OIL AND GAS DEVELOPMENT IN NEWFOUNDLAND

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– A Comparative Perspective, May 3 – 5, 2017
Outline

- Newfoundland Economy
  - Structure
  - Oil and Gas
- Royalties Regimes
  - Existing projects
  - New generic royalties
- UNCLOS and future potential obligations
- Environment
NL’s absolute and relative position have improved over time, but they have been declining in recent years. We are starting to see the impacts of lower oil prices with two years of real decline in GDP. The budget is forecasting several years of negative growth.
Employment

- There is a noticeable decline in employment and a noticeable increase in the seasonally adjusted unemployment rate in the last three years, which pre-dates the fall in the price of oil.
- Employment levels expected to be 42,350 lower than they were in 2013, when annual and monthly employment peaked. This represents a 17.5% reduction in employment levels from 2013 to 2022.
- To put this in perspective, in the last three years, employment fell by 4.2% from peak or there are 10,100 fewer people working in 2016 than in 2013.
- Unemployment rates have been increasing and by 2019, they are expected to increase to 19.8%, which is just below the 20.2% record in 1985.
- Hard to know how much of it is caused by oil price falls, but certainly some of the deterioration is due to a slow down in the oil economy.
Since first oil (1997), employment rate in NL has increased (from 42.9% in 1997:03 to 50.6% in 2017:03) but still lower than any other province. Since the collapse of oil prices, the employment rate has fall from 55.4% in 2013:01 to 50.6% in 2017:03.
The unemployment rate in NL has improved over time, but has been and remains the highest in the country.
The participation rate in NL has improved over time, but has been and remains the lowest in the country.
Wages NL and Canada

Hourly Wages NL as Percent of CDN

March 2017, $25.80/hr NL and $26.12/hr CDN (NL 98.8% of CDN)

Index of Hourly Wages NL (1997=100)

Hourly wages increased by 88% since 1997

Weekly Wages NL as a Percent of CDN

March 2017, $987.63/wk NL and $949.27/wk CDN (NL 104% of CDN)

Index of Weekly Wages NL (1997=100)

Weekly wages increased by 98% since 1997

Author’s calculation based on CANSIM Table 2820069
Oil Price and GDP/POP NL

[Graph showing oil price and GDP/POP NL from 1998 to 2015]
NL ECONOMY

Oil and Gas
Oil Production - NL

The Oil Production in NL’s Offshore

The Value of Output in NL’s Offshore
Oil and GDP

Since 2003, oil as a share of the economy has fallen by approximately one half.

There has been over $51 B invested in the offshore up to the end of 2015.

Source: Author’s Calculation based on Stats Can CANSIM Table 3790030
Oil and Royalties

From its peak in 2011-12, oil royalties have fallen by 79%
Oil and Royalties

Royalties as a Percent of NL Government Revenue (CDN $)

1998-99: 1.6%
1999-00: 1.8%
2000-01: 1.7%
2001-02: 2.6%
2002-03: 4.4%
2003-04: 15.6%
2004-05: 19.8%
2005-06: 30.0%
2006-07: 30.0%
2007-08: 28.0%
2008-09: 25.2%
2009-10: 22.4%
2010-11: 21.2%
2011-12: 13.9%
2012-13: 13.0%
2013-14: 13.0%
2014-15: 13.0%
2015-16: 13.0%
2016-17: 13.0%
Employment - Oil and Gas Extraction and Support Activities

Source: Statistics Canada, Labour Force Survey, Custom Tabulation

Notes:
- Table cells showing 0.0 refer to estimates that are suppressed (cannot be published) because they are below the confidentiality threshold. The confidentiality threshold is less than 500 for Newfoundland and Labrador.
- Data includes support activities for the Mining industry. This is believed to be a small portion of support activity employment.
Employment Share - Oil and Gas Extraction and Support Activities

Notes:
- Table cells showing 0.0 refer to estimates that are suppressed (cannot be published) because they are below the confidentiality threshold. The confidentiality threshold is less than 500 for Newfoundland and Labrador.
- Data includes support activities for the Mining industry. This is believed to be a small portion of support activity employment.

