

Nova Scotia Department of Energy

Business Plan

2007 - 2008

Alison Scott
Deputy Minister

Honourable Bill Dooks
Minister

MESSAGE FROM THE MINISTER

Nova Scotia is blessed with a variety of energy resources. With 400,000 square kilometers of offshore, our potential is impressive. Oil and gas production has already generated billions of dollars in growth. High velocity wind regimes sweep across the province; 100 billion tons of sea water flows through the Bay of Fundy every day.

These resources inspire our deep confidence that Nova Scotians will continue to benefit from the energy sector and that our businesses will compete successfully in the growing energy field. Towards that end, the Department of Energy moved ahead on a number of fronts this year.

We signed an Offshore Strategic Energy Agreement (OSEA) with EnCana Corporation which guarantees employment, royalties, research and development funding, and industrial benefits for the proposed Deep Panuke Project. This agreement not only ensures economic growth, it provides an excellent opportunity for Nova Scotians to be directly involved in that growth.

By creating Conserve Nova Scotia, we are aggressively promoting energy efficiency and conservation. We need to adapt quickly to a world where the price of energy remains volatile; that adaptation means building a sustainable, energy efficient future.

This vision of the future also motivated Nova Scotia's new mandatory renewable energy standards. These standards will ensure almost 20% of Nova Scotia's electricity will be generated by renewable energy - wind, tidal, biomass, solar and hydro - by 2013.

Everyone needs to take action to reduce our carbon footprint - government, industry and the public. While our renewable targets go along way towards that goal, we need to do more to address climate change and plan for its effect. This year we will work with stakeholders to create the policy tools Nova Scotia needs to reduce its green house gas emissions.

And we must do this within a model that sees our economy continue to grow. We want to encourage further offshore exploration - both in conventional and renewable energy. We know we have the resources. With our growing research efforts, the rest of the world will know too.

Looking ahead, the Department will continue to support Nova Scotia energy businesses both inside and outside our borders. After all, those businesses are filled with the best resource I know - our people.

Honourable Bill Dooks
Minister of Energy

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1.0 MISSION

- 1.1 Mission Statement

The mission of the Nova Scotia Department of Energy is to advance the interests and concerns of the Province and achieve optimum economic, social and environmental value from the energy sector. This will be achieved by promoting the efficient, effective and environmentally sound use of energy and by developing and implementing energy policies and programs directly and in partnership with governments, industry, other provincial departments and local communities.

1.2 Department Profile

The Nova Scotia Department of Energy was created in June 2002 to serve as the Government's focal point in developing and managing the Province's energy resources. Building our energy sector and making the most of the opportunities in our offshore continue to be priorities for the Department of Energy. These priorities are balanced by our commitment to improving our environment and promoting the use of renewable energy resources and technologies.

The department consists of six divisions:

- Business and Technology
- Communications
- Energy Markets and Climate Change
- Legal Services
- Resource Assessment and Royalties
- Strategic Policy, Planning and Services

2.0 LINK TO CORPORATE PATH

In the Fall of 2006 the Government of Nova Scotia released its Corporate Path strategy establishing a vision of “The New Nova Scotia”. This strategy promotes three main directions:

- Creating Winning Conditions
- Seizing New Economic Opportunities
- Building for Individuals, Families and Communities.

The Department of Energy primarily sees its linkage to the Corporate Path through Creating Winning Conditions, Seizing New Economic Opportunities and a Commitment to Review the Province’s Energy Strategy.

2.1 Creating Winning Conditions

Around the world, new energy opportunities are emerging. In order to compete, Nova Scotia needs to ensure a competitive business climate and a diverse resource base that will attract private investors. The Department of Energy must ensure Nova Scotia has a fiscal, policy and regulatory framework that encourages investment in our natural gas, oil and renewable energy resources.

The Department of Energy works with individual companies, business associations, other levels of government and learning institutions to market our resource potential, our competitive business climate and our trained and educated workforce.

A global perspective on investment attraction is particularly important with respect to offshore oil

and gas. The scale of investment in these projects is in the range of \$100's of millions in the exploration stage and in the billions at the development stage. Private sector investment decisions of this magnitude compete on an international basis. The Department of Energy works to create the winning conditions that will attract these large-scale investments; facilitate significant economic benefits for businesses and their employees; and accrue very large financial benefits for the province of Nova Scotia and its people.

2.2 Seizing New Economic Opportunities

The majority of Nova Scotia's heating, transportation and electrical needs are met through the burning of fossil fuels, primarily oil for transportation and heating and coal for electricity. This has an affect on air quality and health and contributes to climate change. To reduce this impact, the Department of Energy is developing policies and regulatory requirements that encourage the use of cleaner energy resources and technologies. Moving towards a green and clean economy provides fiscal benefits and a leadership opportunity for Nova Scotia.

