

Nova Scotia Department of Energy
Annual Accountability Report For The Fiscal Year 2007-2008

November 2008

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1.0 Accountability Statement

The accountability report of the Department of Energy for the year ended March 31, 2008, is prepared pursuant to the Provincial Finance Act and government policies and guidelines. These authorities require the reporting of outcomes against the department business plan information for the fiscal year 2007-2008. The reporting of department outcomes necessarily includes estimates, judgements and opinions by department management.

We acknowledge that this accountability report is the responsibility of department management. The report is, to the extent possible, a complete and accurate representation of outcomes relative to the goals and priorities set out in Energy's business plan for the year.

Minister, Honourable Richard Hurlburt

Deputy Minister, Alison Scott

2.0 Message From the Minister

I am pleased to submit the accountability report on behalf of the Nova Scotia Department of Energy for the 2007-2008 fiscal year. This report highlights the contributions of the department toward the development of a world class energy sector in Nova Scotia.

Each year, the department makes strides on many fronts, and this year is no different.

In our offshore, we:

- finalized approvals for EnCana's Deep Panuke offshore natural gas project,
- created more flexible, lower cost exploration licenses to attract investors,
- released the province's first ever 3-D digital seismic data from the Sable area,
- signed a energy training agreement with Venezuela's national oil company,
- began the resolution of the federal Crown Share Adjustment Payment,
- funded research exploring electromagnetic imaging as a prospecting tool,
- created a Pengrowth-Nova Scotia Professorship in Petroleum Financial Management, and
- announced \$5 million for North America's first tidal demonstration centre.

In our onshore, we conditionally approved Stealth Ventures development of coal-bed methane - also known as natural gas from coal - in the Springhill area of Cumberland County. This is the province's first ever onshore gas project.

On the renewable front, we:

- triggered the creation of new contracts for wind power signed by Nova Scotia Power Inc. and independent producers through our *Renewable Energy Standard* regulations and targets.
- released a wind atlas that allows Nova Scotians to assess their wind potential,
- helped municipalities develop model wind turbine by-laws, and
- funded the Ecology Action Centre's Solar Gain Project to encourage major hot-water users to convert to solar hot water heating.

We also began extensive consultations on Renewed Energy Strategy. More than 250 people took part in workshops held across the province from Yarmouth to Cheticamp. Department staff also met 19 stakeholder groups, including energy producers, major energy consumers, and environmental advocacy organizations. We also received 145 written submissions from Nova Scotians who are engaged in our future energy policy.

Our basic goal through this strategy is to protect our environment while continuing to see our economy grow. The accomplishments we have already made make me confident we can meet this goal, and I am proud to account for them in detail in the document enclosed.

Honourable Richard Hurlburt
Minister of Energy

3.0 Message From the Deputy Minister

It is my pleasure to offer the following accountability report on behalf of our team here at the Department of Energy. We are proud to serve Nova Scotia and Nova Scotians, and we continue our efforts along with our many local, national, and international partners to strengthen the province's position in the global energy market.

Since the Department of Energy's inception in 2002, the Nova Scotia Energy Strategy has served as the foundation for both our mission and mandate. The Energy Strategy continues to guide our planning and decision-making, and provides a means to monitor our success.

In the 2007-2008 fiscal year, we made considerable progress toward our long-term goals set out in the Energy Strategy, and undertook a process to renew that strategy in light of shifting options and opportunities for energy.

The following report provides an overview of our progress that translates into economic, environmental and social benefits for Nova Scotians.

Alison Scott
Deputy Minister

4.0 Introduction

In 2007-2008 the Department of Energy was guided by two documents – the department’s 2007-2008 Business Plan and the Nova Scotia Energy Strategy. When the Energy Strategy was released in December 2001, it provided a solid foundation on which to build a stronger, more vibrant energy industry. The strategy is a dynamic document – one that was designed to be strategic, yet flexible as the department meets the fast changing challenges and opportunities within the energy sector. During 2007-2008, and continuing to 2008-2009 the Energy Strategy is being renewed, since its continued success will depend on the department’s ability to respond to changing global and regional circumstances. In particular in 2007-2008 the Department developed the analysis and planning for offshore energy investment attraction, for regulatory modernization, and for the transformation of our electricity system.

Each year, the business plan outlines how priorities are linked to the themes in the Energy Strategy. Thus, this accountability report reflects not only progress made on our business plan, but on the Energy Strategy as well, thereby integrating strategy and action.

5.0 Department Progress and Accomplishments

In our 2007-2008 Business Plan, the Department of Energy identified three strategic directions to focus on to deliver our mandate:

- *Mitigate climate change through renewable energy, energy efficiency and increased use of lower carbon fuels*
- *Increase investment in Nova Scotia energy sources, with a particular focus on offshore and onshore energy exploration and development*
- *Create a better business climate through effective and efficient energy regulation and operations*

The Business Plan defined each of the Department's strategic initiatives against the three main priorities of **Building Knowledge**, **Marketing Nova Scotia**, and **Support a Positive Investment Climate**. The following sections will identify each of the actions set out in the 2007-2008 Business Plan to achieve these priorities and report on the Department’s progress.