Source: Statistics Canada, Labour Force Survey, Custom Tabulation
Implications

- Economy of NL (and government of NL) is dependent to its young oil industry.
- Oil price (and in case of NL offshore oil, oil production) is volatile.
- What are the implications for the policy makers?
- What they have done in the past? How the income resulted from this industry has been managed?
- Are the lessons learned from other countries applied to avoid possible drawbacks?
Between 2011/12 and 2015/16, royalties have fallen from 38.7% of provincial revenues to 10.5%.

Between 2004-05 and 2014-15, revenues increased by 73% and expenditures increased by 59%.

Most of the heavy lifting in Budget 2016 was done through revenue increases, rather than expenditure cuts. However, if revenue is not sustained in the future, then we will be in the same spot as we are currently.
## Ownership - NL Offshore

<table>
<thead>
<tr>
<th>Company</th>
<th>Hibernia Main Field (incl. AA Block)</th>
<th>HSE (PL1005)</th>
<th>HSE (EL1093 or PL1011)</th>
<th>Terra Nova</th>
<th>White Rose</th>
<th>White Rose Ext</th>
<th>Hebron</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exxon Mobil</td>
<td>33.13%</td>
<td>22.50%</td>
<td>29.81%</td>
<td>19.00%</td>
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<td>36.04%</td>
</tr>
<tr>
<td>Chervon</td>
<td>26.88%</td>
<td>22.50%</td>
<td>24.19%</td>
<td>1.00%</td>
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<td></td>
<td>26.63%</td>
</tr>
<tr>
<td>Suncor Energy</td>
<td>20.00%</td>
<td>22.50%</td>
<td>18.00%</td>
<td>37.68%</td>
<td>27.50%</td>
<td>26.13%</td>
<td>22.73%</td>
</tr>
<tr>
<td>Canada Hibernia Holding Corp.</td>
<td>8.50%</td>
<td>7.65%</td>
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<td></td>
<td>9.70%</td>
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<tr>
<td>Murphy Oil</td>
<td>6.50%</td>
<td></td>
<td>5.85%</td>
<td>10.48%</td>
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<tr>
<td>Statoil</td>
<td>5.00%</td>
<td>22.50%</td>
<td>4.50%</td>
<td>15.00%</td>
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<tr>
<td>Nalcor Energy</td>
<td></td>
<td>10.00%</td>
<td>10.00%</td>
<td></td>
<td></td>
<td>5.00%</td>
<td>4.90%</td>
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<tr>
<td>Husky Oil</td>
<td></td>
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<td></td>
<td></td>
<td>13.00%</td>
<td>72.50%</td>
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<tr>
<td>Mosbacher</td>
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<td></td>
<td>3.85%</td>
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</tbody>
</table>
Precursor to exploration - Offshore

Approximately $6 billion has been bid for parcels of land in NL's offshore
Offshore Expenditure

**Graph 1:** Exploration Investment Activity in NL Offshore
- Data Source: CNLOPB

**Graph 2:** Development & Pre-Development Investment in NL Offshore
- Data Source: CNLOPB

**Graph 3:** Production Expenditure in NL Offshore
- Data Source: CNLOPB

**Graph 4:** Investment in NL Offshore
- Data Source: CNLOPB
NL OIL AND GAS DEVELOPMENT
Background

- Mobil Oil carried out the first seismic surveys on the Grand Banks in the 1960s (first permits were issued in 1963, first well was drilled in 1966), and exploratory drilling continued during the 1970s.

- Throughout the world there was an abundance of oil fields that were cheaper and easier to develop thus oil companies had little incentive to explore off Newfoundland and Labrador’s coast.

- When oil prices increased dramatically in 1973, interest in Newfoundland and Labrador rose and exploratory drilling increased.
Chevron Standard Limited discovered the first commercial oilfield, Hibernia, in 1979, but development could not proceed.

Initially there were parallel Federal and Provincial Regulation governing the offshore as the ownership was being challenged.