2.3 Commitment to Review the Province's Energy Strategy

In December 2001, the Government unveiled its Energy Strategy, "Seizing the Opportunity". This document outlined a plan to address economic, environmental and longer-term strategic issues through its focus on "Powering the Economy; Improving the Environment; and Securing the Future". More than five years later, many of the objectives have either been achieved or are on track as planned. However, a number of factors have changed and the strategy was always intended to be a "living" document - subject to change as conditions require. In 2006, the Government made a formal commitment to update the Strategy. This work is now underway.

3.0 PLANNING CONTEXT

3.1 Overview

Nova Scotia faces all the challenges and opportunities that come with being both an energy producer and consumer. The Department is committed to meeting the various public interests in energy in a balanced and responsible manner.

A reduction in energy consumption is emerging as a key overriding objective of most progressive jurisdictions. In part this is a response to the recent ramp up in prices, but it is also a response to increasing public concern that too much energy is supplied from sources that are unstable and insecure and it also reflects a growing sense of environmental responsibility in all nations.

The reduction in consumption is being seen in current actions by energy users and the reduction is committed to continue through the actions of governments. The International Energy Agency - representing the interests of 26 developed countries including Canada - recently announced that oil consumption by its members fell by 0.6% in 2006 - the first significant decline since the 1980's. Looking out, the United States, the European Union and even China have set targets for significant reductions in energy consumption, especially in gasoline.

The conflict between the need for reduced energy consumption and world economic growth applies a continuous pressure on meeting those targets. A permanent reduction in demand will require global public policy focus and technological innovation. Meanwhile, readily accessible and inexpensive supplies of fossil fuels are on the decline and natural disasters and political instability have introduced shortages and unpredictability to the marketplace. The result has been a series of price shocks. While these sharp rises in prices have often been short-term, fossil fuel prices are tending to settle in at levels above the average before the price spikes took place.

Breaking this pattern of spiking and subsequent higher price plateau requires investments in new, diverse and often unconventional energy sources. In the short to medium term, high energy prices support investment in these new energy sources. At the same time it is critical we deliver on commitments for energy conservation and efficiency.

Fortunately, meeting our objectives for new energy sources - especially those that meet the test of being cleaner and greener - will also help us meet another global and local challenge - climate change.

Health and environmental challenges associated with using fossil fuels are particularly significant for Nova Scotia. Currently, we depend upon coal, oil and gas for more than 90 per cent of our energy needs. The burning of all fossil fuels, particularly coal and oil for the production of electricity and oil for transportation needs, produce sulphur dioxide, nitrogen oxides and particulate matter as well as greenhouse gases (GHG) which affect the rate of climate change and the health of Nova Scotians. Existing provincial regulations require reductions in air emissions associated with fuel combustion while Federal GHG regulations are anticipated.

High fossil fuel prices, coupled with new proposed air emission regulations, should support a positive investment climate for clean energy resources/technology, natural gas, wind, tidal, biomass, solar energy and carbon storage and sequestration. There will also be increased opportunities for energy efficiency.

3.2 Climate Change

The science of climate change has been accepted as being real. The focus of our efforts now has to shift from acceptance to finding tangible solutions to adjust to current and future climate change impacts.

The impacts of climate change have the potential of negatively effecting our province in several ways. The United Nations Intergovernmental Panel on Climate Change predicts a temperature increase of between 1°C to 6°C over the next 100 years, with potentially drastic effects on our fishing, forestry and agriculture industries. It also predicts sea level rise of up to one metre, threatening our coastal communities and lifestyles. As well, increases in the frequency of extreme weather events poses significant health and safety risks and the potential for irreversible damage to our biological and natural systems.

The motivation for action is both social and economic. The Stern Report, commissioned by the British government and released in 2006, predicts that if we continue to release greenhouse gases

in the atmosphere at the current rate, global GDP may fall by as much as 20% - a massive global recession. The same report states that this can be avoided with a minimal investment of 1% of global GDP per year in mitigation and adaptation. To seriously address climate change, emissions reductions in the order of 50% to 80% are needed over the long term.

The National Roundtable on the Environment and the Economy (NRTEE) believes reductions of 60% can be achieved from a technological standpoint, According to NRTEE, "The chief difficulty in significantly reducing GHG emissions is not the lack of relevant technologies – rather it is the lack of a long-term signal. Such a signal is needed to help the private sector make shorter-term investment decisions that take GHG reductions into consideration." The province will address this challenge by becoming a leader in a cleaner and greener economy, as outlined in its Corporate Vision: "The New Nova Scotia".

3.3 Energy Demand

Reducing energy demand is a critical objective in addressing a wide range of energy issues. The government's response to energy efficiency and conservation opportunities has been to create Conserve Nova Scotia. Effective January 1, 2007, this separate Agency assumed responsibility for the Department's Smart Energy Choices program and the development of policy in the area of energy conservation and efficiency. Consequently, the Department of Energy will no longer consider, for business plan purposes, direct energy efficiency and conservation initiatives. However, the department will work closely with Conserve Nova Scotia to ensure that government policies, programs and strategies are mutually inclusive and capitalize on energy efficiency investment opportunities.

