

Nova Scotia Department of Energy (DOE)
Annual Accountability Report for the Fiscal Year 2008-2009

June 2009

Department of Energy
Annual Accountability Report for the Fiscal Year 2008-2009

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1.0 Accountability Statement

The Accountability Report of the Nova Scotia Department of Energy (DOE) for the year ended March 31, 2009 is prepared pursuant to the Provincial Finance Act and government policies and guidelines. These authorities require the reporting of outcomes against the Nova Scotia Department of Energy's Business Plan information for the fiscal year 2008/09. The reporting of the Nova Scotia Department of Energy's outcomes necessarily includes estimates, judgments, and opinions by the Nova Scotia Department of Energy management.

We acknowledge that this Accountability Report is the responsibility of Nova Scotia 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 for the year

Nova Scotia Department of Energy

Minister

Acting Deputy Minister

2.0 Message from the Minister

We value the undeniable beauty Nova Scotia provides us, and more fundamentally, the clean air, water and earth we need to thrive. We also want to earn a living here at home, for ourselves and our families, now and in the future. Our environment, our economy. Two forces that must work in harmony if both are to succeed. With those forces in mind, energy will become a defining issue for Nova Scotians: how much it costs both our climate and our wallet.

How are we doing so far? To partially answer that question, I am pleased to submit the 2008/09 accountability report for the Nova Scotia Department of Energy. This report outlines the contributions the department has made to building Nova Scotia's energy sector over the last year.

In the petroleum sector, this included:

- funding Saint Mary's University's switch from oil to cleaner burning natural gas,
- creating an Offshore Renewal Plan, with funding for new geoscience research,
- resolving the Crown Share Adjustment Payments owed to Nova Scotia from Ottawa,
- approving Nova Scotia's first shale gas production lease,
- approving a new onshore exploration agreement,
- promoting new offshore land open for bidding, and
- funding new Pengrowth-Nova Scotia Petroleum Innovation Grants.

On the renewable front, this included:

- a move towards higher net-metering limits on personal renewable electricity devices like wind turbines,
- releasing new renewable electricity targets,
- releasing a wind integration study,
- launching a new online wind atlas,
- announcing funding for carbon capture and storage research
- strengthening the tidal energy program in response to a Strategic Environmental Assessment of the Bay of Fundy, and a commitment to marine renewable legislation,
- jointly announcing a finalized tidal site, new tidal technology, a local tidal contract, and
- funding a study of options for a cleaner power grid.

It is our job to see this list continue to grow. And it must grow, if we are to achieve the ambitious environmental and sustainability goals adopted unanimously by the legislature: protect the environment, while growing the economy. I am pleased to report last year's achievements in the pages before you, and look forward to more progress in the year ahead.

Honourable Bill Estabrooks,
Minister of Energy

3.0 Message from the Deputy Minister

On behalf of our team at the Department of Energy, it is my pleasure to present the following accountability report. We remain proudly committed to serving Nova Scotia and Nova Scotians; we are also grateful to our many local, national and international partners for their help in our collective efforts to strengthen the province's position in the global energy market.

With an estimated 40 trillion cubic feet of potential in Nova Scotia's offshore, natural gas has continued to play a critical role in the province's economy. Each year, our Sable Offshore Energy Project has contributed roughly \$1 billion to the province's economy, and provided nearly 2000 direct and spin-off jobs. It has also contributed over \$2 billion in royalties to the province, which help pay for education, healthcare, and debt reduction. Work on Nova Scotia's next offshore gas project at Deep Panuke is underway, with first gas targeted for 2010.

Less obvious is the role of natural gas in protecting our environment: natural gas burns more cleanly than oil or coal, produces fewer emissions and can back up intermittent electricity sources like wind and tidal.

These new renewable sources are critical to both our environmental and economic future. Renewable energy growth in our province over the next 4 years is expected to generate substantial investment, and help our environment through cuts to greenhouse gas emissions. Our resources in this area are second to none: we have some of the fastest average wind speeds in Canada, and one of the greatest tidal resources in the world.

Last year Nova Scotia made significant progress in both our petroleum and renewable sectors, and the following report outlines that progress in detail. Our mission and desire remains, as always, to secure an energy future for Nova Scotians that is diverse, affordable, and sustainable. So while we look back briefly at the past year in this report, our focus must remain on the road ahead.

Bruce Cameron
Acting Deputy Minister of Energy

4.0 Introduction

In the 2008/09 fiscal year, the Department of Energy was guided by two documents: the 2008/09 Business Plan and the Toward a Greener Future: Nova Scotia's 2009 Energy Strategy. These documents were designed to be flexible, allowing the department to meet the needs and opportunities of Nova Scotia's constantly changing energy sector. The sector's continued success will depend on the province's ability to respond to changing global and regional circumstances.