Development delayed until the provincial and federal governments resolved the ownership and management disputes, which continued from 1967 until 1985.
The Atlantic Accord

- The Canada-Newfoundland Atlantic Accord was signed on 11 February 1985.
  - The Accord granted the province significant decision-making powers and financial benefits.
  - The Canada-Newfoundland Offshore Petroleum Board (CNLOPB) was given the job of managing offshore resources on behalf of both levels of government.
  - Gave the province the right to tax the offshore resources as if they were on provincial land (as if it owned them).
  - A $300-million offshore development fund was established to help prepare the province for industrial growth, to which Ottawa contributed $225 million.
  - Developers had to hire qualified local workers before considering outside applicants and help pay for local research and education programs. They also had to give first priority to local businesses able to provide the goods and services needed for offshore projects.

Background, cont’d

- Initially, there was limited local involvement because of limited capacity to do so
  - *At the time, NL had low industrialization and incomes and was experiencing high poverty and unemployment*

- In 1997, the Government of Newfoundland introduced New Provincial Regulations Under Act Respecting Petroleum and Natural Gas
  - *These were based on the ‘North Sea Model’ (= Norway)*
  - *Attractive rate of return*
  - *Newfoundland and Labrador Petroleum Corporation was meant to be an active partner*
  - *Local business and employment preference in development and operations*
  - *Controlled rate and manner of development*
Hibernia

- Oil workers discovered Newfoundland and Labrador's first commercial oilfield in 1979 after about 13 years of exploratory drilling in offshore waters. Known as Hibernia, the oilfield is located on the Grand Banks in the Jeanne d'Arc Basin, about 315 km east of St. John's.
- In 1985 the Atlantic Accord was signed.
- But by 1985 oil prices had declined significantly.
- The Hibernia field is located in an inhospitable environment consisting of rogue waves, fog, icebergs and sea ice, hurricanes, and northeaster winter storms, engineering analyses determined that the most appropriate drilling platform would be in the form of a gravity base structure (GBS).
- The government agreed to give the developers $1 billion in grants and approximately $2 billion in loan guarantees in order to make the $5.2 billion dollar proposed project go forward.
- Construction of the Hibernia platform and other oil-extraction structures began in 1990 and the development produced its first barrel of oil in 1997.
A gravity based system (GBS) which, while significantly more expensive than other modes of development, would lead to more jobs in the province.

Industry and government officials estimate the oilfield holds about 1,645 million barrels of retrievable oil, making it the province's largest producing field to date.
Terra Nova

- Terra Nova was discovered in 1984 and started production in 2002.

- The Terra Nova project did not receive the same kind of assistance from government to cover the GBS cost.

- Therefore, developers chose to use a Floating Production Storage and Offloading (FPSO) because it would be significantly cheaper than a GBS and take less time to build. A $200 million contract to design and build the FPSO’s steel hull was given to a Korean company.

- It was the first of its kind off the coast of NL. Learning and unexpected delays and higher than estimated costs and loss in royalties...
  - Several instances, resulted in production stopping, e.g. between 2004 and 2006, production was stopped five times.
Terra Nova

- Terra Nova is the first harsh environment development in North America to use a Floating Production Storage and Offloading (FPSO) vessel.

- The reservoir has an expected life of 15-17 years.

- It is estimated to contain over one billion barrels of oil in place, of which about 500Mbbl of oil are recoverable.
White Rose

- White Rose was discovered in 1984 and started 2005.
- Two past projects from which to learn.
- Husky eventually decided to move forward with the White Rose project. But they used extra time to reassess the project.
- Suggestion was using a GBS to produce more jobs. But finally an FPSO was approved under some conditions.
- The life of the field is estimated at 12-15 years.
- 478 million barrels of recoverable oil.

