

# Oil and Gas



Eirik Raude

Oil tanker in Conception Bay South

## Impact of the Oil Industry

The oil and gas industry's contribution to the provincial economy has grown significantly in recent years. Oil production now directly accounts for about 16% of real GDP. In comparison, oil and gas extraction accounts for less than 3% of national GDP. The oil and gas industry's contribution to employment is significantly lower than that of GDP due to its capital intensive nature.

## Oil Production

Oil production declined in 2005. Total production was 111.3 million barrels, down 3.1% from 114.8 million barrels in 2004. Despite lower production, the value of oil production increased by almost 29% to \$7.3 billion, reflecting historically high oil prices.

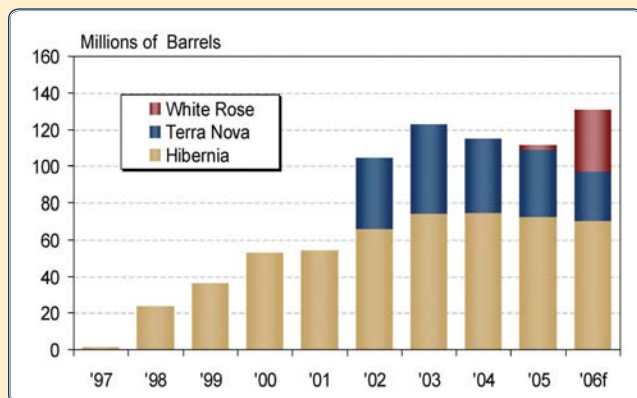
Production declines were experienced at the Hibernia and Terra Nova facilities in 2005. Hibernia production declined by 2.6% to 72.6 million barrels. Terra Nova recorded the largest decline with production falling by

10.0% to 36.2 million barrels. Terra Nova production was impacted by: a 38 day maintenance shutdown that began in early September; problems with the gas compression system including downtime for repairs; and higher water volumes in the production wells.

A 90 day turnaround is planned for Terra Nova in 2006 to: address maintenance, inspection and regulatory backlogs; allow completion of projects which have been deferred due to persons-on-board limitations; and install additional living quarters on the Terra Nova FPSO. The duration of the planned shut-in coupled with a delay of the start-up of the far east producer well G90-6Z after experiencing operational difficulties, is expected to reduce 2006 production to 26.7 million barrels.

White Rose achieved first oil on November 12th, 2005 with production totalling 2.4 million barrels for the year. Production is expected to reach peak levels of 100,000 barrels a day in 2006 and annual production is anticipated to total almost 34 million barrels.

## Oil Production 1997 to 2006<sup>f</sup>



f: forecast

Canada-Newfoundland and Labrador Offshore Petroleum Board

## Exploration

The long-term sustainability and growth of the local oil and gas industry is inherently linked to exploration activity and subsequent discoveries. Recent exploration activity has focused mainly on seismic data collection, an integral input into the exploratory drilling decision making process. A record 381,227 common mid-point km of 3-D data and 14,737 line km of 2-D data was collected in 2005. Seismic programs were conducted on the Orphan Basin, Laurentian Sub-basin, Northern Jeanne d'Arc Basin and Offshore Labrador.

Increased exploration drilling is expected. Exploration drilling in 2005 included work done by Husky Energy

on its Lewis Hill property in the South Whale Basin and the spudding of a well on exploration licence EL 1093 by the Hibernia Management and Development Corporation. Exploration drilling is expected to pick up in 2006. Petro-Canada plans to drill an exploration well in the southern region of the far east block of the Terra Nova field using the drill rig *Henry Goodrich*. Husky Energy plans to drill up to four wells (likely delineation wells) in 2006 using the drill rig *Rowan Gorilla VI*. Drilling of the first well began in early March and all four wells are expected to be completed by November 2006. Also, Norsk Hydro has indicated the potential for two wells on its West Bonne Bay licence with drilling commencing as early as 2006.

A consortium, made up of Chevron Canada Resources, Exxon Mobil Canada Ltd., Imperial Oil Resources Ventures Limited and Shell Canada Limited, is expected to use the *Eirik Raude*—a harsh environment deepwater, semi-submersible drill rig—to drill an exploration well, Great Barasway F-66 on EL 1076 in the Orphan Basin. This well is expected to be the deepest offshore well ever drilled in Canadian waters, with water depths in the area exceeding 2,300 metres. The drilling program is expected to commence in the second quarter of 2006. Beyond 2006, the partnership plans to drill two additional wells in the Orphan Basin, tentatively scheduled for 2007 and 2008.

The move into deepwater exploration in 2006 is taken, in industry circles, as a sign of continued interest in the province's offshore. Exploration drilling has not occurred in the Orphan Basin since 1985 and with over \$670 million in work commitments presently associated with the Orphan Basin, significant work is anticipated over the next few years. In fact, given that there is close to \$800 million in total outstanding work commitments that must be met by January 2010, it is expected that an average of 2-3 exploration wells will be drilled per year.

