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Planning Maine's Energy Future

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Secure and reasonably priced energy supplies have always been vital to the welfare of Maine's economy and its people. Maine responded to the energy shocks of the 1970s with important state policies, designed in large part to reduce our dependence on foreign oil. John Flumerfelt and Richard Silkman of the State Planning Office provide for us an overview of Maine's recent history of energy use and an analysis of both past and future energy policies in Maine. Two alternatives perspectives on energy policy are provided by Beth Nagusky of the Natural Resources Council of Maine and Matthew Hunter of Central Maine Power. - Editor

Responses:

Market failure requires aggressive action
by Beth Nagusky, Staff Attorney, Natural Resources Council of Maine

Real world energy policy
by Matthew Hunter, President & CEO, Central Maine Power Company

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The development of energy policy in Maine over the past two decades has been at times difficult and divisive. We have weathered three attempts to shut-down our nuclear facility, Maine Yankee, through citizen-initiated referenda; we have engineered a disengagement from the Seabrook nuclear facility in New Hampshire; we have created a revolution in the power supply industry by throwing open the doors to non-utility generation; and we have turned down the opportunity to enter into a long-term energy contract with Hydro-Quebec.

During this period, our energy planning activities, and state energy policy more generally, have been driven by two objectives: (1) a reduction in our state's dependence on oil and other non-renewable energy resources, and (2) a reduction in our overall consumption of energy through energy conservation programs, incentives, and other initiatives.

In this paper, we review the development of past energy policies and examine both their intended and unintended consequences. As we will highlight, these policies have not been benign, and continue to shape the energy landscape in Maine, often in ways not envisioned by their champions and in certain instances to the detriment of the economic health of the state. Following this discussion, we outline a number of key elements that we believe present-day energy planning must address, and we present recommended policy directions that we believe Maine should pursue.

Overview of energy use in Maine

Maine has a unique energy profile relative to the national average and is a national leader in areas such as the development of renewable energy resources and competitive bidding for new electric power supplies. While the state remains highly dependent on oil, the development of renewable resources, combined with the contribution of nuclear power, has helped mitigate what would otherwise have been even higher oil dependence. In addition, Maine has achieved some dramatic improvements in overall energy efficiency and now uses much less energy per unit of economic output than it did two decades ago.

The growth in renewable energy resources during the 1980s largely reflected the growth in non-utility power generation that resulted under Maine's implementation of the federal Public Utility Regulatory Policies Act of 1978 (PURPA). Growth in the use of biomass (wood) energy during the 1980s was particularly dramatic, at over 150 percent. This allowed Maine to increase its overall energy usage without increasing the state's relative dependence on oil. Figure 1 shows that, while total energy use grew by over thirty percent during the decade, Maine's level of oil dependence declined slightly. Figure 2 shows the growth in biomass energy use in Maine during the 1980s. This growth was largely responsible for both mitigating Maine's level of oil dependence and placing Maine in the forefront of renewable energy development. Together, renewable hydroelectric and biomass energy combined to account for the production of almost forty-five percent of the electricity used in Maine in 1990, as is illustrated in Figure 3. (Note that Figure 3 shows the energy used solely to produce Maine's electricity, while Figure 4 shows Maine's overall energy use mix.)

