricity. Early skirmishes between environmentalists and utilities focused not on the economics of electricity generation but, rather, on the environmental impacts of power plants and on the question of how many additional power plants were needed to meet demand growth. The debate often concentrated on the accuracy of forecasts of future demand growth. Few questioned the implicit assumption that the only way to satisfy additional demand was to build more central station power plants.

During the decade of the 1970s, utilities ceased to operate in an environment of declining marginal costs. For many utilities construction and operation of new central station generating capacity became more expensive than utilization of existing generation sources. The increasing costs of new power plant construction and concern over environment degradation spurred a<sup>1</sup> search for alternatives.

In the late 1970s the Environmental Defense Fund (EDF) helped pioneer the notion that electrical utilities could benefit themselves and their customers by investing directly in end-use conservation devices. EDF's argument was quite different from what utilities were accustomed to encountering. It did not challenge utility projections of future demand growth; it focused instead on the question of how utilities could satisfy most economically whatever customer demand they forecasted.

EDF maintained that strictly as an economic proposition central station power plants were not the best investment alternative for utilities. The EDF demonstrated that California's two largest utilities could meet all their projected demand growth at substantially less cost and with substantially less financial risk if they canceled plans to build additional coal and nuclear power

---

<sup>1</sup> Id. at 133.

plants and instead invested in conservation hardware and small-scale renewable energy sources.

After a vigorous skirmish, California's two largest utilities abandoned their plans to build additional central station power plants before the end of the century. Pacific Gas and Electric and Southern California Edison announced that they would replace these plants in their supply with investments in end-use efficiency improvements; geothermal, wind, and solar energy; co-generation; and conservation voltage regulation).

## **THE EDF ALTERNATIVE PLAN FOR NEW YORK UTILITIES**

EDF turned its attention eastward in 1981. Five New York utilities were struggling to build a 1,080 megawatt (MW) nuclear power plant, Nine Mile Point Two, which had been plagued with massive cost overruns. In September 1981, the New York Public Service Commission (PSC) ordered a special hearing to consider alternatives to completion of the Nine Mile Point Two project. EDF presented a comprehensive plan for replacing Nine Mile Point Two with investments in conservation hardware and small-scale renewable energy sources.

When the Nine Mile Point Two project was launched in 1971, its sponsors estimated that it would be completed in 1977 at a cost of \$370 million. By 1981, the utilities' cost estimate had risen to \$3.7 billion for completion in October 1986. (The project ultimately was completed in July 1987 at a total cost of \$6.3 billion).

By the time of the PSC hearing, more than \$1 billion had been sunk into the Nine Mile Point Two project. Despite this enormous sunk cost, EDF's economists, using a sophisticated computer model to simulate utility investment decisions, demonstrated that the utilities would be far better off financially if they abandoned the plant and pursued alternative investments instead.<sup>1</sup>

The EDF alternative plan involved utility investments in residential and commercial sector end-use efficiency improvements, co-generation, conservation voltage regulation, and small hydroelectric projects at existing dam sites. The end-use efficiency investments, which constituted more than 55 percent of the plan, included in the residential sector water heater insulation, fluorescent lighting, low-flow showerheads, and energy efficient refrigerators and air conditioners; and in the commercial sector fluorescent lamps and energy-efficient ballasts as well as more efficient heating, ventilation, and air conditioning systems.

EDF maintained that these investments could provide the energy and capacity equivalent to Nine Mile Point Two with equal (or greater) reliability during the same period of time at a cost

---

<sup>1</sup> The EDF alternative plan and the economic analyses supporting it are outlined in Environmental Defense Fund, *A New Alternative to Completing Nine Mile Point Unit 2 Nuclear Station: Economic and Technical Analysis* (1981).

17 percent less than the cost of completion of the plant. These cost savings were particularly significant because they were calculated on the assumption that ratepayers bore the full sunk costs of the canceled plant.

EDF's alternative plan represented an entirely new approach for New York's investor-owned utilities. EDF's proposal was based on the notion that utilities should treat conservation investments as a source of energy services on an equal footing with traditional supply alternatives. By offering financial incentives to stimulate conservation investments or by directly supplying their customers with conservation hardware, utilities can avoid constructing additional generating capacity and can reap financial benefits for themselves and their ratepayers. To provide an incentive for utilities to pursue conservation investments, EDF proposed that utilities be permitted to earn a rate of return on these investments similar to what they earn on investments in conventional supply alternatives.

