

The Effects of Electric and Gas Deregulation on Water Industry Competition  
Issues

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## I. INTRODUCTION

This chapter will address the potential effects of restructuring in the electricity and natural gas industries on water utilities. This chapter is a preliminary look at some of the ways in which water utilities might be affected by restructuring in other utility industries. There are currently several research projects in progress, by the author and others, that are examining these issues. Those projects should result in a much more comprehensive treatment of these issues than is possible at the present time.

## II. RESTRUCTURING IN THE ELECTRIC INDUSTRY

### A. Reasons for Restructuring

Historically, electric utilities were declining-cost companies. Each generation of power plants was more efficient than the earlier generation. The cost per unit of production declined and, as a result, prices fell. For example, from 1940 through 1970, the average price of electricity in the United States declined steadily from 3.84 cents per kilowatt-hour to 2.10 cents per kilowatt-hour. C.F. Phillips, Jr., *The Regulation of Public Utilities* (3<sup>rd</sup> ed. 1993) at 11.

All of this changed dramatically starting in the late 1960's and continuing through the late 1980's. Electric utilities invested in the next generation of power plants – primarily nuclear power plants – with the expectation that prices would continue to decline and that demand would continue to grow. The oil crisis and double-digit inflation of the 1970's, coupled with massive cost over-runs at nuclear power plants, the accident at Three Mile Island, and more stringent air pollution control requirements caused these predictions to dramatically miss the mark.

By the end of the 1980's, all of the nuclear power plants were either canceled or included in rates. By the mid-1990's, electric utility rate cases were becoming rare events, prices were stable and starting to decline again, and large consumers of electricity had competitive options available to them.

With the advent of combined cycle power plants that produce electricity at less than most utilities' average cost of production, it appears that we are back to "business as usual" in the utility industry. That is, it looks like we are again in a declining-cost era,

where utility rates will be stable or decline as new technologies replace older, less-efficient plant and equipment. However, instead of suggesting a return to the first 60 years of utility regulation (infrequent rate cases usually leading to a decline in rates), the industry and many consumers are seeking to deregulate portions of the industry.

The Energy Policy Act of 1992, P.L. 102-486, 16 U.S.C. §§ 824j-824o, went a long way to opening up the wholesale electricity market to competition. Subsequent orders of the Federal Energy Regulatory Commission (FERC) all but deregulated that market. *See Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities*, 61 *Fed. Reg.* 21,540 (1996), modified on reconsideration, 62 *Fed. Reg.* 12,274 (1997).

In Pennsylvania, the restructuring of the electricity industry is moving forward rapidly. With the enactment of the Electricity Generation Customer Choice and Competition Act, 66 Pa. C.S. §§ 2801, *et seq.*, in November 1996, Pennsylvania is at the forefront of attempting to allow all consumers to choose their supplier of electricity.

#### B. Status of Restructuring

Restructuring refers to the process of making a portion of the electricity market competitive. Neither Pennsylvania nor any other state is considering the possibility of deregulating the distribution of electricity. So, for the foreseeable future, it appears that the electricity industry will consist of two distinct markets: the generation of electricity which may become largely unregulated and the distribution of electricity (the wires, transformers, and substations that are needed to get electricity to the consumer) that will remain regulated. It is for this reason that most people are referring to the “restructuring” of the electric industry, rather than to its deregulation.

For the past 20 years, there has been a national and state policy to encourage the production of electricity by independent companies rather than by the local utility. *See, e.g.*, 16 U.S.C. § 824a-3; 18 C.F.R. §§ 292.101, *et seq.*; 52 Pa. Code §§ 57.31, *et seq.*; *Pennsylvania Electric Co. v. Pa. Public Utility Commission*, 544 Pa. 475, 677 A.2d 831 (1996). That policy has given rise to many

independent power producers throughout Pennsylvania, as well as many large commercial and industrial consumers that generate at least some of their own electricity. Further, since the passage of the Energy Policy Act of 1992, there has been widespread competition in the wholesale electricity market, making it easier for utilities to buy power from the lowest-cost source.

