Rig worker (CBC Newfoundland and Labrador)

Oil and Gas

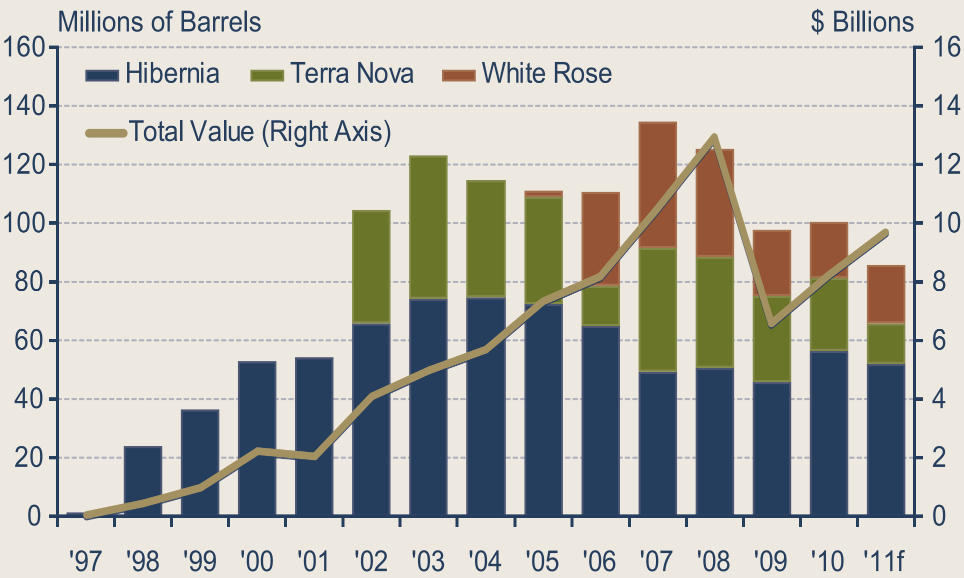
Oil Production

Oil and gas is a vital sector in the Newfoundland and Labrador economy. Provincial real GDP has grown by nearly 52% in the last two decades, with over half of the growth attributed directly to the oil industry. In 2009, oil extraction and support activities accounted for 27.5% of the province's nominal GDP and 2.4% of provincial employment. The industry's total capital expenditures were approximately $1.3 billion in 2010, up 13.8% from 2009.

The province's three active projects produced 100.7 million barrels of oil in 2010 (see chart) and accounted for approximately 35% of Canada's conventional light crude production. Production increased 3.1% (or 3.0 million barrels) relative to 2009 mainly as a result of new production from the AA Blocks at Hibernia and the start-up of the North Amethyst field.

The value of oil production was approximately $8.2 billion in 2010, up 23.9% from 2009 as a result of higher crude prices and output. The price of Brent crude oil averaged US$79.61/barrel in 2010, compared to US$61.74/barrel in 2009. Cumulative oil production since 1997 totalled 1.2 billion barrels, worth approximately $73.8 billion.

Offshore Oil Production



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Source: Canada-Newfoundland and Labrador Offshore Petroleum Board; Department of Finance

Hibernia

The Hibernia oil field—the first and largest oil field to be developed offshore Newfoundland—began producing in 1997. Current (October 2010) reserve estimates for Hibernia are 1,395 million barrels. This is higher than the previous (2006) estimate of 1,244 million barrels and almost double the 1986 estimate of 711 million barrels.

Hibernia produced 56.3 million barrels of oil in 2010, up 22.9% (or 10.5 million barrels) from 2009. Average monthly production was 4.7 million barrels in 2010 compared to 3.8 million barrels in 2009. Increased production was influenced by a number of factors including a successful drilling program, better than expected recoveries in several wells, decreased downtime compared to 2009 and the addition of production from the AA Blocks. Estimated production value in 2010 was approximately $4.6 billion. Approximately 1,090 persons, including tanker crew, were employed in support of Hibernia last year.[2]