## **THE UTILITIES' RESPONSE TO THE EDF PLAN**

None of the utilities involved in the Nine Mile Point Two project had ever considered direct utility investments in conservation and small scattered renewable sources of supply as an alternative to construction of the plant. Because they could not dispute the notion that such alternatives would be cheaper than completion of a multibillion dollar nuclear power plant, they sought to avoid any direct cost comparison between the two. Instead of arguing comparative economics, they sought to attack the concept of utility investment in conservation, even though it already had been embraced by utilities in many other states.

### *Legal and Philosophical Objections*

The utilities argued that direct utility investments in conservation would pose difficult legal problems. Yet they refused to be specific about what legal obstacles they foresaw, hoping merely to create sufficient doubt to diminish the appeal of the EDF alternative. One of the "legal" arguments articulated during the Nine Mile Point Two proceeding was that conservation investments would require approval from state regulatory authorities hardly an obstacle since those authorities were the very body conducting the inquiry into alternatives to Nine Miles Point Two.

In subsequent PSC proceedings focusing on the EDF alternative,<sup>1</sup> the utilities were finally forced to articulate their legal objections to direct utility investment in conservation. Aside from the utilities' claim that the PSC had no authority to order them to invest in conservation (even if such investments were the most economical means of providing service to their customers), the

---

<sup>1</sup> New York State PSC Case 28223, Proceeding to Inquire into the Benefits to Ratepayers and Utilities from Implementation of Conservation Programs That Will Reduce Electric Use.

principal legal objection they raised was their fear of running afoul of the antitrust laws. The administrative law judge who presided over the conservation proceeding agreed with the EDF that the antitrust laws did not bar utility rebate programs and that the utilities would be insulated from antitrust liability in any event by the "state action" exemption from the antitrust laws. The judge ruled that there are no legal barriers under federal or state law to investment by utilities in conservation in New York.

The more basic objection of the utilities to the EDF plan was philosophical rather than legal. Most of the New York utilities believe that their business is to sell electricity, not conservation.<sup>1</sup> They viewed conservation with as much enthusiasm as a cigarette manufacturer has for an antismoking campaign. For public relations purposes they favored informational advertising by utilities to promote conservation, but they were fearful that too many customers would begin to heed the message.<sup>2</sup> Objections based on what utilities conceived to be their traditional business role were difficult to justify, however, in the face of evidence demonstrating that it is far more costly to utilities and their ratepayers if utility investment choices are limited to traditional alternatives.

#### *Uncertainty of Customer Response*

Although other utilities throughout the country had implemented conservation investment programs successfully, the New York utilities argued that such programs would not work in New York because their customers would not respond to conservation incentives. Because none of the New York utilities had ever considered such programs, they had little basis for claims that New York customers would react differently. It was not until they were required to experiment with such programs during the PSC's conservation proceeding that they generated data specific to their service territories.

The results of their experiments were dramatic. Niagara Mohawk, which conducted the most extensive conservation incentive experiment of the seven investor-owned utilities, offered several different rebate and installation programs. When Niagara Mohawk offered full rebates to customers who purchased water heater wraps, in less than one month approximately 13 percent of the customers in the sample purchased water heater wraps and applied to the utility for reimbursement. This represented an extraordinary response considering the short duration of the experiment and the fact that customers had to go out and locate the conservation device and mail a form into the utility in order to be reimbursed.

---

<sup>1</sup> Lawyers for Rochester Gas and Electric even argued during the conservation proceeding that the company's certificate of incorporation would be unconstitutionally impaired if it were directed to invest in conservation because its corporate charter only empowers it to sell electricity.

<sup>2</sup> Thus, in the conservation proceeding, the utilities found themselves in an uncomfortable position. They opposed utility investments in conservation on the grounds that any conservation in their systems would harm nonparticipating ratepayers while vigorously defending their commitment to informational programs to promote this very "evil."

Niagara Mohawk also offered a rebate program to customers who purchased energy efficient fluorescent light bulbs. Although the utilities went to great lengths to attempt to establish that few customers could use such lights, the Niagara Mohawk rebate program was a tremendous success.

