Accountability Report

2016–2017

Department of Energy

July 2017

NOVA SCOTIA

Contents

Accountability Statement

The Accountability Report of the Department of Energy for the year ended March 31, 2017 is prepared pursuant to the Finance Act and government policies and guidelines. These authorities require the reporting of outcomes against the Department of Energy's Business Plan for the fiscal year just ended. The reporting of the Department of Energy outcomes necessarily includes estimates, judgments and opinions by Department of Energy management.

We acknowledge that this Accountability Report is the responsibility of the Department of Energy management. The report is, to the extent possible, a complete and accurate representation of outcomes relative to the goals and priorities set out in the Department of Energy's Business Plan.

See original for signature

Geoff MacLellan
Minister

See original for signature

Murray Coolican
Deputy Minister

Message from the Minister

The Department of Energy continues to strategically manage and promote our province's energy resources on behalf of Nova Scotians. In 2016-2017, we delivered on that commitment and strengthened our economy by creating opportunities for the middle class and jobs for young Nova Scotians, while continuing to protect our environment.

Nova Scotians are in the middle of an unprecedented three-year period of rate stability, legislated through our 25-year Electricity Plan. The new Fuel Adjustment Mechanism ensures ratepayers are only charged for the actual cost of fuel, and this spring they received a rebate for the first time. Nova Scotia Power is also being held to performance standards for customer service, reliability and storm response.

Protecting our environment is a top priority for Nova Scotians, and we continue to integrate cleaner energy sources into the system. Nova Scotia remains a leader in greenhouse gas reductions, having already met the federal target for 2030 by reducing total emissions by more than 30 percent. In the fall, we signed a Climate Change Agreement in Principal with the Government of Canada that recognizes our accomplishments, and allows us to affordably build on our successes.

Tidal energy has been a significant factor in our achievements on climate change. In November, Nova Scotia became the first region in Canada to have a grid-connected tidal turbine. Tidal energy has been shown to launch new companies, attract global investment and create jobs for youth in rural areas. We have continued to develop a regulatory and legal framework for the industry and will continue to support its development.

Everyone deserves the opportunity to contribute to our cleaner energy future. We facilitate this opportunity for Nova Scotians by supporting efficiency programs and active transportation projects. Heating our homes more efficiently reduces greenhouse gas emissions, while also having a positive financial impact on low-income homeowners. In 2016-2017, we provided funding for 32 community-led initiatives through our sustainable transportation program, Connect2, that gave people the opportunity to use sustainable modes of transit to move between community hubs.

In 2016-2017, innovation led the way in our work to develop the province's petroleum resources. Through our Offshore Growth Strategy, we're collaborating with the Offshore Energy Research Association, Genomics Atlantic, and the University of Calgary in the pioneering of genomics and geoscience to reduce exploration risk. This research was shared with industry, and in return we have received billions of dollars in work commitments from major international firms. Supporting LNG projects also continues to be an area of focus as we assist proponents pursuing potential export markets. We will also look at ways to mitigate future fluctuations in natural gas prices for Nova Scotians.

These are exciting times in the province's energy sector, especially for youth looking to obtain a rewarding career at home in Nova Scotia. Through the Energy Training Program and Pengrowth-Nova Scotia Energy Scholarship Program, we've continued to invest in opportunities for post-secondary students and recent graduates looking to receive specialized training in order to pursue energy-related careers.

This report outlines the significant progress we've made on our 2016-2017 commitments, to ensure all Nova Scotians benefit from our energy resources. As our work continues, I know the hardworking and highly skilled staff at the Department of Energy will continue to deliver positive results. I look forward to the year to come.

Sincerely,

See original for signature

Geoff MacLellan

Minister of Energy

Measuring Our Performance

The mandate of the Department of Energy is to manage and promote energy resources to achieve optimum economic, social and environmental value from the energy sector. This mandate is reinforced by the Department's strategic priorities which support the development of a diverse energy supply, use of sustainable and renewable resources, and growth of local industries to generate economic benefits for the province.