5.1 Priority: Building Knowledge

By promoting and facilitating targeted research and development and technological innovation, the Department in 2007-2008 supported its Business Plan and Energy Strategy. To build knowledge of our energy sectors the Department conducted policy

research and developed knowledge to better understand Nova Scotia's competitive position globally regarding international oil and gas investment capital, the development and demonstration of renewable and efficient energy technologies, and the energy market implications of federal and provincial regulation of GHG emissions. The Department's public education initiatives enhance understanding of opportunities for energy efficiency and conservation as well as careers in conventional and renewable forms of energy.

In 2007/08, the Department continued to build an increased scientific understanding of Nova Scotia's onshore and offshore petroleum geology in the public, private and academic sectors by facilitating research & development and technological innovation and geoscience, as well as performing geoscience research within the Department. The Department also supported research initiatives to understand the relationship of gas and oil development activity with our marine environment.

Working with our post-secondary institutions, we continued and increased efforts to provide the skilled workforce required to support the expansion of our energy sector opportunities, and to help our colleges market these training services internationally. The Department helped the academic sector secure assistance in upgrading their research and testing equipment and infrastructure.

- 2007-08 Business Plan Action:

The Department will perform internal geoscience analysis and encourage additional coordinated geoscience studies with the GSC, CNSOPB, academia, PRAC and the private sector.

In 2007-2008 the Department performed internal geoscience analysis for its offshore and onshore development, and initiated additional research with our regulatory, academic, and industry partners. In particular the department managed the award and administration of the geoscience gap analysis project by PARAS, a central element in building our geoscience knowledge, and key to an effective plan to promote new investment in offshore Nova Scotia. (See details of other aspects of the plan, research, and analysis in section 7.0.)

- 2007-08 Business Plan Action:

The Department will continue to garner reliable geoscience information and theory to better understand the inter-relation of seismic testing and tidal electrical systems with the marine environment. This research effort will be conducted through research initiated by the two independent research associations - Offshore Energy Technical Research (OETR) Association and the Offshore Energy Environmental Research Association (OEER). These associations were established in March 2006 through a \$5.2 million provincial grant.

The work of the OETR Association and the OEER Association took major steps forward in their mission in 2007-2008.

The OETR pursued its mission of offshore energy technical research by commissioning studies valued at \$606,000 for new geoscience related to our offshore. In addition OETR organized forums and conferences for experts in offshore geoscience, to continue building our knowledge. (The studies are listed in section 7.0 of this report.).

At the end of FY 2007-2008 the Province announced a grant to OETR of \$18,752,000 from the expected settlement of the Crown Share Adjustment process. The grant is to be used for multi-year research related to our offshore energy geoscience, as recommended by our international advisors on energy exploration and development.

In 2007-2008 the OEER association further pursued its mandate for offshore environmental research. The work included studies, expert forums, and public consultation related to environmental impacts of our offshore petroleum and marine renewable energy. In particular a major work in 2007-2008 included responsibility on behalf of the Department for initiating and overall direction for a *Strategic Environmental Assessment* (SEA) process for Fundy tidal energy development. This broad-based research and consultation process was established to bring together all stakeholders to identify and research all opportunities and concerns regarding the tidal power opportunity in Fundy region. It is an essential basis to determine if and how there will be development of this important resource for Nova Scotia. OEER managed a provincial grant of \$250,000 for the expenses of the SEA process.

OEER also began preliminary environmental research needed to support DFO in updating the ecosystem in the Georges Bank area; an update of science knowledge since the last review and identification of research gaps that can be closed or narrowed prior to the Moratorium renewal/lifting decision; and recommendations on the experimental/study work that is required. A Provincial grant of \$500,000 was given to OEER to develop a firm foundation in the environmental science needed for this review. (See list of research activities of OEER 2007-2008 in section 7.0.) A decision on the moratorium must be reached by December 31, 2012.

At the end of FY 2007-2008 the Province announced a grant of \$4,688,000 to the OEER from the Crown Share Adjustment settlement. This grant will provide sustainability of the OEER in building critical knowledge through environmental research related to our major offshore petroleum and renewable energy resources.

2007-2008 Business Plan Action:

Direct economic spinoffs, such as job creation, business growth and an increased royalty and tax base, can accrue to Nova Scotia from energy sector projects. However, these projects tend to be cyclical in nature. To ensure that our capabilities, capacities and workforce are maintained in Nova Scotia during periods of minimal activity, the Department of Energy will continue to work with industry stakeholders to build target export markets for our energy sector goods and services.

As the Department developed its renewed plan for attracting offshore exploration and investment in FY 2007-2008, the department helped build knowledge and sustainability among our industry suppliers and stakeholders. The department helped build knowledge of supplier export markets by leading delegations and sharing information and intelligence gathered at major international offshore energy trade shows and missions (see list of trade shows and missions attended, section 7.6).

2007-2008 Business Plan Action:

The province will review its commitments under regional climate change strategies and assess the need to develop a Climate Change Action Plan unique to Nova Scotia. Such a plan would focus on the potential impacts of climate change, as well as identifying adaptation and mitigation strategies.

