

Expo Labrador

/ Oil and Gas Opportunities Offshore Labrador

Slide 1 – Title Slide

I'd like to begin by thanking the organizers for inviting me to speak today. Joining us as well are my fellow Board members, Ed Williams, Cynthia Hickman and Lidija Cicnjak-Chubbs, who is a proud resident of Goose Bay. Also joining us are Susan Gover and Corina Mitchell, who support the Board in our monthly meetings, one of which is being held here in Labrador for the first time with our current appointees. And of course, it's great to see Minister Trimper this morning. This is a really beautiful and friendly part of the province, and we had the great pleasure to meet a number of organizations yesterday, with some great discussions. We'll continue today with some other groups.

If parts of my presentation seem familiar to some of you, it's because it includes some material from discussions yesterday, but also my presentation at the Northern Exposure conference in St. John's in January. Hopefully I'll have a few new or different messages to cover for you as well.

Slide 2 - Disclaimer

This wall of text appearing before you is a disclaimer that applies to all the maps used in my presentation. It refers to Canada's jurisdiction over resources outside the 200 mile limit. Canada has filed a submission with the UN Commission on the Limits of the Continental Shelf, the review of which is pending. This disclaimer is a caution to interest holders of potential implications for any licences that extend outside the 200 mile limit under the UN Convention on the Law of the Sea, or UNCLOS.

Slides 3 - Safety Moment – Global Sharing of Information and Lessons Learned

We always begin with a Safety Moment.

With more than 30 years experience, the C-NLOPB prides itself on being a world-class regulator. We have expertise in areas like offshore safety, environmental protection, geology, geophysics, reservoir engineering, well operations, and petrophysics. To become and remain world-class, it is important that the C-NLOPB stays current on technological innovation, best practices and regulatory trends around the world.

In recent weeks, I and other C-NLOPB staff have attended a number of international meetings and conferences where we gather ideas, share information and learn from others.

In May, I attended the mid-year meeting of the International Regulators Forum, or IRF, along with my colleagues from the Canada-Nova Scotia Offshore Petroleum Board and the National Energy Board. The IRF is a group of offshore health and safety regulators from 10 countries who work to improve health and safety in the sector through collaboration on joint programmes and information sharing.

The IRF has four Working Groups – Performance Measurement, Asset Integrity, Safety Culture and Standards. Discussions at our mid-year meeting also included planning for the 2017 Annual General Meeting to be held in Denmark, and an Offshore Safety Conference to be held in June 2018 in Scotland.

Our Senior Safety Officer, Dan Chicoyne, recently attended the HeliOffshore Conference in Budapest, Hungary. Offshore helicopter passenger safety remains a high priority for the C-NLOPB. HeliOffshore is the global association focused on safety, specifically human performance, safety intelligence and reliability and resilience in the context of offshore helicopter travel.

The C-NLOPB also participates in a Wells Working Group of the North Sea Offshore Authorities Forum. The Working Group shares information focused on safety and environmental aspects related to drilling and well operations, well integrity and blowout

prevention. The Working Group also shares lessons learned from recent well control events. Marshall Conway, a Well Operations Engineer with the Board, attended the most recent meeting of the Working Group in Ireland, where they discussed several important aspects of drilling including well design, barrier management, decommissioning, alternative technology and harmonization of guidelines.

In May, our staff attended the International Oil Spill Conference in Long Beach, California, which was a useful forum for the international response community, industry, government, regulators and non-governmental organizations to exchange ideas and lessons learned from actual spill responses and research from around the world.

As we focus on moving forward with safety and environmental improvements in our own jurisdiction, we will continue to learn from the industry and our Canadian and international regulatory counterparts.

Slide 4 – Background on C-NLOPB

But we do more than travel and learn. I'd now like to share a short video with you to provide some background information about the C-NLOPB. It's one of several videos on our You Tube Channel, which also includes a Fast Facts video.

Play Video – “We are the C-NLOPB”

Slide 5 – Canada-NL Offshore Area

The Canada-Newfoundland and Labrador Offshore Area is vast and has over 20 underexplored sedimentary basins. As mentioned earlier, under the Atlantic Accord Acts, our jurisdiction extends to the outer edge of the continental shelf. This is why you see C-NLOPB licences outside the 200 mile limit represented on the map by the red line.