The White Rose Production, Storage, and Offloading Vessel, n.d.
Hebron

- With 707 million barrels of retrievable oil is the second largest in the province after Hibernia.
- However, different from other fields in the province:
  - *its oil is of a heavier quality, meaning that it is harder (more expensive) to extract, and refine. This oil would sell for less than the lighter oil found in other fields.*
- Government’s high demands including:
  - *Higher royalties*
  - *Building another GBS*
- The Hebron Project Development Application was submitted to the Canada-Newfoundland and Labrador Offshore Petroleum Board on April 15, 2011.
- Bull Arm, Trinity Bay, NL is one of the main construction sites for the Hebron Project. Gravity Based Structure (GBS)
Hebron

Hebron Utilities Process Module (UPM) departing Ulsan, Korea on the heavy lift vessel, the Blue Marlin.

The GBS consists of a reinforced concrete structure designed to withstand sea ice, icebergs and meteorological and oceanographic conditions.

Time-lapse video shows 4-year progress of Hebron oil platform
Existing and Approved Projects

**Monthly Production - Hibernia**

**Monthly Production - Terra Nova**

**Monthly Production - White Rose & North Amythyst**

*Data Source: CNLOPB*
Existing and Approved Projects

Hibernia (1,645)
1,011 MM bbls (61%) produced
$634 MMM blls (39%) remaining

Source: Author’s calculation based on CNLOPB Jan 17, 2017 forecast

Terra Nova (506)
294 MM bbls (78%) produced
112 MM bbls (22%) remaining

Source: Author’s calculation based on CNLOPB Jan 17, 2017 forecast

White Rose, SWRX & NA (478)
273 MM bbls (57%) produced
206 MM bbls (43%) produced

Source: Author’s calculation based on CNLOPB Jan 17, 2017 forecast

Hebron (707)

Source: Author’s calculation based on CNLOPB Jan 17, 2017 forecast
Existing and Approved Projects

1,678 MM bbls (50%) produced
1,657 MM bbls (50%) remaining

Total Offshore (3,335)

50% produced and 50% remaining!

Source: Author's calculation based on CNLOPB Jan 17, 2017 forecast
"Reserves" are proven by drilling testing and interpretation of geological, geophysical and engineering data and are considered recoverable

"Resources" are volumes expressed at 50% probability and are assessed to be technically recoverable but are not delineated and economic viability not established
ROYALTIES
Royalties

- **Constitution Act, 1982** gives provinces
  - exclusive power to make laws dealing with the development, conservation and management of nonrenewable resources and forestry resources,
  - and to regulate the rate of primary production from these resources.
  - Parliament has paramount jurisdiction to regulate interprovincial and export trade in natural resources, and both levels of government are given full powers of taxation. *(The Canadian Encyclopedia)*

- The provincial governments retained ownership of minerals and gave only restricted development rights (by means of leases) to companies conducting exploration for minerals such as petroleum and natural gas.
Royalties

- Government (owner) problem:
  \[
  \max \text{ Present Value of Total Net Royalties} \\
  \text{Royalty Rates}
  \]

- Subject to:
  - **Timely development**
  - **Potential Investors, Competing Investment Opportunities**
  - **Uncertainty**
  - **Other Objectives (employment, R&D, facilitating future developments, ...)**
  - ...
NL Royalties – Key Terms

- **Gross Revenue** = gross sales revenue less eligible transportation costs to the point of sale
- **Net Revenue** = gross revenue less eligible project costs
- **Simple Payout** = point when cumulative revenue equals cumulative costs
- **Basic Royalty** = some specified percentage of gross revenue
- **Net Royalty** = some specified percentage of net revenue
- **Return Allowance** = allowed rate of return on unrecovered costs
- **Net Royalty Payout** = cumulative revenue equals cumulative costs plus a specified return allowance on any previously unrecovered cost
- **LTGBR** = Long Term Government Bond Rate
- **CPI** = Consumer Price Index
## Royalties Regime