The 2008/09 Business Plan outlines how priorities are linked to the themes in the 2009 Energy Strategy. The Accountability Report reflects not only progress made on our Business Plan, but also on the 2009 Energy Strategy, thereby integrating strategy and action.

5.0 Department Progress and Accomplishments

In DOE's 2008/09 Business Plan, the department identified three strategic directions to assist in delivering its mandate:

- **Creating wealth** by investing in our energy future with particular focus on renewable energy and offshore and onshore oil and gas development.
- **Protecting the environment** through the development and use of cleaner and green energy and by developing energy responsibly.
- **Effective and efficient regulation** through protecting the public interests for health, safety, environment, conservation, and economic growth.

These strategic directions are reflected in the department's three main priorities: Create Wealth, Protect the Environment, and Effective and Efficient Regulations. The following sections will identify each of the actions set out in the 2008/09 Business Plan to achieve these priorities and report on the progress.

5.1 Priority: Creating Wealth

Investing in Nova Scotia's energy future with a particular focus on renewable energy and offshore and onshore oil and gas development. The department initiated a multi-year oil and gas investment attraction plan. The goal of this plan is to enhance marketing efforts over the coming years to showcase the province's infrastructure and energy resource opportunities.

- ❖ In 2008/09 the quest continued for increased onshore geoscience knowledge and the development of new geological theories for the offshore. Work to promote Nova Scotia's resource potential persists. Representatives from the department attended a number of international conferences and workshops, held one-on-one meetings with exploration companies, and actively participated in international trade shows and conferences.

Strategic Actions: Offshore Petroleum

We will encourage renewed offshore exploration and development, with its enormous potential for building future prosperity.

Strategic Action: Onshore Petroleum

We will encourage onshore energy exploration and development

- In 2008/09, DOE encouraged renewed offshore and onshore exploration and development through a number of targeted trade shows, technical meetings (examples: PETEX, NAPE, APPEX, WPC, and ASPN) and missions locally and internationally. These events build business relationships that are critical for Nova Scotia companies to enter markets abroad. Since the government is only a facilitator, it cannot take direct

responsibility for business to business transactions that occur at trade events. Penetrating foreign markets is a difficult task – but Nova Scotia companies have many advantages that make them competitive in international markets.

- Nova Scotia is also conducting offshore geo-science research work to enhance Nova Scotia’s offshore knowledge and promotional efforts. This research is coordinated by Offshore Energy Technical Research (OETR) and managed by RPS Energy. The results from these studies will be used in the promotional efforts happening in the next 18 months.
- ❖ Nova Scotia is rich in natural resources. Many of these resources, tidal, biomass, wind, solar, and others, are being used to diversify the province’s energy supply. Diverse supply of clean energy can improve our environment, prepare for our energy future, and create new economic opportunities.

Strategic Action: Renewable Energy

We will require and encourage more renewable electricity energy.

- The 2008/09, economic downturn left many renewable energy developers with signed Power Purchase Agreements (PPA) struggling to find financing for their projects and Nova Scotia Power (NSPI) looking for alternate renewable energy sources to meet the province’s Environmental Goals and Sustainable Prosperity Act (EGSPA) targets. As a result the Department of Energy began working with NSPI and the developers to find solutions.
- The Energy Markets Division has been working with NSPI to implement enhancements to the net metering program. Once complete, this new program will encourage the development of small scale renewable energy projects by increasing the net metering limit from 100 KW to 1 MW. It will also allow multiple meters in a defined distribution zone under the same account and it will calculate net use with a 3 year rolling average.

Strategic Action: Electricity

To enhance our energy security, we will use less imported coal, and more diverse sources of clean, local, and renewable energy.

- To create a sustainable economy, Nova Scotia needs to diversify its energy sources and create a greater supply of clean renewable energy. In 2008/09, approximately \$2.7 million was given in the form of rebates to homes, businesses, and institutions within the Heritage gas franchise. This has played a role in doubling the number of natural gas customers year over year. The province plans to continue making natural gas more accessible to institutions.

- In January 2009 research began to examine options to enhance and strengthen the electricity transmission infrastructure in Nova Scotia. This research also identified opportunities and challenges of expanding the regional transmission system. Work is being done to propose changes to the existing net metering program which will make it more accessible to small scale renewable energy developers.

Strategic Action: Downstream Energy Opportunities

Nova Scotia's energy markets will remain competitive and open for imports and exports.