Niagara Mohawk also experimented with a direct mail program to distribute low-flow showerheads to their customers. By reducing consumption of hot water, expanded use of low-flow showerheads can reduce demand for electricity used by water heaters. The Niagara Mohawk program did not require the customers to locate and purchase the showerheads themselves. It simply required customers to return a coupon to Niagara Mohawk requesting the showerhead. Niagara Mohawk experimented with different incentive levels in the showerhead program. Of the customers offered the showerheads for \$7.00, 10 percent accepted the offer. It is interesting to note that because the showerheads only cost Niagara Mohawk \$5.08 each, the company was able to recover more than the cost of the conservation device from these customers. As the level of incentive increased, so too did the customer response. Of the customers offered free showerheads, more than 44 percent accepted the offer in less than one month.

Niagara Mohawk also offered certain customers the option of having the light bulbs, showerheads, or water heater wraps installed for free. The utility hired a contractor to provide this service to a group of Niagara Mohawk customers. In less than one month, 50.6 percent of Niagara Mohawk customers who were offered free installation of these devices accepted the offer. This demonstrated dramatically that customers will respond favorably to conservation incentives provided by the utility.

Unfortunately, Niagara Mohawk's lawyers chose to interpret these splendid results in the most unfavorable light. Although their pilot programs had given customers less than a month to respond, they characterized the results as proof that no more than half their customers ultimately would respond to a full-scale program of conservation incentives. This interpretation illustrated how determined the utilities were to oppose direct utility investments in conservation.

During the Nine Mile Point Two proceeding, the utilities also argued that the EDF had overestimated the energy savings from certain conservation investments because customers had already undertaken conservation measures not accounted for by the EDF. For example, they argued that the EDF had erred in calculating energy savings from water heater wraps because it had based its calculations on the assumption that electric water heaters in New York were set at an average temperature of 140 degrees Fahrenheit. When questioned as to whether they had any actual data on the average temperature of water heaters in their service territories that would contradict the EDF's assumption, the utility witnesses conceded that they did not but maintained that it would be irresponsible to cancel a nuclear power plant in the absence of such information. EDF argued that it would be irresponsible to decide to proceed with a multibillion dollar investment simply because the temperature at which their customers set their water heaters was

unknown.

During the conservation proceeding that followed the Nine Mile Point Two hearings, the utilities conducted a detailed survey of end-uses of electricity in the residential sector of their service territories. This statewide survey, conducted in 1983, found that the mean temperature at which New York customers set their electric water heaters was 140 degrees Fahrenheit.

### *The "Do Both" Response*

The utilities strove mightily to avoid comparing the economics of conservation investments with the cost of completing Nine Mile Point Two. Their principal argument in response to the EDF alternative plan became known as the "do both" argument. The utilities maintained that conservation investments should be considered a complement to, rather than a substitute for, Nine Mile Point Two. Because New York was so heavily dependent on oil-fired generation, the utilities argued, any alternative to oil-fired generation made economic sense. Thus, they argued that Nine Mile Point Two should be completed, even if it were more expensive than the implementation of conservation efforts, because it would produce net savings when compared to expensive oil-fired generation. This "do both" argument maintained that New York ratepayers would be better off if the utilities invested in both Nine Mile Point Two and full-scale conservation programs.

The utilities' argument ignored the question of which investment provided the highest return. Because the utilities had no intention of investing in conservation, they were essentially arguing that even if Nine Mile Point Two were an inferior investment to the EDF plan it should be pursued instead because it offered some improvement over the status quo. The utility argument also failed to take into account differences in relative risks between continuing the Nine Mile Point Two project and pursuing the EDF plan.

Experiences after the PSC decision approving completion of Nine Mile Point Two showed the dangerous consequences of accepting the "do both" argument. The economic losses from the Nine Mile Point Two project increased, while pursuit of more economical conservation alternatives was delayed as a result of the utilities' involvement in Nine Mile Point Two.

At the time of the PSC hearing, the utilities estimated that Nine Mile Point Two would be completed at a total cost of \$3.7 billion. The PSC staff maintained that this estimate was unrealistically low and that the project would cost \$4.9 billion for a 1987 completion date. (EDF employed the PSC staff estimate in its comparative analysis.) Costs of the project eventually soared to \$6.3 billion.