The Department of Energy's efforts are aligned with four areas of strategic focus:

- A diverse, competitive and cleaner energy economy
- Optimal benefits received from development and use of energy resources
- A substantial and growing offshore petroleum sector
- Socially responsible development of Nova Scotia's energy sector

These strategic areas guide the work of the Department of Energy's other core functions:

- Joint Management of Offshore Petroleum Resources
- Onshore Oil & Gas Development & Administration
- Liquefied Natural Gas Exportation & Investment
- Industry and Supply Chain Development
- Fiscal Management – Oil & Gas Royalties

In 2016-2017, the work of the Department was aligned with the priorities set by government: Innovation, Education, and People.

Highlights of the Department's accomplishments are included in the following sections, under the heading of the government priority, strategic area, or core function to which they are most directly aligned.

Departmental Performance on Government Priorities:

Innovation

Offshore Growth Strategy (OGS)

The OGS is a four-year initiative to generate new insight about our offshore petroleum geology, attract new investment to our province, and ready our offshore regulatory regime and local supply chain to be prepared for increased offshore oil and gas activity.

The geoscience research that is part of the OGS builds on momentum from the Play Fairway Analysis (PFA) released in 2011 that was instrumental in attracting over $2 billion in exploration work commitments to the province. This included welcoming a new international company, Statoil, in 2015. This research improves the understanding of Nova Scotia's complex petroleum geology to reduce the geological uncertainties associated with exploring in this environment.

Exploration efforts can lead to new commercial development of oil and gas in the offshore, royalties, crown share payments, and employment and contract opportunities, translating into significant economic benefit to the province. In 2016, Shell Canada received approval to drill two wells offshore Nova Scotia. The first well, Cheshire 97, was completed in July 2016. The second well, Monterey Jack E-43, was completed in January 2017. Both wells were found to not contain commercial quantities of oil, and were subsequently abandoned. The work, however, resulted in significant employment and contracting opportunities for Nova Scotians.

In addition to geoscience efforts, the Offshore Growth Strategy includes initiatives to optimize economic benefit opportunities from offshore development. This includes undertaking supply chain capacity development work, positioning local companies and workers for offshore opportunities, and leveraging opportunities and joint venture partnerships. Our capacity assessment work involves generating new understanding about the potential opportunities that may result from deep-water exploration in the areas of engineering, manufacturing, fabrication and supply and service. For more information on industry and supply chain development, please refer to page 9 of this document.

Building on amendments to the Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation (Nova Scotia) Act, the Department of Energy, jointly with Natural Resources Canada (NRCan), developed three new sets of regulations to address the following:

1. Cost Recovery Regulations
2. Financial Requirement Regulations
3. Administrative Monetary Penalties Regulations

These regulations came into force in February 2016 and were implemented in the 2016-2017 fiscal year. The Department is continuing work on modernizing the Offshore Drilling and

Production regulations, and plans to consolidate the regulations into a single framework regulation.

Electricity Reform

Our Electricity Future: Nova Scotia's Electricity Plan 2015-2040 was released in November 2015. This Plan is focused around four themes: price stability, innovation, accountability, and competition. Under the Plan:

- Nova Scotia Power Inc. (NSPI) was required to file a 3-year Rate Stability Application for 2017, 2018, and 2019 with the Utility and Review Board (UARB) in 2016, as legislated by the *Electricity Plan Implementation Act* (2015) Session of the House. NSPI filed a Fuel Stability Plan application in March 2016 and a Consensus Agreement between NSPI and the Consumer Advocate, the Small Business Advocate, the Industrial Group and the Municipal Electric Utilities of Nova Scotia Co-operative was approved by the UARB in July 2016. These initiatives have resulted in stable electricity rates in the province, with ratepayers only experiencing small increases in fuel related costs.
- In 2016-17, the Department:
    - Initiated spending $350,000 per year for the next 3 years on innovation initiatives in the electricity sector,
    - Initiated spending $150,000 per year for the next 3 years on strategic initiatives that support development of the tidal sector,
    - Designed a Solar Electricity for Community Buildings Program that will solicit and award projects through an independent Procurement Administrator that will result in, at most, a 0.1% rise in energy rates. The three-year program will provide an opportunity, through a competitive bid process, for community-based organizations to develop small scale commercial solar photovoltaic projects. The program is to be implemented during the 2017-2018 fiscal year.
- The UARB was required to develop and adopt Performance Standards for NSPI with penalties for compliance (capped at $1 million annually, as legislated in the *Electricity Plan Implementation Act*). The Performance Standards came into effect January 1, 2017.