- In 2008/09, millions of dollars were invested from the Gas Market Development Fund (GMDF) to build infrastructure and convert major facilities to natural gas. The province is on track and plans to continue encouraging Nova Scotians to convert to natural gas.
 - Representatives from the department attended conferences and meetings all over the world to promote Nova Scotia's petroleum resources and to encourage exploration. The province has a strong interest in maintaining open markets for the import and export of energy.
 - In 2008/09 research began to study opportunities and challenges to expanding the regional grid transmission system.
- ❖ To ensure that competitive career opportunities are created locally the department continues to provide student pay subsidies to local companies. The department remains actively involved in efforts to strengthen and develop private sector partnerships to deliver scholarships and other forms of assistance to Nova Scotia Students.

Strategic Action: Technology and Knowledge-Based Growth

We will support Nova Scotians' ongoing participation in a changing energy industry.

Strategic Action: Social Accountability

The province will continue to consult widely and seek advice on sustainable energy policy.

- In the past year an additional 24 Nova Scotia students were awarded scholarships and grants under the Pengrowth-Nova Scotia Energy Scholarship Program, bringing the total number to 76 students since the launch of the program in 2005. Under the Energy Training Program 250 students have benefited since its start in 2002.

Interest in the Energy Training Program continues to grow. Demand by local businesses to hire students for summer placements is high. The department would like to allocate additional financial resources to this program allowing more Nova Scotia students to take advantage of opportunities in the energy sector.

5.2 Priority: Protect the Environment

The department continued to work closely with the private sector and non-governmental organizations (NGO) to access energy supplies that are diverse, competitively priced and sustainable. As part of the renewal process for the Energy Strategy the department consulted the public and stakeholders for input into energy policies. The release of the 2009 Energy Strategy laid out a solid foundation for future energy direction in the province.

Strategic Action: Website, direct mail, media, advertising, school tours and community tours.

- In 2008/09, the department worked diligently to increase public awareness of energy issues, programs, services, and operations. The preliminary process of developing an ad strategy for the Department of Energy got underway and the public wind education plan is nearly complete. Throughout the year the Communications Division supported the Offshore Renewal Plan through advertising, media relations, speech writing and event preparation.
- ❖ With an estimated 40 trillion cubic feet of natural gas potential in Nova Scotia's offshore, this energy source has played a critical role in the province's economy. Less obvious is its role in protecting our environment: natural gas burns more cleanly than oil or coal, produces fewer emissions and can easily back up intermittent sources like wind and tidal.

In 2008/09 the department began conducting internal geoscience analysis and encouraging additional coordinated geoscience studies with Geological Survey Canada (GSC), Canada-Nova Scotia Offshore Petroleum Board (CNSOPB), academia, Petroleum Research Atlantic Canada (PRAC), and the private sector. These research efforts are coordinated by the two independent research associations – Offshore Energy Technical Research (OETR) Association and Offshore Energy Environmental Research (OEER) Association.

Strategic Action: Onshore Petroleum

We will encourage energy exploration and development.

- Increasing Nova Scotia's understanding of its geological systems is extremely important. The research to develop an onshore geoscience atlas

is underway. The first phase has been complete and the second phase has begun. This atlas will increase Nova Scotia's understanding of its onshore petroleum resources. The information from the atlas will be used in promotional materials to encourage additional investment in Nova Scotia's onshore petroleum industry.

- ❖ In Nova Scotia 88 per cent of the electricity generated is from fossil fuels and 46 per cent of Nova Scotia's greenhouse gas emissions comes from electricity production. To create a sustainable economy it is imperative that Nova Scotia diversify its energy sources to include cleaner burning natural gas and renewable energy. Expanding the province's renewable energy options in order to meet new renewable electricity targets will require more research and incentives to encourage new renewable energy developments.

Strategic Actions: Renewable Energy

We will require and encourage more renewable electricity energy.

- In 2008/09, the department worked to provide opportunities and incentives to increase Nova Scotia's reliance on renewable energy. Representatives from the department worked closely with industry stakeholders to establish top-up, spill, and backup rates allowing Municipal Electric Utilities to sign Power Purchase Agreements (PPA) with Independent Power Producers (IPP) for renewable energy supply. In January 2009 these rates were established by the Utility and Review Board (UARB).
- Understanding the interactions of renewable and nonrenewable energy activities with the marine environment will assist the department in creating regulations to govern the marine renewable energy industry. In 2008 the province contributed a portion of the Crown Share Adjustment Payments to OEER to support research on tidal and other marine renewable energy sources. This research is beginning to improve our knowledge of these interactions.
- In response to recommendations outlined in the Strategic Environmental Assessment (SEA) on tidal energy development in the Bay of Fundy, discussions were held concerning the development of national research network. This network would serve as a link between researchers across Canada focusing on marine energy related research.