Record seismic data collection in 2005 and the expectation of increased future exploration drilling is being supported by record high energy prices. High prices for oil and natural gas have contributed to record profits for the oil industry. Profits at Canada's five biggest integrated oil companies, increased to \$9.6 billion in 2005, up 34% from 2004. Earnings for Imperial Oil, Shell Canada and Husky Energy each exceeded \$2 billion with earnings for Husky Energy doubling from the previous year. This strong performance provides com-



*Rowan Gorilla VI*

panies the financial resources to pursue more exploration activity, especially in deepwater areas. Higher oil and gas prices also make the economics of developing projects in deepwater areas more attractive.

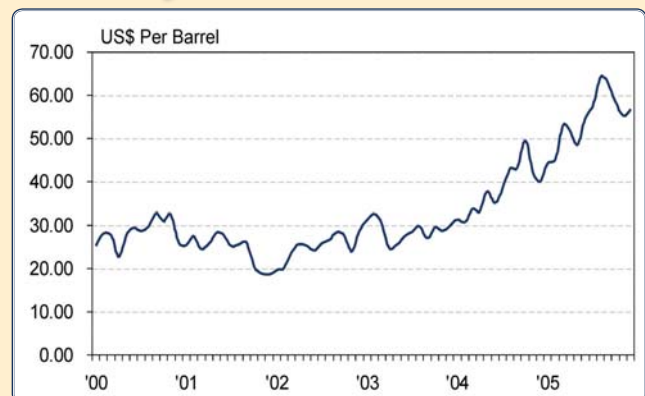
### Potential Development

Hebron, likely the next major offshore project to be developed, is located in the Jeanne d'Arc basin and estimated to contain 400 to 700 million barrels of recoverable oil. The Hebron ownership consortium is made up of Mobil Oil Canada (37.9%), Chevron Canada Resources (28.0%), Petro-Canada (23.9%) and Norsk Hydro (10.2%), with Chevron being the project operator. While a number of development options have been examined, it appears that if a decision to proceed were made that the project partners would likely utilize a gravity based structure similar to that used on the Hibernia project. Chevron estimates total project costs of up to \$11 billion.

### Oil and Gas Prices

Oil prices increased throughout 2005, reaching record levels. In 2005, the price of Brent crude averaged US\$54.41, over 42% higher than the US\$38.21 aver-

#### Monthly Oil Price — Brent Sullom Voe



Department of Finance; Department of Natural Resources



age posted in 2004. Increased energy demand from the growing economies of China and India has driven much of the recent increase in oil prices. Other contributing



*SeaRose FPSO*

factors include: supply concerns related to geopolitical issues such as the recent standoff over Iran's nuclear program; continued unrest and instability in oil producing countries such as Iraq and Nigeria; general supply concerns related to the belief that many of the world's top producing oil wells are reaching maturity and thus will likely see production drop-offs in the near future; and interruptions in the supply chain in the latter half of 2005 caused by hurricane damage to oil rigs in the Gulf of Mexico and refining operations in the United States.

While record high oil prices dominate the headlines, natural gas prices were also hitting historic highs in 2005, increasing over 45% from levels posted in 2004. Similar to oil, natural gas prices were impacted by a multiplicity of factors. Unlike oil, however, gas prices have fallen recently. The decline has been attributed to inventories of natural gas in the U.S. reaching unusually high levels for this time of year, due to above average temperatures in the U.S. moderating demand.

### **Natural Gas Development**

No natural gas development proposals have been submitted to the Canada–Newfoundland and Labrador Off-

shore Petroleum Board (CNLOPB) thus far. However, strong natural gas prices coupled with significant potential associated with the province's offshore are resulting in industry players exploring the possibility of natural gas development. The CNLOPB estimates a total of 9.6 trillion cubic feet (tcf) of discovered natural gas in the province's offshore. The undiscovered (unconfirmed by drilling) natural gas resource potential is estimated at over 60 tcf. Husky Energy is currently in the process of evaluating final pre-feasibility reports from three groups on the development of White Rose natural gas. Husky has indicated that a White Rose gas development is at least 8-10 years away. Husky Energy also signed a non-binding Memorandum of Understanding with Exxon Mobil and Petro-Canada in April 2005 to further study and develop technical and commercial options for development of offshore natural gas. These events, plus recent seismic surveys shot in the Laurentian Sub-basin and offshore Labrador, indicate that interest in the province's natural gas potential is rising.

## **Outlook 2006**

- Oil production is expected to increase by 17.5% to 130.8 million barrels. White Rose production is expected to increase to 33.6 million barrels. Expected production of 70.5 and 26.7 million barrels from Hibernia and Terra Nova respectively both represent declines from 2005.
- Oil prices are forecast to remain high—Brent crude is expected to average about US\$60 per barrel.
- Hibernia and Terra Nova combined capital spending is expected to be in the \$400-\$500 million range.
- Husky Energy capital spending is expected to exceed \$350 million.
- Total direct oil production employment is expected to average about 2,500 person years in 2006, up from about 1,700 person years in 2005.

*SeaRose FPSO, Heather Knutsen, and Maersk support vessel*