The Renewable to Retail (RtR) hearing was convened by the UARB in January 2016, with the UARB subsequently approving a suite of new tariffs to facilitate the opening of the RtR market, and granted final approval of NSPI's compliance filing. The completed UARB Renewable to Retail regulations licensing regime is now in effect.

Efficiency Programming

The Department promotes energy efficiency and conservation programs for non-electrically heated homes primarily through the funding of Efficiency Nova Scotia, and through the creation of regulations and energy efficiency standards for products purchased in Nova Scotia. The Department manages non-electric energy efficiency programs to ensure that assistance in reducing energy costs is provided to those who need it most through programs designed specifically for low income Nova Scotians.

In 2016-2017, the Department of Energy:

- Supported the implementation and adoption of the 2015 version of the National Energy Code for Buildings and the National Building Code.
- Worked collaboratively with NRCan and other provincial jurisdictions to advance the federal Energy Efficient Appliances Regulations and develop and promote goals for 2030 through the Market Transformation Strategy.
- Collaborated with Quality Urban Energy Systems of Tomorrow (QUEST), Nova Scotia Chapter, to create a network of professionals who are interested in the implementation of energy efficient buildings in Nova Scotia.

Marine Renewable Energy (MRE)

The MRE sector represents an emerging opportunity for our local supply sector to develop world class in-stream tidal capacity and for new technologies to produce predictable no-carbon electricity. Nova Scotia's efforts to create a world-class sector in the Bay of Fundy for in-stream tidal energy are based upon innovation in research and development initiatives, supply chain development, and leveraging Nova Scotia's significant expertise in ocean technology.

Research supports better understanding of the environmental, social, and economic impacts of development – a critical piece as projects are deployed in the coming years. Through continued support to the Offshore Energy Research Association (OERA), the Fundy Ocean Research Center for Energy (FORCE), and other entities, the Province has ensured that developments and regulatory activities are fully informed by quality, peer-reviewed research and data collection.

The Department supports activities that will enable environmentally sustainable tidal energy projects and supports the development of world-class in-stream tidal expertise in Nova Scotia. In 2016-17 the Department began developing regulations to implement the *Marine Renewable Energy Act*. The Act governs the development of marine renewable energy resources – wave, tidal range, in-stream tidal, ocean currents, and offshore wind – in designated areas of the Nova Scotia offshore.

Nova Scotia achieved the following milestones for MRE in 2016-2017:

- Facilitated the introduction of a new potentially disruptive technology to in-stream tidal in Nova Scotia. Disruptive technologies challenge conventional technologies and their cost structures through innovative approaches
- Cape Sharp Tidal Venture deployed and grid connected its first 2 MW Turbine in November 2016. This represented the first in-stream tidal energy fed to the grid to power Nova Scotia homes and businesses.
- Contributed to the Marine Renewables Canada (MRC) Annual Conference, hosted in Halifax in November 2016.
- Fundy Ocean Research Center for Energy (FORCE), with funding from the Department, completed transmission upgrades to allow up to 30 MW of tidal energy to connect to the grid.
- Contributed funding to support FORCE's Environmental Effects Monitoring Program.

- Established, in collaboration with partner OERA, the Research Innovation Tidal Energy (RITE) Fund to support marine renewable research. Other partners include MRC, NRCan, Innovacorp, FORCE and Atlantic Canada Opportunities Agency (ACOA).
- Funding of research projects through OERA. Projects included site characterization of potential future marine renewable electricity areas, MRE Infrastructure Assessment Update and feasibility studies.
- Continued dialogue with First Nations on environmental and economic matters relating to marine renewable energy development.
- Supported the creation of MRE Standards through participation in a national committee on marine energy standards (Standards Council of Canada's Canadian Mirror Committee of IEC TC114).

Sustainable Transportation

Implementation of the *Choose How You Move: Sustainable Transportation Strategy* is ongoing. The Connect2 grant program was launched in May 2015. This program supports community driven projects that improve connectivity within two kilometers, particularly between key community assets and help to achieve a low-carbon transportation future with higher mode-shares of biking, walking, rolling, shared transportation and transit and support land-use planning that is oriented to sustainable modes of transportation.