<table>
<thead>
<tr>
<th></th>
<th>Hibernia</th>
<th>Terra Nova</th>
<th>White Rose Original</th>
<th>White Rose Extend.</th>
<th>Hebron</th>
<th>Generic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic Rate</strong></td>
<td>1 - 5%</td>
<td>1 - 10%</td>
<td>1 - 7.5%</td>
<td>1 - 7.5%</td>
<td>1% to payout</td>
<td>1 - 7.5%</td>
</tr>
<tr>
<td><strong>Tier 1 Rate</strong></td>
<td>30%</td>
<td>30%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Tier 1 Allowance</strong></td>
<td>15%</td>
<td>10% + CPI</td>
<td>5% LTBR</td>
<td>5% LTBR</td>
<td>5% LTBR</td>
<td>5% + LTGBR</td>
</tr>
<tr>
<td><strong>Tier 2 Rate</strong></td>
<td>12.5%</td>
<td>12.5%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Tier 2 Allowance</strong></td>
<td>18% + CPI</td>
<td>18% + CPI</td>
<td>15%+LTBR</td>
<td>15%+LTBR</td>
<td>15%+LTBR</td>
<td>15% LTBR</td>
</tr>
<tr>
<td><strong>Tier 3 Rate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.5%</td>
<td></td>
</tr>
<tr>
<td><strong>Tier 3 Allowance</strong></td>
<td></td>
<td></td>
<td>Tier 1 &amp; $50 US</td>
<td>Tier 1 &amp; $50 US</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LTBR: Long Term Government of Canada Bond Rate (10 year).
CPI: Consumer Price Index
## NL Royalty Structure, Rates & Tiers

### Hibernia Project

<table>
<thead>
<tr>
<th>Royalty Regime</th>
<th>Hibernia Main Field (PL 1001)</th>
<th>Hibernia AA Blocks (Within PL 1001)</th>
<th>Hibernia South Extension Unit (Within PL 1001)</th>
<th>Hibernia South Extension Unit PL 1005 &amp; EL1093 (EL1093 is now PL1011)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic Royalty</strong></td>
<td>1% first 3 million barrels (Production start-up) and 18 months after Production start-up. 2% until earliest of: (i) Next 18 months; or (ii) Production exceeds 120 mmbls 3% until earliest of: (i) Next 18 months; or (ii) Production exceeds 194 mmbls 4% until earliest of: (i) Next 18 months; or (ii) Production exceeds 268 mmbls 5% Thereafter</td>
<td>* Basic Royalty calculated for the PL1001 license (royalty ring fence). * Rates and thresholds as per Hibernia Main field section of table</td>
<td>* Basic Royalty calculated for the PL1001 license (royalty ring fence). * Rates and thresholds as per Hibernia Main field section of table</td>
<td>5% from 1st Production</td>
</tr>
<tr>
<td><strong>Net Royalty</strong></td>
<td><strong>Net Royalty Return Allowance</strong></td>
<td>30% 15%</td>
<td><strong>Net and Supplementary Royalty calculated for the PL1001 license (royalty ring fence).</strong> <strong>Rates and Return Allowances as per Hibernia Main field section of table</strong></td>
<td>30% 15% on eligible costs from PL1005/EL1093 only</td>
</tr>
<tr>
<td><strong>Supplementary Royalty</strong></td>
<td><strong>Supplementary Royalty Return Allowance</strong></td>
<td>12.5% 18% plus CPI</td>
<td><strong>Net and Supplementary Royalty calculated for the PL1001 license (royalty ring fence).</strong> <strong>Rates and Return Allowances as per Hibernia Main field section of table</strong></td>
<td>12.5% 18% plus CPI on eligible costs from PL1005/EL1093 only</td>
</tr>
<tr>
<td><strong>Additional Royalty</strong></td>
<td>Not Applicable</td>
<td>12.5% of Net Revenue with Net Royalty Payout Rate reduces to 7.5% with Supplementary Royalty payout</td>
<td>With Net Royalty Payout, 7.5% of Net Revenue when WTI ≥ $50 and an additional 5% of Net Revenue (total of 12.5%) when WTI ≥ $70 Rate reduces to 7.5% with Supplementary Royalty payout</td>
<td>With Net Royalty Payout, 2.5% of Net Revenue when WTI ≥ $50 and an additional 5% of Net Revenue (total of 7.5%) when WTI ≥ $70</td>
</tr>
</tbody>
</table>
### NL Royalty Structure, Rates & Tiers (Cont’d)

