

2016 PROVINCIAL ENERGY STRATEGY: Overview of Recommended Action Items



THE 2016 PROVINCIAL ENERGY STRATEGY

The intent of the 2016 Provincial Energy Strategy is to plan a stronger, more sustainable, and resilient Island. To do this, the Strategy includes specific action items that we will take to help us achieve our desired outcomes. Some are quantified and others are directional, but all are designed to start us down the path to greater energy sustainability.

This document provides an overview of the action items included in the complete draft Energy Strategy. Its purpose is to provide a brief overview of the key areas we believe we should pursue in the next five to ten years. By providing this overview, we hope to receive your input into whether or not we are on the right track. This document will provide the basis for discussion at the second public consultation session, but all Islanders are welcome to provide input via the PEI Energy Strategy website (found at www.peiec.ca). Please note that while the Strategy and this overview document are separate into sectors for ease of reading, each area overlaps and integrates with every other one: the draft Energy Strategy is designed as an integrated one based on our overall energy system.

We invite you to read and provide comments on the entire draft Strategy, also available on the website, or to provide comments on this document alone. Regardless, we would appreciate receiving your comments by July 15th, 2016, so we are able to incorporate input into the final Strategy document.

ENERGY EFFICIENCY AND CONSERVATION

The cheapest energy is the energy we don't use. While producing sustainable and renewable energy is a critical part of our future, it is important that we first reduce the amount we are required to produce – this is the cleanest, cheapest form of energy for our province. With this in mind, our recommended actions to take over the next decade include the following:

Recommended Action Items for Energy Efficiency and Conservation

- **Demand Response**
 - Implement a Demand Response strategy in the residential and small-medium business sectors to control hot water heaters and potentially heating, ventilation and air conditioning equipment. Focus on “quick wins” in the short term, to begin an initial lowering of peak demand before additional heat pumps on the system create stability issues.
 - Encourage large commercial/institution buildings to install Energy Management systems and enroll in Demand Response Programs.

Recommended Action Items for Energy Efficiency and Conservation

- **Energy Efficiency Programs and Services**

- Achieve electricity savings 2% of electric load and 2% of non-electric, non-renewable fuels each year by 2020.
- Mandate an energy efficiency cost-effectiveness screening framework that considers a societal perspective, including non-energy benefits.
- Set up an independent energy efficiency (or Energy Smart) utility with a mandate to pursue efficiency for all fuels.
- Implement a comprehensive set of energy efficiency programs that enable customers to reduce their energy use in a cost-effective manner. Standard residential programs include deep energy retrofits for building shells, residential new construction, appliance recycling, and encouraging sales (through rebates) of the most efficient appliances and lighting. Standard commercial and industrial programs include small business programs, encouraging sales of the most efficient appliances and lighting, and custom options for large customers.
- Implement a Low Income Residential program for Islanders who could not otherwise afford to participate.

- **Geotargeted Energy Efficiency**

- Develop a set of guidelines for when Geotargeted Energy Efficiency should be considered when a transmission or distribution grid intervention is required.
- Develop Geotargeted Energy Efficiency protocols as part of the comprehensive set of programs and services offered by the energy efficiency utility.

- **Codes and Standards**

- Implement the National Building Code and National Energy Code for Buildings, province-wide, as soon as possible. Develop and adopt a provincial “stretch” building code with energy efficiency levels above that of the National Building Code by 2021, and enhance the code one year after each National Building Code is released.
- Support pilot projects for highly efficient buildings to pave the way for more aggressive building performance standards in the future.
- Examine the possibility of mandatory building labelling for the residential sector when homes are listed for sale and examine the feasibility of a mandatory commercial/institutional building energy reporting system, or a voluntary one led by Government buildings.
- Monitor appliance standards approved in the United States or in other provinces and consider adopting them on a case-by-case basis.

ELECTRICITY GENERATION AND MANAGEMENT

While the first step in controlling our energy future is reducing our energy use, increased efficiency alone is not the complete picture of our energy system. We will need to consume electricity and other fuels for the foreseeable future, so it is important to ensure our energy comes from renewable and sustainable sources to the extent possible.

