

Scope of Work: Nova Scotia's Electricity System Review

The electricity market is rapidly changing. Technological, environment, and cost considerations are impacting the direction of changes in the electricity market around the world, not only in Nova Scotia. The pressures of electricity prices relative to other jurisdiction can have an impact on economic development, cost of government services, and overall cost of living. Addressing this pressure, new technologies, and the changing market necessitates a review of the Nova Scotia electricity marketplace.

In the fall of 2013, the Government of Nova Scotia announced that the first comprehensive review of our province's electricity system in over a decade would begin in 2014. The review is a legislated commitment under the *Electricity Reform Act* which was passed by the Nova Scotia Legislature on December 12, 2013. The Minister of Energy stated that the review would begin with expert reviews of the system, and would flow into public consultations on what Nova Scotians want the market to look like in the future.

The *Electricity Reform Act* has two parts: the first opened up the market for low impact renewable electricity suppliers to compete for the sale of electricity to Nova Scotia Power's (NSP's) retail customers. Work on implementing that portion of the act is currently underway.

The second part of the Act requires the Minister of Energy to complete public consultation on the future policy plans and regulations for electricity in the province of Nova Scotia.

The Department of Energy is has sought public feedback regarding the draft scope of work to be done to properly fulfill the requirement for public consultation on our electricity future. The Department received feedback on the overall scope (subjects to be considered); direction of the Review (including how it is being done and the way it will blend technical expertise with stakeholder and public views and preferences), as specific issues that should be considered under the proposed areas of study.

Consultation on the draft scope of work marks only the first step in consultation initiatives related to this important and priority project. The Department will seek feedback throughout the review process with consultation timelines posted online at novascotia.ca/electricityfuture . Public engagement will be led by the Government of Nova Scotia, but also at times will be hosted by stakeholders. The studies commissioned during the first phase of the review will form the basis of broad public consultation and engagement on our electricity system.

While some public engagement will overlap and be guided by the technical work which is underway, the majority of public engagement will use a variety of tools to engage with the public and stakeholders including expert-lead forums, web-based mediums, and a range of public engagement tools.

DRAFT SCOPE OF WORK OVERVIEW

The Act outlines three specific areas for consultation:

- (a) Emerging technologies that may affect the supply and demand for electricity in the Province;
- (b) Market trends in the supply and demand for energy that may affect prices for electricity in the Province, including those relating to energy efficiency and conservation; and
- (c) Emerging trends in utility governance, organization, performance and accountability.

The Act goes on to be clear that the review is not limited to only considering those areas, and it is the intent of the Government to adjust the review as it receives feedback to ensure it addresses the complete system.

Review Process

Phase I: Technical Review

Phase I will gather technical and expert analysis to evaluate global factors and experience that impact Nova Scotia's electricity system and establish Nova Scotia's system and economics within a local and regional context. The Department of Energy is seeking the appropriate expertise to provide the analysis required for broader public consultation through Requests for Proposals (RFP's). More information can be found here novascotia.ca/electricityfuture . At this time, three requests for proposals are being issued based on the subject areas outlined in legislation.

In addition to the experts retained by the Department, other expert views will be considered regarding information relevant to the Nova Scotia electricity market.

Phase I will include three key studies assessing the following:

- Emerging Technology: The Emerging Technology study will seek to understand which existing technologies are likely to increase their role in Nova Scotia's electricity market and which potential future technologies are expected to be cost-effective in a Nova Scotia context. The study will assess technologies for:
 - generation of electricity;
 - conservation and efficiency including maximizing opportunities within the existing system
 - optimization of the system - including smart grid and storage technologies to enable reduction of peak demand, integration of intermittent/ variable output generation resources and maximizing efficiency.

The study will consider key impacts on Nova Scotia from the perspective of whether such technologies will enable us to meet obligations and objectives in a more cost effective manner and whether such technologies are expected to reach cost-effectiveness within short (0-5 years) medium (5-10 years) or longer term (more than a decade away).

- Market Trends for the Supply and Demand of Electricity in Nova Scotia: The study will conduct an analysis on the future of Nova Scotia's potential energy mix, pricing and markets. The study will take into account the prospect for developing new sources of electricity supplies in Nova Scotia to serve Nova Scotia markets as well as the potential to create advantages for Nova Scotians through exports. The study will also account for cost associated with new environmental standard compliance, the interplay between natural gas and electricity. It will also examine supply options from inside the province or from elsewhere.

This work will build upon previous and current work done under the Atlantic Energy Gateway to bring in regional electricity planning opportunities as well as the current NSPI/UARB integrated Resource Planning Process (IRP). The IRP brings together many stakeholders to explore scenarios/options for an electricity future through computerized modeling. As such, this process will help inform the Review findings by providing insight from key stakeholders on which scenarios/options are seen as most likely. Underlying this analysis will be a focus on the lowest long-term cost with the greatest long-term benefit. A key consideration will be managing any potential impacts to rates and ensuring cost effective service delivery.

- Electricity Sector Organization and Governance: The study will review various market models and governance structures for electricity delivery. This will include a broad spectrum of structures and models, including an assessment of the current vertically integrated regulated monopoly and options that introduce more competition. This will also include models where the sources of electricity are supplied competitively and the various elements of the electricity system (generation; planning and operations; transmission; and distribution) are held separately.