The area we regulate is 1.8 million square kilometers. That's bigger than the US Gulf of Mexico Offshore Area and bigger as well than the Norwegian Shelf Offshore Area.

Slide 6 – Offshore Activities

The industry downturn that resulted from low oil prices has had a negative effect on economies globally, including here in Newfoundland and Labrador. Yet, from a regulatory perspective, we have had another busy year and industry continues to invest significantly in this region.

To date we have 29 exploration licences, 55 significant discovery licences and 12 production licences.

Since 1966, there have been 438 wells drilled in our offshore area, including 215 development wells, 56 delineation wells and 167 exploration wells.

1.6 billion barrels of oil have been produced from four projects – Hibernia, Terra Nova, White Rose and North Amethyst. Over one billion barrels have been produced from the Hibernia field alone.

In addition to regulating production, the C-NLOPB oversees activities such as seismic data acquisition, exploration drilling and sub-sea development.

At this time, authorization has been granted for one 2D seismic program and one 3D seismic program for offshore Newfoundland and Labrador this season. Additional program applications have been received and may be authorized throughout the 2017 field season.

For the 2D authorization, it is estimated that approximately 22,000 line kilometres of 2D seismic and gravity data is planned in the South Grand Banks and the Labrador Sea areas.

A single 3D seismic program is planned for portions of the Eastern Newfoundland and Southeastern Newfoundland land tenure regions and will be comprised of four different

survey areas. The 2017 season total for all combined 3D seismic acquisition could be approximately 25,000 square kilometres.

Slide 7 – New Activity

Over the past few weeks there have been some important milestones in the history of our offshore oil and gas industry.

ExxonMobil and its partners completed construction of the Hebron Gravity Based Platform and it has been towed to location on the Grand Banks. In the months ahead, this will become our next producing project, pending regulatory approval.

At the end of May, Husky Energy and its partners announced their decision to proceed with the West White Rose Expansion using a gravity based wellhead platform. The wellhead platform will tie back to the SeaRose FPSO and will eventually produce approximately 75,000 barrels of oil per day at peak. Construction is expected to begin in late 2017 and first oil is expected in 2022, again pending regulatory approvals.

Two specialized facilities that have not been seen in our Offshore Area will begin operations in the weeks ahead. The Board carries out extensive safety assessments on these vessels prior to issuing authorizations.

The Transocean Barents is a harsh environment drilling rig built in 2009. It has been drilling wells on the Norwegian Shelf and has been contracted by Suncor to work in the Terra Nova field.

The Ramform Thethys is a modern 3D Seismic vessel that will be used by Multi Klient Invest AS to conduct seismic programs in the Eastern and Southern Newfoundland regions.

Slide 8 – Labrador Strategic Environmental Assessment

One of the important functions of the C-NLOPB is the development of strategic environmental assessments, or SEAs. An SEA examines environmental effects that may be associated with a plan, program or policy proposal and allows for the incorporation of environmental considerations at the earliest stages of program planning. SEA considers a relatively large ecological setting and includes consultation with a wide array of stakeholders. A project-specific environmental assessment later focuses on site-specific issues that must be addressed in order for petroleum related activity to be undertaken within a licence area.

There is an SEA completed for each of the areas highlighted on this map. Over the past few years we have focused on reviewing and updating an SEA after a period of time, typically in the order of seven to eight years, to incorporate new information and update existing information.

The Labrador SEA was completed in 2008 and we are currently in the process of updating it with our co-chair, the Nunatsiavut Government. A multi-stakeholder Working Group, which includes representation from Indigenous Groups, has been established to assist in conducting the SEA. Our commitment is that an SEA Update must be completed a minimum of 120 days prior to the close of a Call for Bids.

The Scoping Document for the SEA Update was recently completed after a period of public consultation. In the next few days, ads will appear in newspapers seeking interest from environmental consulting firms to help with the SEA Update. An important element will be the inclusion of traditional knowledge.

Slide 9 –Exploration Potential

An important, but sometimes misinterpreted role of the C-NLOPB, as defined in the *Atlantic Accord Acts*, is to facilitate exploration and offshore development while also overseeing compliance with safety and environmental regulations. We do not promote the industry. Promotion is a role for industry, along with governments and Nalcor, and

they have a lot to work with in that regard as the resource potential is significant. There are other favourable factors in Canada and specifically in Newfoundland and Labrador making this a good place to invest.