Recommended Action Items for Electricity Generation and Management

- **Wind:**
 - Explore opportunities to secure federal funding for demonstration projects to expand the amount of wind power that can be cost-effectively deployed.
 - Begin discussions on New Brunswick Power Transmission Tariffs with the New Brunswick Utilities Commission to provide greater clarity on integration of additional wind resources.
 - Pending outcomes of the above opportunities and an agreement with New Brunswick Power, develop two additional wind farms: 30 MW in 2019 and 40 MW in 2025.
 - Explore and develop relationships with transmission and generation project partners to enable the province to take advantage of expected future export opportunities.
 - Work with other Atlantic Canada jurisdictions and additional parties to develop and finance strategies and approaches for mitigating barriers to wind energy exports from Atlantic Canada to New England, including:
 - Reducing transmission rate add-ons,
 - Reducing the transmission bottleneck in Moncton, and
 - Exploring strategies to allow renewable project developers to efficiently comply with the various requirements for imports into New England.
- **Tidal:**
 - Continue to monitor developments with respect to tidal energy, focusing in particular on its potential for becoming cost-effective in PEI.
- **Solar:**
 - Examine and implement a financing option for distributed solar.
 - Develop siting policies for larger ground-mounted solar projects to avoid land-use conflicts.
 - Monitor advances in storage technology and cost reductions in utility-scale solar to begin test projects once they are cost-effective and peak capacity concerns are addressed.
 - Streamline and maintain the Community Economic Development financing-Investment Fund model.
 - Research and consider programs to ensure that new construction projects are solar ready.
 - Research and develop integrated programs that encourage a comprehensive, facility-based approach to energy, including energy efficiency and the adoption of distributed generation.
 - Research and develop integrated programs that encourage energy storage technologies in combination with solar. These could include components such as time-of-day pricing with solar, an energy thermal storage system, and/or net billing.

ENERGY STORAGE

Energy storage projects can provide a number of diverse benefits. They can help us to balance our electricity system and integrate wind and solar. Storing inexpensive power when it is not needed and using it when it can replace more expensive power is the basic function of energy storage.

Recommended Action Items for Energy Storage

- **Utility-Scale Storage**

- Work with WEICan to expand battery storage at the wind energy test site or elsewhere on the Island given that storage in load centres can defer transmission and distribution investment and demonstrate the value of batteries to cost-effectively integrate additional amounts of wind power.
- Explore strategies to secure funding from the Federal Government for such energy storage projects.
- Monitor cost reductions in battery technologies and assess the implications of such on their potential application in PEI.
- Explore the use of batteries to address peak power needs, to integrate additional wind power and leverage federal financial support for the Island as a testing ground with local and export benefits.

- **Building-Level Storage**

- Work with Summerside Electric, Maritime Electric, IRAC and the energy efficiency utility to launch a cost-effective, province-wide Electric Thermal Storage program.
- Develop an appropriate incentive structure to encourage customers to purchase grid-interactive water heaters and/or install relevant technology to allow them to participate in a permanent peak reduction water-heater program.
- Develop additional programs or options for facility-level storage, including exploring options for batteries and storage options other than water heaters.
- Explore with the Federal Government whether appliance efficiency standards should require that new electric water heaters have grid-interactive capability.

Biomass is an energy source derived from organic materials such as plants or waste. It consists of low-to-no-carbon sources, which makes it an important resource for consideration in the Provincial Energy Strategy.

Recommended Action Items for Biomass

- **Cogeneration**

- Explore the extension of the Charlottetown district heating system.
- Consider new district heating facilities at other locations, also examining the feasibility of small-scale cogeneration.

- **Wood and Pellet Heating**

- Install an additional 40 wood heating systems at provincial and other public facilities, using the energy service model.
- Require that wood chip sources be documented, including the reforestation of harvested plots.
- For new wood chip heating installations, explore opportunities to negotiate with energy service providers to obtain contracts more competitive with address pricing for energy services that addresses the variability of oil heating, particularly in relation to new installations.
- Adopt regulations that require the clean separation of waste at construction and demolition sites. This will ensure that less waste goes to landfill ~~and at the same time~~, provides a way to reuse some building components, and provides a source of clean and dry wood for chipping and subsequent use in wood heating systems.
- Develop a strategy to implement large wood pellet heating systems at government facilities to create a local bulk pellet delivery market, parallel to the drive towards wood chips.
- Incent the installation of wood pellet boilers and furnaces in commercial and residential buildings.
- Conduct a survey on energy use in the PEI commercial sector and promote pellet boilers at the same time.
- Implement a pilot project to test pellet cogeneration systems.