Did the utilities fail to appreciate the magnitude of the risk of cost increases? Careful examination of the record of the PSC proceeding suggests that the continuation of massive cost overruns was not a complete surprise to the utilities, despite their sworn testimony that the plant could be completed for \$3.7 billion. The clearest indication that the utilities had little faith in their

own cost estimates was their alarmed reaction to the request that they provide a "cap figure." A cap figure was proposed as the amount of total plant costs that each co-tenant in the Nine Mile Point Two project would be satisfied to receive from ratepayers if the utility were forced to absorb all costs above the figure while collecting the difference if actual costs proved to be less. The only cap figure proffered by any utility was a figure of \$6 billion suggested by Long Island Lighting Company's (LILCO) chief financial officer.<sup>1</sup> Given that the utilities' current estimate of completion costs of Nine Mile Point Two is \$5.35 billion, the figure proposed by LILCO's executive appears to reflect an accurate appreciation of the potential for cost overruns. Unfortunately, the PSC did not adequately perceive the magnitude of this risk when it decided to permit completion of the plant.<sup>2</sup>

In the two years after the Commission's decision to approve completion of Nine Mile Point Two, more than \$2 billion was spent on the project. Yet reviews in 1983 by both the PSC and the New York State Energy Office (SEO) estimated that the net present value of benefits from completion of the project -- the savings compared with oil-fired generation that was the basis of the "do both" rationale -- was approximately \$1.5 billion. Thus, the companies' own data demonstrate that the PSC made a costly error when they approved completion of Nine Mile Point Two. It is clear that had they stopped the project instead, both the utilities and their ratepayers would have been far better off today.

The EDF did an updated study of the economics of Nine Mile Two and Shoreham in January 1984.<sup>3</sup> Even though the sunk costs of each of these projects had increased dramatically, the study showed that investments in conservation and renewable alternatives would still be a viable economic alternative to the plants. The study found that if both plants were canceled and alternatives substituted in their place, ratepayers would realize net benefits of \$1.1 billion even after repaying all the sunk costs of the projects.

The SEO reviewed the EDF study and concluded that a selected set of conservation alternatives would be cheaper than completion of the Nine Mile Point Two project. However, the SEO study severely criticized the EDF because it "failed to consider the economics of the conservation and renewable resource alternative as a supplement to Nine Mile 2." The study further maintained, "There is no apparent reason why the co-tenant utilities could not invest in conservation and renewable resources in addition to Nine Mile Point 2 and realize the resultant savings, as well as savings accruing from the Nine Mile Point 2 investment."<sup>4</sup> The SEO reaffirmed

---

<sup>1</sup> Although the commission made a formal request that each utility provide it with a "cap figure." the utilities refused to comply.

<sup>2</sup> While the PSC did adopt an incentive rate of return plan that penalized the utilities for cost overruns above a \$4.6 billion completion cost, it is doubtful that completion of Nine Mile Point Two would have been approved had the commission accurately appreciated the risk of continued cost overruns.

<sup>3</sup> Environmental Defense Fund. *The Positive Alternative to Completing Shoreham and Nine Mile Two* (1984).

<sup>4</sup> New York State Energy Office, *Nine Mile Point 2 Economics Study, Phase III Report* (September 1984).



its endorsement of completion of Nine Mile Point Two on the ground that the project was still expected to offer some net economic advantage over existing oil-fired generation.

Thus, New York authorities continued to fall into the trap of the "do both" argument, even though experience showed that it sacrifices pursuit of the most economic alternative in favor of an alternative that continues to grow less economically viable. No rational investor would be content to invest his or her capital in securities that provide lower returns and greater risk than competing investment alternatives simply because the return is greater than zero. Yet this is precisely what the New York regulatory authorities continue to permit the utilities to do.

## **THE CONSERVATION DECISION**

Although the New York PSC approved completion of Nine Mile Point Two, the commission also launched a special proceeding to require all seven of the state's investor-owned utilities to consider the EDF's conservation proposals. The utilities initially proposed that hearings be postponed for two to three years while they performed studies to assess the impact of providing financial incentives for conservation. They maintained that they knew little about appliance end-uses in their service territories and they continued to predict that customers would not respond to conservation incentives. The administrative law judge ordered them to commence studies immediately and scheduled hearings to consider the cost-effectiveness of conservation investment.

The utilities conducted a statewide survey of appliance end-use patterns and three utilities experimented with pilot programs as described above. The PSC also sponsored a symposium that brought representatives of out-of-state utilities to New York to discuss their experience with utility conservation investment programs.