In 2006-2007 the Province proclaimed the Environmental Goals and Sustainable Prosperity Act (EGSPA) which committed the Province to reduce GHG emissions 10% below 1990 levels by 2020, parallel to the target set by the New England Governors and Eastern Canadian Premiers Climate Change Action Plan. In response to this legislation during 2007-2008 the Department accelerated its development of a Climate Change action plan in conjunction the renewal of our Energy Strategy.

To develop the Renewed Energy Strategy and the Climate Change Action Plan, in summer of 2007 the Department embarked on a public consultation process across the province. After a series of Halifax meetings with key stakeholders from industry, municipal, environmental, interdepartmental, and aboriginal groups, the Department organized workshop sessions for the public at 13 locations across the province. The Department published detailed discussion papers on the range of energy and climate change topics for the workshops, which were hosted by a well known scientist and educator in the province. Over 250 people attended these sessions.

In addition the Department requested written submissions from all stakeholders and interested parties. We received 145 written submissions which are posted on our website. The Province also commissioned several technical and policy studies on energy efficiency and renewable energy potential in the province. This research, consultation, and stakeholder feedback was used to help develop detailed policy statements for the Renewed Energy Strategy and Climate Change Action Plan, which is planned to be released in late fall early winter 2008-2009.

2007-2008 Business Plan Action:

The Province of Nova Scotia is losing part of its emerging and established workforce to other areas such as Ontario and Alberta. To offset this the department will continue to provide student pay subsidies to local companies to ensure competitive career opportunities are developed locally, collaborate with learning institutions and other levels of government to provide specialized training equipment and infrastructure and partner with private sector companies, and to provide scholarships and other forms of assistance to Nova Scotian students. The department will work with our learning institutions to extend their energy-related training capacities beyond the borders of Nova Scotia.

To help attract and retain our educated workforce in 2007-2008 the department continued to support the *Energy Training Program for Students*. This employment training subsidy program was established in the Department in 2002, and has experienced increased demand. It was created to encourage private sector employers to hire Nova Scotia post-secondary students for career-related work terms in all sectors of the energy industry. In 2007-2008 the program provided wage subsidy to 42 students in energy related work terms, an increase from the 28 students in 2006-2007.

The Department continued to support greater knowledge and attraction to careers in energy by helping administer the *Pengrowth/Energy Scholarship* program. In 2007-2008 the program awarded scholarships to 12 university students (\$2,500 annually renewable for 4 years, totaling of \$10,000 per student), and 5 of our community college students (\$2500 for one year programs) in trades and technologies.

In 2007-2008 department also helped Dalhousie University, one of our key university partners for training, secure funding to upgrade training equipment and infrastructure.

2007-2008 Business Plan Action:

The Province of Nova Scotia will continue to support the efforts of other organizations to educate the public about climate change and issues surrounding energy use.

Through Conserve Nova Scotia the Province continued to fund *Clean Nova Scotia's Climate Change Centre* that develops public education and outreach programs on climate change and energy issues. The *Climate Change Centre* develops publications on climate change and energy efficiency. In addition the *Centre* creates conferences, presentations and educational tools on energy efficiency and renewable energy for schools, colleges and universities, religious and civic organizations. The goal is to raise awareness across our province and help people understand and address the complexities of climate change, energy efficiency, and renewable energy challenges and opportunities.

To build knowledge about climate change in 2007-2008 the Department also provided funds to the Straight-Highland RDA to help them develop and promote their green energy plan, to the Southwest RDA to fund their energy officer to promote energy efficiency and renewable energy in the region, and to the Union of Nova Scotia Municipalities to develop a GHG calculator.

5.2 Priority: Marketing Nova Scotia

In 2007-2008 the Department worked continuously to identify niche markets to support Nova Scotia business development related to energy sectors. International opportunities are emerging for Nova Scotia-developed alternative energy technologies as well as our offshore and onshore energy development. The Department is collaborating with the Department of Environment to identify additional opportunities.

2007-2008 Business Plan actions:

Prospect Exchanges/Expositions: There are a number of key global opportunities to showcase the potential of Nova Scotia's onshore and offshore. These events are known as prospect exchanges at which petroleum explorers gather to showcase their opportunities. As individual companies prefer to spread their risk profile, these exchanges are extremely well attended venues where geoscientists meet to 'shop' the latest opportunities. For example, North American Prospectors Exchange (NAPE) will typically have over 700 booths and will attract 13,000 delegates, all interested in the latest global opportunities.

In 2007-2008, the Department participated or lead delegations to key prospect exchanges. In addition to the *North American Prospectors Exchange (NAPE)*, the Department

participated in CORE 2007(Halifax), MAPG (Morocco), APEX (London), OTC (Houston), APG (Athens). See further details in the following items.

Investors Meetings: The marketing strategy will target companies that have been identified as a good fit with Nova Scotia's investment opportunities. One-on-one meetings are highly effective in both promoting the offshore and in developing effective policy. The Department staff (including Minister and from time-to-time the Premier) are well positioned to open doors and present the results of the work proposed under this plan.