The 2016-17 Connect2 program provided $646,000 to 30 projects and leveraged approximately $3.0 million in matching funds from municipalities, not-for-profit organizations, other provincial government sources, and federal government sources.

Interdepartmental collaboration with other departments to implement other action items in the *Strategy* is ongoing.

Education

Pengrowth-Nova Scotia Energy Scholarship Program

The Pengrowth-Nova Scotia Energy Scholarship Program offers funding to trades and technology and university undergraduate and Master-level students throughout Nova Scotia to pursue energy-related studies. In 2016-2017, sixteen students from across the province were awarded the Pengrowth-Nova Scotia Energy Scholarship, helping them move toward their future careers in the energy sector. Eight young Nova Scotians, enrolled in energy-related university programs, received a renewable scholarship of $2,500 per year for four years. Eight other students, enrolled in trades and technology programs at the Nova Scotia Community College, received a one-time scholarship of $2,500.

Additionally, a $10,000 Innovation Grant was awarded (over 2 years) to a Master's student in Applied Science at Saint Mary's University, to explore the potential for commercial petroleum

deposits in the Scotian Basin. This graduate project builds on government's geoscience research, which identified the oil and gas potential in Nova Scotia's offshore, estimating more than 120 trillion cubic feet of natural gas and eight billion barrels of oil.

Energy Training Program

The Department has continued to work with industry and partners to increase opportunities and capacity within Nova Scotia's energy sector. Twenty post-secondary students across Nova Scotia gained work experience during summer 2016 in the energy sector through the Energy Training Program for Students. The program is in its 15th year of operation and has provided hands-on experience to approximately 420 young individuals in Nova Scotia.

People

Engagement & Consultation

The Department consulted and worked collaboratively with the Mi'kmaq of Nova Scotia on several projects throughout 2016-2017, and continues to strengthen its relationships and support for Mi'kmaq participation in the energy sector. The Department of Energy remains the only Department within the provincial government, outside of the Office of Aboriginal Affairs, to support a full-time position for Aboriginal Consultation within the Department.

The Department also provided resources and supported participation on interdepartmental and intergovernmental initiatives regarding Public Participation and Public Confidence.

Other Departmental Core Functions

Joint Management of Offshore Petroleum Resources

Oil and gas activity in the Canada-Nova Scotia Offshore Area is jointly managed by the federal and provincial government. The governments of Canada, Nova Scotia, and Newfoundland and Labrador have agreed to work together on legislative and regulatory changes for all of Canada's offshore areas.

Work has continued under the Frontier and Offshore Regulatory Renewal Initiative (FORRI) to modernize existing operational regulations for the offshore. FORRI is a partnership of federal and provincial government departments and regulators with responsibility for Canada's offshore areas. Regulations are being updated and consolidated into a single framework regulation. Stakeholder consultation has begun on the regulatory changes and will continue throughout 2017.

In February 2016, new Cost Recovery Regulations were introduced, under the *Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation (Nova Scotia) Act*. The Cost Recovery Regulations outline a new cost recovery regime for the CNSOPB to recover the cost of their services from industry, with 2016-17 being the first year of implementation. These regulations allow the CNSOPB to more fully recover their costs and created transparency in how fees are calculated.

Onshore Oil & Gas

The Department of Energy is continuing its multi-year initiative to build a petroleum geoscience atlas of onshore Nova Scotia. This initiative documents the current state of knowledge of Nova Scotia's onshore petroleum geology. There has been a significant amount of data regarding exploration for onshore oil collected in the province since the first exploration took place in the late 19th century. Throughout 2016-2017, the Department continued to collect, compile, and analyze data, including the extension of research initiatives stemming from the 2015 Piston Coring Program, which explored the existence of source rock hydrocarbons in the deep-water of the Scotian Shelf. Once compiled, the atlas will be made available to the public and investors in a modern, electronic format. As new information becomes available, the onshore atlas will be amended and expanded to remain current.

An ongoing priority for the Department is to modernize onshore oil and gas regulations to ensure that industry best practices are required, and incorporate the use of new technologies.