Figure 1: Maine Energy Use Trends

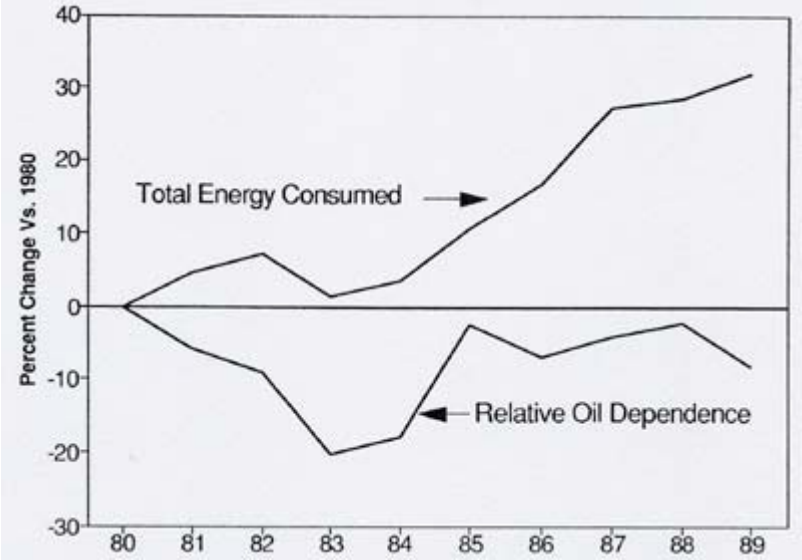


Figure 2: Maine Wood Use Trends

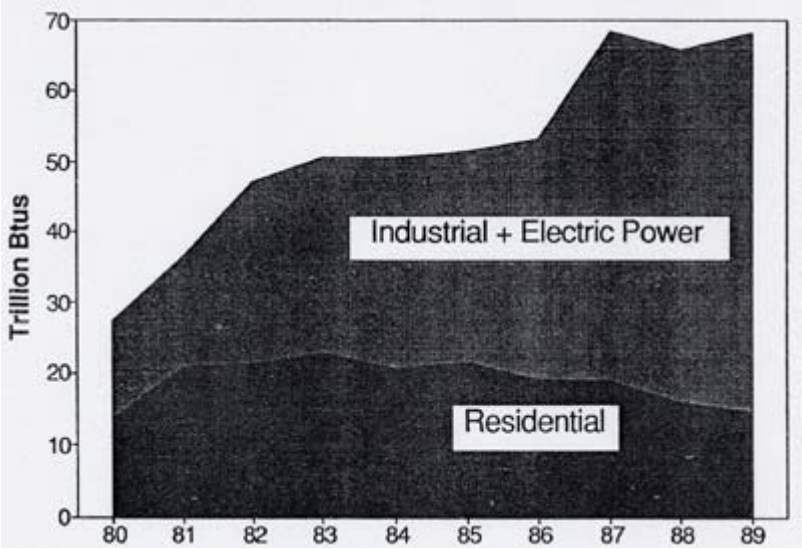
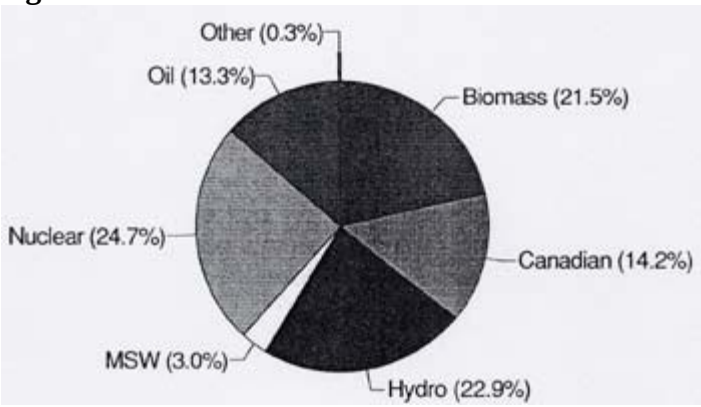
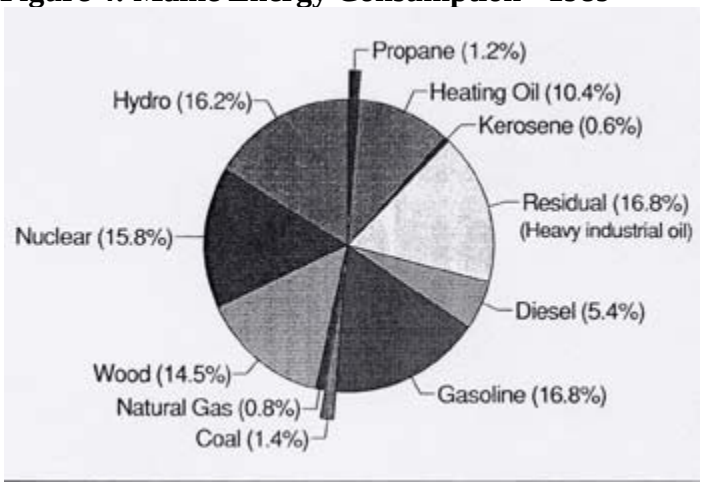


