

11. CANADA

11.1 Energy Policies and Actions

Canada is a significant producer of natural gas, petroleum, coal and electricity, and is a major supplier of oil, gas and electricity to the United States and coal to Asia, Europe and Latin America. Electric power generation in Canada draws on hydroelectric, nuclear, coal and natural gas, with a small but growing contribution from wind power. Canadian energy policy reflects the constitutional division of powers between the Federal government and the provinces.¹⁷²

The Energy Sector of Natural Resources Canada is responsible for developing Canadian policy on all energy sources.¹⁷³ The Government of Canada announced an Action Plan in April 2007, which aims to fulfill the international climate commitment set in the Kyoto Protocol by regulating both greenhouse gas emissions and air pollutants from industrial emitters.¹⁷⁴ The plan sets mandatory reduction targets for major industries that produce greenhouse gases, and also sets national limits for industrial emissions for air pollutants that cause acid rain and smog. The targets in the plan will not be voluntary that companies will have to respect aggressive limits to reduce these polluting emissions.¹⁷⁵

In order to tackle the problem of climate change, the Government of Canada has announced a suite of *ecoENERGY* Initiatives designed to help boost clean energy supplies, help Canadians use energy more efficiently and develop clean energy technologies. The initiatives include:

- The *ecoENERGY for Industry program* was designed to improve industrial energy intensity and reduce energy-related industrial greenhouse gases and air pollution.¹⁷⁶
- The *ecoENERGY for Personal Vehicles Initiative* offers easy access to information, including fuel consumption guides and other tools, to help Canadians choose the cleanest, most efficient car or truck for their particular needs.¹⁷⁷
- The *ecoENERGY Retrofit program* provides financial support to homeowners, small and medium-sized businesses, public institutions and industrial facilities to help them implement energy saving projects that reduce energy-related greenhouse gases.¹⁷⁸ Selected provincial and municipal entities also offer grants and incentives to homeowners who conduct energy saving upgrades.¹⁷⁹
- The Government of Canada has announced a four-pronged biofuels strategy to expand the production and use of biodiesel. The *ecoENERGY for Biofuels*

¹⁷² Source: http://en.wikipedia.org/wiki/Energy_policy_of_Canada

¹⁷³ Extracted from the web site of Energy Sector of the Natural Resources Canada, <http://www2.nrcan.gc.ca/es/erb/erb/english/View.asp?x=446>

¹⁷⁴ ecoAction, <http://www.ecoaction.gc.ca/turning-virage/index-eng.cfm>

¹⁷⁵ ecoAction, <http://www.ecoaction.gc.ca/turning-virage/index-eng.cfm> & <http://www.ecoaction.gc.ca/news-nouvelles/20070426-3-eng.cfm>

¹⁷⁶ ecoAction, <http://www.ecoaction.gc.ca/ecoenergy-ecoenergie/industry-industrie-eng.cfm>

¹⁷⁷ ecoAction, <http://www.ecoaction.gc.ca/ecoenergy-ecoenergie/personalvehicles-vehiculespersonnels-eng.cfm>

¹⁷⁸ ecoAction, <http://www.ecoaction.gc.ca/ecoenergy-ecoenergie/retrofithomes-renovationmaisons-eng.cfm>

¹⁷⁹ Extracted from the web site of Natural Resources Canada, <http://oee.nrcan.gc.ca/corporate/incentives.cfm?attr=0>

Initiative, announced in July 2007, involves an investment of up to \$1.5 billion over 9 years to boost Canada's production of biofuels.¹⁸⁰

- The *ecoENERGY Technology Initiative* provides funding for research, development and demonstration to support the development of the next-generation clean-energy technologies.¹⁸¹
- The *ecoENERGY for Renewable Power program* involves the investment of \$1.48 billion to increase Canada's supply of clean electricity from renewable sources such as wind, biomass, low-impact hydro, geothermal, solar photovoltaic and ocean energy.¹⁸²
- Based on the *Renewable Fuels Strategy*, an announcement was made in December 2006 that new regulations will be set out to require 5% renewable content based on the gasoline pool by 2010 and 2% renewable content in diesel and heating oil by 2012, upon successful demonstration of renewable diesel fuel use under the range of Canadian conditions.¹⁸³



Low energy home at Canada¹⁸⁴



Solar panels¹⁸⁵

¹⁸⁰ ecoAction, <http://www.ecoaction.gc.ca/ecoenergy-ecoenergie/biofuelsincentive-incitatifsbiocarburants-eng.cfm>

¹⁸¹ ecoAction, <http://www.ecoaction.gc.ca/ecoenergy-ecoenergie/technology-technologie-eng.cfm>

