

# Oil and Gas

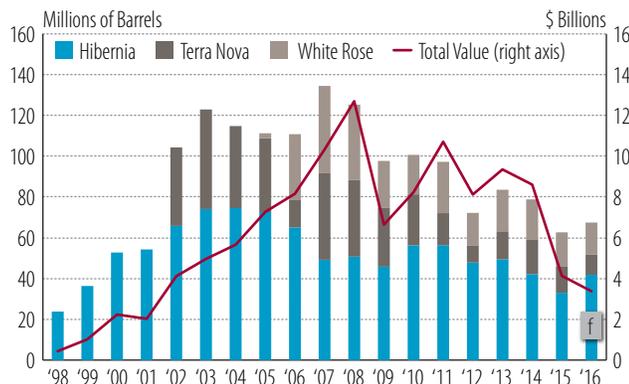


*Hebron GBS, December 2015. Courtesy: the Hebron Project.*

The oil and gas industry (including support activities) is the largest contributor to provincial GDP. It is estimated that the industry accounted for 25.7% of the province's nominal GDP in 2014. Oil and gas industry employment in 2015 was approximately 8,400 person years or 3.6% of total provincial employment.

Crude oil production decreased by 20.5% from 78.9 million barrels in 2014 to 62.7 million barrels in 2015, as all three producing projects recorded lower production (see chart). The estimated value of oil production was \$4.1 billion in 2015, representing a decrease of more than 50% compared to 2014. The decrease was the result of both lower production volumes and a substantial decline in crude oil prices. The price of Brent crude oil, a benchmark for Newfoundland and Labrador oil, averaged US\$52.32/barrel in 2015, down 47.1% from an average of US\$98.97/barrel in 2014. The negative impact of lower oil prices was partially offset by a lower Canadian dollar which depreciated by 13.6% relative to the U.S. dollar in 2015.

### Offshore Oil Production

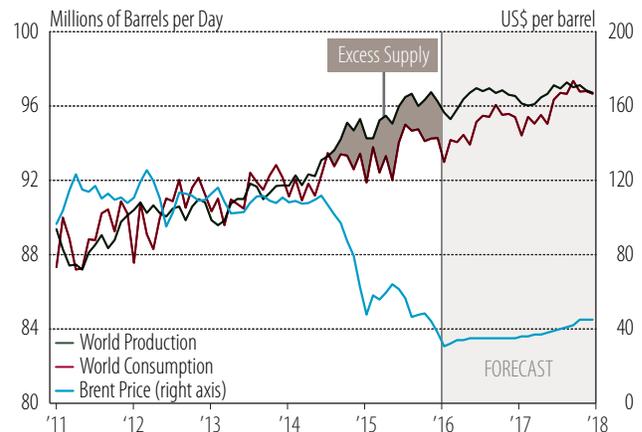


f: forecast  
Source: C-NLOPB; Department of Finance

Over the past few years, world oil supply growth has exceeded demand growth, leading to the current situation of excess market supply (see chart). Supply has increased rapidly as a result of increased U.S. shale oil production, while demand growth has been constrained by decelerating economic growth in China. This excess supply has resulted in

a steep downward trend in crude oil prices since the summer of 2014. Although oil price volatility will likely continue, most industry analysts believe that oil prices have finally reached a floor and expect moderate increases over the next few years. As of March 30, 2016, Brent crude oil was trading at US\$36.75/barrel.

### World Liquid Fuels Production and Consumption and Oil Prices



Source: US Energy Information Administration (Short Term Outlook March 2016)

### Hibernia

Hibernia's total production decreased by 21.6% (9.1 million barrels) in 2015 to 33.0 million barrels. Production was curtailed from September 18 to October 21 as the Hibernia Gravity Based Structure (GBS) underwent a planned regulatory maintenance and inspection turnaround. Cumulative production at Hibernia, since first oil in November 1997 to December 31, 2015, was 952 million barrels (58% of reserves) worth an estimated \$65.3 billion.

As of December 31, 2015, a total of 2,231 people were working on the Hibernia project within the province with 1,926 (86%) from Newfoundland and Labrador.