The latest step in this process is giving these diverse generating companies direct access to retail consumers. Rather than being required to sell only to large utilities, electricity generating companies would be allowed to sell directly to consumers. In addition, companies (and even cities and non-profit organizations) are being encouraged to buy electricity at wholesale and resell it to retail consumers, as a way of further broadening the electricity market. The hope is that by giving consumers direct access to the electricity generator, consumer choice will increase, the quality of service will improve, and prices will decline.

Restructuring the electricity industry is not a simple task. The Pennsylvania Public Utility Commission (PUC) has conducted at least two dozen separate proceedings to address everything from the licensing requirements for electricity suppliers to the precise rates that electric utilities will charge for distributing power to their customers. *See* Appendix A for a partial list of generic orders.

The market in Pennsylvania is scheduled to open on January 1, 1999, when one-third of the electricity customers in Pennsylvania will be able to choose their generation supplier. Another one-third of consumers will be able to choose their supplier on the next day, with the remaining one-third getting the right to choose one year later. Thus, on January 2, 2000, every electricity consumer in Pennsylvania will be able to choose their generation supplier.<sup>1</sup>

### III. RESTRUCTURING IN THE NATURAL GAS INDUSTRY

#### A. Reasons for Restructuring

Many states are considering restructuring the natural gas industry in

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<sup>1</sup> This schedule reflects the effect of the restructuring orders issued by the PUC. It differs from the phase-in schedule set out in the statute, which envisioned full customer choice on January 1, 2001. 66 Pa. C.S. § 2806(b).

conjunction with restructuring the electric industry. In Pennsylvania, large consumers have been able to purchase their own gas supplies for more than a decade, but small consumers do not have that ability. It is believed by some that if the natural gas industry is restructured, small consumers will be offered packages of energy services, including a combination of electricity and gas. This could make it both easier and more cost-effective to purchase energy services.

#### B. Status of Restructuring

The restructuring of the natural gas industry began in the mid-1980's, when FERC issued Order 436 (50 *Fed. Reg.* 42,437 (1985)) and, later, Order 636 (57 *Fed. Reg.* 13,267 (1992)); *see* 18 C.F.R. Part 284. After several years of litigation, those orders and subsequent orders issued by the Pennsylvania PUC, gave all large natural gas consumers the ability to choose their gas supplier. In many instances, the gas was delivered to a large industrial consumer directly from an interstate pipeline, completely bypassing the local gas distribution utility. In other cases, the local gas utility continues to transport the gas from the interstate pipeline to the customer. When this occurs, the local utility receives a fee for transporting and distributing the gas, but has no role in procuring the gas itself.

Some of Pennsylvania's natural gas utilities have started programs to allow smaller consumers to purchase gas directly from other suppliers. *See, e.g., Pa. Public Utility Commission v. Equitable Gas Co.*, 1997 Pa. PUC LEXIS 92 (1997); *Pa. Public Utility Commission v. Columbia Gas of Pennsylvania, Inc.*, 1996 Pa. PUC LEXIS 140 (1996). While legislation has been introduced to require the restructuring of the natural gas industry (S.B. 943 (Printer's No. 1037) and H.B. 1068 (Printer's No. 1193)), efforts to develop consensus legislation have been unsuccessful so far. It appears unlikely that natural gas restructuring legislation will be enacted during the 1998 session of the General Assembly; however, that should not affect the ability of utilities to implement and expand their pilot programs for small gas consumers.

### IV. EFFECTS ON THE WATER INDUSTRY OF RESTRUCTURING IN OTHER UTILITY INDUSTRIES

#### A. Water Utilities as Energy Utility Customers

Water utilities use a great deal of electricity. Nationwide, approximately 78 million kilowatt-hours are consumed **each day** in the production and distribution of water. H. Arora and M.W. LeChevallier, "Energy Management Opportunities," 90 *Journal American Water Works Association*, 2:40 (Feb. 1998). One water utility system estimates that electricity costs represent 9% of its total operating and maintenance expenses. *Id.*

In a restructured energy market, water utilities will need to change the way in which they purchase energy services. New energy options, including real-time metering and pricing, will be made available. This will place an increased emphasis on the ability of water utilities to manage both the timing and magnitude of their energy consumption. Energy-efficiency measures, such as the installation of variable-speed pumps, should become increasingly cost-effective.