<table>
<thead>
<tr>
<th>Royalty Regimes</th>
<th>Terra Nova</th>
<th>White Rose - Current Generic Royalty Regulations</th>
<th>White Rose Expansion</th>
<th>Hebron</th>
<th>Generic Onshore*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic Royalty</strong></td>
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<tr>
<td>Basic Royalty</td>
<td>1% until earliest of:</td>
<td>1% until earliest of:</td>
<td>1% until earliest of:</td>
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<tr>
<td></td>
<td>(i) 50 mmbls</td>
<td>(i) 20% of reserves</td>
<td>(i) 20% of reserves</td>
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<tr>
<td></td>
<td>(ii) Simple Payout</td>
<td>(ii) 50 mmbls</td>
<td>(ii) 50 mmbls</td>
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<tr>
<td></td>
<td>2.5% until Simple Payout</td>
<td>2.5% until earliest of:</td>
<td>2.5% until earliest of:</td>
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<tr>
<td></td>
<td>5% for next 100 mmbls</td>
<td>(i) 100 mmbls</td>
<td>(i) 100 mmbls</td>
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<tr>
<td></td>
<td>7.5% for next 100 mmbls</td>
<td>(ii) Simple Payout</td>
<td>(ii) Simple Payout</td>
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<tr>
<td></td>
<td>10% Thereafter</td>
<td>5% for next 100 mmbls</td>
<td>5% for next 100 mmbls</td>
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<td></td>
<td></td>
<td>7.5% Thereafter</td>
<td>7.5% Thereafter</td>
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<tr>
<td><strong>Net Royalty</strong></td>
<td></td>
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<tr>
<td>Tier 1 Rate</td>
<td>30%</td>
<td>20%</td>
<td>20%</td>
<td></td>
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<tr>
<td>Tier 1 Return</td>
<td>10% plus CPI</td>
<td>5% plus LTGBR</td>
<td>5% plus LTGBR</td>
<td></td>
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<tr>
<td>Allowance</td>
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</tr>
<tr>
<td>Tier 2 Rate</td>
<td>12.5%</td>
<td>10%</td>
<td>10%</td>
<td></td>
<td></td>
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<tr>
<td>Tier 2 Return</td>
<td>18% plus CPI</td>
<td>15% plus LTGBR</td>
<td>15% plus LTGBR</td>
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<tr>
<td>Allowance</td>
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<td></td>
</tr>
<tr>
<td>Additional Royalty</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>6.5% applies after Tier 1 Payout if the monthly average posted WTI price for the month exceeds US$50/bbl.</td>
<td>6.5% applies after Tier 1 Payout if the monthly average posted WTI price for the month exceeds US$50/bbl</td>
<td>Not Applicable</td>
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</table>

*CPI = Canada Consumer Price index*  
*LTBR = Long Term Gov of Canada Bond Rate*  
*Generic Onshore Royalty Regime includes a Royalty Holiday on the first 2 million barrels.*
Hibernia

- Because the oil companies had agreed to build a GBS, which would provide the province with much needed jobs, they were able to bargain for a relatively low royalty rate.

- It had built up provincial infrastructure so that future oil fields could be developed more cheaply, easily and without government assistance.

- Initially royalties hadn’t been tied to production levels. This became an issue years later when oil prices increased and companies wanted to increase production.

- This situation taught the province the importance of establishing a favourable royalty regime.
Terra Nova

- Since they used FPSO government could negotiate higher royalty rates.
White Rose

- Past projects, regulations, taxes and royalties define the investment climate.
- More concrete information help investors to decide faster.
- Husky eventually decided to move forward with the White Rose project. But they used extra time to reassess the project.
- Thus the government moved toward a **generic royalty regime that would apply to all projects beginning with White Rose**. The generic regime was intended to be both fair to the province and encouraging to investors.
  - *This will save time and money that would have been spent on negotiating a specific deal;*
  - *Give oil companies a degree of financial security; oil companies would know what they would be expected to pay in royalties, which would help them evaluate their financial situation prior to getting involved.*
White Rose Extension

- The generic royalty regime had been altered to include a tier 3, or super royalty arrangement, which would kick in during times of very high oil prices. This was simply an act to ensure that if oil prices were exceptionally high, the province, and not just the oil companies, would benefit.