Figure 3: Maine's Electric Power Mix - 1990



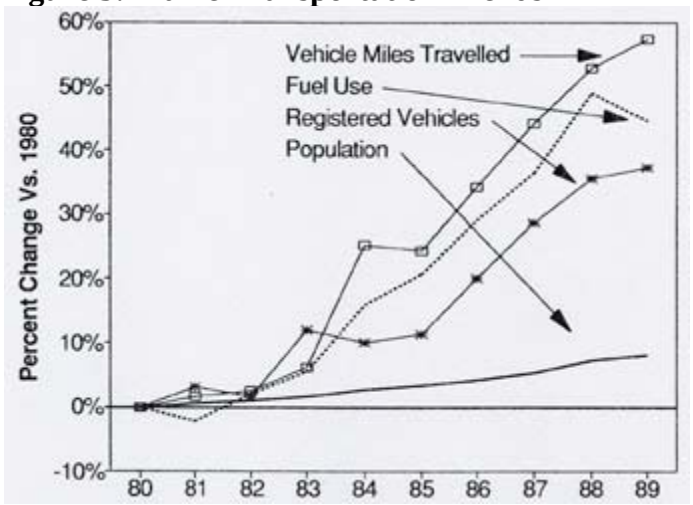
Energy consumption trends during the 1980s, however, included both a dramatic increase in the development of renewable resources and a thirty percent increase in total oil consumption. Most of the increased oil consumption was driven by growing energy use in the transportation sector, which depends almost exclusively on oil. As of 1989 (the most recent year for which comprehensive energy use data are available), annual statewide oil consumption had risen to 37.7 million barrels, up from 29 million barrels in 1983, but still well below the 45 million barrels consumed in 1972. As is illustrated in Figure 4, Maine currently depends on oil products for exactly half of its basic (primary) energy needs, down significantly from 1970s levels of almost eighty percent and much closer to the national average of about forty-three percent. Considering that Maine lacks the coal and natural gas that comprise a large share of the nation's energy supply, the state's oil dependency is relatively low.

Figure 4: Maine Energy Consumption - 1989



Concomitant with economic growth, statewide energy use grew to an all-time high in 1989 and surpassed, during the late 1980s, energy use levels seen during the mid-1970s. Total energy consumption increased by thirty-two percent during the period 1980-89, led primarily by growth in the transportation sector. Falling real gasoline prices helped stimulate an increase of over forty percent in transportation-related energy consumption during the 1980s. This growth in fuel use followed an increase of almost sixty percent in the number of vehicle-miles traveled throughout the state. In contrast, during the same period we saw a thirty-five percent increase in the number of registered vehicles in Maine and only nine percent growth in population. Figure 5 illustrates the increase in automobile use (miles driven) relative to fuel use and the growth in the number of vehicles in Maine's fleet. The figure also indicates that fuel use is rising despite a gain in overall vehicle efficiency.

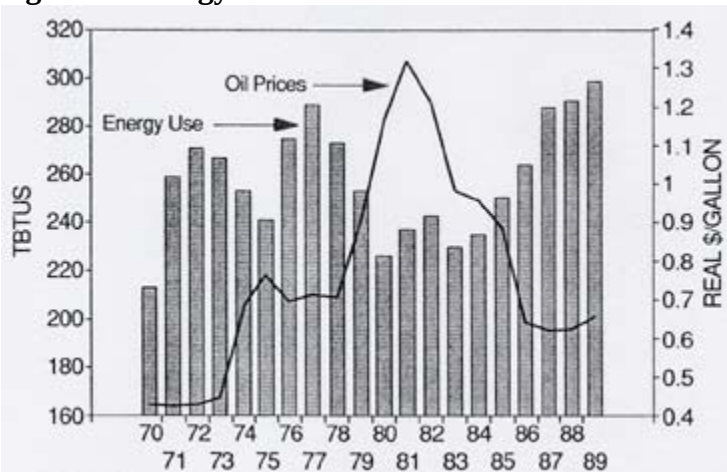
Figure 5: Maine Transportation Trends



Energy consumption trends during the 1970s and 1980s were driven significantly by rising and falling oil prices. Figure 6 compares the inflation-adjusted price for home heating oil (a proxy for oil prices generally) with the state's energy consumption pattern for the period 1970 through 1989. As is evident, energy use declined during the early 1970s as consumers reacted to the Arab

oil embargo, and then fell again in reaction to late 1970s oil price shocks. As prices plunged and the economy began to grow, beginning in 1981-82, energy consumption showed a steady increase.

