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State of Maine

Energy Action Plan

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State of Maine Energy Action Plan

August 1999

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Foreword

This State Energy Action Plan is prepared by the Maine State Planning Office (SPO) in fulfillment of its statutory responsibilities for energy planning and policy development. It is the first statewide energy report prepared since the 1992 report of the Legislative Commission on Comprehensive Energy Planning.

This report is not a comprehensive energy plan in the traditional style of previous State Energy Plans. It is, instead, a document that identifies the pressing energy issues confronting the State, and spells out the ongoing and appropriate actions that need to be undertaken in response to those issues. It also provides an overview of energy trends in Maine within the context of a energy supply and demand picture, where total energy consumption is growing in pace with economic activity and population changes, and in a time in which the energy supply picture is radically changing.

This report brings forward currently established energy goals, objectives, and policies from the 1992 report of the Legislative Commission, which are still generally valid today, even in the face of new energy circumstances. The discussion of pressing energy issues occurred within the context of established energy policy, perhaps at times suggesting more emphasis on certain policies, but not revealing any fundamental problem with these stated energy goals and objectives.

This plan is a companion piece to the recently published Energy Data Book, which is updated annually and maintained by the State Planning Office as the state energy data set.

Energy planning and policy development is a dynamic activity, evolving and changing to fit new circumstances created from within and from outside the state. This issue of a state energy plan comes at a time of dramatic change in our energy circumstances, a time of ample energy supplies and relative stability. A time, not of crisis, when energy policy still matters in the future of the state.

This report would not be possible without the hard work and contributions of the many energy stakeholders who participated in the two energy working sessions organized and conducted by the SPO energy team. The initial session was held in June 1998 to identify and prioritize pressing energy issues and concerns. Then a follow-up session in August provided a roundtable discussion of the issues and appropriate actions. Based on this input, and continuing dialogue in many energy issue venues, this action plan was crafted to set a course of action for the SPO and others.

We hope you will find it enlightening and useful as we all work to address and solve energy issues.

I. INTRODUCTION

The following introductory material is restated from the 1992 report of the Legislative Commission on Comprehensive Energy Planning. It has been edited and updated to fit existing conditions, but still works as an introduction to the importance of energy issues concerning the state today.

Few people recognize how important energy is in their daily lives and to the economic prosperity of Maine. Almost every aspect of life in Maine is influenced by energy needs and uses. And, in turn, producing, transporting and using energy often has a significant impact on the natural environment. Recognizing these relationships and identifying appropriate public goals is the first step of developing sound energy policy. However, while most Mainers tend to agree on what the broader energy goals should be, there remains a great deal of controversy over how to achieve them, and how to balance objectives that are often in conflict with one another.

Today Maine does not face an imminent energy crisis, but it is a time of fundamental change in its energy circumstances and conditions. The closing of Maine Yankee, the introduction of large new supplies of natural gas, the restructuring of electric utilities are changing the energy landscape of Maine. In the future competition will be the code word to describe new relationships between energy producers/suppliers and their customers. Competition that should be good for Maine energy consumers. All of this is happening in a time when the world is awash in oil supplies, resulting in inflation adjusted prices that have never been lower. Today's energy challenges are not related to responding to major price spikes or supply embargoes, but arise from fundamental changes in the supply and demand for energy which will affect consumer choices, and complicate energy decisions and their economic and environmental consequences.

Energy decisions being made today will have a profound effect on Maine's future. Today's energy policies must lead to responsible choices -- responsible in ensuring the ongoing availability of reliable and low cost energy supplies to meet the needs of Maine's energy consumers, and responsible in addressing the overall environmental and economic impacts of energy use and production. Most importantly, the citizens of Maine, including rate payers, utilities, environmentalists, businesses, industries and policy makers, must realize that there is no single solution for a sustainable and affordable energy future. Rather, sound planning requires coordinated and well-balanced strategies. In addition, we must recognize that finding an appropriate balance will almost certainly involve tough choices and difficult tradeoffs.

Current activity to restructure the electric utility industry is a good example of structural changes in the energy picture that contains tradeoff choices and balancing of public policy objectives. Electric restructuring is being pursued to introduce competition into the generation of electricity, and into the retail sale of electric services. In the near future, electricity will be produced by independent, non-utility, "merchant" plants, from which electrons will be transported at an established fee over transmission and distribution lines owned by the remaining

regulated utility, and power marketers or energy providers will sell the electrons and related services to the end user. Competition in the generation and sale of electricity "products" is expected to result in lower cost electricity. The task in restructuring is to create a competitive marketplace where power generators will compete to produce the most competitively priced electricity, and energy providers will compete for customer sales on the basis of cost and service. Rule making by the Public Utilities Commission is well underway to establish the new rules and regulations needed to implement the restructuring law enacted in the last Legislature. Maine has elected to go to full retail competition beginning March 1, 2000. Utilities are currently divesting their ownership in generation facilities and other assets. And marketers will soon be registering to sell electricity. A number of complicated policy issues remain to be worked out, such as allocating and recovering stranded costs, approval of divestitures, conduct of a consumer education program, and ironing out details for implementing a resource portfolio standard and the delivery of energy efficiency and conservation programs.

Maine has clearly moved well beyond the era in which its energy future could be molded by a specific energy "plan" that anticipates and implements energy choices on a deterministic basis. The broad array of uncertainties surrounding future energy demand, price trends, the penetration of new technologies, and changes in regulatory standards, act together to require a flexible planning process, rather than a detailed road map. The goal of energy planning, therefore, is to focus on the *process* of energy decision-making. This process must ensure that specific energy issues and resource options are discussed and decided upon in an open and balanced manner that weighs the positive and negative aspects of a particular energy decision against the State's broader policy goals and objectives.

There are no easy answers. Ample energy supplies at competitive costs are critical to Maine's economy. Energy generation, distribution and consumption comprise well over 10 percent of the State's total economy. Efficient energy use is essential if Maine is to compete in the global economy. In addition, nearly all energy resources have an environmental cost. For example, burning fossil fuels for electric energy, for industrial power, and in motor vehicles is contributing to the buildup of carbon dioxide in the atmosphere and is producing unhealthy air, resulting, on a national level, in billions of dollars annually in increased health care costs; nuclear energy produces radioactive waste which require long term isolation; and damming Maine's rivers for hydroelectric energy and cutting Maine's forests for biomass production have environmental impacts as well.

Maine must develop a sustainable energy future -- a future that protects human health and the environment, and promotes economic prosperity. The cornerstone of this energy future is increased energy efficiency in every sector of energy use. Efficiency is the key to reducing long-term energy costs, reducing pollution, and reducing dependence on imported energy. But conservation alone will not be enough to meet the State's projected energy needs. Recognizing that, one way or another, the public has to pay the real cost of energy, a sound energy future will include increased reliance on clean resources, renewable resources, and a diverse mix of resources.

II. ENERGY STATUS

Energy Consumption in Maine

In 1995, the last year that summary data is published, Maine people and businesses consumed 350.9 trillion BTUs of energy. This level of consumption continues a general upward trend in statewide energy use, although it marks a dramatic drop in energy use from the year before because of sharp reductions in the use of residual oil in the commercial and industrial sectors. Since 1993, the trend in energy consumption has been upward as Maine businesses and industry recover from the dramatic recession of 1989 -1992. With continued economic improvement through the later half of the decade, energy use in Maine is probably at an all time high point.

During this same period the energy intensity of the Maine economy has remained essentially constant reflecting the enduring effects of energy conservation, as well as, a fundamental shift in the Maine economy from more energy intensive manufacturing to a lower energy consuming services oriented economy. This structural change in the Maine economy is also shifting the mix in energy use from a heavy oil dependency to an much more electricity dependent demand. In the future, an economy based on electronic commerce, with large amounts of lighted and environmentally conditioned workspace, will require relatively large supplies of electricity.