- Province required 5% of equity.
Hebron

- Different from other fields in the province:
  - *its oil is of a heavier quality, meaning that it is harder (more expensive) to extract, and refine. This oil would sell for less than the lighter oil found in other fields.*
- The basic rate is lower than others.
- The tier 3 is still there.
- Equity 5%
New Generic Offshore Oil Royalty

### Basic Royalty

<table>
<thead>
<tr>
<th>R Factor</th>
<th>Basic Royalty Rate (BRR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Oil to R&lt;0.25</td>
<td>1.0%</td>
</tr>
<tr>
<td>0.25≤R&lt;1</td>
<td>2.5%</td>
</tr>
<tr>
<td>1≤R&lt;1.25</td>
<td>5.0%</td>
</tr>
<tr>
<td>R≥1.25</td>
<td>7.5%</td>
</tr>
</tbody>
</table>

### Net Royalty

<table>
<thead>
<tr>
<th>R Factor</th>
<th>Net Royalty Rate (NRR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R &lt;1 (R_{min})</td>
<td>0%</td>
</tr>
<tr>
<td>1≤ R ≤3</td>
<td>10%(NRR_{min}) -- 50%(NRR_{max})</td>
</tr>
<tr>
<td>R &gt;3 (R_{max})</td>
<td>50%</td>
</tr>
</tbody>
</table>

\[
R_T = \frac{\sum_{i=1}^{T} (P_i * Q_i + IR_i) - \sum_{i=1}^{T-1} TRANS_i - \sum_{i=1}^{T} (BR_i + NR_i)}{\sum_{i=1}^{T} (PREDEV_i + CAPEX_i + OPEX_i)}
\]

\[
NR_T = NRR_{MIN} + \frac{R_T - R_{MIN}}{R_{MAX} - R_{MIN}} * (NRR_{MAX} - NRR_{MIN})
\]

\[
NRR_T = 10% + \frac{R_T - 1}{3 - 1} * (50% - 10%) = 10% + \frac{R_T - 1}{2} * 40%
\]

\[
NR_T = (P_T * Q_T + IC_T - TRANS_T - CAPEX_T - OPEX_T) * NRR_T
\]
New Generic Offshore Oil Royalty – Illustrative Example

<table>
<thead>
<tr>
<th>Assumed R</th>
<th>BRR</th>
<th>Assume Base for Basic Royalty</th>
<th>NRR</th>
<th>Assumed Base for NR</th>
<th>Net Royalty</th>
<th>Total Royalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.0%</td>
<td>$200.00</td>
<td>0.0%</td>
<td>$50.00</td>
<td>$0.00</td>
<td>$2.00</td>
</tr>
<tr>
<td>0.5</td>
<td>2.5%</td>
<td>$200.00</td>
<td>0.0%</td>
<td>$50.00</td>
<td>$0.00</td>
<td>$5.00</td>
</tr>
<tr>
<td>1</td>
<td>5.0%</td>
<td>$200.00</td>
<td>10.0%</td>
<td>$50.00</td>
<td>$5.00</td>
<td>$10.00</td>
</tr>
<tr>
<td>1.2</td>
<td>5.0%</td>
<td>$200.00</td>
<td>14.0%</td>
<td>$50.00</td>
<td>$7.00</td>
<td>$10.00</td>
</tr>
<tr>
<td>1.5</td>
<td>7.5%</td>
<td>$200.00</td>
<td>20.0%</td>
<td>$50.00</td>
<td>$10.00</td>
<td>$15.00</td>
</tr>
<tr>
<td>2</td>
<td>7.5%</td>
<td>$200.00</td>
<td>30.0%</td>
<td>$50.00</td>
<td>$15.00</td>
<td>$15.00</td>
</tr>
<tr>
<td>3</td>
<td>7.5%</td>
<td>$200.00</td>
<td>50.0%</td>
<td>$50.00</td>
<td>$25.00</td>
<td>$25.00</td>
</tr>
<tr>
<td>4</td>
<td>7.5%</td>
<td>$200.00</td>
<td>50.0%</td>
<td>$50.00</td>
<td>$25.00</td>
<td>$25.00</td>
</tr>
</tbody>
</table>