¹⁸² ecoAction, <http://www.ecoaction.gc.ca/ecoenergy-ecoenergie/power-electricite/index-eng.cfm>

¹⁸³ ecoAction, <http://www.ecoaction.gc.ca/ecoenergy-ecoenergie/renewablefuels-carburantsrenouvelables-eng.cfm>

¹⁸⁴ Source: www.solarnetwork.ca/swf/passivesolarhouses.html

¹⁸⁵ Source: www.gulland.ca/homenergy/renewableperformance.htm

11.2 Environmental Evaluation/SEA in Canada

In Canada, it is an administrative requirement to conduct SEA for the integration of environmental considerations into new policies, programmes and plans. A directive, named "Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals" (the Directive), was issued by the Cabinet on the environmental assessment of policy and programme proposals in 1990, then it was expanded to include the environmental assessment of plans in 1999, and was modified to include a requirement for a public statement of environmental effects in 2004.

Under the Directive, Ministers expect that departments and agencies conduct SEA of a policy, plan or programme proposal when the following two conditions are met: (i) the proposal is submitted to an individual minister or Cabinet for approval; and (ii) implementation of the proposal may result in important environmental effects, either positive or negative.

Departments and agencies are also encouraged to conduct SEA for other policy, plan or programme proposals when circumstances warrant. Ministers expect the SEA to consider the scope and nature of the likely environmental effects, the need for mitigation to reduce or eliminate adverse effects, and the likely importance of any adverse environmental effects, taking mitigation into account.

The SEA should contribute to the development of policies, plans and programmes on an equal basis with economic or social analysis; the level of effort in conducting the analysis of potential environmental effects should be commensurate with the level of anticipated environmental effects. The environmental considerations should be fully integrated into the analysis of each of the options developed for consideration, and the decision should incorporate the results of the SEA.

Departments and agencies should use existing mechanisms to involve the public, as appropriate. They should prepare a public statement of environmental effects when a detailed assessment of environmental effects has been conducted through SEA. This will assure stakeholders and the public that environmental factors have been appropriately considered when decisions are made.^{186,187}

Once conducting SEA in Canada, departments and agencies should apply appropriate frameworks or techniques and develop approaches tailored to their particular needs and circumstances. Below shows the key processes in undertaking SEA in Canada.

A general two-stage process is adopted, comprising a preliminary scan to determine potentially important environmental considerations and followed by detailed analysis of the environmental effects. The analysis should be undertaken on an iterative basis throughout the policy development process, and be fully integrated into the analysis of each of the options developed so the consequences of alternative proposals can be

¹⁸⁶ The above paragraphs are summarised from the web site of Office of the Auditor General of Canada regarding "1999 Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals, 2004, <http://www.oag-bvg.gc.ca/domino/reports.nsf/html/c20041004se01.html>)

¹⁸⁷ Guidelines on implementing the Cabinet Directive can be found in the web site of the Canadian Environmental Assessment Agency, http://www.ceaa.gc.ca/016/directive_e.htm#1