Maine enjoys a fairly balanced mix of primary energy sources thanks to the development of hydro and biomass electricity generation, but is still heavily dependent on fossil fuels. New supplies of natural gas will improve the mix, replacing to some extent the loss of nuclear power in electricity generation. The states' dependency (71.7 % in 1994) on oil based products at the point of end use consumption is even more pronounced than might be apparent because oil is also used to generate some of the electricity consumed by the end use consumer. The mix of primary energy sources available in Maine, and the mix of energy choices for the energy consumer is changing with the introduction of new natural gas pipeline supplies from both western and eastern Canadian sources. Newly developing supplies of eastern Canadian gas and oil place Maine in the path of large supplies of energy headed to the US market. Although still officially imported energy supplies, the availability of these North American sources does have an incremental improvement in energy security when compared to other offshore foreign supply sources.

Energy expenditures in 1994 topped 2.72 billion dollars, with nearly one half (42.7%) spent for electricity purchases, another third (30.8%) for transportation fuels, a fifth (18.7%) for residential and space heating, and the remainder for industrial power. Even with increases in energy consumption in the early 1990s, total real expenditures remained fairly constant reflecting imbedded energy efficiencies and falling oil prices. In recent years, continued declines in oil prices, and relatively mild winters have helped to keep energy expenditures down.

Energy Consumption by End Use Sector

Production of Electricity - Total in place generation capacity serving Maine demands is just over 2,700 MW. The growth in renewable energy during the 1980's in Maine was most prominent in the electric power sector in large part due to the availability of power sales contracts at attractive "avoided cost" rates. In 1994, over 46% percent of the capacity installed to supply Maine's electric power was contingent upon the renewable resources of MSW (municipal solid waste), hydropower and biomass, which combined supplied almost 50 percent of the electric energy sold within Maine in 1994. Conversely oil, represents 30 percent of Maine's capacity mix, but was used to supply only 4.6 percent of the State's actual electric power in 1994. Biomass and nuclear power were in close contention for offering the most capacity. However, nuclear power from Maine Yankee and other New England nuclear stations, supplied the most electricity in 1994 by providing 33 percent of the mix, followed by biomass at 27 percent, hydro at 19.3 percent and Canadian imports at 12.7 percent. Maine's waste-to-energy facilities provided an additional 3 percent of the State's electric power in that year.

Today, dramatic changes are influencing the future of the electric utility industry. The premature closing of Maine Yankee has left a gap in the state's electric generation capacity, which will soon be filled by new natural gas fired plants. In addition restructuring of the industry to take effect in March 2000 will fundamentally change the supply and demand picture. More competition in the generation of electricity and consumer choice of electricity providers and sources creates an uncertain future for existing generation sources, especially for renewables.

Transportation - Most of the energy demand in the transportation sector is filled by gasoline and diesel fuel products. In 1995 over 95.7 trillion BTUs of energy were consumed to fuel passenger vehicles, motor freight trucks, buses, trains, ferries, airplanes and recreational vehicles used to move people and goods around and in and out of the state. Transportation energy consumption is about 26% of the total state consumption. All of this fuel is oil based products - a single fuel type dependency that keeps the state at risk of supply disruptions and price fluctuations. In recent years, transportation fuel consumption trends are moving upward reflecting an increase in vehicle miles traveled, coupled with an influx of lower fuel efficient sports/utility vehicles.

Residential Consumption - Residential energy consumption has been fairly stable at 60 to 63 trillion BTUs per year, even with a sharp increase in heating oil consumption in 1995. Residential energy consumption is about 20% of total energy consumption in Maine. In recent years a shift in the mix of fuels used for space heating has occurred as householders switched from electric heat to oil, kerosene, and propane space heaters prompted by rising electricity rates and low oil prices. The residential sector is also heavily dependent on oil based products, however there is much greater flexibility to switch fuel types such as to wood as energy prices change. New natural gas supplies in some energy market areas will provide another competitive alternative.

Commercial and Industrial Consumption - In 1995 the commercial sector of the Maine economy used nearly 30 trillion BTUs of various energy sources to power businesses,

institutions, schools, hospitals, and office buildings. The principle sources of energy used in the commercial sector are heating oil and electricity. In addition, there is significant use of natural gas and residual oil. These four sources account for over 94% of the energy consumed in this end use sector.

Energy trends in the commercial sector fluctuate with trends in the general economy. Energy use planed off in 1990 and 1991 during the last recessionary cycle, then rebounded to the highest levels ever through 1994 as the economy recovered. The percentage of natural gas use has increased modestly throughout this period, suggesting a larger future role in the energy mix.

In 1994 the industrial sector used 124.6 trillion BTUs of energy to power manufacturing plants, assembly and fabrication shops, and the pulp and paper industry. The single largest energy source is residual oil used to fuel boilers to produce steam and electricity to power large paper making operations. In addition self generation of electricity from on-site hydro and wood power plants contributes another 21% to the industrial energy mix. Unique in Maine's energy picture is the use of coal in the industrial sector. Other than a very small amount of residential use, coal is not a significant part of the energy supply. Purchased electricity from utilities, heating oil, and natural gas complete 98% of the industrial energy supply.

III. ENERGY GOALS and OBJECTIVES

Energy goals and objectives as stated in previous State Comprehensive Energy Plans are still pertinent and appropriate to current energy concerns and issues, although relative emphasis will change with the issues and the times. The following statement of State energy goals and objectives, along with explanatory materials are excerpted (with some editing and updating) from the 1992 Final Report of the Commission on Comprehensive Energy Planning.

Overview of Past Energy Policy

“The highest priority for the 1980’s is that Maine develop a statewide energy policy that will enable the State of Maine to secure a reliable, adequate and low cost energy supply for the state’s future.” (1983 Maine Comprehensive Energy Resources Plan)

“The overriding goal of Maine’s energy policy is to promote the present and future economic well-being of Maine residents and businesses by ensuring the availability of reliable energy at the lowest possible cost.” (1987 Energy Resources Plan)

These prior State energy plans produced by the Office of Energy Resources focused predominantly on goals related to cost and reliability, with the specific objectives of reducing the State’s dependence on oil through increased efficiency and through the development of renewable, indigenous resources.

Maine law establishes several energy priorities with respect to regulated electric utilities. The State’s “Small Power Act” (MRSA 33 §3302) states that Maine should “encourage the development of energy producing systems using renewable resources; particularly abundant, renewable resources or resources in close proximity to Maine.” In addition, the “Maine Energy Policy Act” (MRSA 35-A §3191) gives preference, when the available alternatives are otherwise equivalent, first to conservation and demand management, and then to power purchased from qualifying facilities, otherwise known as “cogeneration” facilities. As a result of these policies, Maine has become a national leader with respect to the development of non-utility generation and conservation, generally, and in its dependence on renewable resources specifically.

In passing the Electric Restructuring Act (MRSA 35-A Sections 3201-3217) the Legislature reaffirmed these public policy preferences by enacting a resource portfolio requirement for indigenous renewable energy resources, and directing that energy conservation programs continue to be delivered by the regulated transmission and distribution utility. The

Resource Portfolio Standard (RPS) will serve to help maintain the existing contribution of renewables to the electricity supply, within an acceptable level of influence on the market price of electricity. The continuation of electric energy conservation programs preserves and extends the progress made over the past two decades in imbedding energy efficiency and conservation practices in Maine businesses and homes.

Many of the priorities of State energy policy continue to serve as energy goals relevant to the 1990's. For example, the 1987 energy plan outlined the following specific objectives:

- encouraging energy conservation;
- cost effectively developing Maine's indigenous energy resources;
- reducing the cost of energy;
- increasing the availability of natural gas;
- working to encourage appropriate federal and State energy-related tax policies;
- encouraging diversification of Maine's energy resource base;
- working toward greater reliance on market mechanisms;
- enhancing energy education and public information; and
- pursuing opportunities for energy production for export that provide economic benefits and are consistent with State land-use and environmental goals.

With the benefit of hindsight, however, it can be seen that, while these overall objectives continue to be relevant for the 1990's, attaining them is often more complicated than may be initially realized. This is partly because the modern energy landscape has become increasingly complex, and because energy issues are increasingly intertwined with other social and economic interests. In addition, some of the specific assumptions upon which past energy policies were based proved to be highly inaccurate.