Several developments concerning Hibernia occurred during 2010. The provincial government finalized formal agreements with industry to develop the Hibernia South Extension (HSE). This development alone is expected to return an estimated $13 billion to the provincial government through a combination of royalties, returns on investment (through Nalcor Energy) and corporate income tax revenues. HSE comprises two areas—

2 Employment numbers for Hibernia, Terra Nova and White Rose were as of March 31, 2010.

the AA Blocks with estimated recoverable reserves of 48 million barrels and the Hibernia South Extension Unit (HSE Unit) with estimated recoverable reserves of 167 million barrels. These developments are expected to extend the productive life of Hibernia by 5 to 10 years. Extraction from AA Blocks began in late 2009 using direct drilling from the Hibernia production platform. Oil produced from the AA Blocks is currently subject to a royalty rate of 42.5% of net revenues.

As well, in late 2010, the Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) approved the amendment to the Hibernia Development Plan to allow development of the HSE Unit to proceed. The decision enables the Hibernia Management Development Company Ltd. to develop the HSE Unit area utilizing existing oil production facilities and support infrastructure, and by adding subsea infrastructure. First oil from this project is expected in the second quarter of 2011. The province, through Nalcor Energy, acquired a 10% equity stake in the HSE Unit at a cost of $30 million. Nalcor Energy will pay a proportional share of the project costs and receive a proportional share of production revenues.

Terra Nova

The second oil field to commence production in the province's offshore was Terra Nova in 2002. The C-NLOPB estimates oil reserves and resources at Terra Nova to be 419 million barrels.

This field produced 24.9 million barrels of oil in 2010, a decline of 4.1 million barrels (or 14.1%) from 2009. Average monthly production was 2.1 million barrels in 2010 compared to 2.4 million barrels in 2009. Production in 2010 was below 2009 levels as a result of natural declines, a scheduled maintenance turnaround in the third quarter and the shutdown of some wells in the fourth quarter to address issues related to hydrogen sulphide (sour gas). Production value in 2010 was approximately $2.0 billion. Total employment in support of the Terra Nova project last year was 805 persons, including tanker operations.

Terra Nova's operator, Suncor Energy, is planning for a 15-week scheduled shutdown of the *Terra Nova FPSO* to replace the injection swivel. The shutdown is being contemplated for July 2011, however, the company may defer the shutdown to 2012. The refit is expected to take place in Marystown. A decision concerning whether to proceed with the scheduled shutdown this year is expected early in the second quarter.

White Rose (including North Amethyst)

The White Rose field commenced production in 2005, representing the third producing oil field in the province's offshore. White Rose (including North Amethyst) produced 19.4 million barrels in 2010, down 3.4 million barrels (or 14.8%) from 2009. Average monthly production was 1.6 million barrels in 2010 compared to 1.9 million barrels in 2009. Production at White Rose was lower in 2010 reflecting interruptions associated with the North Amethyst tie-in and natural declines in the main field. Production value in 2010 was approximately $1.6 billion. Total employment at White Rose was 1,236 persons in 2010, including tanker operations and 217 persons in support of the North Amethyst development.

The C-NLOPB estimates oil reserves and resources at White Rose to be 373 million barrels. This estimate includes the main South Avalon Pool, North Amethyst Field, South White Rose Extension, West Avalon Pool, North Avalon Pool and the Hibernia formation. North Amethyst, the first of three satellite areas to be tied back to the *SeaRose FPSO*, began production in May 2010. Pilot well drilling in the West White Rose, the second of three satellite fields, commenced in August 2010 following approval from the C-NLOPB. The development strategy and timing of West White Rose are dependent on the outcome of the pilot well scheme. The South White Rose Extension, which is the third of the tie-back developments, received regulatory approval in 2007. Husky Energy Inc. and partners continue to assess development and scheduling options for the South White Rose Extension. Husky Energy is also currently assessing the feasibility of using a gravity based structure (GBS) to develop White Rose's growing resource base. Unlike the Hibernia GBS that has processing and storage capabilities, Husky is proposing a wellhead GBS that strictly pumps oil from the seabed and is capable of drilling wells.