Hibernia Management and Development Company Ltd. (HMDC) plans to upgrade the Hibernia platform's two drilling rigs during the second half of 2016 to optimize performance and ensure its long term safety and integrity. These upgrades have be-

come necessary as increased reserves have extended the life of the project. When initially proposed for development, estimated recoverable reserves totalled 520 million barrels and field depletion was expected to occur within the 2015-2017 timeframe. Since then, estimated recoverable reserves have increased more than threefold to 1,644 million barrels and HMDC now expects to produce until at least 2040. The rig upgrades are not expected to impact normal production operations.

### **Terra Nova**

Terra Nova produced 13.1 million barrels of oil in 2015, a decrease of 3.7 million barrels (22.1%) compared to 2014. On May 13, 2015, the *Terra Nova FPSO* was taken offline for scheduled maintenance. Work included routine maintenance as well as tank remediation. Production resumed July 5<sup>th</sup>, two and a half weeks ahead of schedule.

Cumulative production from Terra Nova, since first oil in January 2002 to December 31, 2015, was 379 million barrels (75% of reserves) with an estimated value of \$26.7 billion.

As of December 31, 2015, there were 815 people employed on the Terra Nova project within the province, with 759 (93%) from Newfoundland and Labrador.

### **White Rose (including North Amethyst)**

White Rose produced 16.6 million barrels in 2015, down 16.8% (3.4 million barrels) from 2014. The *SeaRose FPSO* was shutdown for 16 days in August for regular maintenance. Cumulative production from White Rose, since first oil in November 2005 to December 31, 2015, was 254 million barrels (53% of reserves) with an estimated value of \$22.8 billion.

On December 17, 2014, Husky Energy announced that, in light of the current low oil price environment, it was deferring the final investment decision on the West White Rose extension project. Husky also announced that it will be considering alternative modes of development to the wellhead platform, including a sub-sea development concept.

Despite the delay in the final investment decision, Husky has indicated it remains committed to the development of West White Rose and other target areas and the project remains an important part of its long-term portfolio.

As of December 31, 2015, there were 1,095 people employed on White Rose operations within the province, with 1,019 (93%) from Newfoundland and Labrador. In addition, there were a total of 147 people working on the White Rose Extension (all locations) with 102 (69%) from the province.

### **Hebron**

The Hebron project, estimated to contain over 700 million barrels of recoverable oil, received official sanction on December 31, 2012. The project will utilize a stand-alone GBS similar to, but on a smaller scale than, Hibernia. The Hebron GBS is designed for an oil production rate of 150,000 barrels of oil per day. The total capital cost for the project is estimated at more than \$14 billion.

GBS construction at the Bull Arm dry dock began in October 2012. After pouring the GBS base slab, the GBS was floated to the Bull Arm deepwater site on July 22, 2014. Construction associated with the lower part of the GBS is now complete and construction of the topsides modules is ongoing as well as installation of all mechanical systems inside the GBS.

The accommodations module is nearing completion at Bull Arm, with assembly and architectural finishing underway. The flare boom, which was fabricated in Channel-Port aux Basques by Talon Energy, was completed in October 2015. Fabrication is being finalized on the helideck and life-boat stations by C & W Offshore in Bay Bulls. The Drilling Support Module was fabricated in Marystown by Kiewit Offshore Services and completed in December 2015.

Two topsides modules are being built in South Korea by Hyundai Heavy Industries. Fabrication of the Derrick Equipment Set is complete and it arrived at

Bull Arm in November 2015. Fabrication continues on the Utilities Process Module with completion anticipated for 2016. Mating of the GBS and topsides, as well as hook up and commissioning of the platform, is scheduled for later in 2016. First oil is expected late in 2017.

As of December 31, 2015, there were 5,075 people working on the Hebron project within the province, of which 4,624 (91%) were residents of Newfoundland and Labrador.

### **Offshore Oil Exploration Initiatives**

In December 2013, the Canada - Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) 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.

Over the past five years, the Provincial Government and Nalcor, in partnership with global seismic companies TGS and Petroleum Geo-Services, has conducted one of the largest seismic programs in the world. Analysis of satellite seeps survey data and recently acquired seismic data resulted in the delineation of new offshore basins as well as extensions to existing basins offshore Labrador. As well, significant prospectivity in deepwater areas offshore Newfoundland has been identified. The Province, through Nalcor, continues to strategically invest in geoscience acquisition programs. Numerous geoscience programs are ongoing in several offshore areas, including the Newfoundland

and Labrador Northeast Slope, South Grand Banks, South Labrador Sea and Flemish Pass areas.

