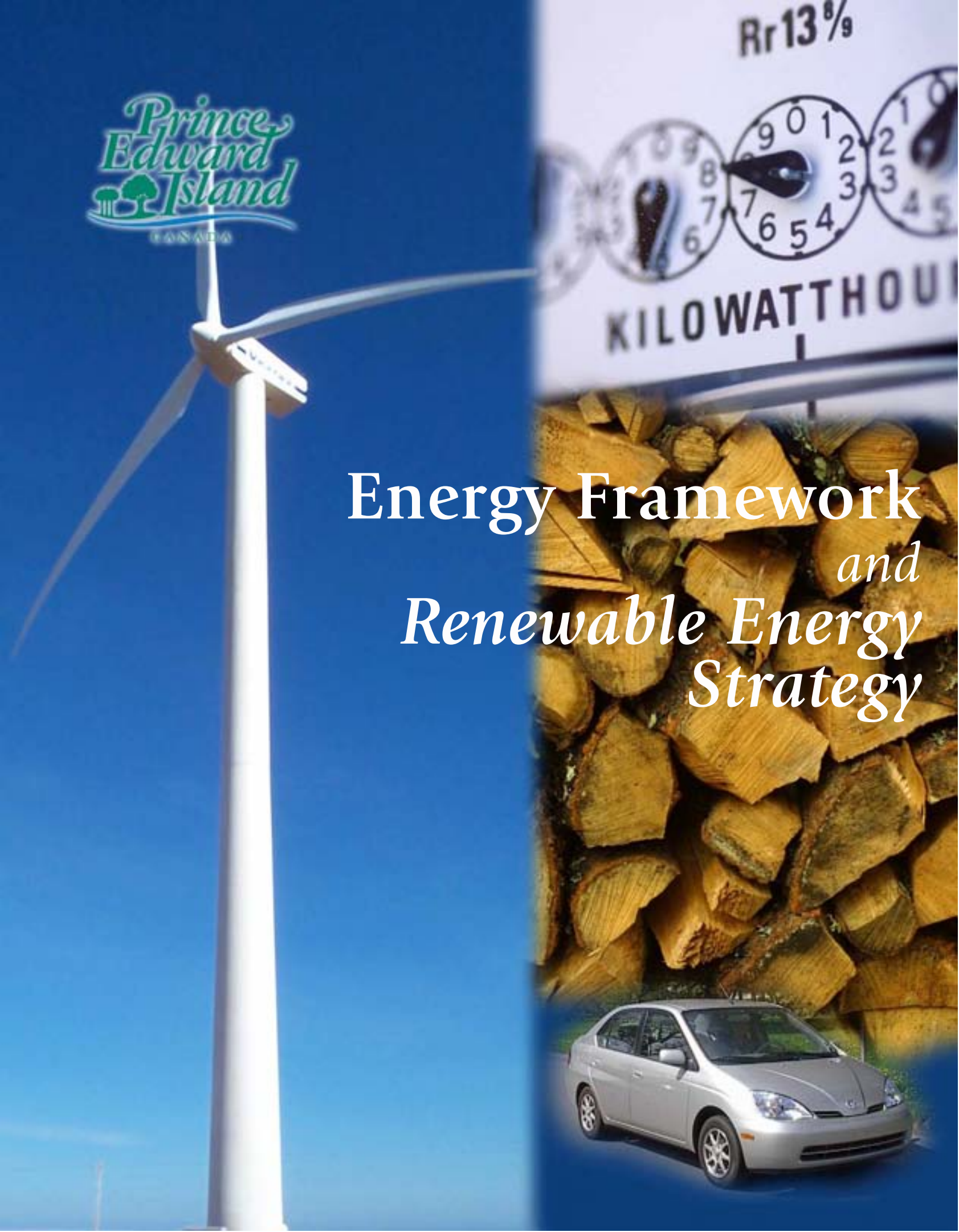
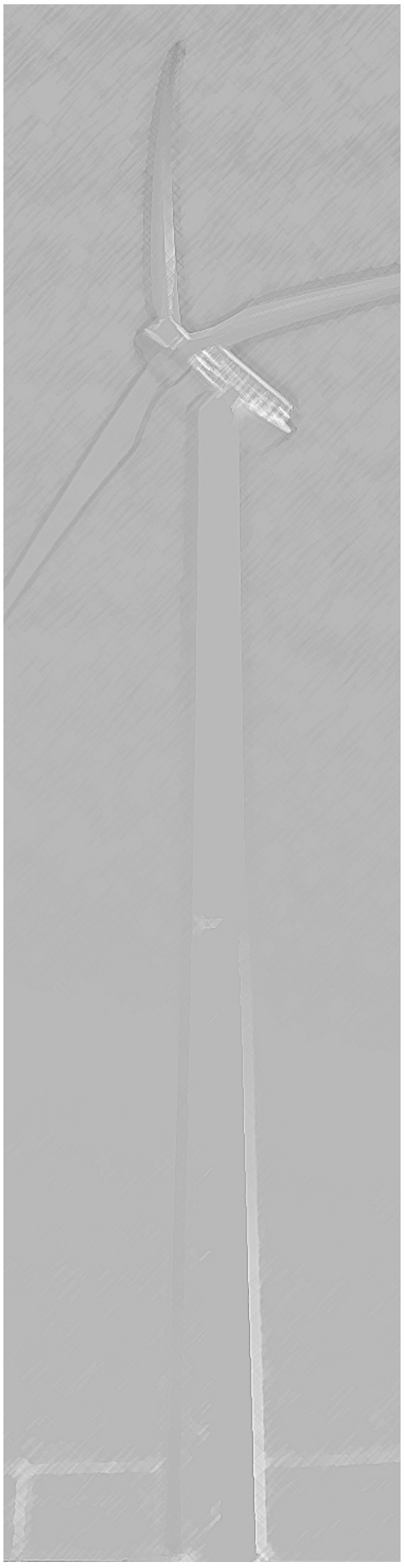


Energy Framework *and* *Renewable Energy Strategy*



Prince Edward Island

Energy Framework and *Renewable Energy Strategy*

Prince Edward Island
Department of
Environment and Energy
June 2004

Shaping Prince Edward Island's Energy Future

Whether it is in the form of fuel to heat our homes and businesses, produce electricity, or power the transportation sector, energy production and use has a significant impact on the economy and environment in Prince Edward Island. Imported fossil fuels, mainly light oil and automotive fuel, supply approximately 80 per cent of total energy needs in the province. Reliance on these fuels has, and will continue, to place the Island in a precarious position, particularly in terms of price stability. At the same time, consuming fossil fuels has serious environmental impacts because of the release of harmful air pollutants including greenhouse gases which cause climate change.

Today, changes in the way we produce and use energy present new opportunities to shape Prince Edward Island's energy future with a Made in PEI Energy Solution. Renewable energy has the potential to play an important role in that solution. This document sets out the strategy to enhance the role of renewables in PEI's energy mix, and the framework around which we will build a comprehensive provincial energy strategy in the months ahead.

Renewable energy resources currently supply approximately seven per cent of PEI's total energy requirements. Most of this energy is from biomass, primarily firewood used to heat Island homes. The other growing component is wind which now supplies five per cent of the province's electricity; although, that accounts for only 0.5 per cent of our total energy requirements.

Wind energy is the renewable resource that has the most promise for Prince Edward Island. Wind power has the potential to stabilize future electricity prices and provide a measure of energy security. As a result, it features prominently in the Province's Renewable Energy Strategy. However, the strategy also capitalizes on other opportunities. Renewable biofuels, such as locally produced ethanol and biodiesel have potential to play a role in meeting future energy needs in the transportation sector. The advancement of hydrogen technology has the ability to radically change the manner in which future generations develop and manage energy resources. Prince Edward Island could play an important role in research, development and demonstration of hydrogen technologies in concert with wind and solar power generators. Other components of the Renewable Energy Strategy are demand side management which promotes efficient energy use, encouraging the adoption of energy codes for new building construction, and exploring options for public transportation.

It is important to note that both the Energy Framework and Renewable Energy Strategy are works in progress. They include some areas of immediate action; but they also take a longer term approach and identify initiatives that we should be pursuing over the next decade. For instance, we know that an ethanol production facility serving the PEI market is not feasible today, but we also know it is an idea worthy of further exploration. Renewable energy is a constantly evolving field. We must be ready to adapt as technologies and opportunities change.

