

# Newfoundland and Labrador's Offshore – Future Potential

## Introduction

Newfoundland and Labrador's offshore is endowed with many natural resources. For centuries, the exploitation of fish shaped the culture and economy of the province. In recent years, the extraction of offshore oil has transformed the economy of Newfoundland and Labrador to one of the wealthiest in Canada. While the oil industry has been established in this province for almost 20 years, by many estimates it is still in its early stage of development. The existing producing fields and much of the exploration that has taken place to date are located in relatively shallow water (i.e. less than 100 meters). There are believed to be substantial offshore resources in the deeper water basins offshore Newfoundland and deepwater exploration and development hold significant potential for future growth in oil production, and by extension the provincial economy.

## International Context

Deepwater exploration and production activity is driven by a variety of supply and demand factors like the need to offset declining production from onshore and shallow water basins; the potential for discoveries of large hydrocarbon reserves; and increased economic viability of deepwater developments.



According to the International Energy Agency (IEA), over 300 billion barrels of recoverable oil lie beneath deep water around the globe. Rystad Energy, a leading consulting company, forecasts the world's production of oil from deep and ultra-deepwater regions will grow at a compound annual growth rate of 1.3% over the 2012-2030 period. This rate of production growth greatly exceeds growth from all other offshore environments. The IEA predicts that production from deepwater oil and gas will expand from 4.8 million barrels of oil equivalent (boe) a day in 2011 to about 8.7 million boe by 2035. This will help balance the future production decline in production in shallower waters, mainly in the North Sea and parts of the Gulf of Mexico.

To support this increase in production, drilling activity and capital spending in the deepwater is expected to increase significantly over the next decade. According to Douglas Westwood's 13th edition of the *Deepwater Market Forecast* issued March 31<sup>st</sup>, 2015, deepwater expenditure is expected to increase by 69%, compared to the preceding five-year period, totaling \$210 billion from 2015 to 2019. As production from mature basins onshore and in shallow water declines, development of deepwater reserves has become increasingly vital, particularly to the world's oil majors.

About \$66 billion was spent worldwide on deepwater exploration and development in 2014. Newfoundland and Labrador, and by extension Canada, is presently only capturing approximately one percent of the global exploration spending—this despite our comparable historic success rates, vast unexplored areas, competitive fiscal regimes, and low political risk.

## Positioning Newfoundland and Labrador

Newfoundland and Labrador has approximately one million square kilometres of offshore sedimentary basins. While Newfoundland and Labrador has a vast offshore area, there has been a relatively limited amount of exploration and consequently development. Beginning with the release of the Energy Plan in 2007, the Government of Newfoundland and Labrador has made a concerted effort to increase offshore oil exploration and to fully participate in the growing sector of energy investment. Advancements in the area of regulatory structure, equity participation and fiscal structure have been made.

### Regulatory Structure

The singular most important change in the regulatory environment has been the introduction of scheduled licence rounds. In December 2013, the Canada - Newfoundland and Labrador Offshore Petroleum Board and the province announced a new scheduled land tenure system.

The new system allows additional time for exploration companies to conduct geoscientific assessments of the hydrocarbon prospectivity in the lesser explored basins of the Newfoundland and Labrador offshore area thereby encouraging exploration in frontier areas and fostering a more competitive environment. As well, the system follows a set schedule for companies to nominate and bid on land parcels for exploration, improving transparency and predictability. Longer lead times to acquire and analyze data and a set land sale schedule positions the province to compete with the leading exploration jurisdictions in the world.

## Equity Participation

The establishment of Nalcor Energy, the province's energy corporation, has been a significant step forward for equity participation in the offshore. The province, through Nalcor Energy, is now an equity partner in Hebron, North Amethyst and satellite developments at Hibernia and White Rose.

Nalcor determined that a key barrier to exploration for the Newfoundland and Labrador offshore has been the lack of high quality, readily accessible geoscience data to understand the potential prospectivity of the province's offshore basins. The chart on page 29 shows the amount of 2D seismic data acquired and the number of exploration wells for Norway and Newfoundland and Labrador. There is a 0.97 causal correlation between 2D data and well drilling. As can be seen in the chart, more than 75% of Newfoundland and Labrador's seismic data is 25 years old. The format of the data is out of date and not internationally competitive nor desirable and covers mostly areas on the shelf and not the slope and deepwater where companies are focused today.