3.4 Energy Supply

3.4.1 Energy Imports

90% of Nova Scotia's energy needs for transportation, heating, electricity use and industrial production are in the form of fossil fuels, most of it imported. Integration of renewable energy, locally produced natural gas and clean coal technologies to burn local coal resources, all present opportunities to reduce this dependence. However, it is recognized that reducing our dependence upon imports will take time and there is no readily available option for replacing fossil fuels in transportation. Therefore, reducing demand for fossil fuels continues to be a critical part of our mission.

3.4.2 Natural Gas

Nova Scotia has in excess of 40 trillion cubic feet of natural gas potential in the offshore and in excess of 1 trillion of cubic feet of natural gas in the onshore area - particularly in the coalbed methane resources of Cumberland, Pictou and Cape Breton Counties.

3.4.2.1 Offshore

The Province has one offshore natural gas production project in place. The Sable Offshore Energy Project began production at the end of 1999. Sable gas production for 2005 and 2006 averaged 386 million cubic feet of gas per day and 375 million cubic feet of gas per day respectively.

In 2007 production from this project is forecast to peak at over 500 million cubic feet of gas per

day, due to the completion of a \$700 million compression project, before beginning a final decline.

The Province is currently receiving strong fiscal benefits from the offshore. In 2007-08, royalties are expected to peak at a level in excess of \$400 million then taper off as production begins to decline. Total project-life revenues continue to be forecast in the range of \$1.6 to \$2.4 billion. With the successful conclusion of new fiscal arrangements on offshore revenues with Ottawa in early 2005, all of these revenues are to the benefit of Nova Scotians.

In addition to direct revenues to Provincial treasury from royalties each year, offshore expenditures boost our annual GDP. In 2005, offshore related expenditures in NS were \$161 million and provided employment of 1.27 million person hours. Expenditures from 2001 through 2005 have totaled \$1.7 billion, and have provided employment of 15.6 million person hours.

More than \$1 billion in goods and services have been supplied by Nova Scotia companies for the Sable gas project. By working in the local gas and oil industry, Nova Scotians have built the experience and credibility to sell in the international marketplace. Gas and oil activity also contributes to the economic well-being of rural municipal units through the taxation of gas pipelines and gas plants and direct employment.

Renewing all these fiscal and economic benefits, requires new investment in exploration and development. New gas production will begin with EnCana's Deep Panuke project if regulatory and commercial approvals are received in 2007. The sustained future of the offshore energy sector requires new discoveries. Recent exploration drilling has yet to yield new commercial finds which in itself presents challenges for the future of our offshore. The cyclical nature of offshore gas and oil activity creates uncertainty to businesses, people and communities who wish to capitalize on related opportunities. Our main challenge today is to build geological and environmental knowledge. This will lead to increased exploration, in a safe and responsible manner, which in turn will bring new development.

Knowledge is gained through an interplay between geological theory, seismic programs and drilling results. Approximately 200 wells have been drilled offshore Nova Scotia as compared to nearly 7,000 in the North Sea and more than 50,000 in the Gulf of Mexico. In 2006, two research associations were established by the province and our universities to examine geological and marine environment issues related to offshore energy exploration and production from renewable and non-renewable energy sources and to commission key studies to increase our knowledge in these areas.

Forecast Drilling - Offshore

There are no firm exploration drilling plans for 2007 due to a combination of a tight market for drilling rigs and geological uncertainties. However, both BEPCo and Canadian Superior have indicated publicly that they hope to be in a position to drill in 2007.

3.4.2.2 Onshore

While overshadowed by the offshore, Nova Scotia's onshore natural gas potential has had a steady increase in activity over the past 5-6 years. This activity is expected to continue due to the availability of natural gas transportation infrastructure, strong natural gas price forecasts and the commercial success realized by Nova Scotia-based Corridor Resources in similar New Brunswick geological formations.

Recent Exploration Activity

EOG Resources and its partner, Husky Energy, have drilled three exploratory wells in the Hardwoodlands area of Hants County and are currently analysing the results. Depending on these results, more wells may be proposed in the short term.

Stealth Ventures is the operator of the two coal gas agreement blocks in Nova Scotia; one in the Springhill area of the Cumberland Basin, the other in the Pictou coalfield area of Stellarton/New Glasgow. The company has drilled a number of wells in each area and this spring and summer will conduct flow testing in the Cumberland Basin with the intentions of moving ahead with an application for a production agreement. Development activity will mean significant drilling and related production activity for the area. Independent estimates suggest the coalbed methane resource to be in excess of 1 trillion cubic feet for these two basins.

Forecast Activity

Seismic programs are being considered this year for the Parrsboro, Amherst and Sydney areas. Seismic data is generally acquired prior to drilling decisions being made.