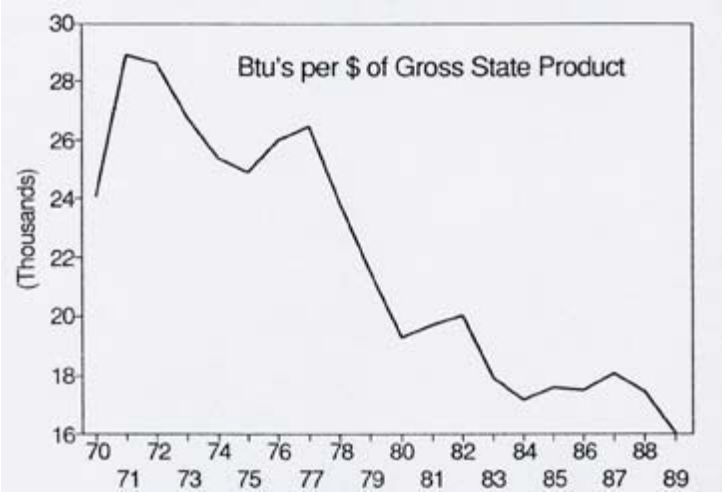
Figure 6: Energy Use Trends



The demand response to higher oil prices was much greater for energy applications where alternatives were readily available. For example, a real increase in the price of gasoline of over sixty-four percent between 1978 and 1982 led to a decrease in consumption of only fifteen percent (some of which was probably due to the 1982 recession). In contrast, an increase of over seventy percent in the real price of home heating oil led to a forty-five percent decline in consumption during the same period. While consumers could readily switch to alternative heating fuels, such as wood, they had no ability to react to higher gasoline prices other than by reducing their driving.

During this same period, the Maine economy became more energy efficient. While the Maine economy grew by fifty-eight percent during the period, energy consumption increased by only thirty percent. Statewide energy efficiency increased across all sectors during this period, and particularly in the residential sector. Maine uses the same amount of energy today to supply the needs of 470,000 homes as it did in 1970 to fuel just 300,000 homes. On a statewide basis, by 1989 it took just over half as much energy to provide the same level of economic output (measured as gross state product, or GSP) as it did twenty years before. Figure 7 depicts the trend of this efficiency index over the prior two decades.

Figure 7: Index of Energy Efficiency



Real oil prices (*i.e.*, oil prices adjusted for changes in inflation) fell to such an extent during the 1980s that the state's total annual energy bill (real energy expenditures) fell by ten percent, despite a thirty percent increase in energy consumption, and despite a twenty-four percent increase in real expenditures for electricity (following a forty percent increase in total electricity use). Total statewide real expenditures for the single largest component of Maine's energy bill of over $2.25 billion is electricity (thirty-five percent), followed by gasoline (thirty-two percent), heating oil (twelve percent), and diesel fuel (nine percent).

The real energy price situation began to change toward the end of the decade. Unusually severe weather in December, 1989 resulted in a seventy percent spike in heating oil prices, and the conflict with Iraq resulted in higher prices for all oil products during the fall and winter of 1990-91. Electricity prices in Maine also began to rise as we entered the 1990s. The effects of capital improvement programs, the rising cost of doing business, the economic slowdown, and the aggressive development of non-utility power projects during the early to mid-1980s combined to place Maine's utilities in a series of almost back-to-back requests for rate increases during the early 1990s. Moreover, the implementation of utility-sponsored (*i.e.*, ratepayer funded) conservation programs and warmer than normal winters served to reduce kilowatt-hour sales and forced utilities to recover their costs from a smaller than expected sales base, again placing upward pressure on rates. This trend toward rising electricity rates, unfortunately, is likely co continue until economic recovery leads to further growth in energy sales and all non-utility power contracts are finally and fully reflected in electricity rates.

The effects of past policies

Energy planning historically has been based upon two fundamental tenets: ensuring that energy remains affordable, and ensuring that our energy resources remain reliable and secure. For the first seventy or so years of this century, this equation produced abundant energy supplies with declining, or at least level, real costs. Energy decisions were not particularly difficult, since technological advances and increasing economies of scale ensured that almost any energy decision would lead to cheaper and more reliable energy supplies. During the 1970s, this relationship ceased to exist.

The "easy" days of energy planning fell apart as our ability to predict future energy-related economic trends failed. In the early 1970s, we failed to predict the oil price shocks, inflation, the high interest rates, the over-building of utility capacity and the utility construction cost overruns seen over most of that decade. Then, during the early 1980s, in the midst of a second and much more significant oil price shock, we failed to predict that real oil prices would decline dramatically during the remainder of the decade, and that the world's overall oil and natural gas supply (proven reserves) would actually grow during the 1980s and 1990s, despite rising rates of consumption.

Unfortunately, energy policies developed during the late 1970s and early 1980s were based on projecting then-current trends into the future. The energy mix that fuels our economy today is largely the result of policies that were formulated in reaction to the real and perceived threats of that time. Fortunately, some of those policies produced at least partially desirable results, although not always in the manner in which they were intended. Other policies of that time, particularly the regulation of oil and natural gas wellhead prices, not only failed, but achieved the opposite of their intended effect by intensifying the price and supply disruptions they were supposed to mitigate.