Moving into the 21st century, strategies to implement Maine's overall energy goals must be based on well-defined objectives and must be carefully targeted and coordinated to achieve those objectives. They should recognize the complexities inherent in almost any energy decision, and the risks involved with basing objectives on potentially inaccurate forecasts and assumptions. Thus this plan does not make forecasts, but instead focusses of the current pressing issues and the processes needed to move the state securely and reliably into the future.

Energy Goals

In the 1992 Final Report of the Commission on Comprehensive Energy Planning, the Commission found that Maine energy policy should address: (1) **energy costs**, both direct energy prices (i.e., dollars per gallon or cents per kilowatt-hour) as well as to overall energy cost (the total bill for energy). (2) **Energy reliability**, which is the assurance of adequate necessary

supplies of energy, and includes issues related to energy security. (3) The **environmental impacts** on air, land, water, and health that result from energy production, transportation, and use. (4) The **economic impacts** of energy policy and choice on the economy, in terms of jobs, competitiveness, and general economic vitality.

Thus, the Commission concluded “**the goal of Maine energy policy is to meet the State's energy needs with a diversity of reliable energy supplies at the lowest possible cost, while at the same time ensuring that energy production and use is consistent with Maine's environmental and economic objectives.**”

Energy Policy Objectives

Maine can enjoy an energy future that balances cost, reliability, environmental impacts and economic impacts by focusing on the following set of objectives.

- Promoting energy efficiency and conservation
- Supporting energy education
- Controlling energy costs
- Ensuring adequate levels of competition by promoting market-based approaches to energy problems, and overcoming market barriers and distortions
- Ensuring equity in how energy supplies and costs are allocated among Maine energy consumers
- Promoting greater diversity in Maine’s energy resource base
- Promoting the continued development of renewable indigenous resources, where cost effective and appropriate.
- Improving the State’s flexibility to respond to unforeseen price volatility and supply disruptions in new market driven environments.
- Reducing/avoiding environmental degradation and stress through wise use and production of energy resources.
- Promoting consistency among energy policies and programs, and coordination between energy policy and other State goals and objectives

As to the energy policy goals noted above, the order in which these objectives are iterated is not as important as understanding that each is important, and that none stands on its own without some (and often many) inter-relationships with the others.

Energy efficiency is clearly a key element in meeting Maine's energy goals with respect to regulated energy types, such as electricity and natural gas, as well as unregulated fuels, such as heating oil and gasoline. Improved energy efficiency leads to reduced energy costs, enhanced environmental quality, improved energy security and enhanced economic competitiveness. Energy efficiency should not be viewed in terms of reducing comfort and convenience, but as achieving the same or greater comfort, productivity, etc., while using less energy and minimizing waste.

Controlling energy costs is important with respect to the inherent relationship between energy and the economy. Current high energy prices place a great strain on Maine's citizens and businesses, especially when they coincide with a recession. Energy costs are determined both by the amount of energy used and the price at which it is purchased. Conservation and energy efficiency can help control energy costs since lowering energy use also lowers energy bills. At the same time, Maine must pay adequate attention to ensuring that energy prices are fair and reflect the full cost of impacts associated with energy production, transportation and use.

Competition is the cornerstone of setting prices and allocating energy supplies for unregulated fuels such as heating oil, firewood, and gasoline. Competition also has become a much more significant force with respect to electricity, given the State's past policy to encourage generation by independent power producers; and current activities to restructure the electric utility industry. In addition to this trend toward increased competition, it is governments role to ensure that the marketplace works and that market barriers and imperfections are overcome through appropriate regulatory and other actions. Market driven approaches to energy issues should be pursued whenever they are more efficient than direct regulatory solutions. For example, policy makers cannot predict which energy choices, such as types of alternative fuels or vehicle emission technologies, will turn out to be most effective in meeting new Clean Air Act compliance deadlines. In this instance, market-based forces should be allowed to determine the best combination of cost-effective solutions to meeting a public policy objective.

Equity refers to ensuring that energy costs are allocated fairly and that residential, commercial, and industrial customers each pay their fair share of maintaining the utility infrastructure. Equity also becomes an issue with respect to how energy policy affects low-income consumers, and with respect to ensuring adequate oversight of markets for non-regulated energy supplies, such as heating oil, propane and gasoline. Equity is also an issue with respect to how energy policies affect consumers who relied on past energy policies that may have subsequently changed.

Energy diversity means avoiding relying too heavily on any one type of fuel or energy service, and that the capacity exist to switch quickly to other fuels when necessary. It is an especially important objective for Maine, due to the State's above-average dependence on oil and the relative lack of coal and natural gas in its energy mix. No energy resource is ideal in

every way, and each represents varying degrees of potential benefits and risks. A well-balanced energy portfolio is the best way to enhance potential benefits and minimize those risks. Maine should strive to reduce its dependence on oil through increased efficiency and reliance on renewable energy resources. In particular, investment in and promotion of alternatives that address transportation energy use offers the single greatest opportunity for reducing oil use in Maine, followed by programs that reduce oil use in Maine's industrial sector (such as fuel switching to natural gas).

Renewable energy resources should continue to be viewed as a means of increasing the diversity of Maine's energy mix, improving environmental quality, mitigating Maine's historically high level of oil dependence and enhancing the long-term sustainability of the State's energy profile. While the land- and water-use impacts of these resources have become increasingly controversial, there remains significant potential for additional development of Maine's hydro and biomass resources, as well as ongoing efforts to develop Maine's wind resource. Today, Maine is a national leader in its reliance on renewable resources, and further opportunities for such development exist. The present challenge, however, is to ensure that any increased reliance on indigenous resources is consistent with State objectives for the proper use and conservation of those resources.

Flexibility and responsiveness mean being prepared for uncertainties and recognizing that we cannot foretell our energy future. If we have learned anything from energy planning, it is that we cannot predict with any accuracy future oil prices, economic trends or other factors that effect how we will use energy in the future. But while we cannot always anticipate what energy challenges may lie ahead, we can work to improve our ability to respond to them quickly and appropriately as they arise.

Reducing and avoiding environmental degradation is becoming an increasingly important issue as energy policy makers recognize that almost every aspect of modern energy use creates significant and often unwanted environmental impacts. While many of these impacts can be addressed through stronger environmental laws and regulations, energy planning can play an important role in terms of ensuring that Maine's energy future is consistent with the State's environmental goals.

Consistency is an important objective of State energy policy in the sense that policies should strive to enhance predictability over time, and in terms of ensuring that energy policy is as consistent as possible with respect to other State policies, goals, and regulatory mandates. Consistency does not mean, however, that policy should not change or react to new circumstances or new needs.

IV. Current Energy Issues

In 1998 the State Planning Office conducted two energy issue discussion sessions to identify and refine the pressing energy issues confronting the state of Maine. The first meeting was an energy issue discovery session held with a variety of representatives of state and local agencies, organizations, and businesses; as well as, individuals interested in energy issues. This session identified and ranked energy related issues that participants saw as critical to the interests of the State and energy users. These energy issues were then elaborated on and discussed again in a second stakeholders meeting to help identify what needs to be done, how and by whom, and when. The outcome of these sessions is reflected in the energy issues and actions presented below.

These issues and actions are those seen as most pressing and important, at least in the foreseeable future, for State attention and action. Given the limited resources currently allocated to state energy planning, and the rather dispersed delivery of energy related programs across agencies and organizations this plan attempts to identify appropriate actions needed to respond to the issues, and outlines how those response should be carried out. Although this plan is not a comprehensive energy plan for the state, it does present a plan of action for tackling the pressing energy related issues.

A. Coordinated Energy Policy and Planning - Energy Advisory Council

Background

State energy policy is fairly well developed and imbedded in several statutes and programs such as the Small Power Development Act, Electric Efficiency Act, public utility conservation programs, low income energy assistance programs, past State Energy plans, and State energy efficiency building codes. Vestiges of formerly larger energy programs remain scattered across several State and regional agencies such as the small business energy audit and assistance services provided by the Department of Economic and Community Development, winterization and fuel assistance programs delivered through the Maine State Housing Authority and related Community Action Programs, and energy policy development and planning conducted by the State Planning Office. And State energy goals and objectives are well stated in the 1992 Comprehensive Report on Energy Planning.

