

Accountability Report 2017–2018

Department of Energy

Department of Energy and Mines (July 2018)

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Accountability Report 2017–2018

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Accountability Statement

The Accountability Report of the Department of Energy for the year ended March 31, 2018 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 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 2017-2018 Business Plan.

Original signed by

Derek Mombourquette
Minister

Original signed by

Simon d'Entremont
Deputy Minister

Message from the Minister

Innovation and opportunity powered Nova Scotia toward a cleaner energy future in 2017-18. Through the Department of Energy's efforts, we continued to strategically manage and promote our province's energy resources in a responsible and sustainable way. This approach creates the conditions for future economic growth and benefits that will be shared by all Nova Scotians.

Our efforts in petroleum resources continue to pay off across the province. One-time funding from offshore revenue will be used to expand high-speed internet service, fund post-secondary research and support initiatives that contribute to our communities. We will continue to invest in offshore geoscience to create a clearer picture of our oil and gas resources, and we'll share this research with industry to help attract additional investment.

At the same time, Nova Scotians can be proud of our accomplishments in renewable energy. Nova Scotia is a national leader in fighting climate change by reducing emissions. We have already met the federal government's 2030 target of reducing emissions by 30 per cent below 2005 levels, and we're not stopping there. We're also on track to meet our legislated target of having 40 percent of our electricity generated from renewable sources by 2020. In addition, our investments in energy efficiency and solar energy continue to help Nova Scotians save money on their energy bills while improving air quality for us all.

We've advanced many other initiatives over the past 12 months. Nova Scotia built on its position as a tidal energy leader. Regulatory and legal changes have given developers a new pathway to prove their technologies, bring them to market faster and ultimately lower the cost of this renewable energy. Through Connect2, we continue to give Nova Scotians more opportunities to use sustainable modes of transportation. We also remain committed to helping young people pursue meaningful careers in the energy sector by supporting the Energy Training Program and the Pengrowth-Nova Scotia Energy Scholarship Program.

This report provides more detail on these, and many other initiatives that helped us deliver on our 2017-2018 commitments. I want to thank dedicated and professional staff at the Department of Energy for their efforts this past year.

The 2018-19 year brings some change for our department with a new name, the Department of Energy and Mines, and the addition of the Geoscience and Mines branch, which used to be part of the Department of Natural Resources. Our new department brings all of the province's experts in subsurface resources together in one place, and allows for new collaborative opportunities to better promote the province's energy and mineral resources as we continue our work together.

Derek Mombourquette
Minister

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Financial Results

	2017-2018 Estimate	2017-2018 Actual	2017-2018 Variance
Program & Service Area	(\$ thousands)		
Gross Departmental Expenses:			
Office of the Minister and Deputy Minister	401	377	(24)
Administrative Services	1,326	1,133	(193)
Sustainable and Renewable Energy	2,368	2,575	207
Business Development and Corporate Services	3,171	2,970	(201)
Petroleum Resources	3,713	15,372	11,659
Canada – NS Offshore Petroleum Board	4,355	4,318	(37)
Clean Growth and Climate Change	13,670	25,766	12,096
Total: Gross Departmental Expenses	29,004	52,511	23,507
Additional Information:			
Ordinary Recoveries	3,914	3,931	17
Provincial Funded Staff (FTEs)	58.2	56.2	(2.0)

Variance Explanation:

1. Gross Departmental Expenses (Petroleum Resources) was \$11.7 million higher than estimated, primarily due to funding to extend offshore work in petroleum geoscience for another four years.
2. Gross Departmental Expenses (Clean Growth and Climate Change) was \$12.1 million higher than estimated, primarily due to funding assistance to help low-income Nova Scotians in non-electrically heated homes with energy assessments and free home upgrades.
3. Provincial Funded staff (FTEs) were less than budgeted due to temporarily vacant positions.

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. The 2017 Ministerial Mandate Letter outlines that achievement of the mandate is to include the following strategic actions:

- Ensure electricity rate stability and reduce energy costs for low income individuals and families
- Continue work on tidal and renewable energy
- Reduce greenhouse gas emissions
- Continue to develop the offshore growth strategy

In addition to the strategic actions, the following Platform Commitment was made:

- Continue with enhancements to the non-electric, home energy efficiency program

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

- Joint Management of Offshore Petroleum Resources
- Onshore Oil and Gas Regulation/Administration
- Sustainable and Renewable Energy Policy
- Liquefied Natural Gas (LNG)
- Industry and Supply Chain Development
- Fiscal Management – Oil and Gas Royalties
- Engagement and Consultation
- Energy Education and Training

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

Departmental Performance on Ministerial Mandate:

Ensure electricity rate stability and reduce energy costs for low income individuals and families

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:

- Government introduced and passed the *Electricity Plan Implementation Act* (2015), which resulted in the Nova Scotia Utility and Review Board (UARB) requiring Nova Scotia Power Inc. (NS Power) to file a 3-year Rate Stability Application for 2017, 2018, and 2019. These initiatives have resulted in stable electricity rates in the province, with ratepayers only experiencing small increases in fuel related costs. Per legislation, the UARB continues to monitor the implementation of the Stability Plan and NS Power continues to meet or exceed expectations.
- Through the same Act, the UARB was required to develop Performance Standards for NS Power, which has met or exceeded almost all performance objectives as outlined in reporting that is publicly available on the NS Power and UARB websites. The *Electricity Plan Implementation Act* allows the UARB to levy financial penalties against NS Power for unsatisfactory performance.
- In 2017-18, the Department also:
 - Continued spending \$350,000 per year on innovation initiatives in the electricity sector.
 - Continued spending \$150,000 per year (over 3 years) on strategic initiatives that support development of the tidal sector.
 - Rolled out a Solar Electricity for Community Buildings Program that received 67 bids and awarded 18 projects to First Nation Bands, Municipalities, Educational Institutions and non-profit groups.

Continue work on tidal and renewable energy

Marine Renewable Energy

The Department supports activities that enable environmentally sustainable tidal energy projects and supports the development of world-class in-stream tidal expertise in Nova Scotia. In January 2018, the Department proclaimed the *Marine Renewable Energy Act* and Regulations. The Act governs the development of marine renewable energy in Nova Scotia.

Nova Scotia achieved the following milestones in 2017-2018:

- Nova Scotia successfully worked with the federal government to establish program funding that supports the marine renewable sector as part of the Government of Canada's budget 2017 commitments to clean growth and clean technology.

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- Cape Sharp Tidal Venture (CSTV) retrieved their deployed 2 MW turbine in June 2017 and is currently planning to deploy its second 2 MW turbine. This activity provides additional marine operation learnings and is helping resolve operational challenges in the sector.
- Supported conferences, research programs and standard development designed to advance knowledge and performance in the sector.
- Launched the Marine Renewable Energy Demonstration Permit Program in January 2018 that allows for new, innovative technologies to demonstrate their technologies in Nova Scotia.

Reduce greenhouse gas emissions

The Department of Energy is collaborating with departments and partners to achieve greenhouse gas emission reductions. This is a long-standing government objective and is consistent with obligations made under the Pan-Canadian Framework on Clean Growth and Climate Change (PCF) and the Canada-Nova Scotia equivalency agreement regarding greenhouse gas emissions from electricity producers.

The Province will be able to access federal funding programs to support strategic investment in GHG emissions reduction programs and leverage significant private investment. This funding will be available starting in 2018-2019 to support programs that reduce GHG, but requires program design, delivery, and evaluation, as well as matching provincial, municipal, First Nations, or private investment.

Continue to develop the offshore growth strategy

The Offshore Growth Strategy (OGS) began as 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.

In addition to geoscience efforts, the OGS 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.

In March of 2018, the Province announced a \$11.8 million investment in Phase 2 of the Offshore Growth Strategy to continue this work.

Continue with enhancements to the non-electric, home energy efficiency program

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 2017-2018, the Department of Energy:

- Supported the implementation of Build Smart – Canada’s Building Strategy through initiatives such as:
 - The Efficiency Nova Scotia Building Optimization Program,
 - The HomeWarming Program,
 - Home Energy Performance Label Disclosure Program, and
 - Heat Pump standards and rebates
- Worked collaboratively with NRCan and other provincial jurisdictions to develop and promote goals for 2030 through the Market Transformation Strategy.

Departmental Performance on 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 governments. The Department of Energy has continued to work with Natural Resources Canada and the Canada-Nova Scotia Offshore Petroleum Board to ensure that exploration and development of Nova Scotia’s offshore oil and gas resources are responsibly managed.

Work has also continued under the Frontier and Offshore Regulatory Renewal Initiative (FORRI) to modernize existing regulations for the offshore, to update and consolidate the existing operational regulations into a single framework regulation. Consultations have been held with representatives from the oil and gas sector, non-governmental organizations representing both environmental and fisheries interests, and organizations representing northern and Indigenous peoples and development of new regulations is proceeding.

Onshore Oil and Gas Regulation/Administration/ Assessment of Growth Potential

The Nova Scotia Department of Energy administers onshore petroleum exploration and development rights as set out in the *Petroleum Resources Act* and Regulations and natural gas infrastructure development as set out in the *Gas Distribution Act*, the *Underground Storage Act* and the *Pipeline Act* and their associated Regulations.