5.3 Priority: Effective and Efficient Regulations

The energy sector has numerous regulations from exploration through to development, production, and transmission. The department leads initiatives to improve the effectiveness of this regulatory system for both renewable and non-renewable energy. The development of new energy legislation is ongoing. This focus continued in 2008/09 with technical and expert reviews to ensure our regulatory approach is consistent with

best practices in other parts of Canada and that it protects the public interest of Nova Scotians.

Regulation of offshore energy is a joint federal and provincial responsibility. Development of offshore oil and gas policy is significantly affected by the views and priorities of our partner, Natural Resources Canada (NRCan), and our counterparts in Newfoundland and Labrador Natural Resources. In addition, other federal departments and provincial energy interests have a role to play as well as stakeholder groups including industry, fisheries, environmental, aboriginal, and community groups in developing a modern legislative and regulatory system.

- ❖ Renewed interest in onshore petroleum in both conventional and unconventional gas highlights the requirement to update our regulations to seize emerging opportunities. In particular the development of new technology allows exploration for and development of coal-bed methane and shale gas. The Regulatory Innovation group coordinated work with other divisions to create onshore Drilling and Production Regulations, update Royalty Regulations, and finalize a renewed Pipeline Act and Pipeline Regulations.

Strategic Action: Approval of Policy recommendations on Drilling and Production and Pipeline Act/Regulation changes. Stakeholder consultation-spring/summer 08. Introduction of legislative amendments to Resources and pipeline Acts.

- In 2008/09, a consultation paper was drafted outlining changes to the Pipeline Act and Pipeline Regulations. A stakeholder consultation concerning the Pipeline Act and Pipeline Regulations was conducted in spring 2008. The department began to work with the Legislative Council on amendments to this Act.
 - The development of new regulations for land tenure, drilling, and production has begun with an anticipated completion of 2010. Due to timing and resource constraints the stakeholder consultation was not held in 2008 but is being planned for Summer/Fall 2009.
- ❖ Through the department, the province continues to support many initiatives including the Frontier and Offshore Regulatory Renewal Initiative (FORRI) to modernize offshore regulations. Through FORRI, the department continued its work to finalize modern drilling and production regulations and, for the longer term, to develop a comprehensive Offshore Operations Regulation. The Regulatory Innovation group also participated in ongoing efforts to inform on best available research on seismic practices in the offshore.

The province has a responsibility to protect workers in the energy sector. The Government of Canada, Nova Scotia, and Newfoundland and Labrador agreed on legislative changes that will firmly ground worker safety and worker rights in law, but

the process of turning that agreement into law in three diverse jurisdictions has proven long and complex. All parties continued to work to bring it to a conclusion.

Strategic Action: Support FORRI initiative. Public consultation.

- In 2008/09, a representative from the Department of Energy continued to support FORRI by providing technical expertise and policy advice. The stakeholder engagement process concluded in 2008 after 3 round tables starting in 2005. The department is anticipating the regulation to come into force in late 2009.
- ❖ The Bay of Fundy has been identified to have the greatest potential for tidal energy production in North America. The province is taking advantage of this opportunity by facilitating the development of a demonstration facility in the Minas Passage. The first turbine will go in the water at this demonstration site in fall 2009.

Strategic Action: Finalize agreements with developers. Initiate science and coordinate baseline work required. Work with OEER and OETR. Review and respond to Strategic Environmental Assessment.

- The optimal location for the tidal power demonstration site was selected with the assistance of marine energy experts and tidal energy developers.
- Research work coordinated by OEER and OETR continued, focusing on the interaction of renewable energy activities with the marine environment. The results from this research will be used to increase regulatory certainty.
- In June of 2008 Nova Scotia responded to the Strategic Environmental Assessment (SEA) coordinated by OEER with a report entitled “Bay of Fundy Tidal Energy.” In this report the province committed to a number of items, which are described in section 7.3.

5.4 Structural and Mandate Changes:

The Department of Energy had significant structural changes in 2008/09. The Fiscal Affairs Division became its own separate entity, separating from the Resource Assessment Division. The responsibilities for Climate Change were moved to the Department of Environment which led to the creation of the Energy Markets Division.

6.0 Human Resource (HR) Strategy

The DOE continued to implement Nova Scotia's Corporate Human Resource Plan 2005-2010. In 2008/09 Energy developed an HR strategy that parallels the Corporate Plan but is tailored to meet the department's circumstances and needs. The plan outlines DOE's four primary areas of focus; diverse employer, succession management, orientation of new hires, and career planning.

In 2008/09 the DOE remained committed to diversity in its recruitment of employees. The DOE continued to work closely with the Human Resources Client Services Unit to ensure that individuals on their list of qualified diversity candidates were given first opportunity for casual placement. An orientation package was developed for new employees to help answer their questions and make them feel comfortable in their new workplace. Performance appraisals have become an important tool in assisting each employee in developing a career plan. The department has also begun to look at succession managements and identify resource requirements for each division.