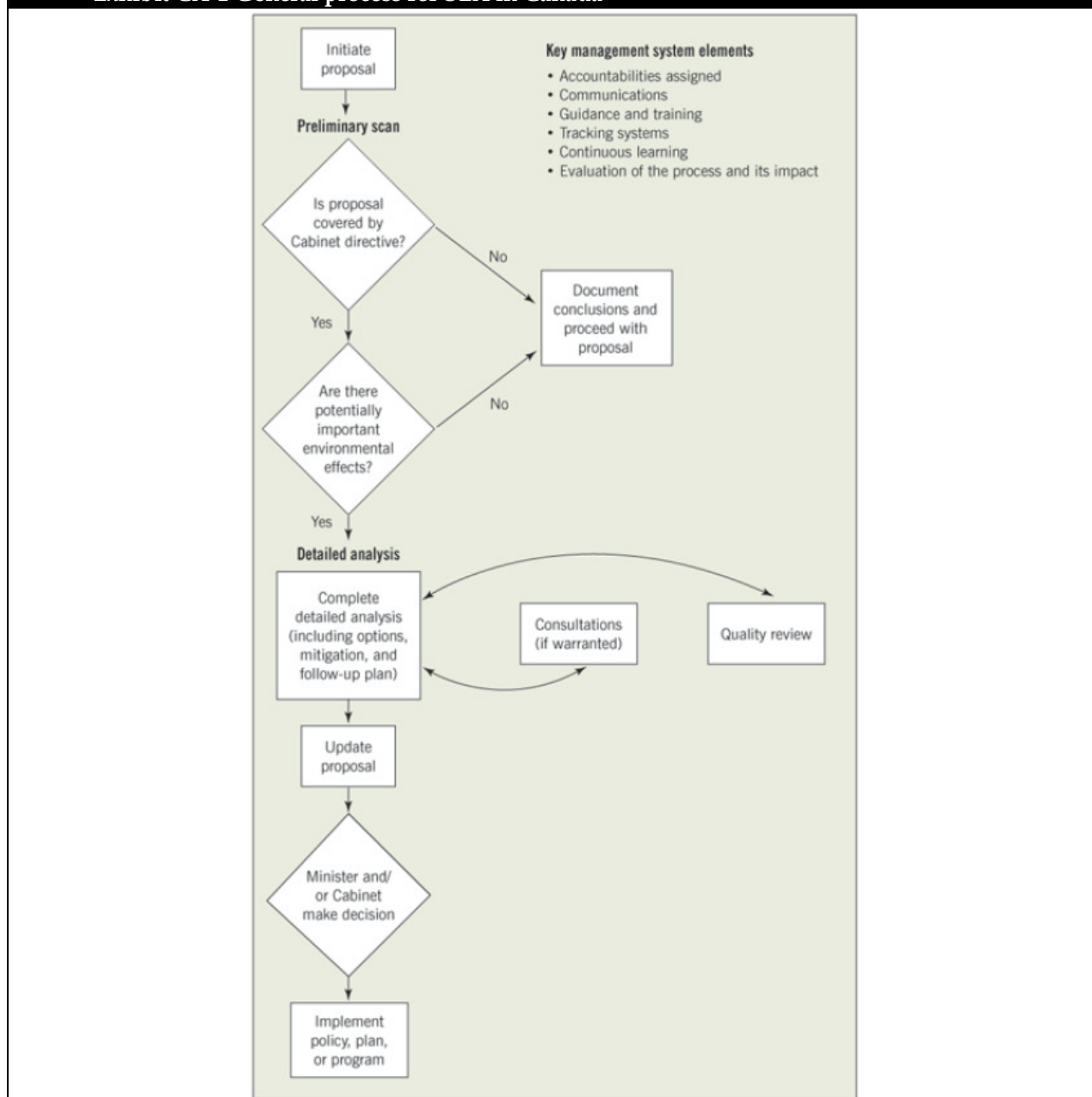
compared. The SEA should consider the scope and nature of potential effects, the need for mitigation or opportunities for enhancement, the scope and nature of residual effects and the need for follow up measures. It will also identify for decision-makers concerns about the environmental effects among those likely to be most affected and among other stakeholders and members of the public.

With effect from 1 January 2004, federal departments and agencies are required to prepare a public statement of environmental effects when a detailed SEA of a proposal has been conducted. The statement is intended to assure stakeholders and the public that environmental factors have been appropriately considered in cases of policy and planning decisions with potentially significant environmental effects. In all cases, the findings of the SEA are to be incorporated into memoranda of Cabinet and other forms of documentation for decision-making.¹⁸⁸

The SEA process is presented in **Exhibit CA-1**.

¹⁸⁸ Strategic Environmental Assessment: A sourcebook and reference guide to international experience, Barry Dalal-Clayton and Barry Sadler, 2004, http://www.iied.org/Gov/spa/documents/SEAbook/Chapter3_Oct04.pdf, page 57

Exhibit CA-1 General process for SEA in Canada¹⁸⁹



¹⁸⁹ Extracted from the "Report of the Commissioner of the Environment and Sustainable Development, 2004" in the section "Generic process and elements for conducting strategic environmental assessment" under the web site of the Office of the Auditor General of Canada, <http://www.oag-bvg.gc.ca/domino/reports.nsf/html/c20041004xe04.html>

11.3 Environmental Evaluation/SEA for Energy Policies and Actions in Canada

It is administratively required to conduct SEA in Canada for the policies, plans and programmes related to energy, following the requirement as stated in the "Cabinet Directive on the Environmental Assessment of Policy, Plan and Program (PPP) Proposals". For the process and requirements on SEA, information can be referred to Section 11.2.

A summary table for the energy policies and actions and SEA status in Canada is presented in **Exhibit CA-2**.