3.4.2.4 Local Distribution

The Province is committed to converting government facilities to natural gas to support the expansion of the distribution system. Using natural gas as an alternative to fuel oil can help our environment and provide fuel-source diversity. To date, natural gas produced from our offshore is distributed in Dartmouth, Amherst, and key industrial users in the Canso Strait area. Expansion of the system into other markets in the province, including Halifax peninsula, Truro and New Glasgow depends upon the availability of reasonably large anchor-loads to justify the infrastructure investments. Continued distribution is also constrained by cost/profit implications for the distribution company and cost/savings implications for the consumer. However, the recent return of natural gas prices to a more normal relationship with home heating fuel makes natural gas an attractive option.

As the natural gas market grows, Nova Scotians will benefit from the manufacture, installation and maintenance of appliances in addition to the construction of the actual distribution pipe system itself. Should there be a move to develop coalbed methane in the Springhill area, additional pipeline infrastructure would be required in that area and there will be additional opportunities for local gas distribution.

3.4.3 Electricity

3.4.3.1 Renewable Energy

Increasing the amount of sustainable, renewable energy in Nova Scotia will diversify our electrical generation methods, result in local and global environmental benefits, provide economic opportunities for Nova Scotians, and help position the Province to meet future energy demands.

The total power production delivered via NSPI in 2006 was 13 thousand gigawatt hours (a gigawatt is 1000 megawatts). This was 97% of all power production in the province, the remaining 3% was produced by non NSPI factory cogeneration plants. Power delivered by NSPI was generated from the following sources in 2006:

59% coal fired plants

28% oil and gas fired plants

12.5% renewable sources- including a tidal plant, small hydro plants, and 20+ wind turbines.

Renewable power generation, as a percentage of the electricity delivered by Nova Scotia Power in 2006, realized growth.

In January of 2007, the Government of Nova Scotia introduced a mandatory Renewable Energy Standard that will substantially increase the amount of renewable energy used in electrical generation. By 2013, based on current consumption, about 400 megawatts of new renewable energy, mostly wind power, is expected to be built, creating new opportunities for GHG reductions and new opportunities for independent power producers.

Since the release of the province's Energy Strategy in 2001, approximately 100 megawatts of renewable power projects have been either built or are committed to be built. The 30MW wind farm at Pubnico came into service in early 2005. Nova Scotia Power Inc. (NSPI) has now accepted all 17 small-medium size (less than 2 MW) Independent Power Producer (IPP) renewable energy projects that were proposed in response to a fixed rate, long-term renewable power purchase price offer. These total 28 MW.

NSPI subsequently awarded Power Purchase Agreements for an additional 42 MWs of IPP wind projects in response to a public request for proposals for large-scale renewable energy supply from IPPs. All of these projects are anticipated to come on line by the end of 2007. A total of 60 MW of post 2001 renewable energy projects are currently anticipated to come on line by the end of 2007. In addition, NSPI announced in March of 2007 that it is seeking an additional 130 MW of renewable IPP projects through a competitive bid process.

The Department of Energy recently partnered in a study regarding the potential of offshore renewable energy generation in the Bay of Fundy. In conjunction with stakeholders, this potential will continue to be evaluated through an integrated process of regulatory development, strategic environmental assessments, research and pilot project(s) prior to any commitment for large-scale commercial development.

4.0 STRATEGIC INITIATIVES

The Department of Energy has established three strategic directions that it will focus on to deliver its mandate.

- Mitigate climate change through renewable energy, energy efficiency and the 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

4.1 Mitigate Climate Change

Government must work closely with the private sector and non-governmental organizations (NGO) to achieve diverse, competitively priced and sustainable energy supplies in Nova Scotia. As part of our Energy Strategy renewal, the Department will explore with stakeholders what the contents of a Nova Scotia climate change action plan should include.

The department will explore a variety of policy tools to achieve GHG reductions and will play an important role in working with the federal government on developing and implementing a regulatory regime for managing greenhouse gas emissions from large industrial emitters in the province.

Last year saw the department step up to fully fund the Nova Scotia Climate Change Centre after federal funding was cancelled. Other initiatives included supporting the creation of community energy plans for Halifax Regional Municipality and the Strait-Highlands region, working with the Union of Nova Scotia Municipalities on a best practices guide for small and medium-sized municipalities, and developing an issues paper on the high level risks of climate change impacts on Nova Scotia. The department is also providing funding for a high-tech mapping project of Halifax harbour that will assist in climate change adaptation work. The department will continue the management and facilitation of dozens of renewable energy and climate change adaptation projects. These actions and initiatives are important elements in what will become a more comprehensive strategy to address climate change.