With State energy policy and programs essentially in place, the problem today is one of garnering the resources needed to sustain a meaningful level of effort in program services, in a time when there is no energy crisis, but when energy conditions are undergoing fundamental change. A quiet revolution is underway that will fundamentally change the energy picture in Maine. Changes that will result in more energy choices for consumers, but that will also involve complex decisions for mostly unprepared energy users.

The SPO has the statutory responsibility to develop energy policy, including the periodic preparation of a State Energy Plan. Adequate resources to carry out these responsibilities would go a long way towards providing the guidance and framework for decision making currently lacking in the energy arena. An enhanced State capacity to plan and coordinate positions and actions relative to specific energy issues would go a long way towards responding to the stated need for coordinated energy decision making.

Issues

Many participants at the energy discussion sessions expressed the need for a clear, strong, effective voice in energy matters. A voice with some authority to influence energy decisions. A forum in which to discuss issues, to help formulate positions and policies that address pressing energy issues, and to inform the decision making process.

Lack of coordination in the development and delivery of State and local government sponsored energy programs and services.

Actions

An Energy Advisory Council was proposed that could provide the forum to discuss current energy issues, and to act in an advisory role in the formulation of appropriate policy and recommendations in such areas as the development and conduct of energy education and conservation programs, in the development of positions on energy facility siting, contributing to the discussion of the environmental consequences of energy decisions, and providing an advisory role for plans and programs to implement new electric energy conservation and R&D programs.

The exact role and make-up of an Energy Advisory Council needs to be further developed by those who would be active in its functions. To do this the SPO will organize and conduct stakeholder discussion sessions leading to a group decision to proceed or not with the necessary legislation or executive order that might be needed to duly constitute and enable an advisory council.

The SPO will host an annual energy stakeholders meeting -- to promote program collaboration, and to review current and emerging energy issues.

B. Energy Education for Conservation and Consumer Choice

Background

The need for energy education has never been more acute. Federal and State deregulation of the oil, natural gas, and electric utility industries, the introduction of large new natural gas supplies, the important role of energy conservation in meeting energy and environmental objectives, the closing of Maine Yankee nuclear power plant, and historically low oil prices have all contributed to fundamentally reshaping the energy choices and decisions facing Maine consumers. The need for a strong effective educational program is clear.

The increasing need for information and education comes at a time when public energy education programs are waning and virtually nonexistent. The Maine Energy Education Program (MEEP), housed for many years in State agencies, is now an incorporated nonprofit program struggling to garner sustaining support and continue to deliver its programs into local community school systems.

The Department of Economic and Community Development, Energy Division conducts energy education programs related to conservation information and assistance available to residential and small business consumers, and maintains and distributes information on energy efficient equipment, energy technologies, state building energy codes, and grant opportunities.

The Consumer Education Advisory Board on Electricity Retail Access strongly recommended the development of an integrated consumer education program to inform consumers of the many upcoming changes in the electricity industry. Such a program would also provide consumers with an objective and credible source of information so they could make informed electricity purchasing decisions. The Public Utilities Commission has approved a 1.2 million dollar consumer education campaign that will provide a message of impending changes in the purchase of electricity.

DEP's Sustainable Communities education program covers some energy related aspects of environmental problems, where energy use is closely linked to environmental issues. This educational effort provides an opportunity to further develop educational programs that link energy decisions to environmental consequences.

Issue

Energy Education. There is a continuing need for energy education, but the means to deliver programs and services is declining and shifting, becoming more project specific. Education and outreach is the front line in terms of encouraging and assisting consumers to make cost effective and responsible energy decisions. The remaining public/consumer programs are administered by the Department of Economic and Community Development, but with declining funding. Limited education is provided by the Maine State Housing Authority and regional Community Action Programs created specifically to promote and inform their customers about programs and services that are available from their organization. In general, energy consumers

often face the task of making multiple contacts with agencies and groups to find the energy information and program details they need. This situation makes it more difficult for consumers to get all the information they will need to make sound choices.

A renewed public sector focus on energy information and education is needed to reestablish the State's role as a source of objective and factual energy information. Presently, energy information and out reach programs will continue to be delivered as part of existing and ongoing energy and environmental programs. In the future, decision makers, program planners and managers need to incorporate appropriate information and out reach components into new programs such as the Electric Consumers Ed., new Low income programs, and the new Southern Maine Technical College energy star homes initiative. There is a risk that opportunities may be missed for leveraging educational programs when project coordination and collaborations is missing. There is a need to provide improved coordination and collaboration in the design and delivery of consumer energy information programs.

Actions

One idea is to establish an energy education coordinator within DECD Energy Division, supported by the annual SEP grant. This position could also provide some staff support for an Energy Council. The SPO could work with DECD and appropriate agency representatives to further discuss this idea, and put together a proposal for further consideration.

C. Electric Utility Restructuring

Background

Energy Issues session participants were unanimous in their concern that a truly competitive market result from the implementation of the Electric Utility Restructuring Law. The Public Utilities Commission is currently heavily involved in a number of proceedings to create the rules and relationships needed to implement the restructuring law. In this process old relationships are being realigned, new structures created, old public policies reaffirmed and recrafted, new supply and sales requirements being created, in ways designed to create a competitive electric market place that will result in a lowering of electricity costs. Yet in the midst of the process it is difficult to see how the outcome will work to achieve the objective of lower electricity prices. In fact in several aspects concerns are raised that a fully competitive market will not be achieved, exposing consumers to marketplace forces that might actually result in higher prices. The effect of the divestiture of generating facilities to a single large owner, and the opportunity for small power generators to access and participate in the electricity markets are in question. The ability of smaller electricity consumers to understand and exercise purchasing power through aggregation is unclear and needs to be promoted. The operation of the regional power pool and its rules are a large uncertainty. Seasonal fluctuation or demand peaks in a market influenced environment can be expected putting short run price pressures on electricity sales.

The SPO has led the Administration's team on restructuring and has taken a fairly active role in the creation of the Electric Utility Restructuring law, and in ongoing proceedings before the PUC to implement full retail access to electricity beginning on March 1, 2000. This is an example where the SPO has used its limited resources to respond to a very critical issue. During the implementation phase the emphasis of the SPO is on implementing the RPS requirement, and in crafting a sound energy conservation program, and providing for a continued low income assistance program. In addition the SPO and Public Advocate represent the State of Maine on the ISO New England advisory council.

Issues

The over arching issue of electric restructuring is assuring the creation of a truly competitive electricity market place. Keen competition in the generation and in the sale of electricity will lower prices, but questions remain as to the ultimate structure and function of a restructured electricity market. Specific issues revolve around the questions of market power concentration, equal access to competitively priced sources for all consumers in all parts of the state, the effects of periodic and future transmission restraints, maintaining a good mix of renewables and other sources, and the effects on electricity prices created by system benefits charges for conservation and low income programs and recovery of stranded investments.

Another critical issue concerning the future development of the electric power generation industry in Maine is the adequacy of transmission capacity for interstate movement of Maine based generation (electricity as an export commodity, utilizing indigenous renewables) into the New England market. Questions are raised about the ability of Maine based generation to have competitive access to the regional electricity market. Can Maine renewables compete or even participate if south flowing transmission is constrained? What is needed for and what are the impacts of additional generational and transmission developments? Is a state infrastructure plan, policy, and review process - such as a facilities siting commission- needed? These are the questions and issues raised by the energy stakeholders.

Actions

As the process of restructuring unfolds, the SPO will continue to monitor activities and take an active role in critical issues as they arise. The Office will continue to participate in rule making and related discussions concerning energy efficiency programs, and the renewables portfolio requirement.

D. Natural Gas Development

Background

The vision of widespread access to natural gas is becoming a reality. The construction of the PNGTS project is now completed, with service to customers provided in early 1999. The M&NE project has received its Federal and State certificates and approvals, and has begun work on major river crossings. This project is scheduled to provide natural gas delivery services by the end of 1999. In the meantime local distribution services are being put into place in the Bangor market, and plans are underway to expand service from existing and new distribution lines into the Bath-Brunswick area, and other central Maine communities. The combination of substantial loads at large industrial plants to be served directly from the pipelines and the development of services by distribution companies for local commercial, industrial, and residential demands creates a framework for access to natural gas energy supplies for most of the larger energy markets in the state.