In addition, water utilities will face increased choices about the type of energy that they use. Electricity and natural gas will become more interchangeable, particularly as new technologies are developed. Fuel cells and micro-turbines are being tested in several parts of the country and look like they will become commercially viable in the near future. M.L. Wald, "Fuel Cell Will Supply All Power to a Test House," *New York Times* (June 17, 1998). As this occurs, smaller energy users will have options similar to those available today for larger energy users (who can install on-site combustion turbines). These options allow energy consumers to purchase natural gas in order to produce their own electricity. Thus, many water utilities will be faced with options that include the purchase of electricity from various sources, improving the utilization and efficiency of electricity, and purchasing natural gas – either to use directly or to produce electricity on-site.

It can be expected that the utilities' customers and the PUC will look more carefully at water utilities' energy costs and the measures that the water utility is taking to minimize the level of those costs. Water utilities will need to document their energy-utilization decisions and ensure that they are maximizing the benefit from each energy dollar that they spend.

#### B. Water Utilities as Potential Acquisition Candidates

The energy and water industries are both undergoing major

consolidations. Several energy-industry mergers have been announced during the past two years, including the proposed merger between DQE, Inc. (the parent of Duquesne Light Co.) and Allegheny Power System, Inc. (the parent of West Penn Power Co.). In addition, there are numerous mergers taking place in the water industry, including the proposed merger between PSC Corp. (the parent of Philadelphia Suburban Water Co.) and Consumers Water Co. (the parent of Consumers Pennsylvania Water Co.).

Importantly, energy utilities are becoming more interested in the water utility business and mergers will become more common between those two industries. For example, DQE, Inc., in addition to owning Duquesne Light Co., also owns AquaSource, Inc., a growing water utility. AquaSource currently operates in six states, serving more than 95,000 water customers. "Liquid Gold: Consolidation Sweeps Texas' Small Town Water Utilities," *Texas Journal* (Aug. 5, 1998). In fact, that company is currently the largest investor-owned water utility in Texas and it expects to continue to grow considerably during the coming years. *Id.* Similarly, Enron Corp. (a major electricity and natural gas marketing company, as well as the parent company of an electric utility in Oregon) recently announced the acquisition of Wessex Water, PLC, a British water utility. "Enron to Acquire Wessex Water for \$2.2 Billion," *Wall Street Journal* (July 24, 1998). That energy company has announced plans to enter the water business both in the United States and throughout the world. "Enron Names Mark a Vice Chairman, Putting Her in Firm's Top Echelon," *Wall Street Journal* (May 7, 1998).

As the energy industry restructures, some energy utilities (such as GPU, Inc., in Pennsylvania and New Jersey) will be reshaped into distribution utilities. Distribution utilities will seek opportunities to maximize the return on their distribution expertise and infrastructure. These include their customer service operations, call centers, billing, metering, field operations, and other areas of expertise.

As a consequence, water utilities will become potential acquisition candidates. As with any acquisition, this will place increased pressure on the utility's management and employees to become more efficient and enhance the value that they provide for their investors and customers. It also will raise new issues for the PUC and other regulators, who need to receive assurances about the

capabilities of the new owners to operate a water utility safely and reliably.

### C. Water Utilities as Potential Competitors

The restructuring of the energy industry also presents opportunities for water utilities to provide new services and increase their profitability. With appropriate regulatory approvals, water utilities could become energy service providers. This could take many forms, including the purchase and resale of energy, the provision of billing and metering services, or some combination of these activities.

Opportunities also may exist for joint projects that might involve, for example, performing metering for energy and water by the same personnel or even through a common billing system. Similarly, water utilities and energy utilities might team up to provide new types of equipment or services to consumers (such as appliances that use hot water more efficiently, reducing a consumer's water and energy bills simultaneously).

## V. PROSPECTS FOR RESTRUCTURING THE WATER INDUSTRY

### A. Reasons for Restructuring

It does not appear that the water industry is facing the same pressures as the energy industry. Restructuring in the energy industry is primarily a function of the declining costs being experienced on the production side of the business. That is, new power plants can produce electricity at less than utilities' current average cost of production. Further, the economies of scale in the electric industry are declining rapidly and may soon be non-existent (such that small, distributed generation may prove to be more cost-effective than large, central-station power plants).