Recognizing that the majority of NL's offshore area has yet to be explored (and the majority of exploration that has taken place to date has occurred in the Jeanne d'Arc basin), Nalcor has spearheaded the acquisition of extensive quantities of new geoscience data over the Newfoundland and Labrador offshore area.

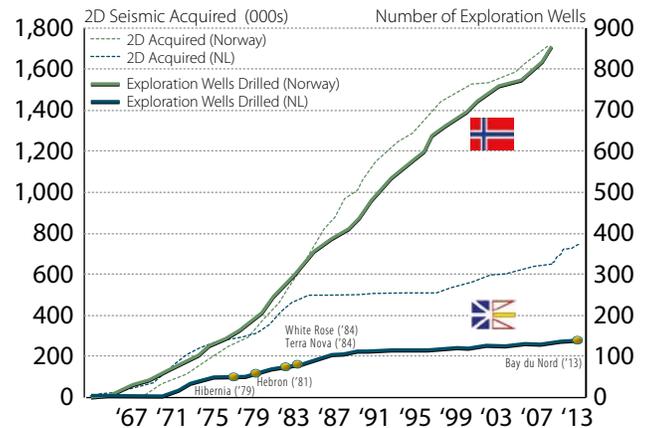
In late 2010, with Airbus - Defence and Space, Nalcor undertook a regional oil seep mapping and interpretation study encompassing all of offshore Newfoundland and Labrador. The satellite data acquired during this survey has imaged areas of potential natural seepage in various basins and highlighted potential new regions for oil exploration. This satellite seeps survey is a multi-client survey and is available to the global industry from Airbus.

Using the insights from the 2010 Nalcor-Airbus satellite survey and other data, Nalcor in partnership with global seismic companies, TGS and PGS, has conducted one of the largest seismic programs in the world. The 2-D seismic program collected over 80,000 line kilometres of seismic data off Labrador and down the southeast coast over the Orphan Basin, Flemish Pass, and Flemish Cap, much of which had never been imaged before. The investment in geoscience exploration and scientific analysis has resulted in the identification of three new basins off Labrador (Chidley, Holton and Henley) and the expansion of the previously discovered Hawke basin.

By getting involved in the early stages of exploration, Nalcor is systematically reducing uncertainty and increasing scientific knowledge of each basin—new insights that are delivered to and shared with the global industry.

One of the next steps in improving the information available to industry is an updated resource assessment for offshore Newfoundland and Labrador. It has been decades since a regional resource assessment has been undertaken.

## 2D Data “Hand-in-Hand” with Wells



Source: TGS

Nalcor in partnership with the Department of Natural Resources has engaged a third party consultant – global leading company Beicip Franlab - to conduct a resource assessment for offshore Newfoundland and Labrador. Through the resource assessment, Newfoundland and Labrador's entire offshore area will be evaluated in a phased approach that will be timed to correspond with the C-NLOPB's new scheduled licence system. Nalcor will deliver the results of the resource assessment to the global oil and gas industry in advance of the land sales as a means of reducing uncertainty for companies while quantifying the resource potential for the area for the benefit of the people of Newfoundland and Labrador.

In addition to facilitating the acquisition of new geoscience data for the province's offshore; Nalcor has been actively promoting the offshore potential of Newfoundland and Labrador. Together with the provincial Department of Natural Resources, Nalcor has travelled to and promoted the offshore around the world and appeared in keynote positions in many conferences and seminars. In addition, Nalcor has met with E&P companies from around the world.

## **Diversification within the industry**

Diversification of the Newfoundland and Labrador economy has been a much debated and discussed topic. A more diversified provincial economy is prudent and necessary, in particular one that is so dominated by a single commodity. However it is extremely important that while we grow other areas of the economy, we also continue to grow the oil industry so that future production levels become our buffer to oil price shocks. Diversification “within” the industry offers a very clear and achievable mitigation of oil price risk.