7.0 Financial Results

Department of Energy		000's of Dollars	
	Estimate 2008-2009	Actual 2008-2009	Variance
Revenues	513,964	455,113	-58,851
Expenses			
Salaries	3,913	3,404	-509
Operations	4,375	8,972	4,597
Conserve NS	10,269	20,245	9,976
CNSOPB	3,260	3,260	0
Total Expenses	21,817	35,881	14,064
FTEs	49	44.2	4.8

- *In accordance with the public accounts, all estimates/actuals have been rounded to the nearest thousand.*
- *Revenue actuals include CNSOPB recovery of \$1,532.*

Variations:

Revenue: The difference between estimated revenue and actual revenue resulted from a reduction in the price of natural gas and liquid in 2008 and 2009.

Salaries: The variance between estimated and actual salaries in 2008/09 was due to vacant funded positions remaining unfilled.

Operations: The increase in operations expenses was due to:

- \$5 million to the Carbon Capture Storage Consortium
- Budget increases at Conserve Nova Scotia for existing programs as well as additional budget pressures relating to Government commitments for new programs

8.0 Measuring Our Performance

8.1 Priority: Create Wealth

Measure: Number of targeted promotional events and technical meetings that take place at local, national and international venues.

What Does This Measure Tell Us?

Attending targeted promotional shows and technical meetings enables Nova Scotia government officials to build relationships critical to promoting the resource potential of Nova Scotia's offshore industry. The number of promotional events and technical meetings is an indicator of potential interactions and transactions that Nova Scotia companies may have while visiting external markets.

Where Are We Now?

To enhance knowledge and promotional efforts, geoscience work is being coordinated through the OETR association, and the project management has been awarded to RPS Energy. Several special projects are getting underway and will be announced shortly. This work will be used in promotional efforts over the next 18 months. A Strategic Investment Attraction Plan also got underway in 2008/09. This plan will coordinate promotional efforts undertaken to attract investment in Nova Scotia's offshore.

The collective scientific, technical, policy and regulatory efforts within the Offshore Renewal Plan are the basis for the Strategic Investment Attraction Plan. Information on each of these areas will be used to create the department's message to key audiences identified in the plan. Due to the competitive nature of the industry and record demands for resources, personnel, and infrastructure, it is imperative that the department develop strong clear messages that deliver information effectively and consistently.

Where Do We Want To Be?

Forging strong relationship with potential exploration companies domestically and internationally is very important. It allows representatives from the Department of Energy to keep these companies aware of potential offshore opportunities in Nova Scotia. Building these relationships requires regular face to face meetings and associated travel. These connections could lead to future investment in Nova Scotia's offshore petroleum industry.

Promotional efforts will increase as the results of the geo-science work being conducted under the Play Fairway Analysis Project become available. This work will help Nova Scotia get its message about petroleum resource opportunities, out to the global investment community.

Measure: Number of students accessing the energy scholarship program and number of students who have had private sector work experience in energy related industries through the Energy Training program.

What Does This Measure Tell Us?

The number of students accessing these programs demonstrates that there is a significant interest in the energy sector not only from our youth but with companies who are actively engaged in the sector. These private-sector employers have provided post- secondary students and new graduates with valuable skills and experience that will enable them to become part of a highly skilled energy sector workforce.

Where Are We Now?

During the past year another 24 Nova Scotia students were awarded scholarships and grants under the Pengrowth-Nova Scotia Energy Scholarship Program. This brings the total number to 76 students since the inception of the program in 2005. Over 250 students have accessed the Energy Training Program since its start-up in 2002. The attrition rate for students receiving these scholarships has been less than 5 per cent.

During the upcoming fiscal year the department will be updating the promotional material and preparing a new marketing and communications plan to increase the awareness of the scholarship program to high school guidance counselors and parents. Similar measures will also be undertaken with the Energy Training Program; however, the uptake for this program continues to be strong from all areas of the energy sector.

Where Do We Want To Be?

The number of applicants interested in the scholarship program from all high schools in Nova Scotia needs to be increased. In the upcoming year, the Department of Energy will visit high schools that have yet to submit scholarship applications on behalf of their students and other schools. The ideal scenario would be to receive an application from every high school in the province.

The uptake on the Energy Training Program continues to grow. There is no shortage of interest from local companies intending to hire students for summer placements. In the future the Department of Energy may seek to allocate additional financial resources to the Energy Training Program so more Nova Scotia students can take advantage of opportunities in the energy sector. In the coming year, more work site visits will be undertaken to enhance the evaluation of work placements.