The Renewable Energy Strategy is but one component of the Prince Edward Island Energy Framework to address future energy demand. Over the next few months, the outcome of work on two fronts will influence how that framework evolves. As I mentioned at the outset, there is a strong link between energy consumption and climate change, so Prince Edward Island's plans to address climate change could have a significant impact on the province's overall energy strategy. During the spring 2004 session of the Legislative Assembly, a Special Committee on Climate Change was struck to seek input from Islanders and make recommendations on a Climate Change Strategy for Prince Edward Island. The other factor at play is the work of the Atlantic Energy Ministers' Forum which is identifying opportunities for regional cooperation within the energy sector including cooperation on climate change, renewables, electrical generation, and oil and natural gas exploration and development. Currently, the utilities and Governments are working on a plan to address long-term energy supply needs within the region. Once again, the outcome of this work will influence the direction of the Prince Edward Island Energy Strategy. We will, therefore, be in a much better position to finalize this overall strategy in 2005.

In closing, I want to emphasize that the Renewable Energy Strategy is part of the broader Government initiative to create a sustainable future for the Province of Prince Edward Island. By incorporating renewable energy into the provincial energy mix, we not only achieve a greater level of energy security and self-sufficiency, we protect our environment for future generations of Islanders to enjoy.

Jamie Ballem
Minister of Environment and Energy

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PEI Energy Framework

To ensure that residents of Prince Edward Island have access to secure and competitively priced energy supplies, which are acquired and consumed in an efficient and environmentally responsible manner, it is necessary to formulate a comprehensive provincial energy strategy. This requires response to immediate needs of price and security, but must also include a vision of what is the optimum path for meeting future energy demands. As with most strategies, it must be designed with the flexibility to respond to changes in fuel markets and technological advancements. Political decisions, such as the ratification of the Kyoto Accord by the Government of Canada, will undoubtedly impact how, and at what price, we consume fossil fuels.

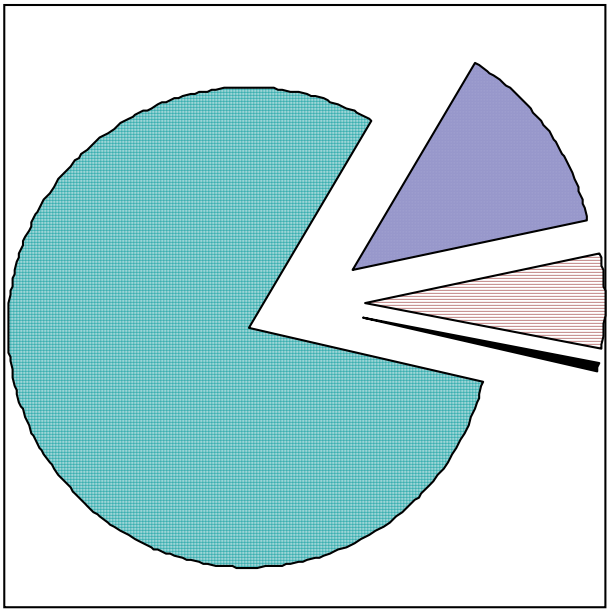
Regardless of future commodity prices and other unforseen events, it is expected that the development of renewable energy resources will play an important role in the provincial energy strategy. In recent years, the Prince Edward Island Energy Corporation has installed 10.56 megawatts of wind power that meets four per cent of the Island's electricity needs. Other wind projects are in the conceptual stage. Evaluation of developing alternative fuel facilities to produce ethanol for the transportation sector has begun. The Province is exploring its possible role in hydrogen fuel development - perhaps, the fuel of the future. Biomass and solar technologies, already deployed within the province, may play a larger role in meeting future thermal, and possibly electrical, demands. Although the future is not fully known, it would appear that renewables will play a major role in PEI's energy future. This Renewable Energy Strategy will help define that role.

The Current Energy Situation

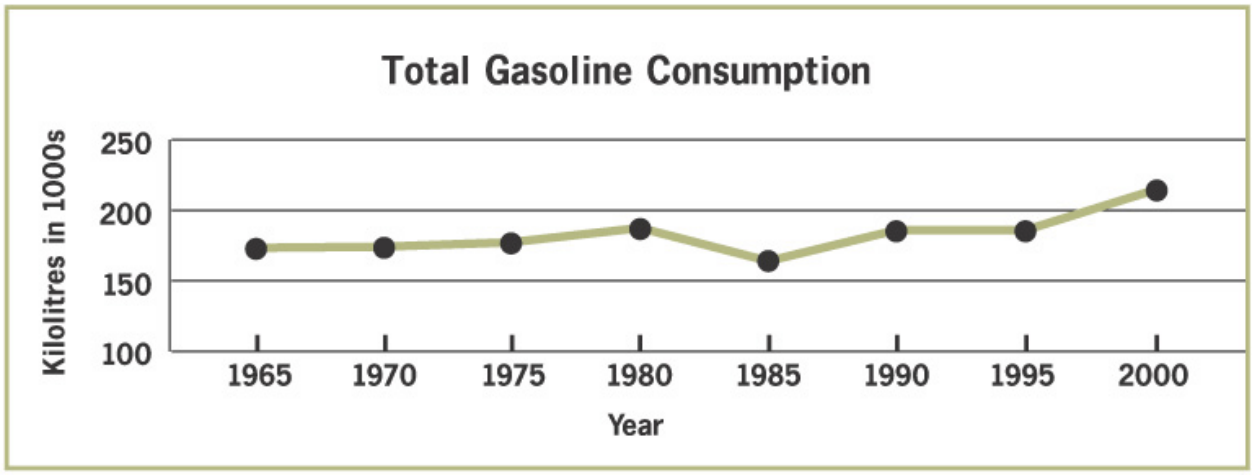
Presently, Prince Edward Island is very dependant on imported oil supplies to satisfy its energy requirements. In fact, 80 per cent of total energy demand is met by petroleum products, with the transportation sector completely reliant on this fuel source. Most of the province's thermal requirements – heating homes, commercial buildings and powering industrial operations –

are met with light and heavy oil or propane. Electricity accounts for approximately 13 per cent of the Island's energy needs. Since the early 1980s, virtually all of this power has been derived from off-Island generation and transmitted across the Northumberland Strait via a cable connection with the New Brunswick Power Corporation. Other than the recent wind power projects, which comprise 0.5 per cent of total energy supply, on-Island electrical generation requires petroleum. Biomass, an indigenous product that includes cordwood, sawmill residue and municipal garbage, is responsible for the remaining 6.5 per cent of PEI's energy mix.

Current PEI Energy Mix

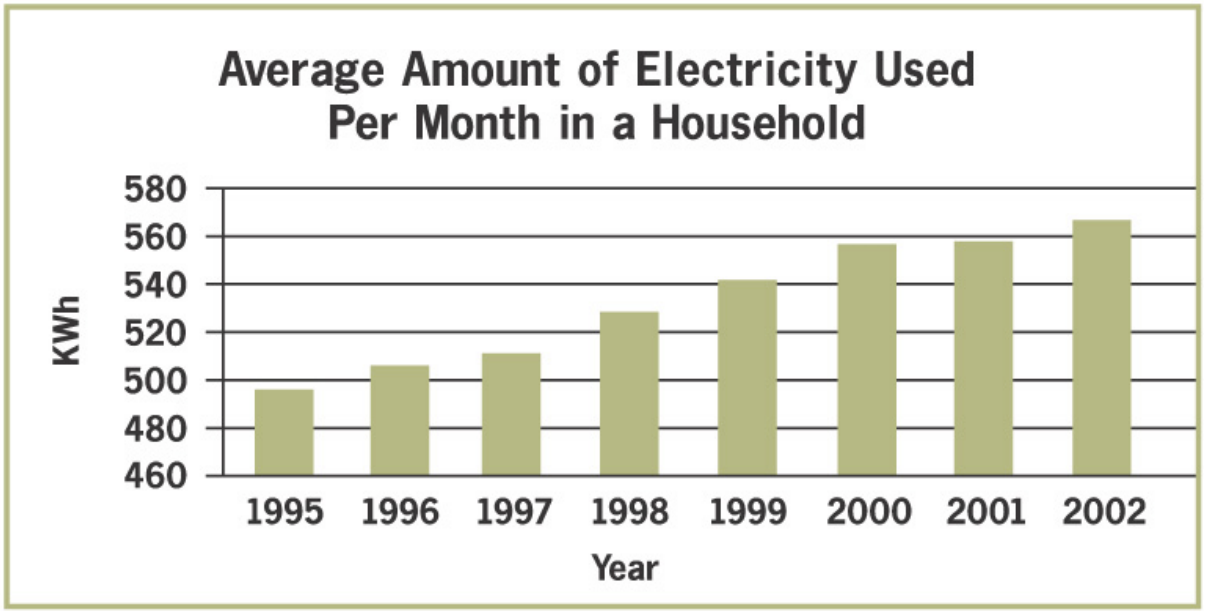


For the past several years, the prices paid by Islanders for petroleum products have been competitive with those of neighboring provinces. However, these fuels have always been subject to rapidly fluctuating prices that are set by the international oil market. Constrictions in oil supply from the major oil producing regions of the world have largely been the cause of these price peaks. But as the world's thirst for oil increases, particularly from emerging economies such as China, it is questionable if known resources can meet additional demand, which will lead to increased pricing. Locally, the transportation sector has shown a constant rise in demand for gasoline since the mid 1980s, mainly due to an increase in private passenger vehicles. Without a public transportation network and with increasing numbers of vehicles on Island highways, this trend is expected to continue.