In 2007-2008, the Department organized direct meetings with our officials and potential investors to promote investment in our offshore sectors, both development and export. Meetings occurred during Prospect Exchanges and Expositions at NAPE and the MAPG (Morocco) event. A meetings was jointly undertaken with NRCan in China to promote our onshore energy opportunities to Chinese government officials and China's National Oil companies. The Department organized meetings regarding offshore energy policy in Scotland, concurrent with annual industry events there. These meetings included NRCan, ACOA, CNSOPB, CNLOPB (Newfoundland), and international energy industry analysts.

Conferences and Presentations: There are many local, national and international conference opportunities where the Department staff learn the latest scientific and business concepts pertaining to exploration and development, review geoscience concepts and models relevant to offshore Nova Scotia, discuss new policy initiatives designed to reinvigorate offshore Nova Scotia's exploration activity, and present technical papers pertaining to various areas of offshore Nova Scotia where the petroleum potential is high.

In 2007-2008 officers of the Department participated or led workshops in the conferences connected with the Prospect Exchange events listed above. These include *North American Prospectors Exchange (NAPE)*, CORE 2007(Halifax), MAPG (Morocco), APEX (London), OTC (Houston), APG (Athens).

The Department made presentations at the PRAC R&D forum (St. John's, May 2007), and to the OTANs Board of Directors in 2007-2008 regarding our Department's investment attraction initiatives, and made three separate presentations at CORE 2007 regarding our initiatives.

Trade Shows/Trade Missions: Showcasing Nova Scotia goods and services in markets outside of Nova Scotia and the Atlantic region provides an opportunity for local companies to expand their businesses. Opportunities for joint ventures and technology transfers are facilitated through these activities.

These Trade Shows Trade Missions attended in 2007-2008 are described above under *Prospects Exchanges* and *Investors Meetings*. The Department helped local companies

by participating in these international industry events, inviting and leading delegations to these events, and providing export development information locally before and after events. Nova Scotia also has a partnership strategy for export development. *Going Global, Staying Local* offers a focused approach to export development that was developed in consultation with the export community and provincial departments that have a mandate for trade development, including the Nova Scotia Department of Energy.

Resource Identification: Highlighting opportunities for prime development in Nova Scotia's renewable energy resources is key to further investments in the industry. The department will continue to support the development and marketing of renewable energy resource assessments aimed at increasing knowledge and activity within the province.

To advance renewable energy development in Nova Scotia in 2007-2008 the Department undertook technical studies, plus a major strategic environmental research and consultation process to increase our knowledge and activity in promoting renewable resources.

In 2007-2008 the *Wind Integration Study* (Hatch) was completed to give a technical assessment of the proper level of wind power (intermittent power) that can be effectively accommodated in the Nova Scotia power grid without instability, and the extent of wind power the grid could handle in the near future with minor modifications in the system. This assessment is essential to developing our wind resource in the province and helping meet our environmental and climate change goals. (Please see page 13 for more details on this study.)

To help develop our major tidal power resource (Fundy area) a process known as a Strategic Environmental Assessment (SEA) was undertaken in 2007-2008. This research and consultation process was managed through the OEER association, funded by the Province. It will allow us to build advanced understanding and public discussion of any environmental obstacles to developing our tidal power resource, a unique and potentially large power source for the province. The SEA process included studies as well as public forums, and was concluded in June 2008 with the public release of the Provincial Response to the SEA Report.

Marketing Materials: Delivering key investment information to industry is of paramount importance in attracting investment. The mode in which the information is conveyed will be tailored to the potential opportunity and target audience. In this regard, business and technical information will be delivered through a strategic mix of promotional media. This will involve using the services of internal business development and marketing and communication staff as well as subject matter specialists contracted as required.

The mix of materials to help market our energy resources and suppliers, offshore and onshore were strengthened in 2007-2008. In that year we created a targeted marketing

video for our offshore sector and its suppliers, as well as an update of our annual CD on current activity in our offshore and onshore.

Based on the analysis and international advice received by the Department, in 2007-2008 we produced and placed a special 37 page supplement in the November 2007 issue of *World Oil Magazine*. This international marketing tool provided the global industry and analysts with extensive, up-to-date information on Nova Scotia offshore and onshore prospects, regulatory environment, training and safety regimes, suppliers, and other key information needed to market our energy resource. It will be followed up in 2008-2009 with the remaining components of the comprehensive investor attraction plan developed by the Department in 2007-2008.

5.3 Priority: Support a Positive Investment Climate

The energy sector has a high degree of public interest regulations from exploration through to development, production and power transmission. The Department leads initiatives to improve the effectiveness of this regulatory system for both renewable and non-renewable forms of energy.

The Department has identified opportunities to enhance our competitive position including regulatory modernization, establishing Offshore Strategic Energy Agreements and building relationships and trust with First Nations and other interested parties. The Department provides technical and strategic advice on the capacities and capabilities of Nova Scotia business as well as the investment interests, priorities and strategies of potential investors.

In 2006-2007, the Department initiated a review of our regulatory regime in key petroleum policy areas with a view to identify areas for change and a renewed strategy to increase exploration interest in our offshore. In 2007-2008 this review was completed and a comprehensive plan for investment attraction including regulatory modernization was developed, and is expected to be fully implemented in 2008-2009, dependent on funding.