Measure: Number of renewable energy sources, options for electricity market structure.

What Does This Measure Tell Us?

This measure illustrated the progress being made to meet RES targets in 2010 and 2013, the EGSPA 2020 GHG (Greenhouse Gases) reduction goals, and all interim targets. It is important to note that this is not a measure that is under the control of the department however, the industry must comply with the goals set by the department.

Where Are We Now?

In 2008 Nova Scotia had 60 MW of post 2001 renewable energy. This supply provided approximately 160 GWh of energy annually. To meet the 2010 RES target NSPI signed Power Purchase Agreements (PPAs) for 245 MW of renewable energy. Due to the 2008/09 global down turn in the economy, several developers holding signed PPAs with NSPI had difficulty financing their projects. As a result the Department of Energy began working with NSPI and developers to find solutions. However, current estimates indicated that only 400 GWh of renewable energy will be available for 2010.

NSPI currently has two RFP's for 10 MW of biomass renewable supply and 20 MW of other renewable supply. However, at this time there is no certainty that any proposed projects for the RFPs will be available to meet the 2010 RES.

The 2009 Energy Strategy proposed changes to the existing net metering program. The Energy Markets Division is working with NSPI to implement an enhanced net metering program. The new program will provide 4 incentives to small scale producers of green electricity: 1) by increasing the net metering limit from 100 KW to 1 MW, 2) allowing multiple meters within a define distribution zone, 3) allowing multiple meters to be under the same account to be eligible, and 4) by calculating net use with a 3 year rolling average. The enhanced net metering program will provide municipalities and communities with increased opportunities for renewable energy development.

Where Do We Want To Be?

To meet the 2010 RES target, approximately 600 GWh of renewable energy will be required.

Measure: 15-20 million has been invested from the GMDF to build infrastructure and convert major facilities to natural gas.

What Does This Measure Tell Us?

This measure provides information on the amount that has been invested into infrastructure and the number of major facilities that have been converted to natural gas. It also illustrates the department's success in implementing the plan to expand the use of cleaner burning natural gas across the province.

Where Are We Now?

In 2008/09, approximately \$2.7 million was given in the form of rebates to homes, businesses, and institutions within the Heritage Gas franchise areas. This included the counties of Guysborough, Cumberland, Hants, Colchester, Pictou, and Halifax. The number of natural gas customers has nearly doubled since 2007/08. At the end of fiscal year 2008/09 the province was slightly ahead of schedule for investment and number of facilities using natural gas. To date approximately \$15-20 million has been committed to reaching this goal.

Where Do We Want To Be?

In 2009/10 the contribution agreement with Heritage Gas is estimated to increase from a minimum of \$1.7 to \$3.7 million. An additional \$1.5 million has been committed to natural gas facilities at the VG Hospital. The province plans to continue increasing the number of Nova Scotia facilities that have access to natural gas.

8.2 Priority: Protect the Environment

Measure: Converting to cleaner fuels.

What Does This Measure Tell Us?

This measure indicates the amount of energy being supplied by cleaner energy resources, such as wind, hydro, and natural gas. Additionally, this measure indicates the province's progress in meeting reduction targets in air emission and GHG.

Where Are We Now?

In 2008/09, the department worked with stakeholders to establish top-up, spill and backup rates to allow the Municipal Electric Utilities to sign PPAs with Independent Power Producers (IPPs) for renewable energy. These rates were established by the UARB in January 2009. This change will enable the Municipal Electric Utilities to sign contracts with IPPs for renewable energy and help NSPI in reducing its dependence on fossil fuels (coal and oil).

Approximately \$15-20 million has been committed from the Gas Market Development Fund to provide rebates to expand natural gas usage across Nova Scotia. In 2008/09, \$4.2 million in rebates were given to homes, businesses, and institutions for converting to natural gas. The number of natural gas customers in Nova Scotia has almost doubled since 2007/08.

Where Do We Want To Be?

To meet the 2010 RES target, approximately 600 Gwh of renewable energy will be required. In addition, the province wants to increase the renewable energy supply to meet future renewable and emission targets.

Measure: Energy Awareness Index as defined in 2003/04 public survey (Thinkwell Research)

What Does This Measure Tell Us?

The 2009 Energy Strategy is now the central energy-related strategy for the department and government.

Where Are We Now?

The wind public education plan is near completion. An ad strategy has been drafted for the department. The Offshore Renewal Plan continues to be supported through advertising, media relations, speech writing and event preparation. The Communications Division continues to monitor the media for issues relating to the Department of Energy. Additionally, communications is currently in the process of writing the corporate communications plan.

Where Do We Want To Be?