The amount of gasoline consumed in Prince Edward Island increased 24 per cent from 1965 to 2000. (Source: *Prince Edward Island State of the Environment Report*; data source, Statistics Canada.)

Electricity is a vital component to our modern lifestyle. Its use is widespread in every sector of our economy. Historically, PEI has endured some of the highest electricity rates in Canada, mainly because of the reliance on fossil fuels. Nonetheless, Islander's have continually increased their requirement for electricity. This is particularly demonstrated in the residential sector where the average amount of electricity used per month in PEI households increased 14 per cent from 1995 to 2002. As with petroleum, there are growing signs that the demand for electricity will outstrip supply in Maritime Canada without construction of additional generating capacity.



Demand for electricity has risen steadily in recent years. (Source: *Prince Edward Island State of the Environment Report*; data source, Maritime Electric.)

The Vision for PEI's Energy Future

A measure of self-sufficiency and price stability are attainable by incorporating locally-acquired, renewable energy into the provincial energy mix. To date, indigenous energy resources have been limited to the renewable supplies of biomass and wind power. To satisfy provincial demand, it is expected that renewables will comprise a greater segment of the energy mix. An ideal solution would be to meet all of the province's electrical needs, over 200 megawatts, with our wind resource. Mindful of the intermittent nature of this resource, one alternative is the advancement of hydrogen fuel technology that stores power when the wind does not blow. Other backstopping fuel sources such as natural gas will be explored. Nonetheless, it is possible for Prince Edward Island to increase its electrical generation capacity by wind energy beyond 15 per cent by 2010, to 100 per cent within the next 10 years. Other favourable solutions could be accessing competitively-priced hydro power and other conventional fuels from mainland sources in the region. This is highly dependant on the decisions of other governments.

Given that the transportation sector in Prince Edward Island consumes approximately 40 per cent of the province's energy supply, transportation initiatives are another key means of enhancing the role of renewables in the energy mix. Pubic transportation and alternate fuels such as ethanol and e-diesel are possible solutions to reduce the dependence of fossil fuels in the transportation sector. As well, the use of hybrid fuel technology is expected to rise significantly, particularly in response to higher gasoline prices and the desire to improve air quality. Several automotive manufacturers, including General Motors, Ford, Honda and Toyota, are already marketing hybrid fuel vehicles; and the number of these vehicles on the road is expected to increase in the near future.

While the theme of independence and sustainable development are expressed throughout this energy framework, Prince Edward Island must not develop its energy future without an awareness and understanding of outside energy supplies and the ambitions of neighbouring provinces. Accessing other possible electricity supplies in the region, both renewable and non-renewable, will require increased interconnection capacity to the mainland. The Province is in the process of determining the most cost-effective manner of upgrading the cable that supplies power from New Brunswick. Further, Prince Edward Island has been collaboratively working through the Atlantic Energy Ministers' Forum to solve common energy problems in the region. Of particular interest to Atlantic Energy Ministers is formulating a plan, in concert with the region's electrical utilities, to meet projected shortfalls in electrical capacity. Most utilities in the region face a shortfall in supply by 2010.

Meeting all of PEI's electrical needs with wind power would be an ideal solution to enhancing the role of renewables in the energy mix.

Renewable fuels will be a part of an Atlantic energy solution and PEI may be the holder of much of the region's wind capacity assets. The other Atlantic Provinces are better positioned to pursue hydroelectric, biomass and other renewable energy options. Prince Edward Island may wish to invest in these assets to provide greater energy security and diversity of supply. Regardless of the final plans, coordination and collaboration in planning of both renewable and non-renewable generation capacity by the Atlantic Provinces will better meet the needs of the region's energy consumers.

Promoting renewable energy also meets the Province's goals for sustainable development and will address many environmental issues, particularly climate change. Most of the man-made sources of greenhouse gases are the result of extracting, transporting and consuming fossil fuels such as coal, natural gas and oil. As renewable supplies are either non-emitting or low-emitting sources of energy, they are positive responses to meeting future limitations for greenhouse gases and other harmful air pollutants.

Promoting renewable energy will also address many environmental issues, particularly climate change which threatens the PEI coastline.

Adopting specific measures to reduce greenhouse gases is another significant component of the provincial energy strategy. In November 2003, Prince Edward Island became the first province to sign a Climate Change Memorandum of Understanding with the Government of Canada. The MOU provides a collaborative structure for the two governments to:

- develop renewable energy technologies including wind energy and wind/hydrogen systems;
- share in the promotion and implementation of energy efficiency practices;
- promote various individual climate change actions;
- develop a climate change adaptation strategy; and
- reduce greenhouse gases within the agriculture sector.

Approximately a year prior to the signing of the PEI Memorandum of Understanding, Canada ratified the Kyoto Accord which will require this country to reduce greenhouse gases by six per cent under 1990 levels by the years 2008 to 2012. The assignment of reductions is still being discussed but it may be expected that all provinces, territories, and indeed, all Canadians will be required to do their share to decrease greenhouse gas emissions.

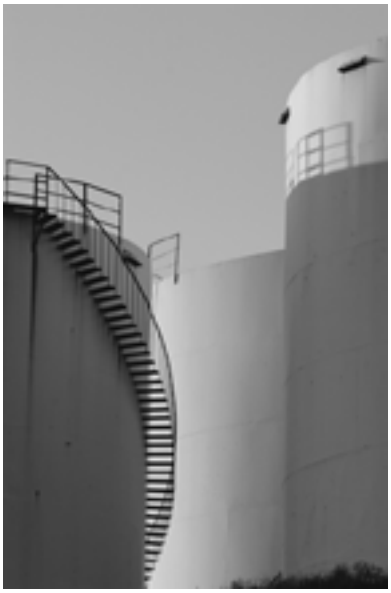
Recently, a full-time Climate Change Co-ordinator was hired through the PEI Energy Corporation and the PEI Department of Environment and Energy. The assignment of a dedicated position within the provincial government will provide greater focus to this issue and coordinate the delivery of emission-reducing initiatives. To provide a forum for public input on PEI's Climate Change Strategy, a Special Committee of the Legislative Assembly will be holding consultation sessions later this year. The outcomes of these sessions will also help finalize the Prince Edward Island Energy Strategy.

Renewable Energy Strategy

In June 2003, the PEI Energy Corporation released the Draft PEI Renewable Energy Strategy and hosted six public consultation sessions across the Island. The intent of these meetings was to explain the current energy situation in Prince Edward Island and seek input as to how the Province should incorporate renewable sources into the future energy mix. The results of the sessions and comments received on the Draft PEI Renewable Energy Strategy have been incorporated into this document.

Participants at last year's public consultation sessions were informed that Prince Edward Island is the only province in Canada without substantial resources of hydroelectric power, fossil fuels or nuclear energy. This has required the province to import virtually all its sources of energy. In fact, imported petroleum fuels account for almost 80 per cent of the Island's energy needs. The transportation sector is totally dependent on petroleum products and a large component of the Island's thermal demands are being met by this fuel type. However, the province has excellent wind resource potential that could generate at least 200 megawatts of electricity, and the agricultural sector may be a source of producing the necessary feed stocks for a biofuel industry to meet some of the thermal and transportation requirements.

Electricity accounts for another 13 per cent of the energy mix. Until the recent installation of wind capacity at North Cape, electricity generated in Prince Edward Island was obtained from petroleum. Generally, on-Island generation with petroleum is the most expensive alternative for the electrical utility. In recent years, most of the province's electricity has been obtained from off-Island generation that is



Imported petroleum fuels account for almost 80 per cent of the Island's energy needs.

transmitted via two submarine cables connecting with New Brunswick. In 2004, it is expected that 94 per cent of PEI's electricity will be obtained from generating facilities in New Brunswick and Nova Scotia. Much of this generating capacity is with fossil fuels. In addition to the issue of price stability, there is some question as to the ability of the region's generation capacity to meet future needs. Of more immediate concern to Islanders is a requirement for Maritime Electric Company Ltd. to acquire 50 megawatts of new generating capacity by late 2005. Options to meet this capacity shortfall include the construction of on-Island generation (with light fuel oil) or the construction of additional interconnection (cable) capacity and the purchase of capacity from mainland or New England utilities.