Exhibit CA-2 Summary of Energy Policies and Actions and SEA Status in Canada	
(a) Energy Policies and Actions	
Energy Policies and Actions	Policies: <ul style="list-style-type: none"> Action Plan to regulate both greenhouse gas emissions and air pollutants Renewable Fuels Strategy Actions: <ul style="list-style-type: none"> ecoENERGY for Industry program ecoENERGY for Personal Vehicles Initiative ecoENERGY Retrofit program ecoENERGY for Biofuels Initiative ecoENERGY Technology Initiative ecoENERGY for Renewable Power program
Guidance/Legislations for Energy	N/A
(b) Environmental Evaluations / SEA Status in Energy Policies and Actions	
Type of Assessment	Strategic Environmental Assessment
Requirement Mechanisms	Administrative
Legislation for Environmental Evaluation / SEA	Cabinet Directive (1999)
Applications	Policies, Plans and Programmes

11.4 Analysis and Conclusions

Canada has huge energy resources of natural gas, petroleum, coal and electricity, and is a major supplier of oil, gas and electricity to the United States and coal to Asia, Europe and Latin America. The Energy Sector of Natural Resources Canada is responsible for developing Canadian policy on all energy sources. In responding the Kyoto Protocol, the Canadian government announced an Action Plan to regulating both greenhouse gas emissions and air pollutants from industrial emitters. This is done by setting mandatory reduction of greenhouse gases production and limits for industrial emissions for air pollutants for major industries. Another main focus is on the problem of climate change, in which the government announced a suite of ecoENERGY Initiatives in order to use energy more efficiently and develop clean energy technologies.

The efforts putting on promoting energy conservation by the Canadian government are comparable to that by the Hong Kong government. In Hong Kong, the Energy Efficiency Office was set up in 1994. The office aims to organise and coordinate Government's efforts to promote energy efficiency and conservation. There are also standards and guidelines, and different programmes to promote the community's understanding and awareness and to take appropriate action in achieving energy saving.

Regarding the requirements of the Environmental Evaluation/SEA in Canada, it is administratively required to conduct SEA in Canada for the policies, plans and programmes related to energy, following the requirement as stated in the "Cabinet Directive on the Environmental Assessment of Policy, Plan and Program (PPP) Proposals".

Preliminary scan is a process conducted as early as possible in developing a proposal for approval by the government. If the scan does not identify the potential for significant environmental implications, no further analysis of environmental effects is required. It can save time and money by drawing attention to potential liabilities for environmental clean-up and other unforeseen concerns. Therefore, preliminary scan would be a good reference to Hong Kong for its SEA procedure so as to streamline project-level environmental assessment by eliminating the need to address some issues at the project stage.

11.5 Examples of Energy Policies/Actions or their Environmental Evaluation/SEA

Example CA-1	Orphan Basin Strategic Environmental Assessment, 2003 ¹⁹⁰
Type of Study	Strategic Environmental Assessment (The Canada-Newfoundland Offshore Petroleum Board (C-NOPB) has the responsibility pursuant to the <i>Canada/Newfoundland Atlantic Accord Implementation Act</i> and the <i>Canada-Newfoundland and Labrador Atlantic Accord Implementation Newfoundland and Labrador Act (the Accord Acts)</i> to ensure that offshore oil and gas industrial activities proceed in an environmentally responsible manner)
Description of Study	The C-NOPB issues offshore land rights in the form of exploration licenses, significant discovery licenses and production licenses. On April 15, 2003, the C-NOPB announced the 2003 Call for Bids for the Newfoundland offshore area. This Call for Bids NF03-1 allow for exploration on lands which have not been previously available. The C-NOPB has prepared this SEA for the northeast Newfoundland Shelf, Orphan Basin, and Orphan Knoll area, prior to the close of the Call for Bids NF03-1 in order to identify at an early stage potential environmental concerns for a license area. This SEA provides a broad overview of the existing environment and considers the scope and nature of the likely environmental effects of activities and possible mitigative measures which may have to be addressed through license conditions.
Summary of Alternatives	No alternatives were presented in the report.
Scope of Assessment/ Study	The evaluation parameters considered in the study include: <ul style="list-style-type: none"> • Marine mammals and noise • Effects on finfish and fisheries from noise disturbance • Disturbance of harp seal pupping and whelping areas • Effects on shrimp and snow crab fisheries • Effects of seabirds • Ecosystem effects • Deep sea fauna
Environmental Measures	Mitigations for seismic exploration include: <ul style="list-style-type: none"> • Ramping up of airguns at the start of survey • Monitoring of marine mammals and sea turtles • Communication with the fishing industry • Notice to mariners and fisheries broadcasts • Use of fisheries guard vessels and observers to avoid conflicts with fishing vessels and gear • Compensation for gear losses attributable to seismic survey activity Mitigations for exploratory drilling activity include: <ul style="list-style-type: none"> • Adherence to limits on discharges • Screening and selection of chemicals used in drilling • Design and implementation of a Waste Management Plan to be approved by the C-NOPB Mitigations for oil spills include: <ul style="list-style-type: none"> • Emphasis on prevention through education, procedures and policies • Design and implementation of an Oil Spill Response Plan to be approved by C-NOPB • Immediate spill response material on the drill rig and/or attendant vessels
Outcome of Study	<ul style="list-style-type: none"> • The primary finding of this SEA was the potential need for special planning in the area of the Bonavista 'Cod Box'. Bonavista 'Cod Box' has been identified