One of the most significant energy policies of that time, in terms of its effect on Maine's energy profile today, was the implementation of PURPA. PURPA was, initially, a small part of President Carter's National Energy Act and was promoted as a means of stimulating the development of small scale, advanced technologies for electric power generation. Recognizing that the utilities' monopoly control of the nation's power supply represented a substantial market barrier to such development, Congress required utilities to purchase power from facilities that met certain criteria for size, fuel usage, and operating characteristics (hence the term "qualifying facilities").

PURPA was originally a reaction to the perceived threat of oil price and oil supply instability. Its ultimate effect, however, has been a major restructuring of the nation's electric utility infrastructure and its regulatory framework. Maine provided an especially fertile ground for PURPA-related independent power production, due to the combined effect of a highly sympathetic regulatory environment and the existence of indigenous hydro resources and a forest products industry that afforded natural opportunities for small power and cogeneration projects. During the same period, Maine faced growing electric power needs; as noted above, electricity consumption increased by forty percent over the decade.

The need for new resources to meet growing electric power demand was intensified after the 1984 Maine Public Utilities Commission (PUC) decision that required Maine utilities to disengage entirely from their contracts with the Seabrook nuclear station. To replace this capacity, the commission directed the utilities to enter into power supply contracts with independent power suppliers and cogenerators. Unfortunately, many of these contracts were negotiated before Maine had learned how to procure new generation resources in a truly competitive fashion and are at prices well in excess of what would ultimately be found necessary to stimulate this alternative supply market. In effect, Mainers have paid "twice" for their share of Seabrook. Ratepayers are paying the costs of disengagement, and in addition they are paying high prices for the projects that were developed to replace Seabrook. These resource

commitments are one of the fundamental reasons behind today's rising rates, because they were acquired at higher than necessary prices. Unfortunately, the development of independent power may have been viewed with an excessive degree of regulatory enthusiasm, without appropriate regard to future rate impacts.

Elements of planning a responsible energy future

In the 1990s, energy planning must still address the fundamental goals associated with the cost and reliability of our energy supply. Energy remains a critical factor in our economy today. Indeed, the role of energy in modern life is increasing, as consumers enjoy - and feel they have a right to enjoy - the higher level of goods and services that depend upon energy. At the same time, the process of energy planning has become increasingly complicated, due to the interrelated and often conflicting societal goals that are affected by, or affect, modern energy use. Energy planning must now respond to a much wider array of issues than in the past. Frequently, resolving some of these issues requires tradeoffs, such as higher energy costs, that the public may be unwilling to recognize or accept.

Consumers expect all the services and benefits that energy provides (such as mobility, heat, light, communications) but exhibit a growing intolerance for the infrastructure that is necessary to deliver those services. This apparent double standard is one of the most challenging aspects of energy planning. Part of this simply reflects what is commonly known as the "not-in-my-backyard" syndrome, or NIMBY. However, a potentially more troubling aspect involves society's growing awareness (and sometimes unsubstantiated fears) about the effects of energy-related projects on human health and the environment. It is becoming increasingly difficult to site and construct new energy projects that may be necessary to meet society's energy needs, even though consumers still maintain the same demand for energy and its related services.

One important way to address this problem is to build a higher level of energy awareness among today's energy consumers. People often may not realize the link between their everyday use of energy and the implications of that use with respect to the resources and services that provide it. For example, consumers who may be concerned about environmental issues, such as climate change, should understand that their energy behavior may affect directly the issue about which they are concerned. In addition, people often believe, and are led to believe, that someone other than themselves (like government or a utility company) bears the responsibility for addressing the problem. A case in point is the manner in which energy conservation has been pursued within Maine, particularly with respect to utility-sponsored conservation programs.

Energy conservation is, and should be, an important goal of society, and is an area in which electric utilities can certainly play an important role. However, the potential for energy conservation is often proclaimed as being able to offset the need for any new energy resource development, and consumers are led to believe that it is not they, but utilities, who will find and pay for the energy savings. Consumers fail to realize (or are nor told) that any expenditures made by utilities to promote conservation are costs that are passed through to consumers in rates. Further, these expenditures are frequently made to subsidize conservation measures undertaken by customers who have both the technical ability and financial resources necessary to act

independently of the utility. Indeed, an interesting study would be to examine the incidence of such utility- sponsored conservation programs across classes of consumers.

