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It has many parallels with the current situation.

Thank You Clayton McKay Dixfield, The Only One

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Evolution of Maine's Electric Utility Industry, 1975-1995

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Recent articles in Maine Policy Review have focused on the sweeping changes taking place in Maine's electric industry. We continue the dialogue with this article by Carroll Lee, Vice President-Operations at Bangor Hydro-Electric Company and Richard Hill, retired University of Maine Professor. Lee and Hill trace the electric industry evolution back 20 years and offer a comprehensive and integrated perspective on how this industry has progressed from a monopoly to one with significant elements of competition.

Carroll R. Lee

Richard C. Hill

Introduction

Since the introduction of electricity for commercial use a century ago, dramatic changes have occurred in the manner in which electricity has been provided and used. The initial supply systems of isolated hydro or coal-fueled generating systems, which powered lights, small manufacturing, and transportation systems, have evolved to modern, large capacity systems of high voltage transmission networks connecting large power stations essential for the maintenance of a modern, high-income producing economy. As electricity supply evolved, the planning and development of the systems was undertaken by electric utility organizations, under the supervision of governmental regulation. Such regulations helped to assure the supply of this service at a minimum cost to consumers and, by many observers' accounts, this structure was quite successful.

Over the past two decades, changes in Maine and elsewhere have signaled a transition from an electrical monopoly towards an industry with significant competition. This evolution was driven by two related events:

- Utilities and their regulators overestimated the growth in demand for electric power; and,
- The bizarre behavior of the price of oil.

As a result, public policy forced:

- The abandonment of large generation projects like Seabrook;
- The purchase of non-utility generator-supplied power; and,
- Utilities to subsidize conservation.

When the price of oil collapsed, dropping from \$50/bbl in 1982 to \$18/bbl in 1986, (reported in 1989 dollars), competition to central-station electricity emerged. Utilities lost much of their residential heating load; former industrial customers invested in diesel generation; and electric utilities began scrambling to retain customers. These developments proved that new entrants in the industry could be accommodated, despite industry claims that this would adversely impact

customers. In the context of increasing worldwide competition and a significant disparity in electricity prices in states and regions of the U.S., the public increasingly began demanding lower priced electricity. New laws and regulations continued to open up the traditional industry structure to competition.

As competition has evolved, the approach to power supply planning and decision making has changed dramatically. In the pre-Seabrook era, power supply planning was accomplished by electric utilities and regulators under the assumption of little competition, with relative certainty of demand and cost recovery. Planning has increasingly recognized competitive threats, and long-term supply commitments are rarely undertaken by traditional electric utilities. The industry is rapidly disintegrating to separate businesses: A power supply business, subject to intense competition; a distribution business, continuing with a monopoly structure; and a retail sales business, with evolving competition.

During the past two decades (see Figure 1), a historical evolution has occurred in power supply planning in Maine, responding to the rapid changes which have occurred in energy markets, and, during this same time period, an energy policy evolution has occurred as well, although perhaps at a slower pace, as predictions about high oil prices failed to materialize.

Seabrook era planning

By 1975 the world had already experienced the first Organization of Petroleum Exporting Countries (OPEC) oil embargo and the price of oil increased from about \$2 per barrel in the early 1970s to more than \$10 per barrel (see Figure 2, only available in hardcopy). This event began a public policy debate in the U.S. and elsewhere concerning the future adequacy of oil and gas supplies and stimulated a significant interest in the development of alternative sources of energy and in energy conservation. Among the policy decisions were: 1) efforts to develop coal resources, including the undertaking of a multi-billion dollar federal Synthetics Fuels Program to demonstrate the viability of converting coal and other low-grade fossil fuels to usable liquid and gas fuel; 2) efforts to dramatically expand the use of nuclear power, including the development of fast breeder reactor technology to extend the fuel cycle, and research on the development of nuclear fusion; 3) efforts to promote the development and use of renewable resources like solar, hydro, wind, and biomass; and 4) the promotion of energy conservation.

In New England and Maine, these problems manifested themselves in rapidly increasing oil and gas prices and, correspondingly, in electricity rates. Since New England and Maine depended to a large extent on oil for energy, the region's economy was dramatically impacted. Electric utilities responded with a renewed commitment to nuclear power plant expansions, including plans for new generating plants in Connecticut, Rhode Island, Massachusetts, New Hampshire, and Maine. With historical success at plants like Maine Yankee, which produced extremely low-cost electricity, optimism existed that these new plants would significantly reduce the region's dependence on foreign oil and reduce electricity prices. Maine utilities considered and/or committed to substantial amounts of new capacity from these nuclear plants, including the planning of a 1,150 megawatt plant on Sears Island. However, the discovery of a potential earthquake fault line in the vicinity of that plant's location resulted in its cancellation, to be replaced by a smaller, coal-fueled power plant. Smaller commitments were made by Maine's

electric utilities to several nuclear plants outside the state, with the expectation that the Sears Island coal plant would meet the rest of the need.