4.1.1 Build Knowledge

By promoting and facilitating targeted research and development and technological innovation, the Department supports the development and demonstration of alternative energy technologies. The Department conducts policy research and development to fully understand issues that affect Nova Scotia's energy supplies such as the implications of the federal response to climate change. The Department's public education initiatives enhance understanding of opportunities for alternative forms of energy. To provide Nova Scotians with appropriate information to maintain their lifestyles, climate change impact analysis and adaptation strategies have to be undertaken.

4.1.2 Market Nova Scotia's Alternative Technology Opportunities

The Department works continuously to identify niche markets to support Nova Scotia business development. International opportunities are emerging for Nova Scotia-developed alternative energy technologies. The Department is collaborating with the Department of Environment and Labour to identify additional opportunities.

4.2 Increase Investment in Energy Sector with a Particular Focus on Onshore and Offshore Exploration and Development

Increased offshore energy exploration and production will help to sustain the current large tax and royalty revenue base and will provide new business and employment opportunities for Nova Scotians.

4.2.1 Build Knowledge

In 2007/08, we will be building an increased understanding of our onshore and offshore petroleum geology in the public, private and academic sectors by promoting and facilitating research and development and technological innovation as well as performing geoscience research within the Department. In addition, the Department is supporting research initiatives to understand the relation of gas and oil activity to our marine environment. Working with our post-secondary institutions, we are helping to provide the skilled workforce required to support the expansion of our energy sector opportunities. The Department provides assistance with purchasing equipment and building infrastructure to support these opportunities. The Department is also conducting research to better understand Nova Scotia's competitive position globally for international oil and gas investment capital.

4.2.2 Market Nova Scotia Opportunities

In January 2007 the department initiated a multi-year oil and gas investment attraction initiative. This initiative will result in an enhanced marketing effort over the coming years that will showcase the province's infrastructure and energy resource opportunities to targeted companies. An additional \$600,000 has been allocated to implement this initiative. Marketing of Nova Scotia's potential will occur 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.

The Department also works closely with industry associations to facilitate export development as well as monitors economic activity resulting from local energy projects in order to identify, develop and implement strategies that will increase Nova Scotia's related business opportunities locally and abroad.

4.3 Create a Better Business Climate Through Effective Energy Regulation and Operations

The energy sector has a high degree of public interest 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 forms of energy.

In 2006, the Department initiated a review of key petroleum policy areas with a view to identify areas for change which will promote increased exploration interest in the offshore. This work will be continued in 2007 with key policy changes anticipated. 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.

Department policy and administration staff provide leadership and support for:

- Evaluation of new program effectiveness and efficiency
- Development of modernized energy legislation and regulations
- HR Development and Recruitment Strategy
- Information Management Strategy
- Strategic Policy and Services support for operational divisions.

For fiscal 2007-08, an additional \$200,000 has been allocated to support regulatory and energy policy development.

5.0 CORE BUSINESS AREAS

The core business areas of the Department of Energy have been grouped by the departmental divisions as follows:

5.1 Resource Assessment and Royalties

5.1.1 Resources Assessment

The Resource Assessment Group of the Division is responsible for the development of policy, legislation, and regulations for the exploration and development of the Province's offshore and onshore petroleum resources.

Onshore, this Group administers the granting of petroleum rights and co-ordinates the regulation of exploration activity.

While the Canada-Nova Scotia Offshore Petroleum Board regulates day-to-day offshore petroleum activity; the Resource Assessment Group, as stewards of onshore and offshore geological knowledge, actively promotes and markets Nova Scotia's onshore and offshore petroleum potential to global oil and gas companies interested in new investment opportunities.

5.1.2 Petroleum Fiscal Affairs

The Petroleum Fiscal Affairs Group of the Division forecasts and monitors the financial results and fiscal implications of petroleum exploration and development; administers, audits and assesses royalties from petroleum projects; undertakes fiscal policy research and analysis and provides related recommendations; and performs a central role in fiscal negotiations when required.

5.2 Business and Technology

5.2.1 Offshore Benefits

The Department of Energy has a legislated responsibility to represent the interests of the Province in the negotiation and implementation of benefits plans. As with other international offshore jurisdictions, this process builds the local capacity and capabilities that are critical to attracting future investment. It ensures Nova Scotians are able to compete on a best value basis for local business and employment opportunities related to the development of a Nova Scotian non-renewable resource.

All proponents of offshore work must first submit a benefits plan to the Canada-Nova Scotia Offshore Petroleum Board. Benefits plans must provide manufacturers, consultants, contractors and service companies in Nova Scotia and in other parts of Canada with a full and fair opportunity to participate on a competitive basis in the supply of goods and services used in any proposed work or activity referred to in the benefits plan. Key elements of the plan include establishing a local office, local employment, education and training initiatives, and research and development to be conducted in the province.

5.2.2 Business Development

Working with energy sector stakeholders, the department promotes investment in the energy-related capabilities of Nova Scotia. We provide opportunities for local companies to meet potential joint venture partners and participate in investment missions abroad. We maximize business opportunities for local suppliers of goods and services and identify areas of labour demand and possible skill shortages to develop strategic approaches to ensuring maximum participation of Nova Scotians in major energy projects and undertake partnerships in training projects and initiatives.