On October 1, 2015, the Provincial Government and Nalcor Energy announced the results of a new resource assessment, completed by international petroleum consultancy firm Beicip-Franlab, for the parcels included in the 2015 Call for Bids. The assessment concluded that these areas have an in-place resource potential of 12 billion barrels of oil and 113 trillion cubic feet of natural gas. This illustrates the province's tremendous oil and gas resource potential as these areas cover less than two per cent of the total Newfoundland and Labrador offshore area.

### **Recent Discoveries**

In 2013, Statoil announced two new discoveries in the deepwater (approximately 1,100 metres) Flemish Pass Basin. The Harpoon discovery (whose resource potential has yet to be fully assessed) was announced in June 2013 and the Bay du Nord discovery (estimated to contain between 300 and 600 million barrels of recoverable oil) was announced in August 2013. Bay du Nord was the world's largest liquid fuels discovery of 2013 and the largest Statoil-operated discovery outside of Norway. The Harpoon and Bay du Nord discoveries are in close proximity to the 2009 Mizzen discovery, which is estimated by the C-NLOPB to contain 102 million barrels of recoverable oil. Statoil holds a 65% interest in the Mizzen, Harpoon and Bay du Nord fields, and Husky Energy holds the remaining 35% interest.

### **Exploration**

Statoil and Husky Energy remain confident about the potential of the Newfoundland and Labrador offshore area as evidenced by their ongoing exploration program in the area of the Bay du Nord discovery in the Flemish Pass Basin. The 18-month exploration program is expected to be completed in the first half of 2016. Husky Energy recently stated that even during this period of low prices,

the Flemish Pass has been gaining the attention of many super majors in the oil industry, demonstrating that the industry sees this as an important area of development in the long-term.

Currently, there are two semi-submersible drilling rigs working in the Newfoundland and Labrador offshore area. The West Hercules is currently under contract to Statoil and is conducting exploration and delineation drilling in the Flemish Pass Basin—this exploration program is expected to be completed this spring/summer. The West Aquarius is currently under contract to ExxonMobil and is operating in the Hibernia field.

On December 7, 2015, Husky announced that it had signed a two year contract with Transocean Ltd. to secure the Henry Goodrich, which is expected to commence operations in the second quarter of 2016. The rig will be used for ongoing development drilling at the South White Rose Extension and North Amethyst field, including near-field exploration.