The same is not true in the water industry. The water industry continues to be an industry with increasing costs of production (newer treatment plants are more costly than the plants they are replacing) and substantial economies of scale (larger treatment plants have a much lower unit cost of production than smaller treatment plants). Thus, the underlying technological factors that are giving rise to the restructuring of the electric industry are not present in the water industry.

In its simplest terms, this means that increasing competition in the water industry would not result in a cost savings to consumers. Cost savings are potentially available in the electric industry only because new, smaller energy sources can be constructed at less than the average cost of existing sources. Precisely the opposite is true in the water industry: in order to reduce costs, production must be centralized as much as possible, and new plants are more expensive than the average cost of existing plants.

In addition, there is the practical problem of the physical differences between water supplies, even after they have been treated. While electricity and natural gas are fungible commodities, the same is not true for water. Different water sources have different characteristics (taste, color, odor, chemical composition, etc.). This makes it very difficult to “wheel” water from one water system to another.

In summary, both the technology of water production and the characteristics of water itself make it very unlikely that the water industry will be restructured in the same way as the energy industries. Multiple water suppliers serving a single market and competing for consumers is very unlikely.

It is more likely that the water industry structure may change by separating the ownership of production plants from the transmission and distribution of water. In several communities, new water treatment plants are being built by companies that are independent of the utility that distributes water to consumers. These types of arrangements can improve the economies of scale (by having a central treatment plant serve more than one water utility) and increase the financing options that are available to smaller utilities and publicly owned water utilities. However, this type of change in ownership does not lead to consumer choice; it simply opens up different options for the water utility itself.

#### B. Status of Restructuring

There have not been any meaningful proposals to restructure the water utility industry in Pennsylvania. While mergers and consolidations, as well as other types of regional water supply solutions, can be expected in the future, it is very unlikely that individual water consumers will have the ability to choose their

water supplier.

## VI. CONCLUSION

The restructuring of the energy industry presents opportunities for water utilities to reduce their energy costs and improve the efficiency of their operations. It also might present opportunities for water and electric utilities to merge or otherwise combine certain aspects of their operations. Some water utilities may use these opportunities to provide a wider range of services, including energy services, to their customers. It is unlikely, however, that water customers will have the ability to choose their water supplier. The economies of scale and physical characteristics of water make such customer choice neither likely nor desirable, unless there is a dramatic change in the technologies that are available to produce potable water.

Appendix A

**Partial List of  
Pennsylvania Electric Choice Generic Orders**

Advanced Meter Deployment for Electricity Providers; 52 Pa. Code §§ 57.251-57.259, L-00970128, May 14, 1998.

Amend 52 Pa. Code Chapter 57 to Ensure Electric Service Reliability, L-0970120, April 24, 1998.

Electric Generation Customer Choice and Competition Act - Customer Information, M-00960890, F. 0008, 180 P.U.R.4th 61, July 10, 1997; entered July 11, 1997.

Electronic Data Transfer and Exchange, M-00960890F.0015, June 19, 1998.

Establishing Standards for Changing a Customer's Electric Supplier, L-00970121, July 07, 1998.

Final Rulemaking Order Establishing Customer Information Disclosure Requirements for Electricity Providers 52 Pa. Code, Chapter 54, L-00970126, May 01, 1998.

Licensing Requirements for Electric Generation Suppliers; 52 Pa. Code, Chapter 54 and § 3.551, L-00970129, April 24, 1998.

Proposed Enrollment Procedures Applicable to Electric Distribution Companies, M-00960890F.0014, April 24, 1998.

Quality of Service Benchmarks and Standards, L-00970131, May 21, 1998.

Regulations Regarding Adjustment of Electric Distribution Company Bills, L-0970127, Aril 24, 1998.

Regulations Regarding the Perfection of Security Interests in Intangible Transition Property, 52 Pa. Code Ch. 74, L-00970122, July 11, 1997.

Statewide Consumer Education Program, M-00981036, February 27, 1998.

Universal Service and Energy Conservation Programs 52 Pa. Code Chapter 54, L-00970130, May 01, 1998.