5.2.3 Marketing

The Department of Energy provides a wide range of services and programs to Nova Scotians and Nova Scotia's business community. These range from export development and investment attraction to scholarships and research partnerships. They include employment incentives to hire students. All marketing and promotional activities are delivered in a manner consistent with the Province's brand initiative.

The Province recently launched its "Come to Life" brand initiative for all marketing activities undertaken by the Government of Nova Scotia. The Department of Energy has incorporated the Provincial brand in all of its energy initiatives and programs. It is developing a strategic framework to ensure all activities and programs meet corporate objectives to achieve maximum value delivery.

5.2.4 Energy Sector Technology Acquisition

The Department identifies and supports opportunities for Nova Scotians firms competing within the energy sector to benefit from the transfer of technology critical for expanding business opportunities within the sector. Joint ventures and other partnership approaches have levered industry - specific technology competency development under industrial benefits agreements like the oilfield equipment fabrication project under Encana's Deep Panuke Offshore Strategic Energy Agreement (OSEA).

The Department also leverages federal and private sector investment in state-of-the-art energy related educational and training infrastructure in Nova Scotia's post-secondary educational institutions. It has also worked to ensure Nova Scotia's energy related educational training modules and standards meet employer needs.

5.2.5 Research and Development

Nova Scotia benefits from 11 universities, an extensive college system, federal and provincial government organizations, private sector firms and others who undertake energy research. The Department of Energy ensures that research priorities are identified, supported and enhanced through partnerships and leverage opportunities that ensure best value.

5.3 Energy Markets and Climate Change

Energy Markets and Climate Change is a new division inside the Department of Energy. With the creation of Conserve Nova Scotia, the responsibilities for energy management, with respect to conservation and efficiency, were transferred to this new Agency. The Agency and the division work closely on energy management issues, particularly those related to climate change issues.

This Division within the Department of Energy develops and implements policies and programs dealing with natural gas transmission, distribution and use; electricity generation, transmission, distribution and use; refined petroleum products; and renewables.

5.3.1 Electricity and Renewables

The 2001 Energy Strategy identified high level changes to Nova Scotia's electricity system including:

- A focus on renewables
- Competition for new supply
- Opening the transmission system to multiple users
- Opening the wholesale market (municipal utilities) to competition

- Reducing emissions from electricity generation
- Energy efficiency

Legislation was passed in Fall 2004 providing for opening the wholesale market, setting minimum requirements for renewables in our electricity mix, and requiring an Open Access Transmission Tariff. Market rules for users of the transmission system and setting time lines and thresholds for renewables requirements were established in January 2007.

5.3.2 Natural Gas

The Department assists Nova Scotians in converting heating systems to natural gas through Gas Market Development Fund (GMDF) incentives and information that explains the efficiency, safety, and the convenience and environmental benefits of natural gas. The GMDF was provided by the Sable Offshore Energy Producers specifically to encourage the use of natural gas in Nova Scotia. The Province, with its schools, hospitals, and other buildings, can make the expansion of the gas distribution system economical.

It works with proponents, regulatory authorities, and economic development agencies to foster the development of Liquefied Natural Gas (LNG) to increase supply diversity, fuel on fuel competition, and reduce supply risk.

5.3.3 Energy Markets

The Department intervenes on behalf of Nova Scotians at Utility and Review Board (UARB) and National Energy Board (NEB) hearings related to such issues like electricity pricing, gas distribution and new capital developments,

5.3.4 Climate Change

The Department of Energy through this Division is responsible for leading the development of policies and actions on global climate change.

It is currently working with the federal government and key industry stakeholders on the regulatory framework for regulating greenhouse gas emissions by large point-source emitters and for developing targets and time lines for emission reductions for these sectors and their participating companies.

In addition, it prepares assessment of greenhouse gas reduction opportunities and develops with other key departments an assessment of the provincial climate change priorities. It also works to assess the impacts of climate change and develops with other departments and stakeholders, strategies and actions for addressing the impacts of climate change.

The division works with other governments, non-government organizations, the academic community, and the private sector to sponsor projects that will reduce greenhouse gas emissions in Nova Scotia and develop tangible solutions for the future effects of climate change. It is also active in increasing public awareness of climate change mitigation opportunities and

understanding the impacts and science of climate change.

5.3.5 Intergovernmental Affairs

The Department of Energy operates in a multi-stakeholder policy environment. The division has the mandate to ensure that Canadian energy policy development supports and reflects the interests of Nova Scotia. The division has responsibility for coordinating relations with other governments in areas of its responsibility. Examples include: the proposed federal Clean Air Act and Clean Air Agenda, and our ongoing consultations and discussions with aboriginals.

