

lowest possible long term cost. The Government should seek to develop mechanisms and provide support for significant projects that assist in achieving measurable and verifiable demand and energy savings that will provide the electricity system with flexibility and growth in demand through economics development.

ELECTRICITY & AFFORDABILITY

The cost of electricity is an ongoing concern for Nova Scotians due largely to our reliance on fossil fuels as our primary source of electricity. We have seen significant increases in electricity rates over the past ten years. While shifting to more diverse sources of electricity will help mitigate some of that in the long term and bring more predictability to rates, electricity affordability continues to be a concern for Nova Scotians today.

As part of the Electricity System Review, London Economics Inc. completed a high-level cross-jurisdictional analysis of how other areas address electricity affordability. The Affordable Energy Coalition has also suggested that the province create a universal service program.

Universal service programs essentially ensure that all customers have access to electricity regardless of their ability to pay. In Maryland, eligible customers receive assistance via payments for a portion of their current electric bill. Anyone whose income is below 150 per cent of the federal poverty line is eligible. This is a ratepayer-funded program, where a small charge is added to all electric customers' bills. Maryland also has a program that installs energy conservation materials in the homes of low-income ratepayers at no charge.

Ontario also has a low-income energy assistance program that provides emergency financial assistance to low-income customers (up to \$500) for electricity bills in arrears, and energy efficient upgrades. The province also has specialized rules for qualified low-income customers such as equalized billing and disconnection grace periods. Beginning in 2016, the Ontario government will also give low-income residents discounted electricity through direct on-bill support.

The Department of Energy is currently focusing on energy efficiency upgrades for low-income homes as a way to address electricity affordability. By lowering overall consumption, we not only decrease power bills today, but also reduce the impact of future price increases. Nova Scotia Power shareholders have committed to

contributing 37 million dollars for in low-income efficiency home upgrades with the aim of having all upgrades completed in the next ten years.

In addition to the Electricity System Review, the province has undertaken a review of the province's taxation system. Many of the tax review suggestions have implications for addressing poverty in general, and any policy decision by the province on electricity affordability will need to be integrated with actions on taxation.

It should also be noted that the issue of affordability is not limited to those on low incomes. All Nova Scotians and businesses have faced pressure from the rise in fossil fuel prices - particularly for coal and natural gas. The fall of 2014 saw a significant drop in oil prices, but regional and environmental factors as well as purchasing plan decisions all mean there is no immediate and automatic link between a fall in oil prices and the cost of fuel for electricity. Accordingly, for most Nova Scotians, the objective remains more stable long-term prices, at or below the general rise in the cost of living.

WHAT WE HAVE LEARNED

About Our Need for Electricity

The province is expected to have access to enough electricity from current and committed energy sources to meet our likely electricity needs for the foreseeable future. Overall electricity demand is not expected to significantly increase without major drivers such as growth in our offshore sector. We can likely balance steady and predictable demand increases (from factors such as increased use of electronics) through demand-side management and efficiency.

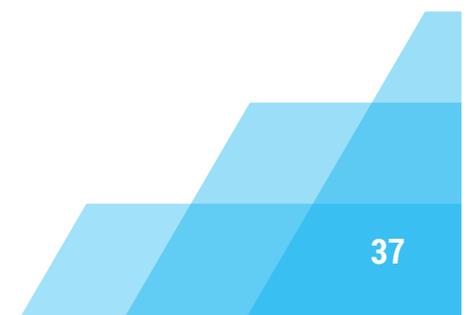
However, as time passes and current generation sources reach the end of their contracts or the end of their useful life, they will need to be replaced.

The electricity system will also have to be flexible enough to respond to the unforeseen. Significant changes in the demand for electricity, such as the loss of large industrial customers, or sharp increases in population growth due to economic growth (an offshore oil discovery, for example) have not been factored into the ranges used in the model that predicts our future demand. With so much unknown, system designs that can respond quickly to unforeseen changes would have significant value for our future electricity system.

Public support for managing growth through efficiency is strong, but the public is mindful of cost. Investments in efficiency measures, policies and rate designs, and technologies that support efficiency and the shifting of demand can all potentially drive down long-term costs for electricity. Still, they all have a cost today in return for future benefits. The public is looking for a balance and many are asking that affordability be taken into account.

About Our Electricity Sources

The studies completed by ICF International show that as we approach 2030 we reach the next critical point for our electricity planning. The gradual phase out of coal-fired power plants and potential retirements of renewable power purchase agreements will open up opportunities for new electricity projects. However, the nature of these opportunities will be shaped by our ability to increase interconnection with other electricity markets such as New Brunswick, and increase regional collaboration on electricity issues.



Our electricity future will be shaped by both a provincial desire to improve our environmental performance and federal requirements to lower greenhouse gas emissions. Federal regulations around coal and air emissions will be a driving force in how Nova Scotia sources its electricity in the future.