Figure 1. Timeline of major power supply events

1970	Public Service of New Hampshire (PSNH) commits to Seabrook nuclear station; oil is priced at \$2/bbl (\$8 in 1995 dollars); major power purchases from Canada negotiated.
1973	Oil embargo; oil priced at \$30/bbl (in 1995 dollars).
1977	Central Maine Power Company (CMP) files for 600 megawatt coal station on Sears Island.
1978	Wyman #4 oil plant comes on-line.
1979	Iran Hostage Crisis: Oil is priced at \$50/bbl (in 1995 dollars); Maine Public Utilities Commission (MPUC) turns down Sears Island proposal, and suggests conservation, cogeneration, and additional investment in Seabrook and other New England nuclear plants; Maine legislature enacts Small Power Production Facilities Act (SPPFA), incorporating the principles of the U.S. Congress of the Public Utilities Regulatory Policy Act (PURPA).
1981	Maine establishes Qualifying Facilities (QF) rule.
1982	MPUC affirms “avoided costs” as basis of purchase from QFs; Seabrook I and II to be used as benchmark.
1984	Hearing examiner from MPUC recommends termination of Maine utilities' participation in Seabrook--becomes MPUC order in 1985.
1985-1990	Several hundred megawatts of QF-supplied electricity comes on-line to produce 30-40 percent of Maine utilities' total need; oil dependency drops from 50% to 10%.
1987	Demand side management (DSM) mandated.
1988	Legislature mandates Least-Cost Energy Planning with preference to conservation and DSM.
1989	MPUC rejects the proposed CMP/Hydro-Quebec power purchase.
1990	Open market contracts start to replace avoided cost as basis of power purchases.
1990	MPUC denies Bangor Hydro-Electric Company's (BHE's) request for approval of Basin Mills project.
1992	Congress, via the Energy Policy Act, authorizes the Federal Energy Regulatory Commission (FERC) to manage wholesale wheeling of power; the Holding Company Act of 1935 is amended to exempt wholesale generators from certain regulations.
1993-1995	CMP and BHE buy out and terminate several QF contracts.
1995	MPUC approves flexible pricing for electric utilities to facilitate response to competition; Legislature (L.D. 1063) requests MPUC to investigate orderly transition to more competitive market for electricity.

Investment by Maine utilities in a coal-fueled power plant to be constructed in the state required pre-approval by the Maine Public Utilities Commission (MPUC) through the receipt of a Certificate of Necessity and Convenience. Central Maine Power Company, as the lead owner of Sears Island, requested approval of the plant in 1977 and this proceeding epitomized the approach to power planning during this era. This included: 1) the development of a forecast of demands; 2) the analysis of alternatives available to the utility; and 3) the demonstration that the alternative presented was the best alternative available. The MPUC then had to decide whether the proposed plant was “needed” prior to granting the requested certificate.

The forecast of demand was based upon evolving econometric forecasting methodology. A mathematical model was developed that related historical economic and demographic data to electricity usage. Projections of these drivers into the future led to forecast of loads from the model. Although the price of electricity may have been one of the drivers of the forecast, this relationship was based solely upon historical data and presumed the status quo in terms of the monopoly structure of the industry.

Prior to the request for approval of the Sears Island coal plant, several utility proposals for power supply had been approved by the MPUC. Approval for participation in the W.F. Wyman #4 plant (a 600 megawatt oil-fired unit located in Yarmouth, Maine) by Central Maine Power Company (CMP), Bangor Hydro-Electric Company (BHE) and Maine Public Service Company (MPS) had been received and the unit began operating in 1978. The Maine Yankee plant, which began operating in 1972, and the Maine Electric Power Company (owned jointly by CMP, BHE and MPS) transmission line and New Brunswick power purchases in the 1970-1975 time period had received full regulatory support. Utility proposals and regulatory approvals for power supply were quite routinely processed and approved.