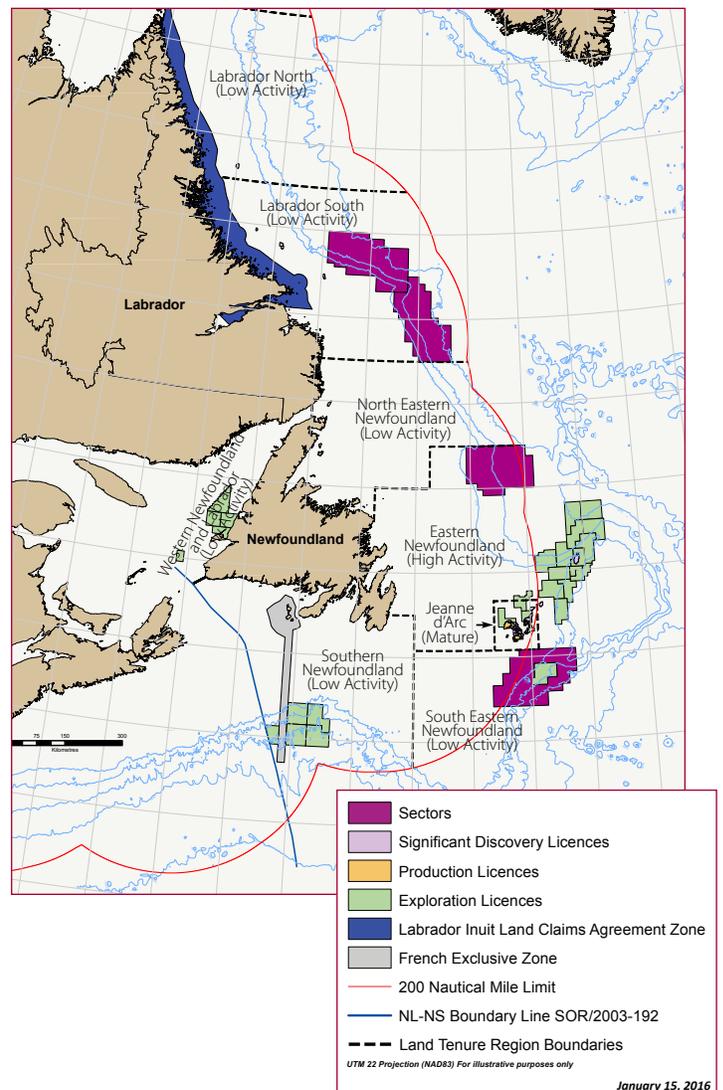
### Calls for Nominations and Bids

On November 12, 2015, the C-NLOPB announced the results of the first call for bids round in the Eastern Newfoundland Region under the Scheduled Land Tenure Regime. The Call consisted of 11 land parcels, totalling 2,581,655 hectares, in the Flemish Pass Basin near the Mizzen, Harpoon and Bay du Nord discoveries. Overall, 13 bids were submitted, nine companies participated and seven parcels were awarded for a total of \$1.2 billion in work commitments. Statoil, with bid commitments totalling over \$600 million, is a major partner in six of the seven successful bids. The 2015 Call for Bids saw three new entrants assume interests in the Newfoundland and Labrador offshore area—BG International Limited, BP Canada Energy Group ULC and Nexen Energy ULC. In February 2016, BG Group was acquired by Royal Dutch Shell plc. In total, there are currently \$2.4 billion in outstanding

work commitment bids in the Newfoundland and Labrador offshore region.

On January 25, 2016, the C-NLOPB issued new Calls for Nominations (Areas of Interest) in North Eastern Newfoundland (NL16-CFN01) and Southern Newfoundland (NL16-CFN02) Regions, as well as a Call for Nominations (Parcels) in the Labrador South Region (Sector NL01-LS) (see timeline).

### Land Tenure Regions



# Active Land Call Rounds Timeline

- Call for Nominations (AOI) Open
- Call for Nominations (AOI) Close
- Sector Identification
- Call for Nominations (Parcels) Open for Six Weeks
- Call for Bids Open
- Call for Bids Close
- Issuance of Licenses

## 2016 North Eastern Newfoundland Low Activity, 4-yr cycle



## 2016 Southern Newfoundland Low Activity, 4-yr cycle



## 2015 Jeanne d’Arc Mature, 1-yr cycle



## 2015 South Eastern Newfoundland Low Activity, 4-yr cycle



## 2015 Labrador South Low Activity, 4-yr cycle



## 2014 Eastern Newfoundland High Activity, 2-yr cycle



## 2013 Labrador South Low Activity, 4-yr cycle



# Oil and Gas

## 2016 Outlook

- Oil production is expected to increase by 7.7% to 67.5 million barrels.
  - Hibernia is expected to produce 41.8 million barrels, an increase of 8.8 million barrels in comparison to 2015.
  - Terra Nova is expected to produce 10.1 million barrels, a decrease of 3.0 million barrels from 2015. A 28-day maintenance shutdown is scheduled at Terra Nova for the second quarter of 2016.
  - White Rose (including North Amethyst) is expected to produce 15.6 million barrels, a decrease of 1.0 million barrels from 2015. A 20-day turnaround is planned on the *SeaRose FPSO* vessel in the third quarter of 2016.
- Brent crude is expected to average approximately US\$37 per barrel on a calendar year basis (US\$40 per barrel for fiscal year 2016-17).
- Hebron development activity will continue with mating of the GBS and topsides expected this year.
- Statoil will continue to delineate and assess the Bay du Nord discovery.
- Two Calls for Bids (Jeanne d’Arc Basin and the Eastern Newfoundland Region) will open in April 2016 and close in November 2016.