¹⁹⁰ http://www.cnlopnl.ca/newsr/2003nr/landsale/ob_ea.pdf, pages 1, 3, 16, 113, 175-176, 180-182, 204

Example CA-1	Orphan Basin Strategic Environmental Assessment, 2003 ¹⁹⁰
	<p>as potentially sensitive fish habitat. The nature of fish and fish habitat protection measures that may be associated with this area, and the precise geographic boundaries of the area have not yet been established. In respect of the 2003 Call for Bids, these considerations could apply to activities within at least a portion of the area. Besides, special or non-standard mitigation measures may be applied in the immediate vicinity of the Bonavista 'Cod Box' area.</p> <ul style="list-style-type: none"> • Exploration activities can be undertaken in the Study Area only when there is the implementation of the identified mitigation measures (e.g. adherence to limits on discharges, screening and selection of chemicals used in drilling, etc).

Example CA-2	Strategic Environmental Assessment Laurentian Subbasin ¹⁹¹
Type of Study	Strategic Environmental Assessment (The Canada-Newfoundland Offshore Petroleum Board (C-NOPB) has the responsibility pursuant to the <i>Canada-Newfoundland and Labrador Atlantic Accord Implementation Act</i> and the <i>Canada-Newfoundland and Labrador Atlantic Accord Implementation Newfoundland and Labrador Act</i> to ensure that offshore oil and gas industrial activities proceed in an environmentally responsible manner)
Description of Study	<p>The Laurentian Subbasin is unexplored at present but thought to have petroleum resources potential. The C-NOPB and the Canada-Nova Scotia Offshore Petroleum Board (C-NSOPB) intend to negotiate the conversion of the existing federal exploratory permits in the Laurentian Subbasin into exploration licenses. As exploration drilling may be proposed thus a SEA is required by the Boards.</p> <p>The objective of this study is to complete a SEA of potential offshore oil and gas exploration within the Laurentian Subbasin by providing an overview of the existing environment of the area, discussed the potential environmental effects that may be associated with the exploration, identifies knowledge and data gaps, highlights any key issues of concern, and makes recommendations for mitigation and planning.</p>
Summary of Alternatives	No alternatives were presented in the report.
Scope of Assessment/ Study	<p>The SEA focuses on identifying potential environmental issues and interactions which may occur as a result of potential seismic surveys and drilling programs within the Laurentian Subbasin. The following Valued Environmental Components are considered in this SEA:</p> <ul style="list-style-type: none"> • Fish and fish habitat • Marine birds • Marine mammals and sea turtles • Fisheries
Environmental Measures	<p>Mitigation measures for seismic survey:</p> <ul style="list-style-type: none"> • Minimisation of airgun source levels • Use of 'soft-start' procedures • Coordinate activities with the fishing industry to reduce conflict/interaction with fishing activity during peak fishing times

¹⁹¹ <http://www.cnsopb.ns.ca/environment/pdf/SeaLaurentian2004.pdf>, pages 12, 17, 212

Example CA-2	Strategic Environmental Assessment Laurentian Subbasin ¹⁹¹
	<ul style="list-style-type: none"> • Discussion and communication with fishing industry • Notification to mariners in a timely manner • Compensation for gear damage • Minimise discharges, compliance with the relevant regulations <p>Mitigation measures for drilling:</p> <ul style="list-style-type: none"> • Small, temporary zone; minimum 500-m radius • Common traffic routes with other vessels • Sequential approach to drilling for multiple wells • Chemical screening and selection <p>Mitigation measures for fuel/oil spills:</p> <ul style="list-style-type: none"> • Design and prevention • Oil spill preparedness and response • Compensation for damage
Outcome of Study	<ul style="list-style-type: none"> • The SEA identified a munitions dumpsite location in the Newfoundland and Labrador portion of the study area. • A Lophelia coral reef has been identified in the study area that exploration drilling activities, which would necessitate the emplacement of moorings upon the site, may be restricted on this site. And any proposed exploratory drilling in the proximate area will require careful assessment. • Exploration activities can be undertaken in the study area using mitigation measures.