The Sears Island coal plant request began an era of change in the relationship between Maine’s electric utilities and the MPUC. If a date had to be chosen to identify the beginning of the transition between major eras in the electric utility industry in Maine, that date must be December 31, 1979. On that day the MPUC rejected CMP’s proposal and suggested instead: Conservation, load management, cogeneration, purchases of Canadian hydro, and additional purchases of Seabrook and other New England nuclear stations. Maine’s electric utilities subsequently increased their investments in Millstone III and Seabrook I and II nuclear plants under construction and located in Connecticut and New Hampshire, respectively. Because these plants were located outside the state, Maine law did not require pre-approval of these investments.

By the early 1980s, Maine utilities owned about 10% of the 2,300 megawatt (MW) Seabrook plant. CMP owned 6.55% (or 150 MW); BHE owned 2.22% (or 50 MW); and MPS owned 1.46% (or 34 MW). Unfortunately, the construction of nuclear power plants generally, and Seabrook, in particular, experienced substantial problems related to the need to comply with rapidly increasing safety requirements (resulting from the Three Mile Island event) as well as historically high interest rates. Managers were unable to prevent these problems from delaying completion and increasing the cost dramatically. By 1984, the MPUC began an investigation to determine whether Maine utilities could and should seek to withdraw from the Seabrook project. During another long and contentious set of hearings, Maine’s utilities presented evidence that,

despite the escalation in the cost of Seabrook, completion of the project was the least-cost option and continued involvement was appropriate. As in the Sears Island coal plant decision, the MPUC disagreed, finding that the best interest of Maine utilities and their customers would be served by a withdrawal from the project. Upon receipt of an offer to purchase from an affiliate of Eastern Utilities Associates, a Massachusetts utility, each of the Maine utilities sold their shares and disengaged from involvement in the project. The MPUC had become a significant participant in the power supply decisions of Maine utilities, and Maine entered an era when involvement in mega-power projects would become the rare exception, rather than the rule.

Evolution of qualifying facilities and demand side management

With the Seabrook withdrawal, power supply planning was increasingly influenced by MPUC regulation. New, non-utility suppliers would provide needed power and utilities would be required by the MPUC to undertake an active role in promoting the conservation of electricity. This era was instituted with passage of the U.S. Congress Public Utilities Regulatory Policy Act (PURPA) and the National Energy Conservation Policy Act in the late 1970s in response to the second oil embargo and the “energy crises.” New entrants into the power supply industry in Maine were further encouraged by the Maine legislature and the MPUC. State legislation analogous to PURPA was enacted in 1979 and the MPUC approved implementing regulations in May 1981. Qualifying facility suppliers (QFs) were relatively small plants that either generated and supplied steam in addition to electricity or were fueled with renewable resources. Utilities were expected to agree on the terms and price for purchases from QFs. “To counteract the monopoly power of the utility” and to “encourage the development of all economically viable projects,” the rule provided QFs with several rights, including: 1) the utility must purchase all electricity offered; 2) at a price based upon full avoided cost; 3) avoided cost data is public information, available to any QF; and 4) utilities may not unreasonably refuse to enter into long-term contracts with QFs.

In 1982, the MPUC reaffirmed the requirement that the price to be paid should be based upon the utilities’ avoided cost (as opposed to a price based upon the QFs’ cost or some discount from the utilities’ avoided cost). This avoided cost was the cost that would be avoided by the utility if it were to forego investments in its own generating facilities or purchases from utility suppliers. To determine this avoided cost, utilities were required to develop at least two power supply plans. The first plan was one in which the demand for electricity would all be provided from utility planned resources, and a second plan was one in which the demand was reduced by an established block of demand and still provided from utility planned resources. The difference in cost between these two plans represented the avoided cost of the utility for the specific block of power, stated in terms of dollars per unit of energy and/or capacity (cents per kilowatt hour or dollars per kilowatt year).

The MPUC subsequently issued specific avoided cost determinations for Maine Public Service Company (MPS) and Central Maine Power Company (CMP). For MPS, in late 1982 the MPUC determined that the company’s avoided cost should be based upon the avoided cost of Seabrook, determined to be in the 9-10¢/kwh range. At this time, the MPUC determined that Seabrook was saleable, and, although no sale was imminent, MPS was ordered to enter into contracts with Sherman Lumber Company and Alternative Energy Decisions, Inc. for approximately 23

megawatts. Similarly, for CMP the MPUC determined that its avoided cost should be based upon the avoided cost of Seabrook, established a similar avoided cost price, and ordered CMP to enter into contracts with several QF suppliers.