While this provides an impetus to continue improving our environmental performance, it also limits how and where we source our electricity. There is also renewed focus globally on climate change. If this continues, we can expect further external pressures such as carbon pricing or more aggressive requirements to create a low-carbon future.

Nova Scotians have told us that they value the environment. They want the province to continue making improvements (as technologies become cost effective) in how we source and manage our electricity to positively impact the environment.

We must now balance external pressures to decrease carbon, our own desire to improve environmental performance, and the desire of Nova Scotians to keep electricity costs stable. This speaks to a need to plan for a low carbon future today, so that price increases can be mitigated or offset through careful planning and integration.

Through the public consultation sessions, we learned that there is some support among Nova Scotians for more focus on small-scale electricity production. There are a number of Nova Scotians looking for opportunities to make their homes, businesses and communities more self-reliant in terms of energy production. This desire for individual opportunities will have to be balanced by the interests of all ratepayers as Nova Scotians look for long-term rate stabilization and predictable electricity rates.

Diversity in our electricity supply has been a goal for the province over the past 15 years. This means moving away from fossil fuels such as coal as our primary energy source. However, this does not mean elimination of fossil fuels. Overreliance on any once source of electricity, even renewables, places us at risk in terms of price and resource availability.

Through the public consultation process, we have reaffirmed our commitment to diversity. Experts, stakeholders, and the public feel that we should be ensuring our electricity security, both in terms of price and availability, by ensuring a mix of electricity sources.

We've also learned that Nova Scotians generally support increased regional solutions. Given that the market is relatively small, most participants feel that increasing our market regionally would benefit our system and give us more import and export opportunities.

About Innovation and Emerging Technologies

The studies completed by ICF International show that many of the innovative, emerging technologies available today are not currently cost effective for large-scale deployment within the province. As the cost of electricity increases and the cost of energy technologies come down, there may be more opportunities for their use in our system. Despite the general observation about new technology still being costly, there are specific cases where the cost-benefit business case can be made today. One such case is in the area of energy management systems.

Nova Scotia's electricity system has undergone significant transformation in the past few years. From a fairly simple model of electricity production ramps up or down to meet changes in need to a complex model that needs to take into account not just changes in customer needs but also one that must balance electricity that comes on when the winds blow or the tidal current ebb and flow. New technologies around system management could help us get maximum value out of renewable resources; shift demand for electricity off peak; and give us a much better understanding of our electricity use and how to manage it.

New technologies that provide a platform for meters and home and office energy management systems are the foundation of preparing Nova Scotia for an electricity future that offers more options in rates and billings and more choice and a reduction in electricity use. They also become critical in managing storage systems and in fact are already in place for electric thermal storage.

Overall, Nova Scotians support pursuing innovative ideas and technologies that will benefit our system. However, we must invest strategically. Investment in new technologies should solve Nova Scotian issues (such as energy management or storage) or bring significant economic benefits to the province (such as tidal energy). Nova Scotians also strongly believe that we should learn from the mistakes and build on the successes of others.

Review participants generally felt that Nova Scotia should focus on small-scale pilots to start testing some of the more expensive technologies today, in order to gain a better understanding of how they work within our system. The discussion around who should pay for innovation has identified a need for a more systematic approach to developing new technologies.

There were a number of options identified in terms of who should pay for investments in new technologies (tax payers, rate payers, or the private sector, for instance). Additional work is needed to identify specific funding streams for electricity innovation.

About Setting Rates and Regulating Utilities

Experts have shown that Nova Scotia likely does not have a large enough market (500,000 electricity customers) for full-scale market liberalization. However, there are opportunities to increase competition and transparency, and better align the interests of shareholders and ratepayers.

There are a wide variety of opinions regarding how our electricity market should be run. They range from a fully open market to breaking Nova Scotia Power into transmission and generation assets to only focusing on what gives the most benefit to Nova Scotians in terms of cost effective and quality service. However, a few key themes that have emerged.

Our current model (cost of service) is becoming less common as utilities move from large capital-intensive investments to models with increased economic and customer performance. Full-scale performance-based regulation would be a lengthy, complex, stakeholder-driven, intensive process with results that may not meet expectations of some stakeholders. However, there are ways to blend our existing cost-of-service model with regulation that has more of a focus on performance and outcomes without immediately going into a full performance-based model.

Through this process, it has become apparent that the rate-setting process is viewed as complex, and not easily understood or accessed by non-experts. Many review participants believe that there is not enough transparency or accountability in the system. Some participants have stated that the UARB process has become too adversarial and information is not readily available or easily accessible. The rate-setting process is layered and complicated, and more work needs to be done in communicating how these components work. Results need to be shared in a way that is easily accessed by the public. In a number of cases, participants complained that basic information is not publically available, when in reality it is available, but difficult to find.