Regarding the electricity sector new regulation was established by the Department in 2006-2007 to mandate use of renewable resources to advance greater sustainability and environmental protection in electric power generation. In 2007-2008 the Department worked closely with Nova Scotia Power Inc in taking steps to ensure effective compliance with this major regulation and goal.

2007-2008 Business Plan Action:

Renewable Energy: nearly 90 per cent of Nova Scotia's electricity is generated by burning fossil fuels. The by-products of burning fossil fuels affect both climate change and health. To encourage increased investment in renewable sources of

energy, the Department of Energy will be working with stakeholders to assess tax issues, distribution issues, regulatory issues and jurisdictional issues (ocean based renewables) that impact on business case decisions.

In 2007-2008, the Department deepened its work and leadership in the development of policy, research, and regulation for renewable resources, in particular in the areas of renewable electricity both land based and marine sources. The *Renewable Energy Standard* (RES) regulation established by the Department at the end of 2006-2007 mandates that 18.5% of power production by our main power utility (NSPI) be from renewable sources by 2013, an increase from 8.5% in 2005.

In 2007-2008 the Department working with NSPI, commissioned a major technical study (*Nova Scotia Wind Integration Study* by Hatch, see Department of Energy website). This work is essential to build effective compliance with the renewable power (RES) regulation by 2013. It will also provide advice on technical options and barriers to increased wind power in our grid after 2013. Since wind power is unpredictable the technical issues to maintain system stability are complex and crucial. Engineers in the Department worked with the study consultants and NSPI to carefully delineate the technical issues and options for wind power in our system, the basis for future policy and opportunities. As a result of the RES regulation NSPI in 2007-2008 signed power purchase agreements with wind power providers for construction of 240 MW of production. Together with the 60 MW commissioned before or during 2007-2008, the total wind under contract is now more than halfway to meeting the 2013 goal.

The development of marine renewable energy sources in Bay of Fundy is a new area of opportunity for the Province with economic, environmental, regulatory, and technical issues to be addressed for assessing the potential of the resource. There is an absence of legislative framework specific to the development of this potentially important resource. In 2007-2008 the Department supported and participated in the Strategic Environmental Assessment (SEA) process for Fundy tidal power to identify and research all stakeholder issues that must be addressed if we are to determine the potential of Fundy. The SEA report was completed in April 2008. The Department accepted a draft recommendation of the process and it has agreed to clarify in legislation that the tidal resource is Provincial Crown property, and if it is to have commercial development it will be managed in an orderly and safe manner as with all other natural resources. In 2007-2008 the Department began the research and consultation needed to develop this legislation.

2007-2008 Business Plan Action:

Oil and Gas: The oil and gas business gravitates to those jurisdictions with a combination of attractive fiscal and land tenure regimes, ready access to markets, efficient regulatory systems, high resource potential, stable government, access to

infrastructure and a ready and reliable service and supply sector. Of these, governments are in direct control of the fiscal and land tenure systems as well as the regulatory system. Governments with established offshore petroleum industries have found over the years that in order to maintain the attractiveness of their offshore areas, they need to regularly review these issues. Policy work will continue in 2007/08 with a view to implement change intended to increase exploration and development interest.

To increase exploration and development in our offshore the Department in 2007-2008 developed a comprehensive plan to attract renewed interest in exploring our offshore potential. Along with strategies for geoscience, policy, and marketing, the plan focuses on regulatory modernization. The Frontier and Offshore Regulatory Renewal Initiative (FORRI) was formed to establish efficient and effective regulatory systems that are both consistent and coordinated with other legislation and regulations related to the frontier and offshore areas. It is an intergovernmental committee represented by provincial and federal governments and the regulatory boards.

In 2007-2008, the Department worked with this group to undertake its first major project, to modernize the offshore drilling, production and conservation regulations. The project involves the consolidation of two sets of regulations into one, and modernization of the regulatory requirements and approaches. Following the development of language for a Goal-Oriented Drilling, Production, and Conservation Regulation, the inter-governmental group decided to evolve this regulation into a comprehensive Offshore Operations Regulation. This work is expected to take a number of years to accomplish, but the larger effort will not impact on the modernized drilling regulation as it is expected to proceed through public and legal processes and come into force in 2009.

- 2007-2008 Business Plan Action:

As gas distribution further develops in Nova Scotia the Department of Energy will review its regulatory framework to make sure that regulatory oversight is both efficient and cost-effective while fully protecting the public interest.

In fiscal 2007-2008, the Department of Energy contracted the services of a consultant to review Nova Scotia's existing Pipeline Act and Pipeline Regulations and make recommendations on appropriate changes to make the existing Act and Regulations performance-based. The consultants (through consultation with the Province) provided a background paper on regulatory approaches and basis for proposed direction. The consultants researched other jurisdictions and facilitated discussions with regulators of pipelines. A final report was presented to the Department including an overview of pipeline regulations in Canada and recommendations and rationale for changes to Nova Scotia's existing Pipeline Act and Pipeline Regulations. Department of Energy staff consulted with internal stakeholders on proposed changes

and continue to work toward amending our existing legislation to give Nova Scotia the most efficient and effective regulatory structure while ensuring public safety.