5.4 Strategic Policy, Planning and Services

The division is responsible for the coordination of energy policies, strategies, plans, and services. It gathers information on Nova Scotia and other jurisdictions' experiences, policies and activities as well as the general business climate for energy investments and analyses them for effectiveness and implications for meeting public policy objectives and relevance to Nova Scotia's energy sector. In carrying out its responsibilities, the Division works closely with other Divisions in the Department.

5.4.1 Policy Analysis

The division has a responsibility to understand the external economic and social policy climate with respect to energy, supply, demand and pricing. More specifically, the division analyses economic impacts and implications of energy developments policies and strategies. It also monitors and reports pricing for gasoline, diesel and fuel oil and provides public information on the comparative costs for different energy sources of space and domestic hot water heating.

Understanding the business conditions for investment attraction requires analysis and advice on Nova Scotia's competitive position as well as research and policy development on investment strategies, our competitive advantages and financial implications of energy policy, plans and strategies.

The renewal of the Province's Energy Strategy is a critical task for 2007-08. It requires extensive stakeholder consultation, policy analysis and coordination among all divisions, other government departments and agencies. Implementation of the strategy changes requires a parallel process of legislative and regulatory development using modern regulatory tools and approaches.

5.4.2 Regulatory Policy

The division is responsible for the coordination of general regulatory development and corporate initiatives such as Better Regulation. This commitment includes the goal of reducing administrative paper burden through electronic registries and services delivery. The division also works closely with the federal government and other jurisdictions, industry and key stakeholders to develop an efficient and effective regulatory regime for offshore and onshore petroleum resources.

For example, policy development for offshore oil and gas is significantly affected by the views

and priorities of our partner Natural Resources Canada and our counterparts in Newfoundland and Labrador Natural Resources. In addition, many other federal departments and other provincial energy interests have a role to play in developing an efficient and effective legislative and regulatory system as well as many other interested parties such as industry, fishing, environmental, aboriginal and community groups.

The Atlantic Energy Roundtable (AER) has been a key forum for the coordination of these initiatives and the Division is working with our partners in the AER to focus on improving the investment climate in our offshore. The division supports the province's interests in the initiatives that are related to the AER including, the Frontier and Offshore Regulatory Renewal Initiative to modernize offshore regulations and the development of the Statement of Practice for Marine Seismic.

The lessons learned from regulatory development in the offshore are now being applied to the development of a modern regulatory system for onshore oil and gas development.

5.4.3 Energy Research

Nova Scotia Energy works with partners in the province's energy research community to help build the knowledge required to resolve energy challenges and close the knowledge gaps that are barriers to our success. These partners include federal research organizations such as the Geological Survey of Canada (GSC), the Centre for Offshore Oil and Gas Environmental Research and general research groups such as Petroleum Research Atlantic Canada.

The Strategic Policy, Planning and Services division is also responsible for supporting the two research associations which are helping to remove some of the barriers to sustaining prosperity for our offshore energy resources. The Offshore Energy Technical Research (OETR) Association was granted \$2.6 million in March 2006 to fund research geoscience initiatives that will help develop new theories and models on the location of commercial offshore oil and gas deposits. The Offshore Energy and Environment Research (OEER) Association was also given \$2.6 million to help improve science knowledge and facts with respect to offshore energy impacts on the marine environment. This work includes a focus on the environmental impacts of both the non-renewable oil and gas resources and emerging renewable resources such as tidal current technologies.

In 2007, both research associations were given additional funds to meet departmental and government objectives. The OETR Association will use a new grant of \$250,000 to digitize and process government owned seismic data and put it into the public domain to help promote interest in the Nova Scotia offshore. The OEER Association is considering the offer of a similar grant to conduct a Strategic Environmental Assessment of ocean renewable energy resources in the Bay of Fundy.

5.4.4 Corporate Services

The Strategic Policy, Planning and Services division also coordinates corporate activities related to business planning, budgeting, financial management and control, human resources, procurement, records management, information management, submissions to cabinet and reporting.

5.5 Communications

The communications division is responsible for the coordination and release of internal and external information produced by the Department. The division helps to inform Nova Scotians about department activities and increase Nova Scotians' understanding about energy use and development. Through a variety of delivery methods, it provides Nova Scotians with information about energy matters so that they can make informed decisions about issues that affect their lives.

The communications division is also responsible for helping to meet the priorities in the business plan. It is involved in public education programs; conferences; development of communications and marketing materials for major initiatives, trade missions; scholarship programs; stakeholder consultation sessions; and the building of new economic opportunities for Nova Scotia's renewable and non-renewable energy sector.

In 2007-08, special emphasis will be placed on helping the department meet its strategic initiatives – such as climate change, investment attraction, and effective and efficient regulation and operations – outlined in this business plan.

5.6 Legal Services

The department hosts, on a full time basis, a lawyer from the Department of Justice to provide legal opinion on acts, regulations, legislation and general operations.