Most participants at the public consultation sessions understood that a long-term energy strategy requires the appropriate mix of conventional and renewable sources. In the short term, PEI will continue to be heavily reliant on imported petroleum fuels for thermal and transportation requirements; and electricity will be mainly generated from off-Island facilities with mostly non-renewable fuels. But, there are several opportunities to integrate renewable energy in the provincial fuel mix in the near and foreseeable future.

Wind power currently provides five per cent of PEI's electricity. Above, the North Cape substation frames one of the turbines at the Atlantic Wind Test Site.

It was particularly noted that wind energy was the renewable resource that has the most promise for PEI, given the favourable wind regime of many areas of the province. This is largely due to the fact that the cost of electricity from traditional, non-renewable sources will continue to escalate while power produced from renewable resources, particularly wind energy, has been steadily reducing in price. While this form of energy is still slightly more expensive than conventional fuels, the gap is closing. Approximately 75 per cent of a wind farm's cost is related to its initial capital investment. Obviously, the cost of fuel (the wind) will remain unchanged at zero into the future. Wind power thus has the potential to stabilize future electricity prices and provide a measure of energy security.

There was general agreement at the public consultation sessions that the Prince Edward Island Energy Corporation should continue its position as the leading agency to develop wind energy in PEI. However, support was registered for allowing private interests, including community-based initiatives and individual homeowners, the opportunity to invest in wind power. The role of the Energy Corporation may, therefore, evolve to become one of regulator, evaluator of the technical merits of proposals, or broker – buying power from wind facilities for the utilities.

A community that has expressed a desire to partner with the Province to increase PEI's wind generation capacity is the First Nations peoples of Prince Edward Island. Through the Mi'kmaq Confederacy of PEI, which represents the Island's Mi'kmaq bands, the Province anticipates signing a Memorandum of Understanding that defines aboriginal involvement in future wind energy development. Being a community which is strongly connected to the land and the environment, investing in renewable energy projects is very appealing to Prince Edward Island's First Nations people.

The notion of a Renewable Portfolio Standard (RPS) for electricity supply was proposed during the public consultations. An RPS defines the percentage of energy that will be accessed from renewable resources. Most respondents agreed that setting an electricity RPS of 10 to 15 per cent by 2010 was a worthwhile and an attainable goal.

There was also general agreement with the Province's desire to access natural gas via a mainline lateral with the Maritimes & Northeast Pipelines system. Prince Edward Island continues to pursue this energy source. However, a decline in stated natural gas reserve levels from the Sable Island offshore development, coupled with Encana Corporation's decision to defer development plans for Deep Panuke, has cast uncertainty for gas supplies in the region. A further impediment is the sharp increase in the cost of natural gas. Availability of Liquified Natural Gas (LNG) and Compressed Natural Gas (CNG), or commercial discoveries of PEI gas, may address any shortfalls in the Scotian offshore. Nevertheless, it is becoming more unlikely that natural gas will be available to the province to meet transportation, heating or electricity supplies prior to 2009 due to the lengthy time it takes to design and construct these projects.

As noted by many session participants, conservation and energy efficiency are immediate responses to addressing energy costs and enabling sustainable development. This strategy also includes initiatives to meet those objectives.

Renewable Energy in Prince Edward Island

Prior to the widespread use of hydrocarbon fuels, early inhabitants were highly dependant on renewable energy in the form of wood biomass. Firewood provided the thermal energy for heating, cooking and many industrial applications. Wood fuel is still the primary or backup source of heat energy for many Island homes and this situation is expected to remain well into the future.

Other forms of biomass, such as municipal garbage and sawmill residue, are consumed at PEI Energy Systems' facility in Charlottetown which supplies thermal energy via a hot water district heating system that encompasses a large area of the city. Originally designed and operated by the PEI Energy Corporation, the PEI Energy Systems' facility has continued to invest in an infrastructure that meets the space heating requirements of approximately 80 customers who control more than 120 commercial, residential and institutional buildings in the city. The Charlottetown District Heating System remains as one of the province's and Atlantic Canada's prime examples of an economical and efficient use of renewable energy. Noting this success, there may be other possible applications of district heating with biomass in Prince Edward Island.

The transportation sector in Prince Edward Island consumes approximately 40 per cent of the province's energy supply. Automotive gasoline and diesel power cars, trucks, boats and other vehicles that support our economy and lifestyle. All this fuel must be imported which represents a tremendous exodus of local capital. Additionally, these fossil fuels are having negative impacts in terms of local air pollution and the release of greenhouse gas emissions. Replacing even a fraction of the volumes of gasoline and diesel with locally produced biofuels may provide economic and environmental opportunities.

The Charlottetown District Heating System is a prime example of efficient use of renewable energy.

Incorporation of hybrid fuel vehicles, such as the model that was purchased by the PEI Energy Corporation and the Department of Environment and Energy, into the entire provincial government fleet would respond to climate change and other environmental concerns. It would also increase the market for these vehicles in Prince Edward Island and serve as a "leading by example" initiative. The Province is pursuing this potential opportunity with automotive manufacturers. In addition, Government is already providing a tax incentive to encourage the purchase of hybrid fuel vehicles in PEI. The 2004 Provincial Budget included a provincial sales tax rebate of up to $3,000 on hybrid motor vehicles.

Government purchased one of the first hybrid gas-electric vehicles in PEI. On average, it has twice the fuel efficiency of a comparably sized sedan.

Early electrification projects that occurred in PEI were often the result of small hydro projects that dammed Island streams and rivers. These installations have long since been dismantled. There is limited potential to generate electricity with hydro power on the Island given that the hydraulic resource consists of few rivers that have relatively small watersheds. There are also environmental issues, particularly possible impacts on migrating aquatic species, that must be considered prior to this form of energy development being pursued.

Implementing considerations for solar gain, commonly referred to as passive solar, into the design of residential, commercial and institutional buildings, can significantly reduce lighting needs and impact space heating and cooling costs. Many Island buildings display these features. Installation of solar panels is a method to capture the sun's energy for heating domestic hot water.

During the 1980s, PEI had the highest per capita number of residential solar domestic water heating installations in Canada. Another application of solar technology is converting the sun's energy to electricity by photovoltaic cells. Although the price of electricity produced by this method continues to decline and several off-grid applications may be cited, it is still prohibitively expensive to generate large quantities of power with photovoltaic equipment.

With the completion of Phase II of the PEI Energy Corporation's Wind Farm at North Cape and construction of North America's largest wind turbine, the V-90, by Aeolus PEI, the province has a generating capacity of 13.56 megawatts from wind power. This will enable Islanders to access approximately five per cent of their electricity from the renewable powers of the wind.

North Cape Wind Farm

The Role of Renewable Energy in the Province's Energy Policy

Prince Edward Island has defined an energy policy which strives to provide its citizens with dependable and affordable energy which does not compromise environmental quality. This energy policy is based on the six energy goals of:

- Ensuring Security of Supply
- Improving Price Equity for Citizens and Businesses
- Encouraging Diversity of Supply
- Achieving Minimal Environmental Impact
- Promoting Efficient Energy Use
- Supporting Economic Development

Pursuing a path of renewable energy development in the province meets several of these goals. Obviously, renewable energy sources that are developed locally provide a measure of security, but also may provide a price hedge against unforseen international events that influence costs of imported hydrocarbons. Historical evidence reveals that the availability and price of petroleum products is closely related to events in these oil-producing countries. Half of the world's oil supply is obtained from Middle East countries that are often embroiled in political strife, and the highly fluctuating price of oil is the result.

Diversity of supply, created by developing renewable energy sources, provides a similar buffer against steep price escalations of traditional fuels, particularly oil. It may also lead to improving price equity for consumers. Presently, wind power has achieved competitiveness with some non-renewable energy fuels for electrical generation. In time, other renewable sources may join wind power to serve as worthy competitors to petroleum fuels, and thus, be able to stabilize overall energy prices.

Renewable energy is typically less harmful to the environment than non-renewable sources, particularly fossil fuels. An especially undesirable effect of burning fossil fuels is the emissions that result. These emissions include precursors to acid rain and smog. Climate change, often cited as the greatest environmental risk to the planet, is directly linked to the use of hydrocarbon fuels and the resulting release of carbon dioxide and other greenhouse gases. Wind power and solar technology are zero emitters; and energy systems that utilize biomass and biofuels are considered to be effective in reducing greenhouse gases. This is because carbon dioxide, the main greenhouse gas, is recaptured in photosynthesis during future crop rotations.