In 2017-2018, the Nova Scotia Onshore Petroleum Atlas was published, the first comprehensive academic analysis of onshore hydrocarbon potential. The data and findings from this research are available to industry and others with an interest in our onshore petroleum resources. As new

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information becomes available, the Onshore Atlas will be amended and expanded to address gaps in the geoscience not captured in the initial documents. Work is also continuing to modernize onshore oil and gas regulations.

The *Gas Distribution Act* was amended in 2017-18 to allow the Nova Scotia Utility and Review Board to authorize the recovery of the costs of long term transmission contracts in distribution rates. In addition, Codes of Practice governing storage of hydrocarbons in underground formations and LNG facilities were reviewed and changes prepared for consideration.

Sustainable and Renewable Energy Policy

Sustainable Transportation

Implementation of the *Choose How You Move: Sustainable Transportation Strategy* is ongoing. The Connect2 grant program has completed three rounds since its launch in May 2015. The 2017-2018 Connect2 program provided \$625,500 to 22 projects and leveraged approximately \$2.3 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.

Liquefied Natural Gas (LNG)

The Department is supporting emerging opportunities related to LNG export and investment in Nova Scotia. Work has continued to examine the economics of additional gas development and exploration opportunities for natural gas prospects offshore. This analysis has been presented and discussed with investors, purchasers, pipeline companies, and gas suppliers.

Industry and Supply Chain Development

In 2017-2018 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 and address development and supply chain opportunities for marine renewable energy. The Department collaborated with the federal government and other government agencies as well as industry representatives in the region under the Atlantic Growth Strategy, an economic development initiative with the objective of driving economic growth in Atlantic Canada by implementing collaborative and targeted actions. The Atlantic Trade and Investment Growth Strategy, a priority area under the Atlantic Growth Strategy, includes development of a multi-year international business development strategy and initiatives supporting SME exporters. These initiatives include the promotion of greater awareness of opportunities, better market planning, enhanced trade training, and more targeted trade missions. The Department has been involved in work to create sector export plans for oil and gas, clean tech and ocean tech.

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Fiscal Management – Oil and 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.

The Department of Energy accounted for more than \$250 million in one-time funding from offshore revenues for the 2017-2018 fiscal year. These funds were directly tied to enabling investment by the Government of Nova Scotia into areas such as energy efficiency, sport and recreation, and research and innovation.

While offshore revenues are not currently experiencing growth, offshore activities still provide fiscal benefits to the province. In 2016-2017 the province reported \$10.3 million in royalties. Since 2000, over \$2.2 billion offshore royalties have been received.

Engagement and Consultation

The Department consulted and worked collaboratively with the Mi'kmaq of Nova Scotia on a number of projects throughout 2017-2018, 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 and also funds a Mi'kmaq Energy Advisor working with the 13 Mi'kmaq communities in Nova Scotia.

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

Energy Education and Training

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 2017-2018, 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.

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Energy Training Program

The Department has continued to work with industry and partners to increase opportunities and capacity within Nova Scotia's energy sector. Eighteen post-secondary students across Nova Scotia gained work experience during summer 2017 in the energy sector through the Energy Training Program for Students. The program is in its 16th year of operation and has provided hands-on experience to more than 430 young individuals in Nova Scotia.

Progress on Performance Measures

Offshore Growth Strategy	
Outcomes	<ul style="list-style-type: none"> • A substantial and growing offshore petroleum sector • Socially responsible development of Nova Scotia's energy sector
Government Priority	<ul style="list-style-type: none"> • Economy • Fiscal
Measure	<ul style="list-style-type: none"> • Exploration investment commitments for each annual Call for Bids • Number of operators/industry partners in the offshore
Annual Target	<ul style="list-style-type: none"> • Response by industry to the Call for Bids process • Additional industry partners for offshore projects
Long-term Target	<ul style="list-style-type: none"> • Industry investments lead to discoveries and development of resources • Direct revenue to NS increases through the development of offshore resources
<p>Measure/Rationale – Production in the Nova Scotia offshore area is declining and investment in exploration activity is needed in order to move new projects to development and production phases. The response to offshore Calls for Bids was selected as a measure of success of the Offshore Growth Strategy. 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.</p> <p>There are factors external to government that impact company decisions and the impact of investments in geoscience research and marketing can only be measured over time.</p>	
Progress on Target	<ul style="list-style-type: none"> • No successful bids received in the 2017 Call for Bids process
Strategic Action to Achieve this Target	<ul style="list-style-type: none"> • Completed initiatives under the Offshore Growth Strategy, including conducting geoscience work and providing results to industry
Changes to Measure	N/A
New Measures	N/A