In April 1983, testimony was filed on the cost-effectiveness of residential conservation measures. Each of the seven utilities used a different methodology and different assumptions concerning the costs and energy savings of the same set of residential conservation measures. Energy savings assumed for certain measures varied by a factor of 6 from one utility to another. One utility estimated that low-flow showerheads would cost an average of \$21.50 each, while another utility had actually procured them for its pilot program for \$5.08 each. Rochester Gas and Electric projected that it would cost \$24.00 to process each rebate (including \$7.25 to write each rebate check), although New York State Electric and Gas had incurred administrative costs of only \$2.00/rebate in its pilot program.

Despite their wide divergence in assumptions and methodologies, the utility studies generally found that each of the residential conservation measures would produce savings several

---

times greater than its cost. For example, the studies found that each low-flow showerhead would produce savings with a net present value ranging from \$214 in Orange and Rockland's service area to \$428 in the LILCO's; net savings from each water heater wrap ranged from \$11 in the service area of Rochester Gas and Electric to \$262 in the LILCO's.

Despite the enormous net resource benefits of conservation investments, all utilities opposed provision of financial incentives to stimulate such investments. Because they refused to credit conservation with significant capacity savings, they claimed that the revenue loss conservation would disadvantage nonparticipants as fixed costs were spread over fewer kilowatt hours of sales. Curiously, all utilities supported informational programs to promote conservation, even though they had to admit that to the extent that such programs were successful in stimulating conservation they would generate the same revenue loss and have the same adverse impact on nonparticipants.<sup>1</sup>

Although some utilities acknowledged that capacity savings produced by conservation investments could reduce rates to all customers, they generally maintained that conservation could not be given credit for capacity savings unless it could be demonstrated that specific conservation investments would defer planned capacity additions. With both Shoreham and Nine Mile Point Two under construction, the utilities maintained that additional generation capacity savings would be minimal. Although marginal capacity cost estimates routinely are computed for rate design purposes, the utilities argued strenuously that they should be able to use different estimates of marginal capacity cost to compute the avoided costs of conservation.

In November 1983, the administrative law judge presiding over the conservation proceeding released a recommended decision. The decision found that there are no legal barriers to direct utility investments in conservation and that the PSC has ample authority to require New York utilities to pursue conservation investments. The decision stated that in light of the continued construction of Shoreham and Nine Mile Point Two, the immediate benefits of conservation investments are substantially reduced. However, the decision concluded that as avoided costs continue to rise, full-scale conservation investment programs will become more economically viable. Thus the decision outlines a staged plan for utilities to develop data, experience, and managerial expertise to implement full-scale conservation investment programs.

The PSC adopted most aspects of the recommended decision. The commission ruled that New York utilities must treat conservation investments on an equal footing with investments in new generating capacity. The PSC directed the utilities to spend 0.25 percent of their revenues to implement conservation programs so as to develop the experience and managerial expertise to

---

<sup>1</sup> Each of the utilities admitted that it had not done any study of the impact of their informational programs on conservation decisions by their customers. When directed by the administrative law judge to determine the potential impact of informational programs on nonparticipants, the utilities were unable to do so.

pursue subsequent, full-scale conservation investments.

Unfortunately, the utilities remained opposed to conservation investments, and their filings in response to the commission's decision were very disappointing. Most of the utilities' expenditures for conservation were for information programs rather than for programs involving direct utility investments in conservation. Although some utilities proposed to offer rebates to their customers for purchasing conservation devices, none of the utilities planned to offer a free installation program, despite the demonstration by Niagara Mohawk's pilot program of the dramatic results free installation programs can achieve.

## **INCENTIVES FOR UTILITY INVESTMENT IN CONSERVATION**

The key difficulty in developing successful programs for direct utility investment in conservation is overcoming utility attitudes toward such investment programs. If a utility opposes direct investments in conservation measures, it is very difficult to get the utility to operate a successful conservation program. In order to remove some of the disincentives to utility investment in conservation, the EDF proposed a balancing account mechanism to prevent short-run utility revenue losses from arising because of additional utility financed conservation. Although the administrative law judge adopted the EDF's proposal, the PSC in its final decision rejected it.