Hebron

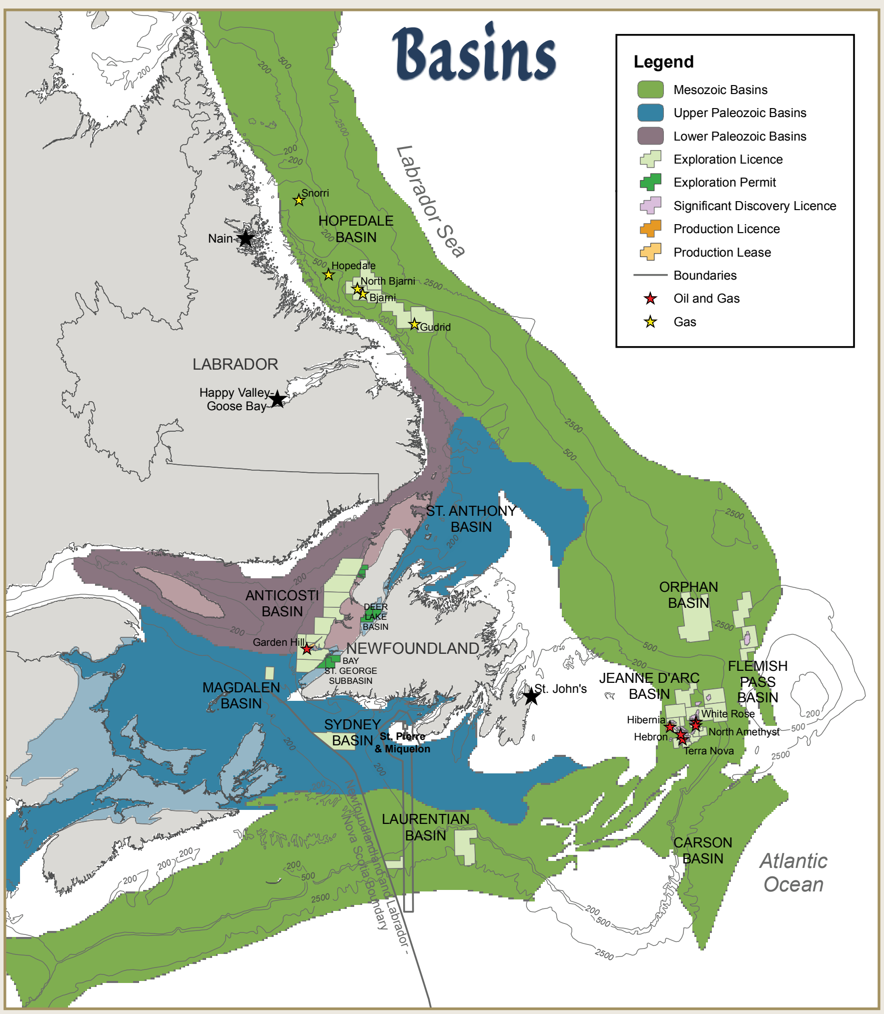
The Hebron field was discovered in 1981 and is located north of the Terra Nova field in the Jeanne d'Arc Basin (see map on page 22). Hebron, the fourth project to be developed in the province's offshore on a stand-alone basis, contains an estimated 581 million barrels of recoverable oil reserves. The field will be developed using a GBS, similar to, but smaller than, the Hibernia GBS. The Hebron GBS will be built in Newfoundland and Labrador.

The province, through Nalcor Energy, purchased a 4.9% equity stake in the Hebron project at a cost of $110 million, and will pay a proportional share of project costs and receive a proportional share of production revenues. The remaining Hebron partners are: ExxonMobil Canada Properties

(36.0%), Chevron Canada Limited (26.7%), Suncor Energy Inc. (22.7%) and Statoil Canada Ltd. (9.7%). ExxonMobil is the operator of the Hebron Project.

Hebron's project office was established in St. John's in 2009 and there are currently about 200 people working on the project in the province. The Hebron Comprehensive Study Report was submitted to the C-NLOPB in June 2010 and the submission of the Development Plan Application to the C-NLOPB is scheduled for the second quarter of 2011.