The availability of large new volumes of natural gas is dramatically changing the energy scene in Maine. Competition with oil and other existing energy sources should have a moderating effect on energy costs. The availability of stable and secure delivery services and interconnected access to large supplies of natural gas from several North American sources will support the wider use of natural gas including the production of electricity as a replacement for Maine Yankee. And economic development planners will be able to indicate to potential new businesses that natural gas is available as an energy choice.

Providing expanded access to natural gas supplies is not the only change in the natural gas industry that will effect Maine energy consumers. Similar to the electric utility industry, the natural gas industry is being restructured at the federal and state levels. Federal "deregulation" of wholesale natural gas markets and interstate pipelines began more than six years ago. In fact, these changes in Federal law and regulations helped set the stage for the development of the current pipeline projects. These changes allow marketplace competitive forces to operate in the natural gas industry by providing for nondiscriminatory equal access to pipelines for transporting wholesale gas that is purchased through a new commodity market exchange and delivered to the individual end user.

Like electricity, Maine consumers will soon be able to purchase natural gas supply and delivery services that will more precisely fit their needs. The "deregulatory" wave is reaching to the state level in the form of "unbundling" existing local gas services to separate gas transportation service from gas purchases and other services, thus allowing the customer a retail choice in gas sources and related services, at a fixed transportation cost. The PUC franchise certificates for Bangor Gas and Central Maine Gas is predicated on this structure, and the current Northern Utilities rate case will result in unbundling of their services. More competition in the production and sales of natural gas, and increased customer choice should provide Maine energy consumers with more influence over their energy future.

Issues

Two years ago the prospects of new natural gas pipelines being built across the state raised the exciting opportunity for making natural gas much more widely available as an energy choice. The SPO recognized the critical nature of the issues confronting Maine energy consumers and took an active role in the Federal decision making process. At this stage, all of the major issues have been settled, and the current role for the SPO is one of monitoring the projects and responding to policy issues and opportunities for enhanced access to gas supplies as they occur.

One issue lying in the wake of the pipeline approval process is the question of adequately planning for the effects of induced development created by the new availability of gas supplies. Already, new and expanded electricity transmission lines are needed to serve new power projects. In some communities, efforts in the name of economic development, to aggregate demand for gas to justify the installation of new taps and laterals will rest on the creation of new industrial parks, roads, and related services located in proximity to the pipeline. With access to natural gas, there will be related growth and land use changes that communities along the pipelines have not addressed in their community plans.

There is a consumer education need associated with emerging opportunities to choose natural gas as an energy source. Experience with natural gas is not widespread in Maine, so there will be a learning curve for consumers who will turn to government sources for good objective information in making decisions in selecting energy choices. Other customers may need information about shopping for gas supply, entering into contract arrangements, selecting gas services, etc. that may also seek information from State sources.

Actions

The SPO natural gas team continues to monitor and support ideas and efforts to take advantage of access to the new gas pipelines. SPO will continue to work with DECD and local people to "tap" into the new natural gas supply.

At the same time, the SPO community assistance team will work to provide technical assistance to municipalities and regions as needed to review and update community plans and programs in response to induced development.

The SPO will work with the DECD's Energy Division, the Public Advocate, and PUC staff to provide appropriate energy information in response to consumer inquiries.

E. Energy and Environment - the new energy priority

Background

Energy use is closely linked with several pressing environmental and land use issues. The combustion of carbon based fuels (oil, kerosene, propane, natural gas, and wood) releases a variety of regulated "criteria" pollutants as well as a suite of other air pollutants into the atmosphere which in turn contribute to environmental problems such as elevated levels of ground level ozone, increased particulate pollution, exacerbating acid rain concerns, and contributing to global warming/climate change concerns. Alternatives to combustion such as wind and solar also have their own components of environmental impacts and land use conflicts such as adverse effects on migrating birds, and unsightly installations of equipment. Energy infrastructures like pipelines, transmission lines, power plants, and tank farms have associated impacts on the environment. These energy and environmental interrelationships need to be taken into account in setting energy policy and making energy choices.

The Commission on Energy Planning noted that the focus of the debate is whether unaccounted for environmental impacts are more appropriately addressed through environmental policy and regulation, or whether these impacts should be considered in the energy planning process itself (by the use of externality adders, or energy based taxes), or whether some combination of both can be developed (such as an energy facilities siting board). Energy planning cannot go forward without recognizing that every energy strategy involves some degree of positive or negative environmental impact. Future energy strategies must, therefore, be as coordinated as possible with State and Federal environmental policies and regulatory mandates.

Since the preparation of the 1992 report on Comprehensive Energy Planning, the Legislature again directed the Chairman of the Public Utilities Commission to work with the Commissioner of the Department of Environmental Protection and the Director of the State Planning Office to form a Study Group on Energy and the Environment. This group had several directives, including the tasks of identifying environmental impacts that are not reflected in direct energy prices (so called externalities), and recommending preferred methods for taking externalities into account in energy decision making. In their report to the Legislature the study team stated that they were "not prepared to recommend specific ways of dealing with environmental externalities." They went on to identify a number of additional steps that would "contribute materially to our effort to harmonize economic and environmental regulation in Maine, ..." This study effort has now been superseded by efforts to restructure the electric utility industry in the state.

The restructuring of the electric utility industry has provided another opportunity to link environmental performance with electricity generation as a way of accounting for the environmental consequences of electricity use. The Commission is working on rules to establish a requirement for energy providers to disclose the sources of electricity they sell and associated emissions of selected pollutants. This disclosure will enhance the consumers' ability to choose an electricity product in keeping with their environmental objectives and serve to inform the electricity consumer of the effects of their choices.

The ongoing implementation of the federal Clean Air Act amendments of 1990 will result in more stringent air pollution standards and tightening regulatory controls effecting energy sources. Some actions may have a beneficial effect on Maine such as Federal EPA's order to limit emission from Midwestern coal fired power plants. Others may constrict energy choices instate such as the forth coming NOX emission standards. Energy options and choices will be fundamentally effected by these environmental protection actions.

Issues

A central issue is how and to what extent to address energy related environmental impacts that are not sufficiently accounted for through land use and environmental regulation. Some acceptable ways need to be found to account for the environmental consequences (pro and con) of decisions made by energy producers and consumers in the process of making energy choices. New methods need to be developed to account for the full “costs” of energy decision, to help decision makers understand the various impacts of tradeoff effects. This will often call for a fine balance between conflicting public policy objectives.

Significant environmental progress can be achieved by actions to conserve and use energy efficiently which will reduce emissions and land use conflicts associated with the production, processing, transportation, and use of energy resources. The environmental costs and benefits of energy conservation and efficiency investments need to be accounted for in the pay back calculations and other considerations made by energy consumers.

There is a need to better coordinate and facilitate land use and environmental decision making processes to assure timely and predictable decisions for energy related facilities and projects. Changing energy markets and new energy choices will require new and upgraded generation, transportation and delivery facilities, and other infrastructures to accommodate increased demands, support new energy technologies and end use applications. A coordinated decision making process could be effective in guiding energy facility siting decisions, including an assessment of the need for the facility based on State energy policies and plans in order to assure that cost effective supplies of energy are available for Maine businesses and consumers.

Actions

Support and expand public energy and environmental educational programs, such as DEP's Sustainable Communities Programs, that provide objective and accurate information about the relationships between energy use and environmental problems.

Support and augment existing programs such as DEP's Pollution Prevention Program, the Maine Chamber and Business Alliance's Energy and Environment Program, the services of the Manufacturing Extension Partnership (MEP) and related partners, and the DECD assistance

programs for small businesses, that help businesses and industries to use energy more wisely, reduce wastes, and improve manufacturing processes.

The SPO should foster a discussion of how to imbed “life cycle analysis” into energy related environmental and regulatory decisions, as a method to account for environmental externalities and social benefits associated with energy development, transportation and use.