One third of provincial economic activity comes from just three offshore projects and only five active companies. This is not consistent with global analogues for resource potential and investment attraction. Areas like the North Sea and the Gulf of Mexico have 30-50 active oil and gas companies drilling on average 30-50 exploration wells per year. We need more companies holding more licences and undertaking more investment, consistent with our resource potential. The strategies that Nalcor and the provincial government are employing are aimed at increasing the number of companies participating in the Newfoundland and Labrador offshore and increasing exploration, development and ultimately production.

## **Recent Results and Future Signals to Watch For**

Offshore Newfoundland and Labrador is at the beginning of a new era of exploration that has not been seen since the early 80s—global E&P companies are prepared to invest and explore. This new and heightened interest is key for not only sustaining the positive contributions that the oil and gas sector make to the province but it is also key for continued growth in oil production and hence revenues.

In mid-December 2014, the results of the deepwater Carson/Flemish land sale were determined. Successful bids were received for three of six parcels. The bid for one parcel in the Flemish Pass was \$559 million, the highest bid ever on a land parcel in the Newfoundland and Labrador offshore area. Bids for \$21 million and \$16.7 million were received on two other parcels. The high level of these bids highlight the increasing interest which multinational oil and gas companies have in the Newfoundland and Labrador offshore and their recognition of tremendous growth potential of the area.

Statoil has designated offshore Newfoundland and Labrador as one of its core areas for exploration and in November they commenced their drilling campaign of 6-8 wells in the Flemish Pass. Statoil is expected to continue its pre-development work for Bay du Nord and possibly seek expressions of interest for a concept development by the end of 2015.

Nalcor and its partners TGS and PGS will continue the 2D surveys and potentially expand the surveys to include 3D data in key areas with upcoming licence rounds. Nalcor is seeing strong industry interest in its exploration data and new insights that the company has been presenting to the global industry over the last 12 to 24 months. This interest is well above expectation this early in our exploration strategy.

## Upcoming milestones and next steps

September 2015 will see the public release of the first new resource assessment – an assessment conducted by Nalcor in collaboration with DNR – based on new data that will cover the eleven parcels on offer in the Flemish Pass in the first ever scheduled licence round closing in November 2015. This will mark the first time in Newfoundland and Labrador’s history that detailed oil and gas resource numbers will be released in advance of a licence round closing, ensuring the global industry and the Newfoundland and Labrador public have a scientifically quantified view of the potential of the blocks on offer. This process is an integral part of Nalcor’s exploration strategy. Future licence rounds scheduled for 2016, 2017 and beyond will follow the same process with detailed resource assessments being conducted over those areas with results released prior to bid closing. This phased and systematic approach will ensure a full evaluation of all of our basins over time with timely results delivered to industry prior to bidding, thereby ensuring maximum value for our offshore acreage is attained for the people of the province.

## Conclusion

Energy investments, through equity participation in oil and gas, by governments around the world have resulted in immense benefits to the resource owners—the people of the jurisdiction.

The exploration resurgence that has just commenced needed no new fiscal incentives or relaxation of rules or regulations to spur action. On the contrary, the province’s rules and regulations were tightened up to improve safety and liability concerns and royalties were even increased on recent projects. The solution however to encourage exploration was to be put in place three simple things that are most basic for exploration companies: capture new high quality geoscience over prospective deepwater areas to reduce risk and provide important resource potential information to global oil companies with an aim to increase exploration activity; provide the time and certainty necessary for new investors by moving to a scheduled exploration licence regime; strategically present to the global industry the insights on our resource potential from the new geoscience data and scheduled land sale system to the right parties in the right places.

The province’s hydrocarbon endowment is vast and the potential for future economic prosperity through development and production is immense. By finding and quantifying the oil and gas resource potential of Newfoundland and Labrador’s frontier offshore basins, Nalcor will help ensure long-term maximum resource benefit for the people of Newfoundland and Labrador.

*Submitted by: Nalcor Energy*