Another significant disincentive to utility investment in conservation is provided by the current structure of the federal tax code. The tax system offers substantial subsidies to utilities for construction of central station power plants, which are not generally available for investments in conservation. The investment tax credit, the accelerated cost recovery system, and the use of tax exempt pollution control bonds all permit utilities to avoid or postpone billions of dollars in federal taxes for power plant construction projects. In 1985 it was estimated that these subsidies for power plant construction cost the federal treasury \$12 billion annually.<sup>1</sup>

## **LESSONS FROM THE EDF EXPERIENCE**

EDF's experience trying to promote investments in energy efficiency improvements and clean energy sources by New York's electric utilities provides some lessons that may be useful today. First, the New York experience provides an excellent illustration of the consequences of utility investment policies that failed to consider alternatives to construction of central station

---

<sup>1</sup> Richard Morgan, "Federal Energy Tax Policy and the Environment" (Washington D.C.: Environmental Action Foundation, April 1985).

power plants. Now that a measure of competition has been introduced into the market for generating electricity in the U.S., it is clear how much money was wasted by building the Nine Mile Point Two nuclear power plant instead of investing in green alternatives. An 88 percent interest in the 1,148-megawatt reactor was sold on November 7, 2001 for \$559 million.<sup>1</sup> Thus, a plant that cost \$6.3 billion to build when completed during the summer of 1987, was worth only approximately \$635 million.

Although the EDF's presentation in the Nine Mile Point Two proceeding represented the most comprehensive case ever made in New York for the economics of conservation and renewable alternatives, interveners in a LILCO rate case in 1980 proposed a conservation alternative to completion of the Shoreham nuclear power plant on Long Island. They projected that a program of investments in residential, commercial, and industrial conservation could displace more oil than Shoreham at a cost substantially less than the \$1-\$1.5 billion needed to complete Shoreham. LILCO rejected this alternative, arguing that it was inappropriate and unreliable and that only \$500 million would be needed to complete Shoreham at a total cost of \$2.2 billion. Shoreham ultimately was completed at a cost of \$6 billion, but because of the plant's location on Long Island LILCO was unable to demonstrate that nearby residents could evacuate successfully in the event of a nuclear accident. Thus, the decision was made in 1989 to abandon the project.

This experience also demonstrated the difficulty regulators have in trying to force changes in utility decisions to invest in construction of new generating capacity. California's utilities did not embrace conservation investment programs enthusiastically until after state regulators had penalized them financially for failing to do so. Other state regulatory bodies may need to do the same. Another alternative is for state authorities, rather than private utilities, to offer incentives to consumers to stimulate greater investment in energy efficiency improvements.<sup>2</sup> In 1996 the state of New York initiated a systems benefit charge (SBC) to fund energy efficiency programs and programs to assist low-income consumers of electricity. This program is funded at a level of \$175 million for a five-year period.<sup>3</sup>

The idea of direct utility investments in energy efficiency improvements is no longer as controversial as it was when EDF first started championing it. A host of demand-side management programs to improve energy efficiency and to reduce consumption of electricity are now in existence.<sup>4</sup> Other measures also are available for pursuing these objectives.<sup>5</sup> Investments in

---

<sup>1</sup> Constellation Group Press Release, "Constellation Energy Group Completes Purchase of Nine Mile Point Nuclear Station, Nov. 7, 2001, at [http://www.corporate-ir.net/ireye/ir\\_site.zhtml?ticker=CEG&script=412&layout=0&item\\_id=225419](http://www.corporate-ir.net/ireye/ir_site.zhtml?ticker=CEG&script=412&layout=0&item_id=225419).

<sup>2</sup> See Alison Bailie, Roger Peters, Matt Horne & Kristin Zarowny, *Successful Strategies for Energy Efficiency* (Aug. 2006).

<sup>3</sup> State of New York Public Service Commission, *Order Continuing the System Benefits Charge*, No. 05-M-0090, Dec. 14, 2005.

<sup>4</sup> See Daniel Violette & Richard Sedano, *Demand-Side Management: Determining Appropriate Spending Levels and Cost-Effectiveness Testing*, Jan. 30, 2006.

<sup>5</sup> These include tax incentives for energy efficiency improvements, energy efficiency building and product codes, and

improved energy efficiency and development of clean energy sources will pay great dividends in the future to both China and the world.

---

regulatory incentives for investments in clean energy technologies