The SPO should continue to consider the need for and functions of an energy facilities siting board or coordinating council as a means to assure timely review and approval of energy projects of statewide or regional significance, and to assure the process adequately addresses the need for the proposed facility.

F. Energy and Transportation - single fuel dependency, alternative fuels, and conservation/efficiency

Background

Energy and lifestyle are no more intertwined than they are in the relationships between transportation and business and residential activities in Maine. Ample supplies of relatively low cost sources of energy for transportation are essential in making modern life in Maine possible. Maine land use and economic patterns are inextricably linked with automobile and truck freight transportation and the energy sources needed to make them run. A potential house of cards closely linked to transportation fuel availability and cost and therefore highly vulnerable to changes in energy costs and availability.

The Maine Department of Transportation points out in its Twenty Year Plan that transportation in Maine remains heavily dependent on oil products (gasoline and diesel) for its prime motive energy. Highway transportation consumes almost four-fifths of all transportation fuels consumed in Maine. Despite recent advances in the use of alternative fueled vehicles, passenger and motor freight transportation continues to be nearly totally dependent on oil based fuels (and linked through fuel taxes, the financial resources needed to maintain and improve the highway system).

In its 1992 report the Commission on Comprehensive Energy Planning recommended that Maine actively promote improved energy efficiency in vehicle performance and use. In addition the Commission recommended continued support for the development of alternative transportation fuels, in coordination with federal and regional efforts to enhance energy security and compliance with Clean Air Act requirements. Considerable progress has been made in these efforts since 1992, through the adoption California clean car emission standards, and in the creation of a Clean Cities Program in the greater Portland area which lays the foundation for

alternative fueled vehicle programs and increased use of more energy efficient modes of transportation.

MDOT transportation plans incorporate goals for energy efficiency (as well as compliance with Federal and State clean air requirements) in both vehicle performance and in traffic movement as a cornerstone of state transportation planning. The new Twenty Year Transportation Plan documents the historic gains in fuel efficiency of vehicles traveling on Maine's highways, but points out recent trends in declining vehicle fleet efficiency at the same time that vehicle miles traveled is increasing. Future changes in automotive technologies, and price volatility may help return things to a more efficient fuel use but for now Maine is seriously backsliding in transportation fuel efficiency. MDOT plans focus heavily on transportation system management through traffic congestion mitigation, travel demand management, and access management all of which can be effective in achieving energy efficiency and environmental objectives.

In the future, the Federal Clean Car Initiative may result in the use of more efficient motors, hybrid electric vehicles, and new gasoline products that will put the country back on to a path of high energy efficiency and reduced oil dependence for passenger movement.

Issue

Declining fuel use efficiency and continued single fuel source dependence are serious energy concerns for Maine. Furthermore, several serious environmental problems are closely linked with transportation energy use. The present heavy reliance on gasoline and diesel fuel can be moderated by more efficient use of fuels, by reduced fuel consumption per passenger or ton of freight moved, and by switching to alternative non-oil based fuels and/or transportation technologies.

Action

The state should take strong coordinated action to fully gain the energy conservation and efficiency benefits that can accrue through the implementation of MDOT transportation plans, strategies, and programs. MDOT plans integrate energy conservation and efficiency into programs designed to achieve environmental goals (and clean air objectives), improved access and mobility (through efficient movement of people and goods and in inter modal and alternative transportation systems and technologies), and improved systems operational efficiency.

Implementation of MDOT 20 year Plan and related plans to improve access and mobility through improved traffic flow in congested areas, and additional traffic capacity will reduce fuel consumption and improve fuel use efficiency. In addition, efforts to manage transportation demands with such programs as Park and Ride, Van pool and Ride share programs; and alternative fueled vehicle programs on fixed route and on-demand response transit services will help to reduce energy demands and improve energy efficiency. New opportunities under TEA 21

initiatives and programs will provide opportunities to further encourage and support alternative modes of transport, alternative fuel vehicles, and improved transportation system functioning.

Support the Clean Cities, Alternative fueled vehicle programs as a way to broaden the transportation fuel mix and encourage new modes of transportation.

G. Expanding the Contribution of Renewables

Background

Maine is one of only a few states in the country that obtains a large percentage of its electricity supply from indigenous renewable sources. Over 50% of the consumption of electricity comes from hydroelectric and biomass fueled power plants. This accomplishment, however, is in danger of being lost because of the current availability of competitively priced oil, the emergence of large new supplies of natural gas, and the restructuring of the electric utility industry. Yet expanding and diversifying the role of renewable energy sources in Maine can provide additional energy, environmental, and economic benefits.

The importance of indigenous renewable energy sources in meeting the electricity demand was reaffirmed in the Electric Utility Restructuring Law. In this law the Legislature established a 30% renewables portfolio standard requirement to be met by energy providers, and it created a voluntary Research and Development fund to support the development of renewable energy applications. The SPO, as well as others, are actively participating in PUC proceedings to formulate the rules that will implement these provisions. Yet even with this support in the law there is concern for losing significant parts of the existing renewable supply, to say nothing of broadening the mix with new projects.

Much of the future for renewables in Maine will depend on the functioning of the new competitive market for electricity being created by the restructuring of the electric utility industry in Maine and in New England. In addition to meeting the demand in Maine for renewable sources, existing and new power facilities may be able to export excess generation to serve the regional market for "green" power if adequate transmission capacity is available. These market opportunities are vague at this time, and under certain conditions transmission out of state is full, thus leaving the future for renewable energy development very unsure at the present time.

Over the years several wind power projects have been proposed, with one achieving its initial regulatory approval. A new wind power project was recently announced, to be located on Redington Mountain in the western mountain area. Although far from becoming a reality, this proposal has raised anew environmental and land use conflict issues. This situation engendered a request to the SPO to prepare a study of appropriate sites for wind power development, which the SPO has pointed out would not be necessarily predictive of sites that might be potentially developed, but leaving the door open to additional studies and analysis to determine the appropriate sites and circumstances for supporting wind power development.

Issues

Energy stakeholders point out that there are structural impediments to renewable energy development and implementation that need to be identified and removed, such as certain sales taxes, net metering provisions, land use regulations, and other public policies that effect renewable projects. Clearly, they maintain, a renewed and greater emphasis on renewables is needed to stop backsliding on the progress that has already been realized.

Opportunities exist for the commercial application of new energy technology in several areas of renewable energy development. Supportive public policies and programs, such as investments in R&D, are needed to realize these opportunities.

The near term potential for wind power development raises anew concerns about the impacts of wind power projects and their appropriate siting. Work on studies to delineate acceptable wind power sites, and appropriate criteria for environmental and land use approvals are needed.

Actions

Public Policy Review. There is a need for a more organized public policy discussion of the value and role of renewable energy use in Maine's energy mix. Conflicting public interests in clean power, low cost electricity, and development of indigenous sources need to be discussed and prioritized in order to provide clear guidance to public decision makers and energy project developers about preferred energy choices. This discussion could occur under the umbrella of the proposed Energy Advisory Council, or within the energy planning activities of the State Planning Office.

Electric Restructuring. The future of existing biomass and hydro generation, as well as other potential renewable sources, is currently caught up in activities to restructure the electric utility industry. The various stakeholders and interests are engaged in PUC rule making and Legislative review and adoption of rules implementing the Electric Restructuring Law. The future for renewables in the new competitive environment will depend on market clearing prices for electricity and the ability of renewable sources to compete, of which decision makers seem to be quite aware.

Wind power development In the unorganized territories, where most of the wind power development potential exist, the Land Use Regulation Commission has in its Comprehensive Land Use Plan (CLUP) recognized the potential for wind power development in Mountain Resource Districts. The Commission in its recently adopted Plan set forth some general criteria to guide project review (visual impacts, soils impacts, wildlife impacts, and technical feasibility). The CLUP goes on to state that "the most reasonable approach to wind power siting issues may be to conduct a comprehensive study of where they are most and least appropriate". Wind power developers indicate that these criteria need to be further fleshed out in order to provide clearer direction and some sense of predictability, among other concerns. The missing element

may be the establishment of an appropriate energy priority for wind power development in light of State policies concerning the desirability of a balanced mix of energy sources from indigenous sources. The issue of conducting a wind power suitability study needs to be addressed in a collaborative effort involving the SPO, LURC, wind power developers, and those interested in the impacts of wind power development.