Liquefied Natural Gas

An LNG project or projects could increase investment in the offshore and result in significant construction and long term employment and contracting. The Department has continued to pursue opportunities related to Liquefied Natural Gas (LNG) export and investment, such as LNG export terminals, in Nova Scotia through 2016-2017. The Department continues to examine the economics of additional gas development opportunities and new exploration opportunities for natural gas prospects in the offshore. This analysis is ongoing, and involves continuing discussions with investors, purchasers, pipeline companies, and gas suppliers.

Industry and Supply Chain Development

Offshore Growth Strategy — Optimizing the Value for Nova Scotia

In 2016-2017 the Department continued its work to identify and enhance the capability of the Nova Scotia energy sector to be successful in capturing offshore oil and gas opportunities locally, regionally and internationally. The Department, in partnership with ACOA, engaged a local industry association for a multi-year Nova Scotia Energy Supply Chain Capacity Study Project, which has a goal to help prepare organizations to participate in the energy supply chain. Further work to define opportunities associated with possible development scenarios is ongoing and will

inform future work with local industry associations. The Department also facilitated industry events, with members of the local supply community and industry associations as participants.

Marine Renewable Energy — Development & Supply Chain Opportunities

The Department continued its initiatives to address development and supply chain opportunities for marine renewable energy this fiscal year by achieving the following:

- Assisting the work of research and industry organizations to assess market demand, identify providers, and support their involvement in local and international activity.
- Funding and participating in industry events to strengthen Nova Scotia's position as an innovator in renewable energy and sustainability, including exposing participating companies to export market opportunities.
- Funding and participating in initiatives to enhance the understanding of challenges and opportunities associated with marine renewable energy activity in Nova Scotia.

Fiscal Management – Oil & Gas Royalties

The Department is responsible for monitoring energy projects to ensure appropriate economic benefits are collected from the development of offshore petroleum resources. The administration and auditing of oil and gas royalties and Crown Share Adjustment payments contributes millions of dollars directly to the provincial treasury. The Department ensures the province's royalty regime reflects modern best practice and strikes a balance between attracting investment and providing a fair return to Nova Scotians.

While offshore revenues are not currently experiencing growth, offshore activities still provide fiscal benefits to the province. In 2015-2016 the province reported $14.1 million in royalties. 2016-2017 figures have not yet been confirmed. Since 2000, over $1.9 billion in offshore royalties have been received.

Progress on Performance Measures

Offshore Growth Strategy	
Outcomes	• A substantial and growing offshore petroleum sector • Socially responsible development of Nova Scotia's energy sector
Government Priority	• Economy • Fiscal
Measure	• Exploration investment commitments for the Call for Bids • Number of operators/industry partners in the offshore
Annual Target	• Response by industry to the Call for Bids process • Additional industry partners for offshore projects
Long-term Target	• Industry investments lead to discoveries and development of resources • Direct revenue to NS increases through the development of offshore resources
Measure/Rationale - If there is not growth in offshore exploration activity there is a risk of decreased or no activity in the Nova Scotia offshore beyond the current producing projects. Investment in and success from exploration is needed in order to move to development and production phases. The response to the Call for Bids was selected as a measure for the Offshore Growth Strategy, as an indication of potential investment in geoscience research in Nova Scotia's offshore. Data for this measure is from the CNSOPB and is based on oil and gas companies' response to the Call for Bids process. The figures represent a commitment by a successful bidder to invest a specified amount in an exploration program in Nova Scotia's offshore within a specified period of time. Attracting new international companies to partner in existing offshore projects is also an important indicator of success for the Offshore Growth Strategy as it demonstrates industry's commitment to the Nova Scotia offshore. There are factors external to government that impact company decisions. While decisions on oil and gas investments, which are made globally, consider the degree to which a jurisdiction's petroleum geology is seen to be attractive, other factors such as a company's exploration and development capital for any given year, commodity prices, and the time it takes for companies to fully assess new exploration opportunities also play a role. As a result, the impact of investments in geoscience research and marketing can take years to be realized in the form of industry investment. The Department can track progress each year through the completion of planned project work.	
Progress on Target	• No successful bids received in the 2016 Call for Bids process
Strategic Action to Achieve this Target	• Implemented Offshore Growth Strategy • Completed geoscience workplan and markets results to industry
Changes to Measure	N/A
New Measures	N/A