5.4. Human Resource Strategy

5.4.1 Employee Survey

- 2007-08 Business Plan Action:
In November 2005 the department conducted an employee survey using the same questions from the 2004 Government-wide "How's Work Going". During 2006 - 2007 the results were analysed with the purpose of developing initiatives that would address issues of concern.
Two such initiatives started during 2006 - 2007 were :
 - *the development of an employee recognition program*
 - *the requirement that all managers complete a 360 degree performance review*

In 2007-2008 a proposed Employee recognition program was developed by the Department. It will be implemented in 2008-09. In addition all managers in the Department completed a 360 degree performance review.

5.4.2 Departmental Human Resource Strategy

- 2007-2008 Business Plan Action:
In 2005 the Nova Scotia Public Service Commission initiated Nova Scotia's Corporate Human Resource Plan 2005-10.
The plan has five goals:
 - *To make a difference through a skilled, committed and accountable public service*
 - *To be a preferred employer*
 - *To be a safe and supportive workplace*
 - *To be a diverse workplace*
 - *To be a learning organization*

In 2007 - 2008 the department will have a Human Resource practitioner develop an HR strategy that parallels the Corporate Plan but tailored to Energy's circumstances and needs. The department will incorporate this strategy into its HR administration on a go forward basis.

An HR practitioner was not assigned till late in fiscal 2007-2008. As result the strategy will be completed in fiscal 2008-2009.

5.4.3 Diversity in Hiring

- 2007-2008 Business Plan Action:
The Department of Energy is committed to diversity in its recruitment of employees. It will review its hiring practices with emphases on improving the representation of designated groups such as African Canadians, Aboriginals and women in non-traditional roles within its ranks. To this end, the department will activity work with

the Human Resources Client Services Unit to ensure that individuals on their list of qualified diversity candidates have been given first opportunity in casual placements.

As part of succession management planning, the department will continue to encourage employee participation in GoverNEXT events, including networking and mentorship opportunities and career development initiatives. In order to support this, the department will provide a representative for the Steering Committee.

In 2007-2008 the Department worked with Human Resources CSU to ensure in each casual hire that persons on the list of qualified diversity candidates have been given first opportunity for casual placement.

The Department provided a representative for the steering committee of GoverNEXT in 2007-2008, although that person landed a position in another department during the course of the year. The Department provided a replacement beginning in 2008.

5.4.4 Occupational Health and Safety

- *2007-2008 Business Plan Action:*
The Department of Energy values the health and safety of its employees and is committed to providing a safe and supportive working environment. The departmental Joint Occupational Health and Safety (JOHS) committee ensures that these goals are met. This committee's priority is to work in partnership with employees to minimize the risk of occupational injury and illness in the workplace. The committee will continue to work with all employees to identify, report and resolve workplace hazards; ensure employee access to training and take necessary measures to promote health and safety.

In 2007-2008 the Department through its JOHS committee worked with new and established employees to identify any JOHS training needed by new staff, identify any workplace hazards, and promote health and safety. In particular a Healthy Workplaces committees was formed and in 2007-2008 a committee member plan and contracted a twelve part series with professionals in health and well being. This series has since been cited by the Healthy Workplaces director in government as a model program.

5.4.5 French Language Services

- *2007-2008 Business Plan Action:*
The Department is supporting government's commitment to enhance French language services within Nova Scotia. The Department will implement the French Language Service Plan for Energy in accordance with the French Language Services Act and Regulations. The Department will also continue to encourage employees to take French language training to increase their capacity to deliver French language

services to its clients.

In 2007-2008 the Departments plan for French Language services was implemented, and two employees participated in French Language Training. In addition, consultation documents for the Climate Change Action Plan and the Renewed Energy Strategy were available in both languages.

6.0 BUDGET CONTEXT

Department of Energy		000's of Dollars	
	Estimate 2007 -2008	Actual 2007-2008	Variance
Revenues	420,685	501,403	80.718
Expenses			
Salaries	3,860	3,241	(619)
Operations	16,401	37,876	21,475
CNSOPB (net)	1,509	1,715	200
Total Expenses	20,261	42,832	22,571
FTEs	54	51.2	(2.8)

* **In accordance with the public accounts, all estimates/actuals have been rounded to the nearest thousand.**

Variations:

Revenue: Revenue from forfeitures increased in 2007-2008. Forfeitures are not budgeted because they cannot reasonably be predicted.

Operations: the increase in Operations expense was due to the research grants given to the Offshore Energy Technical Research Association (OETR) and Offshore Energy Environmental Research association (OEER) in 2007-2008.

Salaries: the decrease in salaries in 2007-2008 was due to FTEs still vacant.

7.0 Measuring Our Performance

7.1 Outcome: *Greater awareness of energy issues, programs, services and operation.*

What does this measure tell us?

Improving public awareness of energy issues is an important and long term process. To serve this process, the department developed an energy awareness survey and index for Nova Scotians. The Energy Awareness Index is a public survey created for us in 2003-2004 by Thinkwell Research. It indicates if there has been an increase in public awareness of energy issues, programs, services and opportunities.

WHERE ARE WE NOW?