Two major contracts for development of Hebron were awarded in 2010. The Topsides Front End Engineering Design (FEED) contract, to be completed during 2011, was awarded to WorleyParsons Canada Services Ltd. in August. The second major contract, for the GBS FEED and site preparation at Bull Arm, was awarded to Kiewit-Aker Contractors (a 50/50 joint venture between Peter Kiewit Infrastructure and Aker Solutions) in November. Both contracts include the option—at the discretion of ExxonMobil—for the companies to provide engineering, procurement and construction services.



Construction of the GBS is expected to start in 2012 at the Bull Arm industrial fabrication site and is expected to create 4.1 million person hours of employment in the province, with peak employment in 2014. First oil is expected as early as 2017.

Exploration

Offshore and onshore exploration continued throughout 2010. In total, 11 wells (exploration, delineation and development) were spud offshore and three onshore. Seismic programs were undertaken in both areas as well. The following are some highlights of exploration activity in 2010.

Offshore

- In February 2010, the C-NLOPB issued a significant discovery licence (SDL) to Statoil Canada Ltd. related to the Mizzen O-16 discovery well in the Flemish Pass Basin (see map). The final well report from the Mizzen O-16 well is now available from the C-NLOPB. Additionally, Statoil completed a well site survey in the Jeanne d'Arc Basin in August 2010 and received authorization to proceed with a geophysical program in the Flemish Pass Basin.
- Suncor Energy Inc. drilled Ballicatters M-96 exploration well in the Jeanne d'Arc Basin in 2009. Drilling operations were suspended in October 2009 and no results have been announced to date.[3] Suncor re-entered the well (M-96Z) in November 2010 and is currently conducting sidetrack drilling operations.
- Husky Energy Inc. drilled the exploration well Glenwood H-69 in EL 1090 in March 2010. No results have been announced. During the summer of 2010, Husky completed a 3,005 km 2-D seismic survey in the Sydney Basin and a 5,550 km 2-D seismic survey off the coast of Labrador in the Hopedale Basin.
- Beginning in May 2010, Chevron Canada Limited drilled Lona O-55 exploration well in the Orphan Basin using the drillship *Stena Carron*. The well has since been abandoned and no results have been announced. Chevron has submitted a project description to the C-NLOPB for 2-D and 3-D seismic programs in the region of the Orphan Knoll, showing continued interest in the area.
- ConocoPhillips Canada and co-venture partner BHP Billiton completed drilling of the East Wolverine G-37 exploration well in the Laurentian Basin in April 2010 using the drillship *Stena Carron*. While no specific data were released, ConocoPhillips announced that the well was dry and have since relinquished five exploration licences (EL) in the area (1081R, 1082R, 1084, 1086R and 1087R) but retained two (1118 and 1119).
- In January 2011, Canadian Imperial Venture Corp. and Shoal Point Energy Inc. commenced drilling of the onshore-to-offshore exploration well 3K-39 to test the hydrocarbon potential of the Green Point shale formation in western Newfoundland. Drilling operations are ongoing.
- In January 2011, NWEST Energy Inc. announced that it extended ELs 1097 and 1098 off the province's west coast to January 15, 2012 by posting a drilling deposit of $500,000 to the C-NLOPB.
- In early 2011, Corridor Resources Inc. submitted plans to the C-NLOPB to drill its first offshore exploration well off Cape Anquille (Old Harry) sometime between mid-2012 and early 2014, pending regulatory approval. The proposal to drill this well, which is located on the Newfoundland side of the Gulf of St. Lawrence, has triggered an environmental assessment process.

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[3] Information obtained as a direct result of drilling an exploration well is confidential for two years following the well termination date (i.e. date on which the well is either suspended or abandoned).