Moreover, Maine has encouraged utilities to treat conservation as a "resource" and to pay up to the same amount for such resources as they would for generation resources. Conservation, however, is not strictly an energy resource, but is rather a means of mitigating the need for new energy resources. This is especially important with regard to how the conservation "purchase" is priced. Because electricity prices must include both the marginal cost of fuel and also the utility's fixed costs, paying equivalent prices for conservation and generation will increase electric rates by shifting the fixed costs onto fewer kilowatt-hours. Unlike new generation resources, purchases of energy savings reduce sales and place upward pressure on rates to an extent that true supply resources do not.

Ratepayers in Maine today are surprised and frustrated by rising electricity rates, especially since they were led to believe that conservation programs would help reduce their energy costs, just as they were led to believe that the development of independent power would help reduce their costs. To date, this has not occurred, although there is evidence that the rate impacts of these policies will diminish over time.

An additional area of concern for present day energy planners is how to find a workable balance between society's interest in the traditional energy policy goals of ensuring affordability and reliability and consumers' increasingly prevalent desire for higher standards of environmental protection. A specific challenge is finding an appropriate way to integrate environmental issues into the energy planning process, but in a manner that does not conflict with our ability to meet society's real energy needs. We must also inform the public about the inevitable tradeoffs that may be required, such as even higher energy costs.

One certain path to higher energy rates, but not necessarily to an improved environment, is the imposition of arbitrary additional costs or "adders" on energy products and supplies that are intended to reflect the external costs, or "externalities," associated with energy use. (Externalities refer to costs that are not included in the price of the product, such as environmental costs related to oil spills that may not be fully reflected in the price of gasoline.) A methodology frequently suggested is to add to the projected cost of a given resource an amount per kilowatt-hour that purports to reflect the cost to society from the project's air emissions or other environmental degradation. Once these costs are added, the "total" cost of the project is used to rank the project with all other so-modified alternative sources of electricity. An economic comparison is then performed based on these modified generation costs, and the energy mix of utilities is changed toward those that appear more environmentally appropriate, based on the assumptions used in developing the adders.

At present, the inclusion of externality costs through this mechanism is at best an inexact science, at worst simply arbitrary. The fact is that we cannot accurately identify and quantify the environmental effects of energy decisions, much less assign to them actual economic costs. Further, the approach that is commonly used in those states that have adopted externalities adders often applies only to a discrete set of air emissions. This may affect a decision between a coal project and a gas project, but does not address externalities related to the unique

characteristics of nuclear, hydropower, or other resources that present different types of environmental challenges. Moreover, these methodologies typically fail to include any assessment of the local benefits of certain projects that may also not be reflected in the cost per kilowatt-hour of the project, such as the economic multiplier effects of using indigenous resources. The imposition of externalities adders at the present time, therefore, represents little more than an arbitrary penalty on certain energy resources that are deemed by some to be less appropriate than others. The process does not create a more level "playing-field," but instead may lead to further distortions in the power supply market.

Finally, the least-cost planning methodology is not necessarily the best or most appropriate area in which to set environmental policy. Whether a specific project or energy resource is environmentally appropriate can be safely determined through the normal environmental permitting process. In recent years, the energy projects developed within Maine have fallen well within state environmental regulatory requirements and are generally viewed as being highly desirable additions to the economy and our energy resource base. If Maine determines that inappropriate projects are not being excluded through the environmental review process, that review process should be modified, rather than imposing a complicated new regime on an already too complicated utility regulatory process.

Specific energy policy suggestions

While the previous section addressed several policies that should not be, or should not have been, pursued, this section recommends several that should be. Each of the following energy policy directions appears attractive in terms of enhancing energy affordability and reliability, in addition to being compatible with the state's environmental goals.

Encourage additional natural gas availability

Natural gas availability in Maine is currently limited to a relatively small residential and commercial base in southern counties and in the Lewiston area, and currently accounts for only one percent of the state's energy mix. In contrast, natural gas (not to be confused with "bottled gas," or propane) supplies fully twenty-five percent of the nation's mix and over fifty percent of U.S. residential energy needs. The restricted availability of this resource is, in fact, largely responsible for the state's higher-than-average level of oil dependence, and has precluded the development of natural gas-fueled industries and electric power resources.