This study will examine the market conditions that support the adoption of the various market models as well as gaining insight into the causes that have led to failure or success in the specific application of each model. Critical market conditions such as market size, geography and the state of generation/transmission assets at the time of change will need to be considered. This study will seek to assess options which would provide cost benefits to ratepayers.

Within each model choice, the study will examine best practices in managing and regulating utility performance including the role of service and performance standards and how to set a proper risk-reward balance for investors and ratepayers. The study will be conducted within a framework of ensuring system maintenance and reliability. Entities directly inter-connected with the North American "bulk power" system (transmission system) are required to comply with mandatory North American Electric Reliability Corporation (NERC) operating and planning standards – maintaining service reliability of both the bulk (transmission) and distribution system reliability will be a fundamental underpinning of the analysis.

The study will also take into account analysis from the Emerging Technology study to analyze factors that may impact on future system design. For example, if local/distributed generation and management technologies are expected to arrive in a cost-effective form in the short to medium term, that would significantly impact upon how we select the appropriate market model and governance structure for Nova Scotia.

A request for proposals has been developed for each of the studies. Feedback received on this scope of the review will inform the final work to be completed by the selected experts. The Department will provide a final scope of work for the Review based on feedback received from the public consultation.

It is expected that study work will begin early this winter. Phase I studies are expected to be released in stages over the course of the spring to early summer of 2014. This work will set stage for the full public consultation process leading into Phase Two.

Phase 2: Nova Scotia Context and Public Consultation

Phase 2 will integrate the various technical studies and expert views and make the information available for the public and key stakeholders to help them identify preferred outcomes. Public engagement will be led by the Government of Nova Scotia, but also at times will be hosted by stakeholders. The studies commissioned during the first phase of the review will form the basis of broad public consultation and engagement on our electricity system.

While some public engagement will overlap the technical work in Phase 1, the majority of public engagement will use a variety of tools to engage with the public and stakeholders including expert-lead forums, web-based mediums, and a range of public engagement tools. Some of the approaches will include opportunities to further refine options through expert-lead forums; other approaches will more directly engage with the public to draw out objectives for electricity system reform and preferences on how to achieve a system that meets those objectives. The methods and timing for engagement are outlined below. A more detailed public engagement plan will be developed and made available as the Review progresses.

Following the receipt of these views, the Department will draft more specific key questions on the future direction of electricity policy in the province. The questions will build on the feedback received from the public and the technical knowledge accumulated through the phase one studies. The questions will focus on key principles; objectives and priorities for Nova Scotia. The Department will use the questions to seek feedback from August to November, 2014. The Department of Energy will continue to use internet-based consultation tools and work with stakeholders to create forums for discussion on options by the public and experts to ensure a wide-range of views are considered and challenged.

The Province will release a final report outlining the findings of the electricity review in spring of 2015. Based upon the expert analysis and input from the public and stakeholders, the Province will table a report that will outline what has been heard during the Review. From that advice, the Government will develop the Province's plan for our electricity sector and related matters. The Report on the Review is expected to be released in the spring of 2015. The Plan will follow.

Final Review Report and Electricity Plan

Once public consultation is complete, the results of the technical studies and public feedback will be integrated into a report on Preliminary Findings and made available for final consultation in the first quarter of 2015. The Preliminary Findings report will be completed as a Final Review Report in the spring of 2015.

It will outline what changes to Nova Scotia's supply and delivery of electricity are technically feasible, cost effective and supported by Nova Scotians. The Final Review Report will also outline how this electricity future can be most effectively governed. The Review Report will respect current binding investments and legal commitments including the orderly shutdown of our existing coal generation fleet over time; contracts with Independent Power Producers; Community Feed-in Tariff Approvals, the Maritime Link, and the Province's plans to open the retail renewable electricity marketplace. However, the final report will not assume the status quo for the electricity market must remain, and where appropriate, will recommend changes to any existing policies, legislation, or commitments.

Following the receipt of the Final Review report, the Department will begin to prepare a plan for implementation of the findings. This report will form the basis of Government's future plans for Nova Scotia's electricity sector. Timing for the release of the Plan will depend upon the complexity of the findings from the Review.

Public Consultation Methodology

The Department of Energy intends to enable broad participation by Nova Scotians. During Phase I, in addition to the experts retained by the Department, other expert views will be considered and encouraged to submit information relevant to Nova Scotia. A formal request for expert submissions from those who have expertise and experience relevant for Nova Scotia will be announced early in 2014. Submissions in the form of short video presentations as well as written work will be accepted, and engagement will include those retained through the 2014 Integrated Resource Planning initiative. Anyone submitting research or work must agree to allow the department to make it publicly available on its website and through other means, though the owner of the research may retain actual ownership and copyright.

Tools for public consultation to be considered include surveys; interactive websites to enable the expression of views in a constructive and positive atmosphere and well as opening dialogue and responses to questions; and stakeholder sponsored forums. Multiple opportunities for engagement are planned over the course of the Review and will include targeted stakeholder sessions as well as public meetings to solicit broader feedback. A detailed consultation plan will be made available as the Review progresses.