Electricity Plan	
Outcomes	• A diverse, competitive and cleaner energy economy
Government Priority	• Economy • Fiscal
Measure	• % of renewable electricity supplied for use in NS
Annual Target	• 25% of electricity from renewable sources supplied for use in NS
Long-term Target	• 40% of electricity from renewable sources supplied for use in NS by 2020
Measure/Rationale - The Province has committed to renewable electricity targets in the Renewable Electricity Regulations and *Environmental Goals and Sustainable Prosperity Act* to reduce use of fossil fuels, develop the energy sector, and create a cleaner environment. The target for this measure includes incremental targets of 12% renewable energy from projects developed after 2001 and 5% renewable energy from Independent Power Producers (IPPs), which are also included in the renewable electricity regulations.	
Progress on Target	• 2015 target of 25% renewable electricity has been surpassed. In 2016, more than 28% of NSPI's electricity sales were supplied by renewable energy • On track to meet 40% target by 2020
Strategic Action to Achieve this Target	• Implementation of *Nova Scotia's Electricity Plan 2015-2040* - publicly released in November 2015. This new Plan is focused around four new themes/commitments: Price stability, innovation, accountability and competition • All commitments under the *Electricity Plan Implementation Act* (which came into force on December 18, 2015) were completed by April 2017
Changes to Measure	• Additional requirements as laid out in the *Electricity Plan Implementation Act*
New Measures	N/A

Energy Efficiency Programs (Non-low income/non-electricity)	
Outcomes	• A diverse, competitive and cleaner energy economy
Government Priority	• Economy
Measure(s)	• GJ of net energy savings per $1 M in program spending
Annual Target	• Develop pilot programs to advise on potential future action
Long-term Target	• To be determined following completion of pilot programs
Measure/Rationale - The Department provides funding to Efficiency Nova Scotia for energy efficiency programs for non-electrically heated homes (e.g. furnace oil, wood, propane or natural gas) to reduce energy use in the province. The non-electricity programs are divided into two categories: low income and non-low income programs. Data for these measures is supplied by Efficiency Nova Scotia. Efficiency Nova Scotia also provides energy efficiency programs for electrically heated homes; these are funded through other mechanisms and not by the Department of Energy. Gigajoule (GJ) is a metric term used for measuring energy use and measures per capita energy consumption decreases. According to Statistics Canada an average four-person household in Nova Scotia uses approximately 103 GJ of energy annually compared to the national average of 127 GJ, based on 2011 data.	
Progress on Target	• Pilot programs were launched late in 2015-16 and will run through 2017-18. o Preliminary results of the Property Assessed Clean Energy (PACE) pilot program, are quite positive, with a number of municipalities having completed the first year of the pilot. These municipalities have already received approval from Executive Council to move beyond the pilot to a full program, allowing them to continue offering PACE financing to their residents for energy efficient upgrades. • Provincial funding for two additional pilot programs was announced in 2016-17. Pilot programs for First Nations Homes and Low-Income Renters and Non-Profits will launch in 2017-18 and run through 2018-19.
Strategic Action to Achieve this Target	• Initiate pilot programs to advise on potential future action • Incorporate learned results into future programming.
Changes to Measure	N/A
New Measures	N/A

Energy Efficiency Programs (low income/non-electricity)	
Outcomes	• A diverse, competitive and cleaner energy economy
Government Priority	• Economy
Measure(s)	• # of homes participated in HomeWarming program • GJ of net energy savings per $1M in program spending • Total GJ saved
Annual Target	• 1,290 homes participate in HomeWarming program • 4,543 GJ of energy savings per $1M in program spending • 55,291 total GJs saved
Long-term Target	• Continued energy savings from Energy Efficiency Programs
Measure/Rationale - The Department of Energy provides funding to Efficiency Nova Scotia for energy efficiency programs for non-electrically heated homes (e.g. furnace oil, wood, propane or natural gas) to reduce energy use in the province. The non-electricity programs are divided into two categories: low income and non-low income programs. Data for these measures is supplied by Efficiency Nova Scotia. Efficiency Nova Scotia also provides energy efficiency programs for electrically heated homes; these are funded through other mechanisms and not by the Department of Energy. Gigajoule (GJ) is a metric term used for measuring energy use and measures per capita energy consumption decreases. According to Statistics Canada an average four-person household in Nova Scotia uses approximately 103 GJ of energy annually compared to the national average of 127 GJ, based on 2011 data.	
Progress on Target	• 1,535 homes participated in HomeWarming program • 5,060 GJ of net energy savings per $1M in program spending ($11.92M spent) • 60,321 total GJs saved
Strategic Action to Achieve this Target	• 2016-17 was the second year of a 4-year funding agreement with Efficiency Nova Scotia for Low Income Energy Efficiency.
Changes to Measure	N/A
New Measures	N/A