Solar Power The Federal Million Solar Roofs Program, which has no financial support for solar power installations, provides a policy initiative opportunity to promote solar energy applications. The Maine Department of Economic and Community Development, Energy Program Division is the State host and coordinator for this program.

Renewables R&D A new fund to support research and development of renewable energy technologies and applications is created by the Electric Utility Restructuring Law. This fund is capitalized by voluntary contributions from electricity customers. Although expected to be very modest, this fund and related grants program should be able to match and leverage other funds to support research efforts and related demonstration projects. The Fund is managed by the Public Utilities Commission, and the State Planning Office will operate the small grants program.

H. Energy Conservation and Low Income Assistance

Energy Conservation

Improved energy efficiency (using less energy to do the same job) and increased energy conservation (typically behavioral or other changes that results in lowering energy use) is critical to the future of Maine's economic prosperity and environmental health. A high level of energy efficiency will be essential to the ability of Maine businesses and industries to compete in their marketplaces, where savings in production cost may mean long term business success or failure. More efficient use of energy coupled with reduced consumption through conservation will lead to improved air quality, lower environmental compliance costs, reduced risk to water resources, extended energy supply, and improved economic performance.

Energy conservation programs and funding levels are declining as federal support is reduced and the slack is not picked up by the State. Energy conservation is a hard sell when consumers show no interest in investing in the equipment and practices designed to use energy more efficiently. For residential consumers the savings can be small and the payback periods can be long, even though they may recognize that energy conservation contributes to lessening air quality and global warming problems. For industrial and commercial firms energy conservation investments must show an acceptable rate-of-return in competing against other internal investments. A number of factors work to discourage energy conservation practices - a lack of interest/knowledge by energy consumers, more effort and cost than it is worth in savings on bills,

lack of capital financing or loans for initial purchase and installation, and a better rate of return from other investments.

The issue of regulated utility provided energy conservation programs is being reestablished in the process of restructuring the electric utility industry. The Electric Utility Restructuring law directs the PUC to establish a state wide energy conservation program to be funded by a wires charge and delivered by the regulated T&D wires companies. The thinking is that utilities have a well developed foundation of experience and position in the system to more efficiently deliver conservation services and programs. The PUC is currently promulgating rules to implement an electric energy conservation program. A number of implementation issues are being worked out through the rule making and Legislative approval process, with some questions (level of funding effort, program planning and evaluation, and efficient program management/operation) returning to the Legislature for further consideration and clarification. Parallel or complimentary conservation programs are not be considered for other energy types, such as natural gas which is also subject to public regulation.

Low Income Assistance

The principle of providing programs for low income energy assistance is well established in utility regulation and public assistance programs, although levels of effort change periodically in response to changes in funding sources and appropriations. Low income assistance delivery systems are in place through the programs of the Maine State Housing Authority and related Community Action Program agencies, which deliver housing, weatherization, and fuel bill assistance services. These service providers express concerns about being able to continue to meet energy management and assistance needs within an ever changing patchwork of federal and state programs and funding sources. They see the need for an all fuels program delivered through a statewide coordinated program, and funded by appropriate assessments and taxes on fuels, linked with a continuing role for federal LIHEAP and weatherization programs.

Low income assistance programs for electricity consumers will continue to be delivered through the regulated public utilities (T&D or "wires" companies) remaining after restructuring takes effect. In the electric utility restructuring law the Legislature directed the PUC to establish a single statewide program for low income assistance supported by a wires charge, which is ultimately paid by all electricity users. In addition to the low income program, some part of the wires charge assessed for energy conservation programs could be ear marked for electric energy conservation measures for low income customer that would result in reduced electricity usage and thus reduce the need for electric bill assistance.

Issues

The central issue is the need to reaffirm the primacy of energy efficiency and conservation as an essential element in meeting the State's energy, environmental, and economic objectives. Some feel that energy consumers have lost the sense of urgency to use energy wisely,

especially in a time of historically low oil prices and abundant supplies of electricity and natural gas. Some feel that there is a need to renew the emphasis the importance of energy conservation practices and programs, to re- invigorate public energy conservation education and assistance programs, and to improve coordination/collaborations among public and private programs. Putting a priority emphasis on energy conservation will lower public assistance costs, contribute to environmental solutions, help meet energy objectives, and contribute to improved business performance.

More can be done to link energy conservation needs with sources of financial support, especially in low income residential and small business programs. Much of this can be accomplished with better program coordination and planning.

In aggregate, The State of Maine is a fairly large energy consumer of electricity and heating oil in government facilities scattered around the state. There are many opportunities for the State to lead by example in its energy purchases and uses. State policy is already established for the purchase of energy efficient equipment, and the application of energy management techniques, but financial resources are often lacking to take advantage of cost effective opportunities.

Funding low income energy assistance programs is almost an annual crisis as Congress considers budget cuts and funding priorities, which highlights this tenuous funding for energy assistance programs. Some feel there is a need to more carefully study alternative sources of funding such as the State General Fund to support a state wide all fuels assistance program. This issue is not new, proposals to create general fund support based on some form of energy use taxation engender strong political concerns. Even in the most recent case, Legislative consideration of general fund support for electric customer assistance did not garner much support.

Outdated and ineffectual residential and commercial building energy codes need to be upgraded to national standards, with loop holes closed, and supported by an adequate educational/enforcement program. The Department of Economic and Community Development, Energy Division is responsible for administering and enforcing the State's existing energy building codes. A recent DOE grant to the Department and the State Planning Office will provide an opportunity to work with the building trades community to find ways to assure the highest possible energy practices are being incorporated into new and rebuilt buildings.

Actions

The first response to most energy related issues should be "Energy Conservation". There is a tremendous need to reestablish a state priority and emphasis on energy conservation and efficiency as a significant part of the solutions to pressing energy, environmental, and economic problems. The SPO and DECD should work together to improve their capacity to establish and carry out energy conservation planning and program delivery. This may include the creation of a State energy conservation program coordinators position. (During the preparation of this report

the Legislature enacted and the Governor signed a bill L.D. 1398 “An Act to Secure Environmental and Economic Benefits from Electric Utility Restructuring” This law creates an electricity conservation planning function within the State Planning Office to “guide the development of statewide conservation programs to be implemented by transmission and distribution utilities pursuant to” directives in the Electric Utility Restructuring Act. The law creates and funds an energy conservation planning position, with additional supporting program funds.)

In addition to the new responsibility to prepare an electric energy conservation plan, the SPO and DECD need to work together to promote energy conservation programs that augments the delivery of energy conservation and efficiency information and assistance by DECD to small businesses, residential home owners, and public and institutional building managers.

The SPO should work to improve energy program coordination and collaboration among the agencies by hosting an annual program review and planning session. Annual or periodic work sessions with MSHA and the CAP agencies would result in better policy development needed to support program development and delivery.

And finally, the 1992 Report of the Commission on Comprehensive Energy Planning contained many recommendations for actions needed to improve and expand energy conservation and efficiency. Some progress has been made on some items, such as energy rated homes, but most of these ideas still need to be worked on.

I. Maine Yankee

Background

The decommissioning of Maine Yankee is well underway with the recent selection of a contractor to dismantle and dispose of the plant. The decommissioning process is being closely monitored by both the State and Federal Agencies as well as antinuclear advocates. The Governor recently announced the establishment of an independent safety review team to review recent NRC decisions to relax safety requirements in light of the fact that the plant is not running. Safety is paramount to the State of Maine.

The big issue is what sources of electricity at what prices will be found or developed to replace Maine's share of the production capacity of Maine Yankee, which was 15% of the state's electricity supply. In recent years, replacement power for Maine Yankee has been purchased from available NEPOOL and Canadian sources. Over the last two summers peaks in demand have prompted the opening of closed plants, which increases the available capacity. In the longer run, with the development of pipeline natural gas supplies, most energy analysts see new combined cycle natural gas plants being built to meet state and regional electricity demands. Three natural gas fueled power plants are currently being constructed, with combined capacity of over a thousand megawatts, which will more than replace the capacity lost with the closing of

Maine Yankee. Many additional projects announced in Maine and in the New England region show that natural gas will be the fuel of choice for future electricity generation.