The goal of increased economic development is also achievable by incorporating a substantial component of renewables in the province's energy mix. Energy created on-Island will translate into jobs that are required to operate and maintain energy-producing facilities in PEI.

Perhaps, more importantly, there is an opportunity to develop and demonstrate renewable energy technology for export to other regions of Canada and around the world. There is also the opportunity to locally manufacture the components and mechanisms that are used in renewable energy systems.

Increasing the percentage of renewable energy in the provincial supply mix has the opportunity to positively impact all the above goals, despite the fact that energy supplies from traditional sources, such as fossil fuels, have been the lowest cost option. The consensus of the public consultation sessions was that Prince Edward Island should pursue an energy future that includes significant supplies of renewable energy.

Renewable Portfolio Standard (RPS)

A Renewable Portfolio Standard or RPS defines the percentage of energy that will be accessed by a jurisdiction from renewable sources. Typically, renewable energy is defined as energy that can be naturally recycled or replenished within a relatively short period of time. Wind, solar, hydro and biomass are all examples of renewable energy sources.

The optimum mix of energy sources, both renewable and non-renewable, is required to balance sustainability, support development of renewable energy sources, and maintain secure production. If the standard is too low, avoidable environmental contamination may result. However, renewable energy is often more expensive. In the case of wind, it is also intermittent and, therefore, not completely dependable. If the level set in the RPS is too high, traditional sources may be compromised, resulting in higher prices. The balance will evolve as technologies become more efficient and cost-effective. Therefore, the RPS should be allowed to change over time.

Comparison of Electricity Prices of Selected Non-Renewable and Renewable Energy Sources (Note: All fuels except wind are considered to allow an 80 per cent generating capacity factor. Wind has been assumed to carry a 40 per cent capacity factor.)	
Coal	6 cents/kilowatt-hour
Natural Gas	6.5 cents/kilowatt-hour (Combined Cycle)
Nuclear	7 cents/kilowatt-hour
Combustion Turbine	9 cents/kilowatt-hour (Heavy Oil)
Wind	6.5 to 8 cents/kilowatt-hour*
Wood Biomass	8 to 9 cents/kilowatt-hour
Photovoltaic Cells	>20 cents/kilowatt-hour

Source: New Brunswick Power Corporation, Point Lepreau Evaluation Integrated Resource Plan
* PEI Energy Corporation, based on utility-grade turbine production.

In the United States, Renewable Portfolio Standards are generally applied only to the production of electricity. At this point in time, and within the short term, the Province is proposing an RPS only as it applies to electrical generation. At some future date, changes in technologies or opportunities may result in the formulation of an RPS for total energy production in the province which will include thermal and transportation fuels. Although other provinces, including our Atlantic neighbours, are considering the implementation of renewables in their energy futures, Prince Edward Island is expected to be one of the first Canadian provinces to adopt a renewable energy standard for electricity generation.

The Draft PEI Renewable Energy Strategy proposed a commitment to obtain 10 per cent of the province's electricity through renewable energy sources by 2010. During the public consultation sessions, Islanders clearly stated they wanted to see that percentage higher.

Prince Edward Island will commit to an RPS for electricity of at least 15 per cent by 2010. Over the longer term, the Province will evaluate opportunities for having 100 per cent of its electrical capacity acquired by renewable energy by 2015.

Access to the transmission infrastructure is a barrier to the movement of electricity across the province and to possible import and export opportunities with mainland markets and generators. This is of particular detriment to small-scale producers of renewable energy. It also blocks the economical marketing of power from utilities and co-generation facilities. Other Atlantic region utilities are developing Open Access Transmission Tariffs (OATTs) for this reason and to meet trade requirements for exporting power to the United States. The owner of most of the transmission infrastructure in Prince Edward Island, Maritime Electric Company Ltd., requires compensation from electricity shippers but it should be based on justifiable capital costs and maintenance expenditures.

In order to improve the ability of economic marketing of both renewable and conventionally-generated electricity, Maritime Electric Company Ltd. will be required to file an Open Access Transmission Tariff with the Island Regulatory and Appeals Commission.

Current knowledge is insufficient for the development of an RPS for thermal or transportation fuels. Preliminary assessment of developing an ethanol production facility in Prince Edward Island is underway and indicates that the relatively small volume required to meet provincial demands is a contraint to economic feasibility. There is a possibility that a regional transportation RPS may be developed in response to environmental initiatives. Volumes to meet an Atlantic Canada transportation RPS would considerably improve the financial sustainability of an ethanol facility. Prince Edward Island may develop a transportation RPS and participate in a regional facility at that time.

Synopsis of Proposed Atlantic Canada Renewable Portfolio Standards (RPS)

Province	Policy Document	Present Renewable Energy Composition	RPS Target	Policy on Renewable Energy Development
NB	White Paper: New Brunswick Energy Policy	20.2 per cent* • 16.6 per cent Biomass • 3.6 per cent Hydro	None Stated	• Green pricing option for small scale, on-site electrical generation. • Undertake demonstration projects for renewable and alternate energy. • Electrical restructuring to allow independent power producers (IPPs).
NS	Seizing the Opportunities	7 per cent • 6 per cent Biomass • 1 per cent Hydro	None Stated	• Increase renewables. • Promote rural electrical generation with wind through IPPs.
PEI	Energy Framework and Renewable Energy Strategy	7 per cent • 6.5 per cent Biomass • 0.5 per cent Wind	Electricity: 15 per cent by 2010 and target of 100 per cent by 2015	• Focus on wind until other technologies develop. • Permit distributed power production.
NFLD	Policy Paper has been sent to Executive Council for consideration. It is expected to contain RPS and climate change initiatives.	35 per cent • 30 per cent Hydro • 5 per cent Biomass	N/A	May be in the policy paper.

* This figure represents the most recent data and updates the White Paper figures.

Biomass

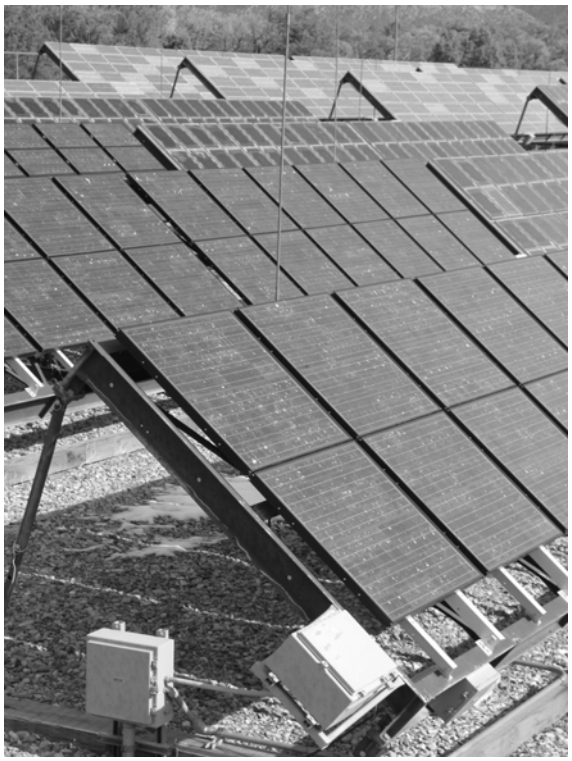
At 6.5 per cent of total energy supply, biomass currently accounts for almost all of the province's renewable energy consumption. In the 2003 Wood Fuel Survey conducted by the Province, it was revealed that 35 per cent of Island residents used wood as either their primary or secondary fuel source for heating. It may be expected that firewood will continue to be the principal form of biomass consumed in PEI.

Several biomass energy projects were developed by Government in the 1980s and early 1990s, including the Charlottetown District Heating System which consumes municipal garbage and sawmill residue. Small thermal plants that used wood chip fuel were constructed at several institutional buildings during this period, but most are no longer operational.

Generating electricity from wood biomass was previously evaluated by the Province in the late 1980s. It was concluded, at that time, that the cost of generating power from this fuel source was prohibitive. Using wood as an energy source usually provides less value for this commodity than could otherwise be realized as a manufactured product. Moreover, the wood must be cut, chipped, loaded, trucked and stored at the combustion site which adds significantly to its cost as a fuel. However, with the escalation in the price of traditional forms of energy, the difference in cost may decline.

The feasibility of biomass-fueled generating systems will be re-evaluated to determine their suitability for economical power generation.

Solar and Photovoltaic Technology



Solar panels can be used to capture the sun's energy for domestic hot water heating systems.