Natural gas offers many benefits relative to its currently available competitors: it burns cleanly, with almost no sulfur emissions; it is the lowest emitter of carbon dioxide among the fossil fuels; it is a secure and plentiful resource; and it is expected to remain highly competitive with oil and other alternatives on a cost basis. Expanding the gas resource will allow Maine to reduce its oil dependence, and could help reduce industrial and utility sulfur dioxide emissions if gas becomes available to paper mills and to power plants that currently depend on high-sulfur industrial fuel oil. Natural gas would also be a welcome option for residential and commercial consumers who would prefer a clean and price-regulated resource to one that is subject to unpredictable volatility. Over the longer term, natural gas can also help Maine with its transportation energy needs, either compressed and used directly or as a feedstock to produce methanol.

Pursue increased utilization of biomass

The use of wood as an energy resource increased by 150 percent in Maine during the 1980s, despite an overall decline in residential firewood use. Much of this increase was driven by growth in wood consumed to generate electricity in co-generation and stand-alone independent power operations. Maine currently has almost 500 megawatts of biomass-fired generating capacity, and wood is now roughly equal to nuclear and to hydro in terms of its contribution to the state's electric power supply. This rather dramatic trend led the State Planning Office to undertake a comprehensive study on the effects of the existing use of biomass energy and its potential for additional development.

While the study is still underway, the analysis thus far suggests that the biomass experience generally should be viewed in positive terms. Biomass energy development has not resulted in the massive clearcuts and poor utilization of forest resources that many had feared. To the contrary, the development of the industry appears to have led to improved forest land management. The existence of a market for what otherwise would be considered a waste product provides landowners and forest managers with a strong incentive to manage their harvests in a more effective manner. Moreover, the industry provides significant economic benefits to the state. The biomass power plants were responsible for a capital investment of approximately $700 million during the 1980s and are responsible for a direct annual impact of approximately $40 million in operational expenditures. Additional biomass development in Maine should be approached carefully, as should any major development that would affect the state's forest resource. However, our experience with wood-fired energy to date has been positive, and there appears to be a potential for further expansion.

Consider electricity as export commodity

Electricity today is a commodity, and is bought and sold in competitive regional markets. To the extent that power plants are going to continue to be built to meet the region's electric power needs (above and beyond those needs mitigated through conservation efforts), there are distinct advantages in having them in Maine. It may in certain cases even be more environmentally sound (from a Maine perspective) to site plants locally, where we can monitor and regulate their operations, rather than having them locate in other states, where the plants' emissions will affect Maine anyway. Conversely, there are few reasons not to site projects in Maine, other than localized NIMBY concerns.

Maine should consider using the potential for additional biomass development, combined with the possibility of increased natural gas availability, as an opportunity to produce electric power for export into the broader New England market. In addition, Maine is currently under consideration as a potential host for other types of power generation projects, including a wind farm of up to 200 megawatts. Needless to say, the development of an electric power export base in Maine must be accomplished in a manner consistent with other applicable state energy, land-use and environmental goals.

Alternative fuels and increased efficiency in transportation

Over one-third of the energy and most of the oil consumed in Maine is used for transportation. In addition, transportation energy use is responsible for a significant degree of New England's ambient air quality problems, due to the high emissions of carbon monoxide, nitrous oxides and volatile organic compounds associated with the combustion of gasoline. Therefore, energy policies that reduce energy use, and particularly oil use, in the transportation sector have the combined benefit of reducing oil dependence and improving the region's air quality.

One important way of addressing this issue is through increased transportation fuel efficiency. While it is unlikely chat consumers will be willing to give up much of the mobility to which they have become accustomed, mandating higher fuel efficiency, through corporate average fuel economy (CAFE) standards or other means, would reduce fuel use without reducing consumers' mobility. We find it unfortunate that, in the context of a relatively well-balanced overall approach in the National Energy Strategy, the Bush Administration found itself unwilling to confront the auto industry on this issue. CAFE standards should be viewed in the same context as efficiency standards for appliances and buildings, which have also been successfully implemented within Maine.

Maine and New England also appear to have a unique opportunity to help promote the development of alternative transportation fuels. Governor McKernan recently directed that Maine pursue regulations to promote the development of reformulated gasolines and other initiatives to combat Maine's ambient ozone problems (much of which originate out-of- state). New England appears to be moving toward the adoption of much higher standards for vehicle emissions, similar to what has already occurred in California. These initiatives will also help reduce our dependence on imported oil, again, with a positive effect on environmental quality.