In 2003-2004, the department conducted the survey to determine baseline awareness index for topics including renewable energy, climate change, offshore activity, electricity, natural gas, and energy training opportunities. An overall energy baseline awareness index of 50 (out of a total score of 100 points) was established.

In fiscal 2007-2008, awareness index was tested again to determine if there has been an increase in awareness of energy issues, programs, services and opportunities.

The overall index was measured at 58%, an increase of 5% (03/04 baseline adjusted to 53%), with specific areas breaking down as follows:

- | | | |
|-----------------------------------|------|-------|
| • Offshore oil & natural gas | 66.5 | (-1) |
| • Offshore training opportunities | 22.5 | (-8) |
| • Renewable energy | 64 | (+17) |
| • Electricity | 56 | (+1) |
| • Climate Change | 79 | (+16) |

WHERE DO WE WANT TO GO/BE IN THE FUTURE?

The department will continue to communicate with the public on these important issues. The department wants to increase public awareness about energy issues, and it will continue to look at ways to build greater knowledge among Nova Scotians.

7.2 Outcome: *Increased understanding of geological systems in Nova Scotia.*

What does this measure tell us?

To indicate an increase in our understanding of our geological systems, and thus our prospects for offshore and onshore energy development, this measure tracks the number of geological research studies initiated and completed as a result of Energy Department support.

WHERE ARE WE NOW?

OETR association : The following are the research activities and related events undertaken by the *Offshore Energy Technical Research* (OETR) association in 2007-2008, which were principally funded by the Province.

Research:

Year one of three in geoscience research studies which totaled \$300,000

- Keith Loudon, Dalhousie University
Analysis of petroleum systems on the Scotian slope using thermal and seismic techniques.
- Grant Wach, Dalhousie University
Reservoir distribution & characterization: Shelf to slope linked depositional systems.
- Georgia Pe-Piper, Saint Mary's University
River sources & the transfer of sands to the deepwater Lower Cretaceous Scotian Basin

Other projects funded included

- Kelman Technologies Inc. (\$256,000)
Archiving & reprocessing of seismic reflection datasets in offshore Nova Scotia
- PARAS Consulting (\$50,000)
Gap analysis of geoscience offshore Nova Scotia

Expert Events organized by OETR in 2007-2008

- Nova Scotia Offshore Basin Forum 2007 – Oct 2007
- Nova Scotia Energy Research & Development Forum 2008 – May 2008

WHERE DO WE WANT TO GO/BE IN THE FUTURE?

In 2008-2009, the OETR will use the \$18.7 million funding announced in late 2007-2008 to carry-out multi-year research recommended by PARAS Consulting in the gap analysis report, which is crucial to building interest in exploring our offshore energy potential. Other projects to be undertaken by OETR include energy research into the R&D technology gaps for tidal, wave and offshore wind.

Through our support and partnership in research through OETR the Department will be building an increased understanding in the public, private and academic sectors of our onshore and offshore petroleum geology as well as our renewable energy resources. The OETR allows the Department to promote and facilitate multi-year research and development and technological innovation as well as support geoscience research within the Department.

7.3 Outcome: *Increase regulatory certainty through better scientific understanding of the interaction of renewable and non-renewable energy activities with the marine environment.*

What does this Measure tell us?

To develop better regulation of marine renewable energy and its interaction with the environment, this measure tracks the number of local research projects in that field which were initiated and completed as a result of Energy Department support.

WHERE ARE WE NOW?

OEER Association: The following are the research activities and related events undertaken by the *Offshore Energy Environment Research* (OEER) Association in 2007-2008, funded by the Province:

Research

- Minas Passage Mapping (\$35,000), with NRCan
- Minas Basin Ecosystem Overview & Assessment Report (\$15,000), with DFO.
- Seismic-Invertebrate Impact Review (\$5,000) with Cape Breton University
- Seismic-Invertebrate Research Program – multi-year research of the marine environment including noise sources, overt behaviour, population impact, biological functions, and socio-economic and environmental impacts. The species to be review include clams, lobsters, scallops, shrimp, and snow crabs.

Strategic Environmental Assessment of the Bay of Fundy (\$250,000)

In March, 2007, the Department of Energy signed an agreement with and provided funding for the OEER Association, in the amount of \$250,000, to undertake a Strategic Environmental Assessment (SEA) of the Bay of Fundy in 2007-2008. The OEER commissioned a Background Report for the Tidal Energy SEA in partnership with the Nova Scotia Department of Energy and the New Brunswick Department of Energy, which contributed \$60,000 towards the study. The SEA process included 2 public forums, Stakeholder Roundtable meetings, an Environmental Assessment report. The final report was submitted to the Minister on April 1, 2008, followed by a second report which included feedback from the Community Forums.

2007-2008 Events.

- Seismic Workshop – Sept 2007
- SEA Community Forums – Aug 2007
- Nova Scotia Energy Research & Development Forum 2008 – May 2008

WHERE DO WE WANT TO GO/BE IN THE FUTURE?