Residential and commercial/institutional building design often incorporates the influences of natural sunlight in heating, cooling and lighting. This is referred to as passive solar design. Direct solar applications may include solar energy panels for supplying domestic hot water requirements. Many solar-powered domestic hot water heating systems were installed during the 1980s due to high energy costs and an incentive program that paid for a substantial portion of the unit's capital cost. At one time, PEI had the highest per capita residential usage of domestic hot water solar units in Canada. With rising energy prices and concerns for environmental issues such as climate change, it is reasonable to expect that solar energy will again become popular for meeting domestic hot water needs.

Energy from the sun may be converted to electricity with photovoltaic technology. Photovoltaic cells have been installed in remote off-grid locations by the oil and gas industry and are commonly used to produce small amounts of electricity to power highway signs. However, electricity produced from photovoltaic cells is considerably more expensive than other forms of energy. It will require significant technological advances before photovoltaic cells make an important contribution to electricity production.

The Province endorses the use of solar technology, particularly for meeting domestic hot water requirements.

Renewable Transportation Fuels

Transportation fuels, mainly gasoline and diesel, account for almost 40 per cent of the Island's energy requirements. All of this fuel must be imported. Displacing a portion of these fossil fuels with locally-acquired, renewable transportation fuels or biofuels may provide economic and energy-security advantages. Further, the transportation sector is the largest source of greenhouse gases and other harmful emissions. Environmental benefits will accrue by incorporating lower-emitting biofuels into the fuel mix.

Ethanol

Fuel ethanol is a high-octane alcohol that is produced from the fermentation of sugar or converted starch contained in green plants. Ethanol is primarily extracted from grains, although technology is being developed to produce this product from cheaper agriculture and forest feedstocks such as straw and woodchips.

Technological advances may significantly change how Islanders power their vehicles in the future.

Ethanol is currently used as a blending ingredient in gasoline for vehicles in concentrations of up to 10 per cent without modifications to engines or carburetors. The benefits of ethanol include octane enhancement, a cleaner environment, new markets for the agricultural sector, and a secure, renewable energy supply.

To meet a 10 per cent blend ratio for automotive fuel would restrict a PEI ethanol facility to an annual capacity of 20 million litres. This level of production is considered to be very small by industry standards and significant subsidization or tax allowances may be required. The economic feasibility of the operation may be enhanced through export agreements with other provinces that will allow higher production levels. Development of technology that accommodates cheaper feedstocks in the ethanol process will also improve economic viability.

The Province will continue to evaluate the economic viability of an ethanol industry in Prince Edward Island.

Biodiesel and E-diesel

Biodiesel is a cleaner-burning diesel replacement fuel made from natural, renewable sources such as new and used vegetable oils and animal fats from meat packing operations. Blends of up to 20 per cent biodiesel with regular diesel fuel are acceptable in most diesel equipment without any engine modification.

Prince Edward Island does have supplies of used vegetable oil from the food processing industries, but the highest value for this product is the glycerine market.

E-diesel is regular diesel fuel mixed with up to 15 per cent by volume of ethanol. The same benefits as gasoline ethanol may be expected from using e-diesel. The handling and storage is similar to that for gasoline.

As with ethanol, the Province will continue to evaluate the economic viability of a biodiesel and e-diesel industry in Prince Edward Island.

Biogas

Biogas is a renewable energy source that is generated when bacteria decomposes biological material in the absence of oxygen. This process is commonly referred to as anaerobic digestion. The molecular constituents of biogas are carbon dioxide and methane (also called natural gas).

The major food processing operations in Prince Edward Island use methane capture to help fuel their plants. As a result, 3.4 million litres of fossil fuels are displaced annually.

There are several examples of biogas utilization in Prince Edward Island. Food processors consume biogas in their boilers that is created from waste materials gathered in their operations. The City of Charlottetown has collected biogas from its sewage handling facility for thermal applications. The City is studying an upgraded system of collection and use of biogas from this source. Island agricultural operations have also employed this technology to produce energy from hog manure.

Provinces with large municipal landfills have installed biogas collection units to generate electricity. However, it has been determined that both PEI's active and decommissioned landfill sites are too small to produce economical quantities of biogas.

Biogas from meat packing wastes provides substantial energy supplies for some European countries. A possible application of the technology to collect biogas from meat packing wastes is being explored by the PEI Department of Agriculture, Fisheries, Aquaculture and Forestry.

The Province will evaluate the feasibility of collecting biogas produced from meat packing wastes as a potential energy source.

Energy Efficiency and Demand Side Management

Implementing energy efficiency measures is usually the most cost-effective method of reducing energy consumption. There are several possible applications to be explored, including initiatives in the transportation sector which uses 40 per cent of the province's total energy supply. The government transportation fleet represents a significant proportion of the total number of vehicles in the province. Implementing transportation efficiency standards in these fleet vehicles will reduce fuel consumption and serve as an example of energy efficiency for this sector.

To show its leadership, the Government of Prince Edward Island will immediately introduce transportation efficiency standards for new or replacement vehicles in its fleet.

Reducing the number of vehicles on the road by providing public transportation is a measure to decrease the overall fuel consumption in this sector.

Government will explore with the Cities of Charlottetown and Summerside options for the development of public transportation systems.

Reducing per capita energy requirements in the residential sector may be facilitated by improving the quality of the province's housing stock. Generally, newer construction has superior levels of insulation and more energy efficient door and window design than houses built a generation ago. However, there is still a need to regiment energy efficiency standards in the construction trades. To date, only the cities of Summerside and Charlottetown have adopted the National Building Code, which does not specifically address energy efficiency but ensures construction integrity that may result in energy efficient practice. The Model National Energy Code for Houses, published by the National Research Council (Canada),

establishes a standard of energy efficiency for design. Adopting both the National Building Code and the Model National Energy Code for Houses for new construction will serve to reduce the per capita energy consumption within the residential sector.

The Province will encourage adoption of the National Building Code and the Model National Energy Code for Houses for new building construction in Prince Edward Island.

Adopting building and energy codes for new construction translates into reduced energy consumption.

Often, the most efficient use of energy is through turning off lights and appliances when they are not required. The provincial government recently implemented an electricity efficiency program that reduced unnecessary lighting at the public administration buildings in Charlottetown. It is expected that this program will result in savings of $10,000 per year or 2.3 per cent of the annual electricity costs for the building complex. This energy savings translates into approximately 125,000 kilowatt hours, enough electricity to supply 17 homes on an annual basis.

The Province will lead by example by implementing electricity efficiency programs within its public buildings.

Most electrical consumers are unaware of the impact that they can have on controlling the cost of this commodity. Using electricity efficiently and scheduling some energy intensive activities away from the peak consumption times of day will decrease consumption of resources and negate or delay the need for additional generating capacity. Commonly referred to as "demand side management", these initiatives can make a huge difference in electricity pricing and reducing environmental impacts. Demand side management requires the participation of utilities and consumers, but typically is an initiative led by the utility.

Maritime Electric Company Ltd. will be required to file an approved energy efficiency plan and demand side management strategy with the Island Regulatory and Appeals Commission.

Wind Energy Development

Wind energy is the energy source that has the most promise to enable Prince Edward Island to pursue a substantial component of renewable energy. Being the fastest growing source of electrical energy world-wide, there still exists, if only momentarily, a small gap between the production costs of this technology and traditional forms of power generation. For this reason, subsidization by government is often necessary to bridge this gap. The infusion of public funds is thus often justified as providing social and environmental benefits through advancing a zero-emitting, renewable energy source.

Noting the favourable wind regimes for several Island locations, continuing lower production costs from technological improvements, environmental benefits from emission reductions, and possible greenhouse gas credits, increased investment in this energy source is expected. Government must ensure that deployment of wind capacity proceeds in an orderly fashion to meet the province's energy, environmental and economic development goals. Because the wind is Prince Edward Island's energy resource, it is important that individual homeowners, farmers, small businesses and communities or cooperatives have the ability to produce their own electrical power for their needs, and to sell any excess production. Mechanisms that provide that opportunity and enable Prince Edward Island residents to invest in local wind energy projects will be pursued.

The largest wind turbine in North America, the V-90 produces about one per cent of PEI's electricity.

The North Cape Wind Farm supplies approximately four per cent of the province's electricity, after the doubling of capacity in November 2003. With construction of the Vestas V-90 turbine, the total electrical supply from wind power was boosted to five per cent. The V-90 is located near the Norway Road, just south of the North Cape facility.

As North America's largest wind turbine, standing on an 80-meter tower with a 90-meter blade diameter, the V-90 is a prototype being tested by Aeolus PEI, a subsidiary of Vestas-Canadian Wind Technologies.