With these decisions, a period of significant activity to develop QF resources in Maine began. Many developers attempted to negotiate contracts with Maine electric utilities. During this period, 1983-1986, oil prices were more than \$30 per barrel and projected by most “experts” to reach \$100 per barrel by the year 2000. Avoided cost estimates by utilities were at 6¢/kwh in the mid-1980s and projected to rise to 15¢/kwh or more by the year 2000. QF contracts reflected these estimates, and in some cases were reviewed and approved by the MPUC. Several hundred megawatts of QF-supplied electricity, amounting to 30-40% of utilities’ total needs, began operating in the mid- to late-1980s. Rates were based upon the planning assumptions and methodologies prevalent during those times. That, in conjunction with other events described below, led to the next era in power supply planning--competitive bidding for power supply.

Along with the development of the QF industry in Maine came the rise in importance of conservation and load management, usually known as demand-side management (DSM). When federal and state laws promoting QFs were enacted, similar laws were implemented encouraging energy conservation. In Maine, two laws were enacted to accomplish this objective: the Electric Rate Reform Act, enacted in 1987, and the Maine Energy Policy Act (MEPA), enacted in 1988. The Electric Rate Reform Act required the MPUC to establish rates related more closely to the costs of providing electric service and encouraged the MPUC to promote state indigenous energy resources. (Later a provision was added that resulted in subsidies for low income residential programs.) The Maine Energy Policy Act required Maine and its electric utilities to pursue a least-cost energy plan. When alternatives were otherwise equivalent, the MPUC was directed to give preference first to conservation and demand-side management and then to QF purchases. These laws were instrumental in policies and decisions later adopted by the MPUC to require electric utilities to purchase additional QF power and demand-side management programs. CMP’s proposed purchase from Hydro-Quebec was rejected because CMP had not aggressively pursued such alternatives. Bangor Hydro-Electric Company’s (BHE’s) proposed Basin Mills project was not granted a Certificate of Convenience and BHE was ultimately penalized by the MPUC for not pursuing DSM appropriately. To further promote DSM, the MPUC adopted a “Rule on Cost-Effectiveness of DSM Electricity Efficiency Investments by Electric Utilities” in May 1987. This rule required electric utilities to undertake DSM if the cost was expected to be less than the cost of power supply alternatives. This cost was determined as the total cost, including the customer and utility cost, of the DSM program. The rule required that DSM programs be undertaken even though such a program could have the effect of increasing electric rates (see Figure 3).

Figure 3. DSM Cost-effectiveness rule

Example: Hypothetical water heater insulation, supplied free of charge

Annual KWH savings	- 400 kwh
-Cost of insulation	- \$50
-Expected life	- 10 years
-Cost of capital	- 10%
-Annualized cost	- \$8/yr.
Electric rate	- 10¢/kwh
Avoided power supply cost	- 4¢/kwh
Participating customer benefit	
- Saves 400 kwh/year @ 10¢/kwh	= \$40/yr
Utility's (or other customers') cost	
- Lost revenue 400 kwh/year @ 10¢/kwh	= \$40/yr
- Avoided cost savings @ 4¢/kwh	= (16)
- Cost of insulation	<u>= 8</u>
	\$32/yr

The participating customer saves \$40 per year, but \$32 per year is in the form of a subsidy from the utility (or other customers).

Although resisted by electric utilities, this rule ultimately mandated multi-million dollar annual expenditures by electric utilities. Programs provided subsidized conservation measures like water heater wraps and high-efficiency lights. CMP implemented a competitive bidding program, called "Power Partners" whereby energy service companies bid for and received contracts to provide DSM services and be paid up to avoided costs, in a similar fashion as QF power purchases.

By the late 1980s, the first generation of QFs had begun operating in Maine and required DSM investments had been undertaken. Traditional utility power supply investments in large, central power plants like Seabrook had been replaced with purchases from small, renewable fueled (biomass, refuse, and hydro) power plants, cogeneration facilities, and a multitude of DSM programs. Maine reduced its dependence upon oil for electricity generation from over 50% to about 10%. However, since the supply cost of these alternative resources was based upon the projections of expensive alternatives, including \$50-\$100 per barrel oil prices, the cost of electricity in Maine increased dramatically, about 50% (see Figure 4, only available in hardcopy).

The final era of the past two decades had begun, when customers loudly protested large rate increases, when power supply planning was based upon competitive bidding, and when restructuring of the electric utility industry in Maine came under consideration.