We want Nova Scotians to understand the energy policies and programs of their government. To help increase awareness and understanding, we will continue to engage and communicate through media, web, reports, fact sheets, speeches, slide presentations, advertising, and organized events.

In previous years, communications measured performance by the Energy Awareness index as defined in 2003/04 public survey, conducted by Thinkwell. Now, the Department will continue to monitor and evaluate individual activities in support of reaching the goals outlined in the 2009 Energy Strategy.

Measure: The number of research studies initiated and the number of research studies completed

What Does This Measure Tell Us?

In 2008/09 the Onshore Geoscience Atlas research study got underway, one of many planned research projects. This study will enhance our understanding of Nova Scotia's onshore petroleum resources. Results from this study will be used to develop marketing materials to attract onshore investment. The department is optimistic that this project will result in increased exploration activity in Nova Scotia and ultimately commercial production. This measure is intended to assist the department in conducting research to increase knowledge of our geological systems.

Where Are We Now?

The second phase of the Atlas series got underway. An external consultant began working with the department to complete the project. The first draft of the Atlas (50% complete) is expected in February 2010.

Where Do We Want To Be?

The Atlas series is expected to be completed by 2011, with virtual tours through the basins as the final phase in the project.

Measure: The number of research studies initiated and the number of research studies completed.

What Does This Measure Tell Us?

The development of a research agenda and initiation of research studies in marine renewable energy activities helps answer important science questions and address knowledge gaps necessary to provide greater regulatory certainty in the marine environment.

Where Are We Now?

In 2008, the province committed 10 per cent (\$23.4 Million) of the Crown Share Adjustment Payments to OEER and OETR. The money was divided among the two organizations OEER \$5 Million and OETR \$18 Million. These funds continue to support research on tidal and other forms of ocean renewable energy and their impact on the environment. A workshop was held in October 2008 at the Bedford Institute of Oceanography to identify five major research priorities: 1) Grid Integration; 2) Modeling and Resource Assessment; 3) Sediment Dynamics and Effects; 4) Behavioral Studies Sea Life; and 5) Ecosystem Responses.

Following this workshop, the OEER and OETR Boards approved the establishment of a joint Tidal Area Subcommittee to ensure proper coordination of the research.

In response to the priority areas identified, the joint Tidal Area Subcommittee held a Workshop in April 2009 on Hydrodynamic Modeling in the Bay of Fundy that focused on presentations from local and national experts on existing hydrodynamic models and current research. In the spring of 2009, the OEER and OETR Associations released a request for Expressions of Interest (EOI) for Research on Tidal Marine Energy - Focusing on the application of hydrodynamic models for the assessment of energy resources and the environmental effects of energy extraction.

The Strategic Environmental Assessment (SEA) of tidal energy development in the Bay of Fundy completed by OEER in April 2008 identified a number of environmental issues related to the extraction of energy from the marine environment that will be addressed through research and monitoring.

Discussions were held among researchers and energy developers concerning a national research network – to be called the Canadian Marine Energy Research Network (C-MERN) – that would link researchers in universities and government agencies across Canada to focus on marine energy research. The SEA proposed that a regional network be created that would focus specifically on the Bay of

Fundy, and be constituted primarily of Nova Scotia- and New Brunswick-based researchers.

Where Do We Want To Be?

Undertake the necessary research required to accurately assess the potential for marine energy development in the Bay of Fundy and to facilitate decisions about the acceptability of commercial scale development. Two proposed plans include: 1) Integration of research capacity existing in universities, federal and provincial agencies, and in the private sector. 2) Establish a comprehensive and collaborative research program that will address the challenges of tidal energy development in the Bay of Fundy.

8.3 Priority: Effective & Efficient Regulations

Measure: Corporate entity established and site selection and baseline science work identified project description received

What Does This Measure Tell Us?

The above measures provide an indication that the tidal demonstration project is progressing and work is underway to construct the project and meet the timelines established to have a device in the water by Fall 2009.

Where Are We Now?

Due to the renewed interest in offshore renewable energy and in particular, tidal energy, Nova Scotia Department of Energy commissioned the OEER to carry out a SEA (Strategic Environmental Assessment). The SEA was intended to provide advice on whether, when and under what conditions tidal energy demonstration and commercial projects should be allowed in the Bay of Fundy.

The SEA process provided an assessment of the social, economic and environmental effects and factors associated with potential development of renewable energy sources in the Bay of Fundy including social effects, environmental effects, and economical effects. The final SEA report, built from the information acquired throughout the SEA process was submitted to the Nova Scotia Minister of Energy at the end of April 2008. Following the submission, a second round of six community forums was held to gather feedback on the report. Public feedback was recorded and submitted to the Minister as a Community Response Report.