Cost-effective investments in conservation and efficiency

Historically, Maine has used so-called oil overcharge funds to subsidize weatherization efforts and other conservation efforts. These funds, however, are now largely gone. The state is currently able to maintain a modest but effective energy education and outreach program, but is no longer able to provide the types of direct subsidies that were available in prior years. Nonetheless, there remain two areas in which the state can play an active role in encouraging Maine to become more energy efficient.

The first is to make funds available for energy-saving investments through the issuance of bonds. Several states have implemented programs that raise capital through bond issues and provide the funds to projects whose energy savings offset energy costs sufficient to meet the revenue requirements of the bonds. These types of programs are mostly available for state or municipal facilities, where access to capital is more difficult and since the funds are based on tax-free financial instruments. The State Planning Office attempted to promote similar legislation in Maine last year but failed to convince the legislature of the program's merit.

A second opportunity is the development of a statewide buildings energy rating system. This type of program is a market-based approach to energy efficiency that attempts to overcome the fact that the true economic value of efficiency investments is not always reflected in the sales price of a home or building. At the residential level, for example, consumers who know they are going to remain in their home for at least a five- to ten-year period usually are willing to upgrade heating systems or otherwise improve the home's energy performance based on the payback they will realize in energy savings. Often, however, such investments do not produce energy savings that provide a sufficient payback in the short term (one to five years), and consumers are unwilling to invest since the investment may not be recovered in their home's sale price (even though the investment has a measurable on-going value).

The "energy-rated" homes concept addresses this problem by combining a standardized energy audit, a computerized rating methodology, and a set of financial incentives offered by mortgage lenders. The latter, which is often characterized as the "energy efficient mortgage," involves a bank's willingness to extend more favorable than usual mortgage terms for the purchase of homes that rank highly in terms of energy efficiency, based on the reduced operating costs (and, therefore, higher income net of energy expenses) that the purchaser would enjoy. The rating system itself also can include an analysis of cost-effective suggestions to upgrade an inefficient home. This type of program, which is currently under development within the State Planning Office, has the additional benefit of opening up the housing market to buyers who might not otherwise qualify for mortgages. The so-called energy efficient mortgage not only lets these buyers into the market, but also ensures that they will not be burdened with the higher energy costs of a less efficient home.

Conclusion

Energy policy for the 1990s must address several key issues. First and foremost, Maine continues to be overly dependent on oil, despite the progress in reducing overall oil dependence during the 1980s. Oil price shocks and potential supply disruptions, therefore, have a disproportionately high effect on Maine relative to other regions.

Maine also faces rising energy costs. The trend toward declining real energy prices and total energy expenditures seen during the 1980s is unlikely to continue through the 1990s. We cannot, of course, predict oil prices with any certainty, but we should anticipate that they will remain subject to potential volatility. Electricity rates are also rising. Rates for the state's largest utility recently rose by $150 million in one year (July 1990 to August 1991) and are projected to rise even further, as are rates for Maine's other electric utilities. Electricity already comprises the single largest element of the state's total energy bill, and rising power rates serve to worsen an already strained business climate.

Unfortunately, there is probably little the state can do in the near term to mitigate the rising energy costs we now face. Government does not (and should not) have much control over the prices set in unregulated energy markets, except to ensure compliance with antitrust and unfair trade practice law. In Maine, the State Planning Office has been able to help the retail oil industry promote a new variety of "fixed-price" purchasing options (that use the futures market

to hedge against potential price swings), but it remains to be seen whether these programs will be widely accepted by an often skeptical consuming public.

With respect to regulated energy prices, there is relatively little we can do now other than to bear the costs of prior policy decisions and to encourage utilities to attempt to renegotiate the earlier independent power contracts on more favorable terms. We can, however, ensure that current and future energy policies protect against the type of unwanted rate effects that we are now experiencing.

Those among us who may have input into the energy policies of today must realize that those policies will have an effect, and possibly a profound effect, far into the future. Moreover, an examination of energy policies from prior decades makes it abundantly clear that we cannot always (or even frequently) foretell with any accuracy whether the assumptions and predictions on which our policies are based are correct, whether the policies will act as anticipated, or whether they may produce unintended and unwanted consequences. At the same time, we must not allow our energy future to be determined in a wholly ad hoc manner. In particular, allowing "NIMBY" concerns to drive energy policy will, ultimately, place us in an untenable situation.

Today, we are no more able to predict the future than others who came before us. We are, however, in a much better position to learn from the past. Looking at both the successes and failures of our energy planning over the prior two decades, we should strive to increase diversity in our sources of energy supply, we should better understand and rely more on market forces to achieve desired outcomes, and we should lean to be cautious as we develop policies that look toward our energy future.

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