Marine Renewable Energy	
Outcomes	• Optimal benefits received from development and use of energy resources
Government Priority	• Economy • Fiscal
Measure	• # of tidal energy projects developed, constructed, and operating in NS
Annual Target	• Funds from tidal COMFIT projects begin to flow to communities • Current tidal projects progress towards deploying devices in the ocean
Long-term Target	• Increased work force in ocean technology and related supply chains • Increased business investment related to marine renewable energy
Measure/Rationale - The Marine Renewable Energy Strategy was released in 2012 and since that time, the Province has worked collaboratively with stakeholders and Nova Scotians to ensure the industry develops in a sustainable and responsible manner. The Province's approach has been to focus on research, development, and regulatory initiatives that will enable deployments that benefit Nova Scotians. The Department is tracking tidal projects and the various stages and milestones for each project. The number of large scale tidal projects is restricted to the berth areas approved by the Province for tidal activity. There are five berths at FORCE that provide infrastructure to tidal developers to undertake R&D activities to test their devices. The goal of the Department is to support these projects as they move forward to deploy devices in the water. Through contractual agreements, each tidal developer provides the Department of Energy with information on the status of projects. The tidal projects measure tracks attributes at various stages of engagement including: project approval stage, construction, and operations. Tidal projects can be approved for Developmental Tidal Feed-in Tariffs (FIT) for large-scale in-stream tidal or for small-scale, in-stream tidal. These incent tidal energy developers to test and deploy their energy projects in Nova Scotia. Being approved for a Developmental Tidal FIT encourages the development of projects by guaranteeing a rate per kilowatt hour for the energy the project feeds into the province's electricity grid. These rates are set by the UARB.	
Progress on Target	• Cape Sharp successfully deployed its first of two 2 MW turbines • In November 2016, the first in-stream tidal energy was fed to the grid to power Nova Scotia homes and businesses
Strategic Action to Achieve this Target	• Creation of 5th berth at FORCE.
Changes to Measure	N/A
New Measures	N/A

Sustainable Transportation (Choose How You Move)	
Outcomes	• A diverse, competitive and cleaner energy economy
Government Priority	• Economy
Measure	• Mode share for commuting in NS • % municipalities with an Active Transportation (AT) plan
Annual Target	• Increase % of mode share commuting by bicycle • Increase % of mode share for commuting by public transit • Continue DalTRAC data collection • Increase the % of municipalities with AT plans • # of kms of designated bicycle lanes • # of kms of trails
Long-term Target	• Double mode share for commuting by bicycle to 2% by 2025 • Double mode share for commuting by public transit to 14% by 2025 • Publish data on sustainable transportation indicators and continue to track over time • Increase AT planning capacity in all municipalities/towns in NS • All major community hubs are accessible via bike lanes/multi-use paths within a 2 km radius
Measure/Rationale - The Sustainable Transportation Strategy, Choose How You Move, was launched in 2013. In partnership with Dalhousie Transportation Collaboratory (DalTRAC) at Dalhousie University, foundational work has been completed to create baseline indicators for sustainable transportation that will allow for evaluation and better strategic direction over time. Mode share is the % of commutes that are completed by various forms of transportation (i.e. drivers, passengers, public transit, walk or bike). An increase in the number of people biking or walking will indicate that there is a shift in public support for active forms of transportation and that infrastructure support, municipal planning and education, and awareness campaigns are having an impact on the choices people make on how to commute to work or school. An Active Transportation (AT) plan is completed by municipal planning staff. Based on extensive consultations, the plan identifies priorities for pedestrian, cycling and multi-use infrastructure, as well as education and awareness campaigns. The focus is on creating connected networks of various modes of sustainable transportation (transit, biking and walking). Transportation data has been collected through surveys conducted by DalTRAC (NovaTRAC)	
Progress on Target	• 25 of 50 municipalities have a plan (50% of municipalities with AT plans, compared to 37.5% in 2015-16) Nova Scotians have seen an increase in active transportation (AT) use for work trips (8% walk and 4% bike in 2016 compared to 6% walk and 2% bike in 2015): Good indication that sustainable transportation efforts and initiatives may be gradually shifting behaviour