Evolving competition in power supply

In the late 1980s and early 1990s, the economic environment in which power supply planning was conducted changed considerably. The world-wide economy was rapidly opening to free-market competition. The forecasts of high oil prices were replaced by the reality of low oil prices, falling to about \$10 per barrel in 1993. Technology for producing electricity from fossil fuels, particularly gas and coal, continued advancing. Fuel to electricity efficiency improved from 30-40% to nearly 60% in modern, combined-cycle power plants. The era of utility investment in large nuclear or coal-fueled power plants had passed and was replaced by a power supply industry that included utility and non-utility investments in smaller power plants and a reduced demand for electricity. It had become apparent that the generation of electricity was no longer a monopoly. Competition in power supply was the preferred economic structure under which to operate.

To facilitate this transition to competition in electricity power supply, the Energy Policy Act of 1992 was enacted by the U.S. Congress. This act created a new class of non-utility generators, called exempt whole-sale generators and provided the Federal Energy Regulatory Commission new authority to order electric utilities to provide wholesale transmission access. This legislation, together with policies adopted by the Federal Energy Regulatory Commission, completed the transition from a monopoly to a competitive industry for wholesale power supply. Electric utilities and non-utilities could both invest in power supply facilities; wholesale purchasers could obtain access to competing suppliers of power. Not only could QFs participate in power supply, but new entrants such as independent power producers and power marketers could rapidly enter the business.

In Maine, these laws and regulations resulted in bid solicitations for power supply by wholesale customers of Maine's electric utilities. Maine's major electric utilities had traditionally provided the full requirement of a number of municipal and cooperatively-owned electric utilities. This power was provided under federal regulation on a "cost of service" basis of rate-making, in a similar manner to retail rate determination. However, with the significant increase in electric rates in Maine, a significant incentive was created for these customers to seek alternative suppliers.

When Madison Electric Works, a large municipal customer of CMP, selected Northeast Utilities, an electric utility principally serving Connecticut, as its power supplier, it became abundantly clear that the landscape of power supply planning in Maine had entered a new era. This bypass by Madison and other wholesale customers placed more upward pressure on electric rates of other customers of Maine's electric utilities.

Because of evolving worldwide competition and the political clout of electric customers, the traditional response by electric utilities--to file for an increase in rates--had become increasingly counterproductive. Not only was the prospect of receiving regulatory approval of such increases

less likely, but increasing rates also exacerbated the problem as rate increases drove customers to other options for energy or conservation. As electric rates increased, not only did wholesale bypass become a possibility, but other supply alternatives evolved. For some customers, self-generation became economically viable, using small diesel generators. For customers with steam requirements, cogeneration of electricity from steam generating plants became attractive. Many customers began switching from electricity for heating water or space to oil, propane, kerosene, and wood. Wholesale transmission access encouraged the formation of new wholesale customers. At least one new wholesale customer--Jay, Maine--is in the process of establishing such an entity now.

New laws and regulations are likely to be enacted that allow competition for retail electricity sales. Several states, including California, have implemented or are considering implementing some form of retail electricity competition.

Power supply planning - 1995

In the context of increasing competition in electric power supply and the relatively poor competitive position of Maine's electric utilities (due in large part to the high cost structure that has resulted from the first generation of QF purchases and DSM investments), power supply planning in Maine has changed in dramatic ways. The traditional role of the major electric utilities to undertake significant investments in generating plants no longer exists. Instead, the planning and provision of power in Maine has been implicitly, if not explicitly, assumed by the customers who need the power. Many potential suppliers of energy, including the traditional electric utilities, compete to serve this need, and public policies continue to evolve to complete the transition to full retail competition.

In 1995, the New England region has substantial surplus power supply. Approximately 3,000 megawatts of such excess capacity exists in New England and more is available from Canadian suppliers. Some of this capacity is owned by non-utility suppliers and more is under development. Power marketers have begun participating in the purchase and sale of power, making wholesale transactions more competitive.

All electric utilities routinely conduct requests for proposals for power supply for periods from a few months to over five years and they routinely receive bids representing several times the required amount of power at prices in the 3¢/kwh range.

Maine's electric utilities have responded to these competitive changes in several ways. First, significant efforts have been undertaken by electric utilities to reduce their cost structure, including the buyout of high-cost QF contracts. In many cases, the cost of just operating these QFs has exceeded the total cost of replacement power supply, which allows the utility to buy out the owners of such facilities and still achieve net savings. These new pressures also caused electric utilities to reduce employment by hundreds of employees and implement substantial changes to business processes.