Onshore

- In February 2011, Nalcor Energy and its partners Leprechaun Resources, Deer Lake Oil and Gas Inc., Investcan Energy Corporation and Vulcan Minerals Inc. announced that they had abandoned plans to drill the third and final well in a three-well exploratory program in the Parsons Pond area. The first two wells, Seamus #1 and Finnegan #1, found shallow gas but no oil deposits. The current plan is to evaluate the well data already collected and cross reference it with seismic survey data collected both onshore and offshore. Exploration expenditures were approximately $30 million, of which Nalcor Energy's share was $23 million.
- In October 2010, Vulcan and its partner Investcan announced the conclusion of the first stage of Phase I on the Robinson #1 and Red Brook #2 wells in the Bay St. George area. Based on the results of Phase I the co-venturers expect to carry out a stimulation program to adequately test the flow rates of several zones that will provide reservoir information to assist in quantifying the natural gas resource. This work is expected to commence in mid-2011. Vulcan also completed a 2-D seismic program in the Bay St. George Basin in 2010.
- Deer Lake Oil and Gas drilled Werner Hatch #1 well to a final total depth of 442 meters and released the rig in March 2010. This is the first of two shallow wells proposed in the Deer Lake Basin to evaluate the shale gas potential of the Rocky Brook formation. The Department of Natural Resources (DNR) is currently reviewing the well results.

Licences, Bids and Land Sales

- As of January 31, 2011, there were 35 active exploratory licences, 50 significant discovery licences, and eight production licences in the province's offshore area. Currently there is approximately $995 million in exploration commitments (including new commitments in 2010) to be undertaken by interest owners.
- The C-NLOPB issued three Calls for Bids in the offshore in 2010. Successful bids totalling about $112.7 million in work commitments were received.
    - Call for Bids NL 10-01 included two parcels in the Jeanne d'Arc Basin comprising 169,400 hectares. Parcel 1 was awarded to Husky and Repsol E&P Canada Ltd. and borders EL 1090, the licence under which the exploration well Glenwood H-69 was drilled by Husky in 2010. Parcel 2, which borders the North Amethyst field currently being operated by Husky, went to Husky and Statoil. Parcel 2 is surrounded by exploratory licences held by Husky and Statoil and also borders two SDLs held by Husky.

- Call for Bids NL 10-02 included exploration rights in two parcels of the Central Ridge/Flemish Pass Region comprising 327,372 hectares. Parcel 1 was awarded to Statoil and Repsol, while Statoil and Husky partnered and successfully won the bid for Parcel 2. The two parcels have approximately $95.2 million in work expenditure commitments. Parcel 1 is located north of the Mizzen discovery made by Statoil in 2009, while Parcel 2 borders the discovery.
- Call for Bids NL 10-03 comprised 3,773 hectares in the Central Ridge/Flemish Pass Region. Statoil and Husky won the bid and the associated SDL with a cash bid of $1.2 million. This parcel of land also borders the Mizzen discovery.

- In September 2010, the C-NLOPB announced a Call for Nominations (NL 10-01) for lands in the offshore area to be considered for possible Call for Bids in 2011.
- In October 2010, the Government of Newfoundland and Labrador issued a Call for Postings to identify prospective parcels of land in onshore western Newfoundland for possible future oil and gas exploration. Approximately seven million acres of land, totalling 28,000 square kilometers, were open for nomination. The deadline for submissions was December 15, 2010. The DNR is currently assessing the nominations.

Oil & Gas 2011 Outlook

Oil production is expected to decline by 14.7% to 85.9 million barrels.

- Hibernia (including AA Blocks and HSE Unit) is expected to produce 52.2 million barrels, 4.2 million less than 2010.
- Terra Nova is expected to produce 13.8 million barrels, 11.1 million less than 2010 due to natural declines and assumed shutdown.
- White Rose (including North Amethyst and West White Rose) is expected to produce 19.9 million barrels, 0.5 million more than 2010.

First oil from HSE Unit—one of two areas comprising Hibernia South—is expected in the second quarter.

Annual average crude oil prices are expected to increase by about 36% over 2010 levels. Brent crude is expected to average US$108.50/barrel.

Capital expenditures are expected to be about $1.7 billion in 2011, up 34.6% from 2010.

The Development Plan Application for the Hebron field is expected by the second quarter. Preparation work at Bull Arm is expected to commence in the second quarter.

Several companies will be pursuing exploration and development opportunities in the offshore in 2011.