<table>
<tr><td></td><td>

Average daily distance travelled per person for non-work trips by automobile is 28 km, whereas average distance travelled by transit and AT is 8.1 km.
Designated kms for bicycle lanes and commuting grade trails were not evaluated in 2016.
56 km of AT connectors were built in the last two rounds of the Connect2 grant program (90.1 km under NSMoves and Connect2 combined)

<table>
<tr><td colspan="4">Travel Choices and Behaviour
Modal Share of Work Trips (%)</td></tr>
<tr><td></td><td>2011
Census</td><td>2015
NovaTRAC</td><td>2016
NovaTRAC</td></tr>
<tr><td>Auto: Driver</td><td>77%</td><td>78%</td><td>77%</td></tr>
<tr><td>Auto: Passenger</td><td>8%</td><td>6%</td><td>6%</td></tr>
<tr><td>Public Transit</td><td>7%</td><td>8%</td><td>5%</td></tr>
<tr><td>Walk</td><td>7%</td><td>6%</td><td>8%</td></tr>
<tr><td>Bicycle</td><td>1%</td><td>2%</td><td>4%</td></tr>
</table>
*Data source: NovaTRAC 2015 and 2016 (Statistics Canada 2011 census data for comparison)
</td></tr>
<tr><td>Strategic Action to Achieve this Target</td><td>

Two rounds of the Connect2 grant program, to promote and advance sustainable transportation throughout the Province, have been successfully completed and we have launched the third round of the program.
Continuing the development of the Blue Route network
NS Department of Municipal Affairs taking the responsibility for completing the Statement of Provincial Interest on Healthy Communities.

</td></tr>
<tr><td>Changes to Measure</td><td>N/A</td></tr>
<tr><td>New Measures</td><td>N/A</td></tr>
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Financial Results

	2016-2017 Estimate	2016-2017 Actual	2016-2017 Variance
Program & Service Area	($ thousands)	($ thousands)	($ thousands)
Gross Departmental Expenses:			
Office of the Minister and Deputy Minister	404	371	(33)
Administrative Services	1,614	1,418	(196)
Sustainable and Renewable Energy	2,345	2,436	91
Business Development and Corporate Services	2,899	2,820	(79)
Petroleum Resources	4,852	4,758	(94)
Canada – NS Offshore Petroleum Board	4,488	4,355	(133)
Non-Electricity Energy Efficiency, Sustainable Transportation & Conservation Grants	12,995	20,578	7,583
Total: Gross Departmental Expenses	**29,597**	**36,736**	**7,139**
Additional Information:			
Ordinary Recoveries	**3,096**	**4,602**	**1,506**
Provincial Funded Staff (FTEs)	**56.5**	**52.7**	**(3.8)**

Variance Explanation:

1. Gross Departmental Expenses were $7.1 million higher than estimated, primarily due to $7.5 million for energy efficiency programs for low income households.

2. Ordinary Recoveries were $1.5 million higher than budgeted, primarily due to $1.1 million in costs recovered from industry for regulation of the Canada-Nova Scotia offshore area.

3. Provincial Funded staff (FTEs) were less than budgeted due primarily to temporarily vacant positions.

Public Interest Disclosure of Wrongdoing Act

The *Public Interest Disclosure of Wrongdoing Act* provides for government employees to be able to come forward if they reasonably believe that a wrong doing has been committed or is about to be committed and they are acting in good faith.

There were no disclosures received by the Department of Energy in 2016-2017.