To allow Prince Edward Island to acquire 15 per cent of its electricity requirements from wind energy by 2010 will require an additional 40 megawatts of turbine capacity. To achieve that end, there are a variety of business models that would allow private and public financing as well as small wind development by individuals, businesses and cooperatives.

Role of the PEI Energy Corporation

With 10.56 megawatts of installed capacity at North Cape, the PEI Energy Corporation owns and operates almost 80 per cent of the wind development in the province and has accrued considerable expertise in this technology. The consensus of the comments received during the public consultation process was that the PEI Energy Corporation should be actively involved in advancing and developing wind projects in the province.

The PEI Energy Corporation will remain actively involved in advancing and developing wind projects in Prince Edward Island.

There are other possible roles that the PEI Energy Corporation may assume in addition to being the main project developer for wind projects in the province. The Corporation's role could evolve to become that of regulator to ensure an orderly and timely rollout of projects in approved areas. With its previous development experience, data acquisition, and access to expertise from the Atlantic Wind Test Site, the Corporation may be in the best position to evaluate the technical merits of future proposals.

Alternatively, the Corporation may serve as an energy agent or broker to buy power from wind facilities for the utilities. In a similar role, the Corporation may arrange power purchase agreements between the market participants.

It may be expected that the role of the PEI Energy Corporation will become better defined with a clearer indication of the nature of the market and those who wish to participate in it.

A subsidiary of the Prince Edward Island Energy Corporation, the Atlantic Wind Test Site is a leader in the testing and development of wind energy technology.

Private Wind Development

Investment by private companies in wind power is not precluded by the PEI Energy Corporation taking the lead role in this development. Installing a further 40 megawatts of wind power will cost in excess of $60 million, and meeting the capacity demands of furnishing 200 megawatts is priced at approximately $300 million. Participation by private sources may be required to meet this challenge. Private development could range from large corporate wind farms with several large turbines, to community and cooperative systems with one or several machines, or individual farms or residences installing a single small turbine for their own electricity requirements.

Large Wind Development

For the purposes of this strategy, large wind development is defined as a private company with a total nominal capacity greater than one megawatt. These developers would be selling their power to an electrical utility based on the terms and conditions of a power purchase agreement.

Royalties from Large Wind Developments

The notion of the provincial government collecting "wind royalties" from large, private wind development was posed during the public consultation process. Several participants were in favour of this concept, particularly if it were applied to wind farms that were specifically developed to serve export markets.

Justification of wind royalties is based on the fact that Prince Edward Island is devoid of known resources of conventional energy fuels, such as oil and gas. These resources net other hydrocarbon-producing provinces vast wealth from the collection of royalties. In essence, wind may prove to be PEI's oil. Additionally, the province may experience certain inconveniences, such as (in some people's mind) a loss of vistas or lost opportunity to pursue other enterprises on wind development lands.

Recognizing that wind systems have most of their costs front-loaded, a concession or "royalty holiday" that forgoes payment of royalties during the first years of operation could be implemented. Notwithstanding the above arguments for royalties, this form of taxation may stifle or completely negate any private investment in large facilities as the economic feasibility of wind power is still marginal. Royalty holidays may balance this additional cost for developers but the concept still introduces additional risk to potential investors in regards to the potential for escalating royalty fees. Another manner of public compensation could be to collect a portion of the attributes or environmental credits that may accrue from power generated from these facilities which is sold off-Island. Still largely undefined, greenhouse gas emission credits or "green credits" may, at some point in the future, have significant tangible value.

The Province will evaluate manners of public compensation that may accrue from power generated from large wind facilities that are specifically developed to meet electricity export markets.

Small Wind Systems

Providing individual homeowners, farmers and small businesses with the ability to produce their own electrical power for their needs, and a market to sell any excess production to the utility, was strongly recommended during the public consultation sessions. For most residences, a turbine rated no larger than 10 kilowatts will suffice. Farms and small businesses may require a larger turbine in the 50 kilowatt to 100 kilowatt range.

It is anticipated that a proportion of the RPS will be allotted to this class of electricity production. The immediate barrier to this class of production, less than 100 kilowatts in nominal capacity, is the high capital cost of the units. Smaller turbines carry a capital cost of between $2,500 to $4,000 per kilowatt of installed capacity. Ironically, production costs for these units will only decrease when the demand for small wind systems increases.

Those who wish to invest in small wind systems are further impeded by the low rate of return that they can expect from selling their excess power to the grid. Fiscal and regulatory instruments may be applied to improve the economic feasibility of small wind development. During the public consultation sessions, tax incentives and the concept of "net metering" were discussed.

The small turbine pictured above would be suitable for businesses, communities or cooperatives.

Measures to Promote Small Wind Systems

Tax Incentives

There are presently tax advantages provided by the income tax laws that allow accelerated depreciation allowance for renewable energy equipment. However, this only benefits those who have taxable business income (taxable profits from their capital assets) to write down, and not individual homeowners. Certain components of the wind turbine are not subject to sales tax. Towers and other supporting infrastructure that are not directly related to the production of electricity are fully taxed. Tax relief would decrease the capital cost and improve the economic feasibility of the wind system.

An analysis of the impact of removing the sales tax on all components of wind turbines will be completed.

Net Metering

Another main detraction to the economic viability of installing small wind systems is the price that is paid by the electrical utility for excess generation. In this instance, "excess generation" is the amount of electrical energy that is produced beyond the needs of the small generator and sold to the utility. Typically, in Canada, the utility pays its "avoided cost", or the price that it would otherwise have had to pay by either generating the electricity or purchasing from

other large suppliers. Under an avoided cost system, the small generator still pays the full retail price for any electricity that they must purchase when their system is not producing. The ratio between full price and avoided cost may be two-to-one or greater.

The concept of "net metering" erases the price differential between the buying and selling prices. In its basic form, net metering allows the small wind producer's meter to run in one direction when electricity is being drawn from the grid. The meter reverses its direction when more power than is required by the small producer's household or business is being produced and this excess generation is being supplied to the utility.

In the United States, net metering is quite common, with 28 states having adopted in statute some form of this concept. There are different variations in these jurisdictions as to what types of energy sources are applicable for net metering (although virtually all include small wind power), and how any excess monthly or yearly production from the small generator is reconciled. It is generally accepted that there must be a maximum capacity limit for small installations as the intention is not to set up several utilities, but to enable this class of generators to meet their own electrical needs. For this reason, the maximum size of generation that may qualify for net metering is 100 kilowatts or 150 per cent of the owner's electrical demand, whichever is less.

Small wind systems that have a nominal capacity of less than 100 kilowatts or meet no more than 150 per cent of their peak demand, whichever is less, will be provided with access to net metering.

The Vergnet 60-kilowatt wind turbine is undergoing testing at the Atlantic Wind Test Site at North Cape.

While net metering is intended for wind energy development, the concept may be extended to other small-scale renewable energy projects such as photovoltaic power cells and micro-hydro. It is expected that similar rules in regards to size limitations per site would apply.

Community Wind Energy Systems

In between the range of large corporate wind farms and small single units for a household are the community or wind cooperative energy systems. The capacity range for these systems may be expected to be between 100 kilowatts and one megawatt (1,000 kilowatts). Communities or cooperatives may wish to develop wind energy to supply electric power for their buildings and other municipal infrastructure. As with the small private development, it is anticipated that an allotment of the RPS will include this class of electricity production.

Based on the Danish and German model, a group of farm operators or other land owners may wish to construct one or more turbines to market electrical production to the grid. The success of the European wind cooperatives was based on a selling price for their electricity of no less than 85 per cent of the residential rate, subsidized line upgrades to accommodate the wind systems, and government's financial backing of loans for capital expenditures.

To ensure the economic viability of the community or wind cooperative systems, these operators will be guaranteed a selling price to the utility of up to 85 per cent of the retail residential rate.

Public-Private Investment Mechanisms

Advancing the development of renewable energy in the province, specifically wind energy, requires community acceptance. Providing the ability for small local investors to contribute to wind development would enable Islanders to take an economic stake in these projects and, thereby, demonstrate their approval for renewable energy.

Green investment mutual funds that are directed by private investment firms are common in Western Europe. But Canadian wind energy development is just beginning to attract this type of investment. This investment structure would also remove much of the oversight of the Energy Corporation and the provincial government. For these reasons, the investment mechanisms described below have the commonality of being endorsed or backed by the Province to ensure Government control.