In March 2008, the Province announced that funding would be given to the OETR from the Crown Share settlement to fund multi-year research relating to the impact of ocean energy on the marine environment. The grant totaled \$4,688,000 for future marine research. The following lists the research and related events to be sponsored by OEER in 2008-2009:

Research:

- Georges Bank Environmental Research
A decision on the Georges Banks moratorium must be reached by December 31, 2012. Leading up to this date, the Province was directed to develop and gather more information on the Georges Bank ecosystem. The environmental research being proposed by DFO on studying the Impacts of Petroleum Exploration and Production on Georges Bank Ecosystem, will be funded in part by OEER and carried out in 2008-2009. This work will provide the baseline science research and information gathering required to inform Ministers prior to their decision on whether they should initiate a public review of the moratorium.
- Marine noise and practices and technology to mitigate such impacts
- Tidal and other forms of marine renewable energy and their impact on the environment (including creation of the Fundy Tidal Marine Energy and Environmental Research Network).
- Continued -Seismic Invertebrate Research Program

Events:

- Fundy Strategic Environmental Assessment: Community Forum May 2008
- Nova Scotia Energy Research & Development Forum May 2008

7.4 Outcome: *Increased opportunities for education and training in the energy sector.*

What does this Measure tell us?

To indicate the impact of departmental coordination of energy scholarship and training funds, this measure tracks the number of students accessing the Pengrowth/Energy Scholarship program, and the number of students who have had work experience in energy related industries through the Energy Training program.

WHERE ARE WE NOW?

The Department's public education initiatives in 2007-2008 enhanced knowledge of opportunities for careers in energy sectors. The Pengrowth/Energy Scholarship Program awarded scholarships valued at \$10,000 (\$2500 renewable over 4 years) to Nova Scotia students attending universities. In addition \$2500 non-renewable scholarships were awarded to Nova Scotia students enrolled in trades and technology programs at the Nova Scotia Community College. Petroleum Innovation grants were also awarded to graduates who begin work in the petroleum sectors of the province.

In 2007-2008, seventeen fifteen students took advantage of the Pengrowth Scholarship program The total for the first three years (2005-2008) is now 48 students, plus 7 grads who received Petroleum Innovation grants.

Pengrowth/ Energy Scholarships:

<u>Year</u>	<u># scholarships (University and NSCC)</u>
2005-06	16

2006-07	15
2007-08	17
Total for first three years:	48 students

The number of students getting experience in the energy industry via the Energy Training Program in 2007-2008 was 42. The program was originally geared for the petroleum sector, but it was expanded in 2006-2007 to companies in the renewable and efficiency energy sector who have submitted applications to the program.

WHERE DO WE WANT TO BE IN THE FUTURE?

The Department of Energy will continue to seek ways to increase opportunities for Nova Scotia students to gain training in the energy sector here in Nova Scotia. Our goal is to increase industry funding and participation in the Scholarship Program.

7.5 Outcome: *Increased awareness of our offshore potential by exploration companies.*

What does this measure tell us?

To indicate and reinforce our efforts to increase awareness of our offshore potential, a number of key local and international promotional events and technical meetings have been targeted. Our involvement with these key events will be tracked in this measure.

WHERE ARE WE NOW?

In fiscal 2007-2008, the Department of Energy participated in targeted promotional and technical meetings in Aberdeen, Athens, Beijing, Houston, Calgary, London UK, and Morocco to promote Nova Scotia's onshore and offshore to potential investors (see 7.0 for list of events and meetings). The Department organized and occasionally chaired technical sessions at these events where appropriate.

WHERE DO WE WANT TO GO/BE IN THE FUTURE?

In 2007-2008 the department coordinated completion of the PARAS geoscience gap analysis, which allowed us to launch the Nova Scotia Offshore Renewal Plan. This plan to be implemented in 2008-2009 and into the future is a multi-year oil and gas investment attraction initiative based on extensive discussions and research by international experts. It will result in an enhanced marketing effort over the coming years that will showcase the province's infrastructure and energy resource opportunities. The plan calls for strategic action on four fronts: geoscience, policy, regulation, and promotion.

In conjunction with the enhancement and packaging of our offshore geoscience knowledge and analysis, the Nova Scotia Offshore Renewal Plan will be

implemented through a number of avenues including hosting of international conferences and workshops, one-on-one meetings with exploration companies, and active participation at international trade shows and conferences.

7.6 Outcome: *Exportation of goods and services related to the energy sector.*

What does this measure tell us?

To increase awareness of Nova Scotia produced goods and services suppliers related to offshore activity, a number of key local and international promotional events and trade shows have been targeted, at which we lead delegations of suppliers. Our involvement with these key events will be tracked in this measure.

WHERE ARE WE NOW?

In 2007-2008 the Department attended and participated in 6 major international trade show/missions:

- Mar. 2007: Buyers-Sellers Forum, Edmonton
- May 2007: All Energy Conference, Aberdeen
- May 2007: Offshore Technology Conference (OTC), Houston, Texas
- Sept 2007: Offshore Europe, Aberdeen
- Nov. 2007: Amer. Assn of Petroleum Geologists, Greece
- Jan. 2008: World Future Energy Summit, UAE

Special meetings: Venezuela, to develop our MOU for energy related skills training.

Note: The Department created and placed a special overview of Nova Scotia offshore resource in the World Oil magazine supplement, which was used at industry trade shows to spotlight and promote opportunities in Nova Scotia.