Second, electric utilities have developed strategies to retain customers and increase the sale of electricity. Opportunities for increased electrification are evidenced by the experience of other

regions. For example, in neighboring New Brunswick, electricity demand increases have outstripped growth in Maine by many fold (see Figure 5, only available in hardcopy) while electricity prices remained at 50% less than those in Maine. This indicates similar opportunities are possible in Maine. The increased sale of electricity is being pursued through flexible pricing policies, whereby the utility can offer to a customer or to groups of customers a competitive price that may differ substantially from the traditional, cost-of-service based tariff. The MPUC recently approved CMP's Alternative Rate Plan and BHE's Alternative Marketing Plan. Both plans include pricing flexibility guidelines to allow faster implementation of competitive pricing and limit price increases allowed for captive customers. BHE also recently received approval to market residential heating service at a rate of 5¢/kwh. To increase revenues and diversify the revenue base, the electric utilities have initiated a range of strategies, including an increased emphasis on economic development and key account marketing and the development and implementation of new products and services. CMP has developed an international energy consulting business, and Maine's three major electric utilities are considering investments in fiber optic networks for cable TV and long-distance telecommunications services.

Finally, the industry is considering the prospect of regulatory restructuring. The Maine legislature has required the MPUC to conduct a study "to provide for an orderly transition to a more economically-efficient and competitive market for electricity." This study, together with recommendations for implementation, is to be presented to the legislature by January 1, 1997. Regardless of the results of this study, increased competition is likely to change further in the electric utility industry. The generation and supply of power is likely to evolve as a separate and distinct line of business, one with substantial competition. Maine's electric utilities may increasingly reduce their investment in this business. The distribution of electricity is likely to continue to exist as a monopoly, possibly as a separate line of business, but under a new form of economic regulation. Regulation is likely to move away from cost-plus to performance-based (e.g., cost efficient, quality) regulation. The retail sale of electricity is moving rapidly to increased competition, with the concerns of recovery of stranded investment costs and maintaining reliability of service still paramount, and potentially a third line of business in this new era.

Conclusion

During the past two decades, dramatic changes have occurred in Maine's electric utility industry, planning for power supply, and regulation of electric utilities. The predictions of the 1970s and early 1980s of energy supply shortages and high oil prices have not proven accurate. But energy policies were implemented based upon those predictions. Maine's electric utilities and their customers are burdened with very high power supply costs due to high-cost QF contracts and diminished electricity demand caused by high electric prices, electricity conservation, and fuel switching. The major electric utilities in Maine find themselves positioned poorly as greater competition looms. With evolving competition, power supply planning will be conducted differently in the context of a restructured electric utility industry. Rather than the electric utility, in conjunction with regulators, determining the need for power and the type of supply to be provided, it will increasingly be the customer who decides how much electricity to purchase, over what term, at what price, and from whom. Potential suppliers will include wholesale power

producers, power marketers, electric utility retail service companies, and possibly other entities who will all compete for business.

With the role of traditional electric utilities (and their regulators) being reduced in providing for an electricity supply, the implications for electric policies in Maine are many. One of the most significant of these is who will be responsible for the “obligation to serve” role traditionally filled by electric utilities. The needs of society for a reliable electricity supply mandates early attention to this important detail. Policies must be established concerning who should pay for the costs associated with fulfilling this obligation, both for costs incurred by electric utilities in the past, so-called “stranded costs,” and for costs which will need to be incurred in the future to satisfy this mandate. Maine policy makers also need to revisit whether or not social policies, like utility subsidized conservation and low income programs, should continue to be mandates. Cross-subsidies in existing rates, which exacerbate the risks of uneconomic bypass, need to be unwound. Questions concerning the need for utility divestiture of generation assets, access to and cost of transmission services for wheeling purposes, and redefinition of remaining monopoly services need to be answered. Finally, policies should be implemented to level the playing field among all energy suppliers.

Although difficult energy policy decisions remain, clear opportunities for future benefits to Maine consumers are in sight. By achieving competition in energy markets, substantially lower energy prices, particularly for electricity, should be achieved. Maine can also increase the security of its energy supply since it is a key geographical link between major energy producers in Canada, including electricity and natural gas supplies in Quebec and the Maritimes, and energy markets to the south. Increased electrification, as has occurred in New Brunswick, could also provide future enhancements to Maine’s economy and environment. As we choose which course to take in seeking these or other opportunities, we should reflect carefully upon the experience of the past two decades, a period of unpredictability in Maine energy planning when energy policies dramatically changed Maine’s electric utility industry.

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