Green Deposit Receipt Program

Structured similar to the Provincial Deposit Receipt (PDR) Program, a Green Deposit Receipt Program could be created to attract investment from small (or large) local investors. This capital pool would flow directly to wind power projects in Prince Edward Island. To ensure a stable investment pool, restrictions in regards to periods of minimum investment may be imposed.

Green Income Trusts

Government, through the Energy Corporation or the Provincial Treasury, could operate a Green Income Trust that invests in provincial wind farms. An important feature of the Green Income Trust is the provincial guarantee of solvency for a set period of time. The trust could be operated similar to an open-ended mutual fund but it may be more expedient to treat individual projects within the structure of a closed-end fund that has a finite project size and limited life cycle. The benefit of the green trust for the Corporation would mainly be as an alternative to acquiring capital from traditional lending sources and stimulant for local "buy-in" for wind development projects throughout Prince Edward Island.

Bond Issues

The advancement of wind technology as a reliable and cost-effective energy source has elevated investment in these ventures as an investment grade security. The Energy Corporation could approach an investment house to issue bonds for a specific project maturing at the date at which the project would otherwise be completely amortized. This timeframe has typically been 15 years. To increase the palatability for small investors, denominations may be issued starting at $500. It is anticipated that an on-Island branch of an investment house or bank would be interested in the underwriting. This eliminates the administration costs to be borne by Government of the previous two investment vehicles.

Exposure to the Master Trust Fund

The Master Trust Fund is a pension fund of investment pool capital valued at approximately $800 million. It represents the holdings of the Prince Edward Island Teacher's Superannuation Fund, the Prince Edward Island Civil Service Superannuation Fund and the Members of the Legislature Assembly (MLAs) Superannuation Fund. With the Minister of Finance as Trustee, this fund is professionally managed. A committee representing Government and the respective unions also provides guidance on the fund's administration. It is possible that investment in on-Island wind projects could meet the criteria of this fund.

A method of enabling Prince Edward Island residents to invest in local wind energy projects will be pursued.

Wind Mapping

It is accepted that Prince Edward Island has an excellent wind resource and should capitalize on this asset for meeting some of its energy needs. To date, major wind development has been limited to North Cape, home of the Atlantic Wind Test Site, where a substantial amount of historical wind data has been collected. Success of the Energy Corporation's wind farm has confirmed this previously collected information.

A lack of understanding of the wind profiles of other possible sites is viewed as an impediment to furthering wind development across the province. This will require collecting wind speed and wind direction data throughout the Island and consolidating previously recorded data that has been compiled by other agencies such as Environment Canada.

The Prince Edward Island Energy Corporation will embark on a monitoring program that systematically appraises the wind profiles of the Island.

This will require the erection of temporary meteorological towers and, possibly, receiving permission to mount data monitoring equipment on existing permanent structures that are used by the telecommunications industry. The ultimate goal is to produce a "wind atlas" for Prince Edward Island that will better enable initial assessment for future wind development.

Wind-Hydrogen Systems

The development of hydrogen fuel cells and hydrogen internal combustion engines suggest that this technology holds significant promise as a renewable energy carrier for Prince Edward Island.

Hydrogen Technology

There is a natural synergy between wind power and hydrogen storage systems. A necessity for creating hydrogen fuel is a readily available power source that provides the energy to separate hydrogen atoms from water molecules. Wind energy is a renewable, zero-emitting power source that can be developed for this purpose. A limiting factor to wind energy deployment in meeting the ever-increasing electricity requirements is its intermittence. Developing an efficient storage method with hydrogen fuel technology could provide a source of power when the wind speeds are low.

Hydrogen Village™ Concept*

A practical method of promoting and demonstrating hydrogen technology is a "village" setting in which wind energy serves as the power source. The North Cape area has been proposed to serve as the setting for these demonstrations in which several homes, farms, industrial buildings, as well as fishing boats and tractors, could be powered from wind power with hydrogen fuel cells and hydrogen internal combustion engines.

Advancing this concept is contingent on federal financial participation and a proposal has been submitted to the H2 Early Adaptors Program on behalf of the Province and various stakeholders.

While the commercialization of hydrogen as a fuel may be years in the future, the Province will continue to formulate its possible role in advancing, demonstrating and deploying this technology in PEI.

*The Hydrogen Village Trademark has been applied for by a consortium managing the Hydrogen Village Project in the Greater Toronto area.

Actions

Based on the input from the public during last year's consultation on the Draft Prince Edward Island Renewable Energy Strategy, the Province will proceed with:

- **Committing to a Renewable Portfolio Standard for electricity of at least 15 per cent by 2010. Given the favourable wind regime in Prince Edward Island, this will be met through the establishment of an additional 40 megawatts of wind capacity. Over the longer term, the Province will evaluate opportunities for having 100 per cent of its electrical capacity acquired by renewable energy by 2015.**

- **Requiring Maritime Electric Company Ltd. to file an Open Access Transmission Tariff with the Island Regulatory and Appeals Commission.**

- **Evaluating the feasibility of biomass-fueled generating systems to determine their suitability for economical power generation.**

- **Endorsing the use of solar technology, particularly for meeting domestic hot water requirements.**

- **Continuing to evaluate the economic viability of an ethanol and bio-diesel industry in Prince Edward Island.**

- **Evaluating the economic feasibility of collecting biogas from meat packing wastes for energy production.**

- **Showing its leadership by immediately introducing transportation efficiency standards for new or replacement vehicles in its fleet.**

- **Exploring with the Cities of Charlottetown and Summerside options for the development of public transportation systems.**

- **Encouraging the adoption of both the National Building Code and the Model National Energy Code for Houses for new construction to reduce the per capita energy consumption within the residential sector.**

- **Implementing electricity efficiency programs within its public buildings.**

- **Requiring Maritime Electric Company Ltd. to file an approved energy efficiency plan and demand side management strategy with the Island Regulatory and Appeals Commission.**

- **Allowing the PEI Energy Corporation to remain actively involved in advancing and developing wind projects in Prince Edward Island.**

- **Exploring the possibility of removing the sales tax on all components of wind turbines.**

- **Incorporating net metering for small wind power in statute to promote this development.**

- **Evaluating manners of public compensation that may accrue from power generated from large wind facilities that are specifically developed to meet electricity export markets.**

- **Ensuring the economic viability of community or wind cooperative systems by guaranteeing a selling price to the utility of up to 85 per cent of the retail residential rate.**

- **Pursuing a method of enabling Prince Edward Island residents to invest in local wind energy projects.**

- **Embarking on a monitoring program that systematically appraises the wind profiles of the Island.**

- **Formulating a possible role in advancing, demonstrating and deploying wind-hydrogen technology in Prince Edward Island.**

Next Steps

Advancing the Renewable Energy Strategy as proposed will require the development of specific legislation that advances renewable energy and possible amendments to existing legislation that impacts the economic feasibility of energy systems.

Renewable Energy Act

It is anticipated that, in the Fall 2004 sitting of the Provincial Legislature, a *Renewable Energy Act* will be introduced that puts into force components of this Renewable Energy Strategy, including:

- A mandated Renewable Portfolio Standard for electricity that requires 15 per cent of electricity consumed in Prince Edward Island be acquired by on-Island renewable resources by 2010.

- An ability for the Lieutenant Governor in Council to prescribe a Renewable Portfolio Standard for transportation fuels through the development of an on-Island biofuels (i.e., ethanol, biodiesel, E-diesel, etc.) industry.

- Pronouncement of net metering for small wind power energy systems that are sized no larger than 100 kilowatts or meet no more than 150 per cent of the qualifying facility's peak demand, whichever is less.

- The ability to collect compensation from power generated from large wind facilities that are developed to meet electricity export markets.

- Mechanisms to enable community-sponsored and cooperative wind developments.

Climate Change Consultations

During the past sitting of the Provincial Legislature, a motion was passed to appoint a Special Committee on Climate Change to consult with Islanders about this issue. Following these consultations, expected to proceed later this year, recommendations will be brought back to the House and incorporated into the provincial Climate Change Strategy and also form a significant component of the Energy Strategy.

Hydrogen Village Project

The Province continues to promote a hydrogen village concept to Industry Canada (NRCan) that would include several applications of wind and hydrogen technology.

PEI Energy Strategy

Utilizing the vital components of the Renewable Energy Strategy and the Climate Change Strategy, a comprehensive Prince Edward Island Energy Strategy is expected to be released by the spring of 2005.

Atlantic Energy Ministers' Forum

Since its inaugural meeting in Charlottetown in May 2002, the Atlantic Energy Ministers' Forum has made great strides to increase regional collaboration on a variety of energy issues. Prince Edward Island expects this forum will continue to serve a vital role in promoting regional cooperation in this sector, including the development of renewable energy.