The C-NLOPB does its part through the administration of the land tenure process and through the authorization of exploration activities. Our expert geologists and geophysicists research the prospectivity of land and with input from industry through the nomination process make parcels of land available in a Call for Bids. But again, we are not involved in the marketing of the resource.

The C-NLOPB also facilitates offshore exploration by authorizing geoscientific and exploratory drilling programs. We will not authorize any activity unless the operator meets legislative and regulatory requirements and has undertaken measures to reduce any risks to levels that are as low as reasonably practicable.

Slide 10 – Seismic Activity in Labrador

Seismic data acquisition off Labrador began in the mid-1960s and halted in the mid-1980s. With the exception of a couple of seismic programs, interest in area did not ramp up again until 2002.

There are several possible explanations for the renewed increase in exploration including renewed interest in natural gas, greater knowledge of ice conditions and ice management, changes in technology, and increased interest from exploration companies that sell seismic data on spec.

In recent years, the scheduled land tenure process and the resource potential have been successful in generating interest from several companies new to our offshore area.

Slide 11 – Significant Discoveries in Labrador

In the 1970s and 80s, there were 27 wells drilled in the Labrador Offshore Area. Eight were in Labrador North and 19 in Labrador South. This resulted in five significant gas discoveries in 1987 – Snorri, Hopedale, North Bjarni, Bjarni and Gudrid. These licences remain current and you can obtain information about each of them on our website.

The total amount of gas discovered in these five discoveries is over four trillion cubic feet. To put this in perspective, the Sable Gas Project off Nova Scotia is winding down and will have produced about three trillion cubic feet by the time it stops producing.

However, the economics and infrastructure required for the commercial development of natural gas continue to be confounding issues.

Slide 12 – Scheduled Land Tenure

The scheduled land tenure system was implemented by the C-NLOPB in 2013 and has been very successful in attracting new players to our Offshore Area. It organizes our Offshore Area into eight regions, three categories and three licence timing cycles.

The regions are:

- Labrador North and Labrador South;
- North Eastern and Eastern Newfoundland;
- South and South Eastern Newfoundland;
- Western Newfoundland and Labrador; and
- the Jeanne d’Arc Region.

The three activity categories are:

- Low Activity regions, which generally have few exploratory wells and less modern seismic data acquisition;
- High Activity regions, which typically have elevated exploration activity levels, including 2D and 3D seismic data acquisition and exploration drilling; and

- Mature regions, which would have substantial 2D and 3D seismic data coverage and extensive exploration/delineation drilling and production activities

The system also works on three licence timing cycles:

- 4-year for Low activity regions
- 2-year for High activity regions; and
- 1-year for Mature regions

Slide 13 – Scheduled Land Tenure

The scheduled land tenure system was designed to improve transparency, predictability and input. It provides additional time for exploration companies to conduct geoscientific assessments of the hydrocarbon prospectivity in the lesser explored basins of the Canada-Newfoundland and Labrador Offshore Area.

The system follows a process of identifying a region and issuing a Call for Nominations for Areas of Interest. The input from industry is used to identify Sectors, as is the SEA. After companies have had sufficient time to conduct geoscientific assessment of the Sector, a Call for Nominations for Parcels is issued leading to a Call for Bids, pending Board and Government approval.

Slide 14 – Scheduled Land Tenure

This is how it works.

For a low activity region like Labrador, companies have up to four years to consider the prospectivity of the area. Once a land tenure region is identified, the process begins with a Call for Nominations from industry for Areas of Interest.

The results of the nominations are analyzed and used by the C-NLOPB to identify a Sector, or Sectors, within the Region.

The Board then issues a Call for Nominations from industry for Parcels within the Sector. The nominations for Parcels are then considered by the C-NLOPB who design a Call for Bids.

A Call for Bids requires Board and Government approval.

Bids are submitted to the C-NLOPB on the basis of work commitments.

Slide 15 – 2017 Call for Bids Labrador

In December 2013, the Board issued a Call for Nominations for Areas of Interest in the Low Activity Region of Labrador South.

The results were analyzed by the C-NLOPB, which led to the announcement of the first Sector in May 2014.