The province responded to the SEA in June 2008 with its report entitled "Bay of Fundy Tidal Energy." In the report, the province committed to:

- providing the Offshore Energy Environmental Research Association up to \$2 million for tidal energy research
- ensuring devices are removed in the event of adverse environmental effect

- ensuring developers create compensation agreements with fishermen before proceeding to development, to protect against adverse economic effects
- encouraging local, aboriginal, provincial, national and international collaboration
- creating marine renewable energy legislation (including potential socio-economic benefits) before considering commercial in-stream tidal projects

In January 2008, the Province of Nova Scotia announced that Minas Basin Pulp and Power (Minas) had been awarded the right to construct a tidal power demonstration and research facility in the Bay of Fundy. This facility will allow for the testing of in-stream turbine devices in tidal waters that are known to possess the most demanding conditions of anywhere in the world. Throughout the course of the test period, the devices will be monitored for wear, environmental impacts and performance that will lead to further technological developments.

The in-stream tidal demonstration project in the Minas Channel is a not for profit corporation. The members will include the Province and the three developers chosen to demonstrate one device each: Minas Basin Pulp and Power, Clean Current, and Nova Scotia Power. Open Hydro will install their device first in October 2009. The institute has been incorporated under the name of FORCE (Fundy Ocean Research Centre for Energy). An agreement has also been signed between the Province (DNR and Energy), Minas Basin and the FORCE Institute.

The FORCE project description has been released and Minas Basin is expected to register their environmental assessment in June 2009. Pending approvals it is expected that the first device (Open Hydro) will go in the water in Fall 2009. Construction is also scheduled to beginning on the land-based facility.

After 12 months and more than \$1 million in research, marine energy experts have identified what they believe to be an ideal site for Nova Scotia's first demonstration turbines. The site is in the Minas Passage area of the Bay of Fundy near Black Rock, 10 kilometres west of Parrsboro. Baseline work is also underway in the area.

The Fundy Strategic Environmental Assessment recommended that Marine Renewable Energy Legislation be put in place prior to commercial development of the resource. The province accepted the recommendation and affirmed its commitment to develop legislation in the 2009 Energy Strategy. The purpose of the legislation is to ensure that commercial ocean energy projects take place with appropriate licensing, environmental protection (including disclosure of environmental data and other information), community benefits, and appropriate provincial revenue. The development of this legislation will be an important measure of the increased regulatory certainty in Nova Scotia.

Where Do We Want To Be?

Have a fully operational demonstration centre by 2010, followed by the next phase in the demonstration involving a pre-commercial array.

Measure: Promulgate drilling and production and pipeline act and regulations and timely approvals for production related activities .

What Does This Measure Tell Us?

This measure indicates the progress that is being made to improve the Onshore Petroleum Regulations.

Where Are We Now?

Improvements were made in the area of regulatory renewal to ensure that issues are addressed in a timely manner. Some examples include updates made to authorization forms and increasing procedure clarity by identifying process time lines for internal decision making.

Stakeholder consultations are planned for the Drilling and Production Regulation. These consultations will be held in the Summer/Fall 2009. The preparation of policy recommendations is also underway.

Where Do We Want To Be?

The development of an Onshore Resource Management Plan has begun. This document will give the province's onshore activities an umbrella document to provide structure, encompass all regulatory responsibilities and connect the various projects, approvals, plans, etc. This plan is identified in the 2009/10 Business Plan. The new Drilling and Production Regulations are expected to be complete by the end of 2010.

Measure: Incorporate the geophysical, installation, certificate of fitness, diving and spill and debris liability regulations and draft Drilling and Production regulation into a single goal oriented regulation that will apply to areas under jurisdiction of the CNSOPB, CNLOPB and NEB.

What Does This Measure Tell Us?

Development of consolidated Drilling and Production regulations will help support the frontier and offshore oil and gas industry's continued growth, competitiveness, environmental stewardship, resource management, and standards for safety.

The proposed regulations for drilling and production activities will: resolve regulatory duplication, move from a prescriptive to goal-oriented style, incorporate a management systems approach, facilitate regulatory process improvements, and reduce administrative burden.

Where Are We Now?

The Drilling and Production Regulations were developed through the Frontier and Offshore Regulatory Renewal Initiative (FORRI) Process. This included drafting of the regulation, stakeholder consultations, Ministerial review and preparation for pre-publication in Canada Gazette, Part I.

Where Do We Want To Be?

The next steps in the process are pre-publication in Canada Gazette, Part I (April 18, 2009) with a 45 day comment period, preparation of a proposal for final publication, Ministerial Consultations as required under Section 7 of the Accord Acts, final review by Provincial Cabinets, and publication in Canada Gazette, Part II, NL Gazette and NS Gazette.