Indigenous renewables will continue to play a role, given the renewables portfolio requirement in the electric utility restructuring law. The balance between new more efficient natural gas fired power plants Vs established generation facilities, including renewables, will remain to be seen in a newly restructured electric utility industry.

V. SUMMARY of ENERGY ACTIONS

A. Coordinated Energy Policy and Planning - Energy Advisory Council

An Energy Advisory Council was proposed that could provide the forum to discuss current energy issues, and to act in an advisory role in the formulation of appropriate policy and recommendations in such areas as the development and conduct of energy education and conservation programs, in the development of positions on energy facility siting, contributing to the discussion of the environmental consequences of energy decisions, and providing an advisory role for plans and programs to implement new electric energy conservation and R&D programs.

The exact role and make-up of an Energy Advisory Council needs to be further developed by those who would be active in its functions. To do this the SPO will organize and conduct stakeholder discussion sessions leading to a group decision to proceed or not with the necessary legislation or executive order that might be needed to duly constitute and enable an advisory council.

B. Energy Education for Conservation and Consumer Choice

One idea is to establish an energy education coordinator within DECD Energy Division, supported by the annual SEP grant. This position could also provide some staff support for an Energy Council. The SPO could work with DECD and appropriate agency representatives to further discuss this idea, and put together a proposal for further consideration.

C. Electric Utility Restructuring

As the process of restructuring unfolds, the SPO will continue to monitor activities and take an active role in critical issues as they arise. The Office will continue to participate in rule making and related discussions concerning energy efficiency programs, and the renewables portfolio requirement.

D. Natural Gas Development

The SPO natural gas team continues to monitor and support ideas and efforts to take advantage of opportunities to access the new gas pipelines. SPO will continue to work with DECD and local people to "tap" into the new natural gas supply.

At the same time, the SPO community assistance team will work to provide technical assistance to municipalities and regions as needed to review and update community plans and programs in response to induced development.

The SPO will work with the DECD's Energy Division, the Public Advocate, and PUC staff to provide appropriate energy information in response to consumer inquiries.

E. Energy and Environment - the new energy priority

Support and expand public energy and environmental educational programs, such as DEP's Sustainable Communities Programs, that provide objective and accurate information about the relationships between energy use and environmental problems.

Support and augment existing programs such as DEP's Pollution Prevention Program, the Maine Chamber and Business Alliance's Energy and Environment Program, the services of the Manufacturing Extension Partnership (MEP) and related partners, and the DECD assistance programs for small businesses, that help businesses and industries to use energy more wisely, reduce wastes, and improve manufacturing processes.

The SPO should foster a discussion of how to imbed "life cycle analysis" into energy related environmental and regulatory decisions, as a method to account for environmental externalities and social benefits associated with energy development, transportation and use.

The SPO should continue to consider the need for and functions of an energy facilities siting board or coordinating council as a means to assure timely review and approval of energy projects of statewide or regional significance, and to assure the process adequately addresses the need for the proposed facility.

F. Energy and Transportation - single fuel dependency, alternative fuels, and conservation/efficiency

The state should take strong coordinated action to fully gain the energy conservation and efficiency benefits that can accrue through the implementation of MDOT transportation plans, strategies, and programs. MDOT plans integrate energy conservation and efficiency into programs designed to achieve environmental goals, improved access and mobility (through efficient movement of people and goods and in inter modal and alternative transportation systems and technologies), and improved systems operational efficiency.

Implementation of MDOT 20 year Plan and related plans to improve access and mobility through improved traffic flow in congested areas, and additional traffic capacity will reduce fuel consumption and improve fuel use efficiency. In addition, efforts to manage transportation

demands with such programs as Park and Ride, Van pool and Ride share programs; and alternative fueled vehicle programs on fixed route and on-demand response transit services will help to reduce energy demands and improve energy efficiency. New opportunities under TEA 21 initiatives and programs will provide opportunities to further encourage and support alternative modes of transport, alternative fuel vehicles, and improved transportation system functioning.

Support the Clean Cities, Alternative fueled vehicle programs as a way to broaden the transportation fuel mix and encourage new modes of transportation.

G. Expanding the Contribution of Renewables

Public Policy Review. There is a need for a more organized public policy discussion of the value and role of renewable energy use in Maine's energy mix. Conflicting public interests in clean power, low cost electricity, and development of indigenous sources need to be discussed and prioritized in order to provide clear guidance to public decision makers and energy project developers about preferred energy choices. This discussion could occur under the umbrella of the proposed Energy Advisory Council, or within the energy planning activities of the State Planning Office.

Electric Restructuring. The future of existing biomass and hydro generation, as well as other potential renewable sources, is currently caught up in activities to restructure the electric utility industry. The various stakeholders and interests are engaged in PUC rule making and Legislative review and adoption of rules implementing the Electric Restructuring Law. The future for renewables in the new competitive environment will depend on market clearing prices for electricity and the ability of renewable sources to compete, of which decision makers seem to be quite aware.

Wind power development In the unorganized territories, where most of the wind power development potential exist, the Land Use Regulation Commission has in its Comprehensive Land Use Plan (CLUP) recognized the potential for wind power development in Mountain Resource Districts. The Commission in its recently adopted Plan set forth some general criteria to guide project review (visual impacts, soils impacts, wildlife impacts, and technical feasibility). The CLUP goes on to state that "the most reasonable approach to wind power siting issues may be to conduct a comprehensive study of where they are most and least appropriate". Wind power developers indicate that these criteria need to be further fleshed out in order to provide clearer direction and some sense of predictability, among other concerns. The missing element may be the establishment of an appropriate energy priority for wind power development in light of State policies concerning the desirability of a balanced mix of energy sources from indigenous sources. The issue of conducting a wind power suitability study needs to be addressed in a collaborative effort involving the SPO, LURC, wind power developers, and those interested in the impacts of wind power development.

Solar Power The Federal Million Solar Roofs Program, which has no financial support for solar power installations, provides a policy initiative opportunity to promote solar energy

applications. The Maine Department of Economic and Community Development, Energy Program Division is the State host and coordinator for this program.

Renewables R&D A new fund to support research and development of renewable energy technologies and applications is created by the Electric Utility Restructuring Law. This fund is capitalized by voluntary contributions from electricity customers. Although expected to be very modest, this fund and related grants program should be able to match and leverage other funds to support research efforts and related demonstration projects. The Fund is managed by the Public Utilities Commission, and the State Planning Office will operate the small grants program.

H. Energy Conservation and Low Income Assistance

The first response to most energy related issues should be "Energy Conservation". There is a tremendous need to reestablish a state priority and emphasis on energy conservation and efficiency as a significant part of the solutions to pressing energy, environmental, and economic problems. The SPO and DECD should work together to improve their capacity to establish and carry out energy conservation planning and program delivery. This may include the creation of a State energy conservation program coordinators position. (During the preparation of this report the Legislature enacted and the Governor signed a bill L.D. 1398 "An Act to Secure Environmental and Economic Benefits from Electric Utility Restructuring" This law creates an electricity conservation planning function within the State Planning Office to "guide the development of statewide conservation programs to be implemented by transmission and distribution utilities pursuant to" directives in the Electric Utility Restructuring Act. The law creates and funds an energy conservation planning position, with additional supporting program funds.)

In addition to the new responsibility to prepare an electric energy conservation plan, the SPO and DECD need to work together to promote energy conservation programs that augments the delivery of energy conservation and efficiency information and assistance by DECD to small businesses, residential home owners, and public and institutional building managers.

The SPO should work to improve energy program coordination and collaboration among the agencies by hosting an annual program review and planning session. Annual or periodic work sessions with MSHA and the CAP agencies would result in better policy development needed to support program development and delivery.

And finally, the 1992 Report of the Commission on Comprehensive Energy Planning contained many recommendations for actions needed to improve and expand energy conservation and efficiency. Some progress has been made on some items, such as energy rated homes, but most of these ideas still need to be worked on.