Industry had several months to acquire information about the Sector and identify prospects.

Then, in January 2016, the Board issued a Call for Nominations for Parcels.

Again, the results were analyzed and the Board issued a Call for Bids in November 2016 following Board and government approval.

There are 10 parcels now available for bidders on the sole criteria of work commitment. The locations of the parcels are illustrated on the map.

Since there remains a significant amount of work to be done on the SEA update, the originally intended November 2017 closing date is no longer attainable.

We'll figure out what the appropriate closing date should be and communicate it to industry and the public in the near future.

Slide 16 – 2019 Call for Bids Labrador South

The same process is being followed again for the 2019 Call for Bids for Labrador South.

A Call for Nominations for Areas of Interest was made in February 2015 and a Sector was identified in June 2015.

A Call for Nominations for Parcels may open early in 2018 with the Call for Bids possibly being announced in late 2018, pending Board and Government approval.

Slide 17 - 2016 Geoscientific Programs

This slide illustrates where geoscientific programs took place in our offshore area in 2016 and the companies that undertook the work.

In the Labrador Offshore Area, MG3 completed a geochemical survey and MKI completed a 2D seismic survey.

3D seismic work was undertaken by MKI and Western Geco in the Eastern Newfoundland Region and together they collected approximately 13,000 square kilometers of seismic data. To put this in perspective, this is an area about 40 times larger than Goose Bay.

The total 2D seismic acquisition for last year was approximately 45,000 line kilometers. This is equal to about 55 flights between St. John's and Goose Bay.

There were also 100 seabed samples taken.

Slide 18 – 2016 Geological Programs without Fieldwork

It was also a busy year for staff at our Core Storage and Research Centre in St. John's where companies come to borrow samples to conduct geological programs without field

work. Companies, researchers and students visit this location to view samples from each of the offshore wells in the form of cuttings, core, fluids and slides.

Twenty-one Geological Programs were approved last year from nine applicants.

Interest was shown in all eight land tenure regions.

Slide 19 – Possible 2017 Exploration Activity

Several 2D, 3D and electromagnetic programs will take place this year. It's also very possible that amount of seismic data collected this year will surpass the amount collected in single previous years.

Slide 20 – 2017 and Beyond for Labrador

Now, a word of caution to temper the very real cause for optimism.

Large multinational oil companies own interests in many countries and must weigh long-term global investments opportunities carefully. The internal competition for investment dollars can be tough, especially during times when investment is curtailed due to low oil prices. Indications are that the Canada-Newfoundland and Labrador Offshore Area is an attractive place for investment and I am realistically optimistic about future offshore activities.

There will be several geoscientific programs undertaken in our offshore area this year and some will likely include Labrador South.

There may also be licencing opportunities in 2018 and 2019.

Over the next six years, there remains over \$3 billion in work commitments to be met for the entire offshore area.

Many industry analysts are projecting a slow and steady increase in oil prices over the next few years.

There are also Research and Development and Education and Training obligations and opportunities for organizations in the province in partnership with Operators.

Slide 21 – Time Line

I want to leave you with a sense of the time line from early exploration to first oil, which is something that efforts are underway to reduce. First oil can typically take 14 years or more based on past experience. Governments are seized with reducing those timelines.

Companies receive a nine year exploration licence from the C-NLOPB after acquiring land in a Call for Bids and meeting the financial requirements.

During that period they will conduct geoscientific field programs and possibly drill a well or two on the licence. If they make a significant discovery, they will apply for a new Significant Discovery Licence.

With the new licence, the company may now drill additional wells, called delineation wells, to determine the size and extent of the discovery. If they believe it to be a potentially commercial discovery, they will begin to prepare a Development Plan and begin moving towards construction.

It's a relatively time consuming process at this point, and the regulatory regime is very robust, but it all starts with exploration. Without exploration, the industry does not advance. The level of activity and interest from a variety of players in this regard these days is positive.

Slide 22 – Thank You

I want to again thank you for this opportunity to talk about offshore exploration in the Labrador region.

If you want additional information about the C-NLOPB, please check out our website, follow us on Twitter, view our videos on You Tube or contact by phone or email. We're trying to be more transparent, accessible, open and accountable than ever before.

Thank you again for your invitation. I'll gladly take questions and comments.