Electricity Plan Implementation	
Outcomes	<ul style="list-style-type: none"> • A diverse, competitive and cleaner energy economy
Government Priority	<ul style="list-style-type: none"> • Economy • Fiscal
Measure	<ul style="list-style-type: none"> • % of renewable electricity supplied for use in NS
Annual Target	<ul style="list-style-type: none"> • 25% of electricity from renewable sources supplied for use in NS
Long-term Target	<ul style="list-style-type: none"> • 40% of electricity from renewable sources supplied for use in NS by 2020
<p>Measure/Rationale - The Province has committed to renewable electricity targets in the Renewable Electricity Regulations and <i>Environmental Goals and Sustainable Prosperity Act</i> 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, which are also included in the renewable electricity regulations.</p>	
Progress on Target	<ul style="list-style-type: none"> • 2015 target of 25% renewable electricity has been surpassed. <ul style="list-style-type: none"> ◦ In 2017, more than 29% of NSPI's electricity sales were supplied by renewable energy • On track to meet 40% target by 2020
Strategic Action to Achieve this Target	<ul style="list-style-type: none"> • Implementation of <i>Nova Scotia's Electricity Plan 2015-2040</i> including introduction of: <ul style="list-style-type: none"> ◦ Solar Electricity for Community Buildings Pilot Program ◦ Electricity Rate Stability Plans ◦ Performance Measures for Nova Scotia Power
Changes to Measure	<ul style="list-style-type: none"> • Additional requirements as laid out in the <i>Electricity Plan Implementation Act</i>
New Measures	N/A

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Energy Efficiency Programs (low income/non-electricity)	
Outcomes	<ul style="list-style-type: none"> • A diverse, competitive and cleaner energy economy
Government Priority	<ul style="list-style-type: none"> • Economy
Measure(s)	<ul style="list-style-type: none"> • # of homes participated in HomeWarming program • GJ of net energy savings per \$1M in program spending • Total GJ saved
Annual Target	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Continued energy savings from Energy Efficiency Programs
<p>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. Efficiency Nova Scotia also provides energy efficiency programs for electrically heated homes that are not funded by the Department of Energy.</p> <p>Gigajoule (GJ) is a metric term used for measuring energy use and measures per capita energy consumption. 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.</p>	
Progress on Target	<ul style="list-style-type: none"> • 1,738 non-electrically heated homes participated in HomeWarming program. • 5,748 GJ of net energy savings per \$1M in program spending (\$11.43M spent). • 65,700 total GJs saved. • Energy Efficiency pilot programs for First Nations Homes and Low-Income Renters & Non-Profits were launched in 2017-18 and will run through 2018-19
Strategic Action to Achieve this Target	<ul style="list-style-type: none"> • 2017-18 was the third year of a 4-year funding agreement with Efficiency Nova Scotia for Low Income Energy Efficiency. • Designed and implemented pilot programs to test new energy efficiency ideas, methods and technologies, and advise on potential future action.
Changes to Measure	N/A
New Measures	N/A

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Marine Renewable Energy	
Outcomes	<ul style="list-style-type: none"> • Optimal benefits received from development and use of energy resources
Government Priority	<ul style="list-style-type: none"> • Economy • Fiscal
Measure	<ul style="list-style-type: none"> • # of tidal energy projects developed, constructed, and operating in NS
Annual Target	<ul style="list-style-type: none"> • Funds from tidal COMFIT projects begin to flow to communities • Current tidal project progress towards deploying devices
Long-term Target	<ul style="list-style-type: none"> • Increased work force in ocean technology and supply chains • Increased business investment in marine renewable energy
<p>Measure/Rationale - The Marine Renewable Energy Strategy was released in 2012 and since that time, the Department has worked 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.</p> <p>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 test their devices. Through contractual agreements, each tidal developer provides the Department of Energy with information on the status of projects.</p>	
Progress on Target	<ul style="list-style-type: none"> • Retrieval of the Cape Sharp turbine in June 2017 • Final commercial operation dates in FIT agreements have been extended to 4 out of the 5 berth holders. • All FORCE berth holders have reported a cumulative \$74 million dollars spent in the local economy. Some are reporting 60-70% of the overall project cost being spent on local procurement. • The Federal government announced clean technology and clean growth funding focused on further funding support for the development of the tidal industry.
Strategic Action to Achieve this Target	<ul style="list-style-type: none"> • <i>Marine Renewable-energy Act</i> and associated regulations proclaimed in January 2018. • Launch of a new demonstration permit program in January 2018 to allow for new, innovative devices to be grid connected. Program is capped at 10MW. <ul style="list-style-type: none"> ◦ Big Moon Power received the first demonstration permit for 5MW.
Changes to Measure	N/A
New Measures	N/A

Appendix A

Annual Report under Section 18 of the *Public Interest Disclosure of Wrongdoing Act*

The *Public Interest Disclosure of Wrongdoing Act* allows 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. The Act also protects employees who do disclose from reprisals, by enabling them to lay a complaint of reprisal with the Labor Board.

There were no disclosures received by the Department of Energy in 2017-2018.