The Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) was created in 1985 through the Atlantic Accord. Responsible, on behalf of the Governments of Canada and Newfoundland and Labrador, for the regulation of the oil and gas industry in the Newfoundland and Labrador Offshore Area. Reports to the Federal and Provincial Ministers of Natural Resources.

**Mandate**
- To interpret and apply the provisions of the Atlantic Accord and the Atlantic Accord Implementation Acts to all activities of operators in the Newfoundland and Labrador Offshore Area, and to oversee operator compliance with those statutory provisions.

**Role**
- To facilitate the exploration for and development of the hydrocarbon resources in the Newfoundland and Labrador Offshore Area in a manner that conforms to the statutory provisions for:
  - Worker safety
  - Environmental protection
  - Effective management of land tenure
  - Maximum hydrocarbon recovery and value, and
  - Canada / Newfoundland & Labrador benefits

**Objectives**

**Safety**
- To verify that Operators have appropriate safety plans in place
- To verify, through audits and inspections, that Operators follow their safety plans and applicable statutory requirements
- To verify, through compliance actions, that deviations from approved plans and applicable statutory requirements are corrected

**Environmental Protection**
- To verify that Operators assess and provide for effects of the environment on the safety of their operations
- To verify that Operators perform an environmental assessment pursuant to Canadian regulations, of the effects of their operations on the environment, and prepare a plan and provide for mitigation where appropriate
- To verify, through compliance actions, that Operators comply with their environmental plans

**Resource Management**
- To effectively and efficiently administer land tenure
- To oversee production activities for consistency with maximum recovery, good oilfield practice, production accounting and approved plans
- To build a knowledge base for the Newfoundland & Labrador Offshore Area through the acquisition and curation of samples and data from exploration and production activity

**Industrial Benefits**
- To verify Operators have an approved Canada / Newfoundland & Labrador Benefits Plan that addresses their statutory obligations
Overview of Previous Oil and Gas Exploration Licensing and Activities

- Strategic Environmental Assessment (SEA) Update Area encompasses an area of approximately 36,000 km² offshore Western Newfoundland.

- There are currently 7 Exploration Licenses (ELs) in the SEA Update Area. An EL confers:
  1. The right to explore for, and the exclusive right to drill and test for, petroleum.
  2. The exclusive right to develop those portions of the offshore area in order to produce petroleum, and
  3. The exclusive right, subject to compliance with the other provisions of the Accord Acts, to apply for a production license.

- Activities associated with an EL may include:
  - Exploration Well Drilling: An exploratory well drilled in an area where petroleum has not been found previously.
  - Delineation Well Drilling: A well drilled after a petroleum discovery to determine the extent of a reservoir.
  - Seismic and Other Geophysical Surveys: Searching and mapping the subsurface structure of the earth's crust using geophysical methods (e.g., seismic) to locate probable petroleum reservoir structures.

- Past exploration in the area has included the drilling of 9 offshore wells, the most recent well being Shoal Point 3k-39 / 3k-39Z, spudded (commenced) on February 18, 2011.

- A total of 14,906 line km of seismic survey data has also been acquired, between 1964 and 2010.

- May 12, 2011: C-NLOPB announced a Call for Bids NL 11-01 (Area B – Western NL Offshore Region), offering two parcels.

- Call for Bids closed on November 15, 2011 with two successful bids: Issuance of EL 1127 and EL 1128 in January 2012.

- November 23, 2011: Former ELs 1097, 1098, 1103 and 1104 consolidated into a new EL 1097R.