The transportation sector is becoming an increasingly important consideration in terms of provincial fossil fuel use and related emissions. Its emissions are still growing while other sectors are reducing their fossil fuel use. While there are valid reasons for this, such as the more rural character of our province, and a diffuse population reducing the cost-effectiveness of public transportation, this does not mean we should accept these statistics as foregone conclusions going forward.

Recommended Action Items for Transportation

- **Electric Vehicles:**
 - Develop an appropriate incentive for buying electric vehicles. Lead by example by purchasing electric vehicles for government operations.
 - Consider the introduction of electric school buses.
 - Reach out to businesses to facilitate the adoption of electric delivery trucks.
 - Reach out to car rental and taxi companies to introduce electric vehicles as part of a green tourism strategy.
 - Consider mandating EV charger pre-wiring in new homes. Examine the feasibility of requiring or encouraging chargers at outdoor parking in new residential developments.
- **Commercial Vehicles:**
 - Assess the feasibility for producing biogas from organic waste and other sources, to produce a vehicle fuel to operate the PEI waste truck fleet.
 - Work with industry to conduct a feasibility study on CNG use for trucks in PEI.
 - Consider the introduction of a fleet-based low-emissions standard for truck operators on the Island.
- **Sustainable and Active Transportation**
 - Continue and enhance the build-out of cycling lanes across the Island.
 - Continue implementing longer-term strategies to make traffic more efficient and to reduce transportation energy use.
 - Work with QUEST and/or other Atlantic governments and agencies to identify strategies and technologies to enhance regional sustainable transportation on an on-going basis.
 - Develop and maintain a long-term cultural~~e~~-change effort to transform attitudes around transportation and commuting and promote sustainable transportation options. This effort should be part of a larger “green image” and “sustainable lifestyle” strategy that includes tourism.
 - Create a provincial transportation committee that is supported by an annual budget.
 - Commission a dedicated Sustainable Transportation Strategy to guide the Committee’s work in implementing the Energy Strategy recommendations.
 - Introduce regular emissions controls for all vehicles fueled with diesel and gasoline.
 - Consider reflecting the cost of driving, as well as of different types of vehicles, in registration fees and/or fuel taxes.

Recommended Action Items for Cross-Sectoral Initiatives

- **Municipal Planning**

- Incorporate energy-related topics into municipal planning discussions in collaboration with municipalities.
- Implement legislation to discourage and potentially remove the ability to pass bylaws that counter-act energy efficiency or renewable energy efforts. Examples include, but are not limited to, communities not allowing clotheslines or the siting of houses to take advantage of solar potential.

- **Government Procurement**

- Develop and implement sustainable-energy-related criteria into Government tender requirements and scoring.

- **Fuel Differential**

- Phase out the existing HST exemption on oil in a manner that does not adversely impact low-income Islanders and encourages uptake of alternative heating sources.
- Develop incentives for Islanders to switch from oil heat to more sustainable options.

- **Electricity Rate Structures**

- Initiate discussions and research (as required) on potential rate-structure and billing changes that acknowledge expected future changes to the electricity system over the coming years. **Specific topics to be included, although not limited to, include:**
 - Net billing and net metering
 - A feed-in-tariff system (including individual, not simply utility-scale)
 - Elimination of a declining block rate structure
 - Implementation of an agricultural rate class
- As meters are replaced or relevant technology such as ETS or solar units are installed, install smart meters to allow for a future time-of-use billing system.
- Research options into meeting the communications requirements of a province-wide rollout of smart meters (and institute a process to ensure that both utilities have a common smart-metering approach and/or systems, if possible).
- Develop, in collaboration with Maritime Electric, an appropriate replacement schedule for all meters that will allow the Island to implement a smart-grid system to better integrate renewable technologies and a distributed generation system.

- **Government Planning**

- Initiate a process to develop high-level calculations for life-cycle costing that will be used to inform purchasing, capital, and other Provincial Government decisions.