6.0 PRIORITIES

Section 4 of this business plan identified the Department's strategic initiatives which match the Department's priorities. This section will identify what actions the Department will take during the fiscal year 2007- 08 in order to achieve these priorities.

6.1 Building Knowledge

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

In addition, the Department will continue to garner reliable geoscience information and theory and a better understanding of the inter-relation of both seismic testing and tidal electrical generating systems with the marine environment. This research effort will be conducted through research and studies initiated by the two independent research associations - OETR Assoc. and OEER Assoc. These associations were established in March 2006 through a \$5.2 million provincial grant.

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 target export markets for our energy sector goods and services.

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.

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 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.

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.

Priority : Build Knowledge				
OUTCOME	MEASURE	DATA	TARGET	Strategic Actions to Achieve Target
Greater awareness of energy issues, programs, services and operation.	Energy Awareness Index as defined in 2003/04 public survey. (Thinkwell Research)	Baseline measure (obtained in 2003/04) shows Energy Awareness Index = 50%.	2007/08 - followup awareness survey. Increase Energy Awareness Index to 65%.	- Website, direct mail, media, advertising, school tours and community tours.
Increased understanding of our geological systems	-Number of research studies initiated -Number of research studies completed	2006 / 2007 is baseline year	2007/2008 - first series of research grants from the \$2.6 million provincial endowment for OETR Assoc. Target a least 4 multi-year grants.	- coordinate study areas with CNSOPB, GSC, PRAC, academia and industry
Increase regulatory certainty from a better scientific understanding of the interaction of renewable and non-renewable energy activities with the marine environment.	-Number of research studies initiated -Number of research studies completed	2006 / 2007 is baseline year	2007/2008 - first series of research grants from the \$2.6 million provincial endowment for OEER Assoc. Target is at least 4 multi-year projects identified for seismic and in-stream tidal research	- Support OEER Association in identifying research priorities and management of research programs.

Priority : Build Knowledge				
OUTCOME	MEASURE	DATA	TARGET	Strategic Actions to Achieve Target
Increased opportunities for education and training in the energy sector	Number of students accessing the energy scholarship program.	2005/06 was baseline year.	2007/08- (59 participating students)	- Increase awareness of program
	Number of students who have had private sector work experience in energy related industries through the Energy Training program	2005/ 2006 was baseline year	2007/2008 (40 participating students)	- Increase awareness of program.

6.2 Market Nova Scotia's Energy Sector

In January, 2007, the Department initiated a project to develop a marketing strategy for Nova Scotia's petroleum potential. This strategy will be implemented in 2007/08 and will include:

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.

Investors Meetings: The above-mentioned 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.

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.

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.

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.

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.

Priority : Market Nova Scotia				
<u>OUTCOME</u>	<u>MEASURE</u>	<u>DATA</u>	<u>Annual TARGET</u>	<u>Strategic Actions to achieve target</u>
Increased awareness of our offshore potential by exploration companies	- Number of targeted promotional events and technical meetings that take place at local, national and international venues	- 2006/2007 baseline	2007/2008 - meet with 5 exploration companies identified as prime potential investors - attend 3 promotional events - make 25 company contacts	Use new funding to: - Publish new reports - Mail-outs to interested parties - Attendance at promotional events - Conduct financial and investment trend analysis of exploration companies to identify a target market audience. - Individual meetings with targeted audience. - Incorporate Brand Nova Scotia - Create marketing materials
Exportation of goods and services related to the energy sector	-Number of trade shows/missions attended - Satisfaction of non-departmental participants	- 2005/2006 baseline - 2006/2007 baseline	2007/2008 - minimum of 2 trade shows/year - 75%	- Partner with stakeholders - Post-event surveys

6.3 Support a Positive Investment Climate

Renewable Energy: 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 alternative 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.

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.

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 protecting the public interest.

7.0 HUMAN RESOURCE STRATEGY

7.1 Employee Survey

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

7.2 Departmental Human Resource Strategy

In 2005 the Nova Scotia Public Service Commission initiated Nova Scotia's Corporate Human Resource Plan.

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.

7.3 Diversity in Hiring

The Department of Energy is committed to diversity in its recruitment of employees. It will review its hiring practices with emphasis 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 actively work with the Human Resources Client Services Unit to ensure that individuals on their list of qualified diversity candidates have been given first opportunity for 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.

7.4 Occupational Health and Safety

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.

7.5 French Language Services

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.

8.0 BUDGET CONTEXT

Thousands of Dollars			
	Authority 2006 - 2007	Forecast 2006 - 2007	Estimate 2007 - 2008
Revenues	280,180	276,000	420,685

Expenses			
Salaries	3,421	3,595	3,860
Operations	14,776	11,270	4,674
CNOSP (net)	1,515	1,515	1,509
Conserve NS	0	0	10,218
Total Expenses	19,712	16,380	20,261
FTEs	51	49	54