- Interests in several of the ELs in the area (1097R and 1102) have also been partially or entirely relinquished by their owners within the past year.
WESTERN NEWFOUNDLAND & LABRADOR OFFSHORE AREA:
STRATEGIC ENVIRONMENTAL ASSESSMENT UPDATE

PROJECT-SPECIFIC ENVIRONMENTAL ASSESSMENT (EA)

- EA is a regulatory review process that is often applied to proposed projects
- Predicts and evaluates a project’s potential environmental effects, so that these issues can be considered and addressed in project decision-making and design
- EA has traditionally been applied primarily to individual projects – including proposed oil and gas exploration activities

STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

- SEA involves assessing the potential environmental effects of a proposed strategic initiative – such as a policy, plan or program - in order to consider such issues at the earliest stages of program planning
- SEA entails a relatively broad and “issues based” approach to EA, focusing on larger policy and planning decisions regarding an overall region
- SEAs often includes an:
  - Overview of the existing environmental setting
    - Biophysical (the natural environment)
    - Socioeconomic (human activities)
  - Early identification of important potential environmental issues and interactions
  - Evaluation of proposed / alternative strategic decisions (policies, plans, programs)
  - Consideration of environmental issues in strategic decisions

WESTERN NL OFFSHORE AREA SEA UPDATE

- Since 2002, the C-NLOPB has been undertaking SEAs of portions of the NL Offshore in which the issuance of exploration licences could be contemplated and which have not previously been subject to substantial levels of project EA
- This has included the preparation of an SEA for the Western NL Offshore Area, initially published in 2005 and amended in 2007 (to extend its geographic coverage)
- The SEA provides information on the regional environmental setting and key environmental issues and considerations, to inform the C-NLOPB’s regulatory decisions regarding offshore petroleum activities in that area
- The C-NLOPB has also committed to regularly review its SEAs and to update them as required, and is currently updating the Western NL Offshore Area SEA. This will include:
  - Identifying and presenting any new environmental information that has become available since 2005 / 07, and
  - Further (updated) analysis of important environmental issues which may be associated with future petroleum exploration and/or development activities in the area
- An important component of the SEA will be consultation
  - These open house sessions are being held to provide information and identify public issues and concerns that are relevant to the area and to the purpose and objectives of the SEA Update
- A Draft SEA Update Report will be released for public review and input
WESTERN NEWFOUNDLAND & LABRADOR OFFSHORE AREA:
STRATEGIC ENVIRONMENTAL ASSESSMENT UPDATE

POTENTIAL OFFSHORE OIL AND GAS EXPLORATION ACTIVITIES

- Several types of petroleum exploration activities may occur in the Western NL Offshore Area following the issuance of Exploration Licences by the C-NLOPB, including:

Offshore Seismic Surveys

- Used to identify geological formations that may contain petroleum resources
- High-energy sound sources (airguns) towed behind a survey vessel at several meters below the water surface
- Vessel travels along a track line in a prescribed grid crossing suspected hydrocarbon prospects (~3–6 knots)
- Sound source fired at regular intervals (50 m), directs sound bursts toward the sea floor
- Reflected sound energy from below the seafloor recorded by sensitive hydrophones (streamers) towed behind the vessel (up to several kilometers in length)
- Data processing systems convert the reflected sound (acoustic signals) into seismic data used for mapping
  - 2D seismic surveys typically cover larger areas with limited time at a location, with single sound source / streamer
  - 3D seismic surveys typically cover smaller areas (narrower survey grid) for longer periods, with multiple sound sources and streamers that provide greater resolution

Well Drilling

- Offshore exploration and delineation wells are drilled to confirm the presence, or define the extent, of petroleum resources at particular locations (often as first identified through seismic surveys)
- Various types of offshore drilling installations can be used once a drill site or target is determined, including the following:

  - Semi-Submersible Drilling Installation
  - Drill Ship

- The drilling installation is often determined by physical environment characteristics, especially water depth and sea and ice conditions
- The main components of offshore wells include:
  - Drill String (piping which connects the rig to the drill bit)
  - Drill Bit (device that cuts through the seabed)
  - Rotation Equipment (turning mechanism), and
  - Drilling Muds (lubricates the drill bit, circulates cuttings and maintains pressure in the well)
- Offshore wells are usually drilled over a period of one to several months, in several stages:
  1) Conductor Hole: Drilling a large diameter hole at the beginning of the well (water-based drilling muds)
  2) Casing Installation: Removal of drill string, running and cementing of steel pipe, installation of blow-out preventer and drilling riser
  3) Well Drilling: Drill bit and riser lowered into the conductor hole, drilling begins, drill string sections added as drilling progresses, drilling riser allows muds and cuttings to travel back to rig for processing
  4) Vertical Seismic Profile (VSP): Stringing geophones down the drilled well to confirm well depth
  5) Well Evaluation and Testing: If significant hydrocarbons are found, formation fluids are obtained and tested
  6) Well Abandonment: Plugged using cement or mechanical devices, well casing and well head cut, inspection
WESTERN NEWFOUNDLAND & LABRADOR OFFSHORE AREA: STRATEGIC ENVIRONMENTAL ASSESSMENT UPDATE

ENVIRONMENTAL SETTING AND CONTEXT

• The SEA has and will provide information on the existing regional environment in the Western NL SEA Update Area, including the:

  **Physical Environment**
  • Geology
  • Seismicity
  • Coastal Environment
  • Bathymetry
  • Meteorology and Climatology
  • Sea Ice and Icebergs
  • Oceanography
  • Unexploded Ordinances

  **Biological Environment**
  • Algae and Plankton
  • Benthic Invertebrates
  • Finfish and Habitat (Commercial, Non-commercial, Coastal)
  • Water Birds
  • Marine Mammals
  • Sea Turtles
  • Species at Risk
  • Protected and Sensitive Areas

  **Human Activities**
  • Commercial, Recreational and Aboriginal Fisheries
  • Aquaculture Activities
  • Marine Recreation and Tourism Activities
  • Traditional Use of the Coastal Environment
  • Submarine / Underwater Cables
  • Marine Commercial Traffic
  • Canadian Naval Exercises

• The Western NL Offshore Area SEA Update will identify and present any new information that has become available since the initial SEAs were completed in 2005 / 2007

• Interested in obtaining Public, Stakeholder and Aboriginal information about the region

POTENTIAL ENVIRONMENTAL ISSUES AND MITIGATION

• Some of the environmental issues and considerations that may be associated with offshore oil and gas exploration activities include the following:

  **Seismic Surveys**
  • Possible avoidance of areas by marine fish, birds, mammals and turtles
  • Attraction to or avoidance of seismic vessels (e.g., lights, noise)
  • Potential accidental emissions or discharges (spills) and associated environmental effects
  • Interference with fishing or other marine activities

  **Some Environmental Protection Measures**
  • Minimizing air gun energy / noise levels and seismic survey area and duration
  • Use of seismic “soft start” procedures
  • Avoidance of known sensitive areas and times
  • Fishing industry communication and coordination
  • Safety zones and fishing gear compensation plans
  • Compliance with applicable legislation, regulations and guidelines

  **Well Drilling (Exploration and Delineation)**
  • Water quality and marine habitat effects from drill muds / cuttings or other discharges
  • Air emissions (exhausts, flaring) and noise
  • Avoidance of areas by marine fish, birds, mammals and turtles
  • Marine wildlife attraction to drill rigs and vessels (lights, noise), disruption or mortality
  • Potential accidental emissions or discharges (blowouts and spills) and associated environmental effects
  • Interference with fishing or other marine activities

  **Some Environmental Protection Measures**
  • Avoidance of known sensitive areas and times
  • Use of oily water separators and high efficiency burners
  • Use of water-based muds (WBMs) and low toxicity synthetic based muds (SBMs)
  • Treatment of SBM-associated drill cuttings to compliance with guidelines prior to discharge
  • Collection and release of stranded birds
  • Chemical screening, selection and management
  • On-shore disposal of wastes
  • Avoidance and reduction of emissions and discharges
  • Compliance with environmental legislation, regulations and guidelines
  • Oil spill prevention, preparedness and response procedures
  • Use of existing and common vessel traffic routes
  • Fishing industry communication and coordination
  • Safety zones and fishing gear compensation plans