\( R = \frac{\text{(cum gross sales & incidental Revenue minis cum transportation costs minus basic and net royalty paid in prior month)}}{\text{(cum pre-development, capital and Operating costs)}} \)
Article 82 of United Nations convention on the Law of the Sea (UNCLOS) requires that parties make annual payments or in-kind contributions, with respect to resource exploitation, including oil & gas production on their continental shelves beyond 200 miles (grants a five year grace period and then starting at one per cent after five years of production and levelling out at seven per cent after 12 years). The payments go an international body, which is then obliged to distribute these payments to UNCLOS States Parties based on equitable criteria, bearing in mind the needs of developing countries. (Wylie Spicer, 2015).

So far, producing oil projects off Newfoundland and Labrador are all located within Canada’s 200-mile (370-kilometre) exclusive economic zone.

Newfoundland and Labrador has already issued exploration licences on the Outer continental shelf (OCS) and more calls for bids have been issued recently.

Oil development in the Flemish Pass Basin, Norway’s Statoil and Husky finds, including Bay du Nord, are roughly 500 kilometres out and well beyond the 200-mile limit. About 300 to 600 million bbl of recoverable oil have been discovered, and if this asset is developed, Canada’s Article 82 obligations will be triggered.
Implementation of UNCLOS

- Article 82 is somehow unprecedented as it is the only provision in the Convention setting out an international royalty concerning an activity within national jurisdiction. It contains a rough and untested formula to determine payments or contributions (Aldo Chircop, 2009).

- Disputes may arise over the way countries apply their obligation: examples undervaluing or incorrectly valuing payment, assessment of the portion of an oil field that lies under the extended continental shelf as opposed to within 200nm... (Joanna Mossop, 2017).

- Who will pay? Three possibilities, and possible combinations of each
  - Federal government
  - Pass the cost on to the producer in the form of additional royalty payments.
  - Provincial government

- How these royalties will be paid?

- United States: the OCS royalty would be levied from producers.

- The party that’s responsible for making this payment is not Newfoundland and it’s not Statoil. It’s Canada. So Canada has to work its way into this process, so that it can somehow or another generate enough revenue to be able to fulfil its international obligations in Article 82. (Wylie Spicer, 2015).
Implementation of UNCLOS

- The sharing of benefits from offshore resources has long been a contentious legal and political issue -> Atlantic Accord
- Could NL be required to pay?
- Overall, Atlantic Accord envisions treating NL offshore oil & gas resources as if they were land-based, likely in recognition of the fact that mineral resources are generally under provincial jurisdiction.
- The federal government has not asserted itself in any significant way with regards to the royalty structure of NL. In practice, operators interact only with NL representatives. Rather, the federal role appears to be administrative. (Petur Radevski, 2015)
Implications of UNCLOS

- Typically, offshore development practices operate on long time frames that can span decades.

- Today’s prospecting and exploration license may become a development and production license, perhaps between ten and 20 years from initial activity. The production license can be expected to last for 20 years or more. In general, the deeper the offshore activity, the more likely that costs will be higher and, consequently, the longer the period needed for cost-recovery (Aldo Chircop, 2009).

- Until these issues are determined at the domestic level, industry might perceive uncertainty with respect to Article 82.

- This will undermine NL resources competitiveness.
ENVIRONMENT
The One Ocean

- Oil companies aren’t the only ones benefiting from the ocean – petroleum activity has direct effect on fisheries.
- In the province of Newfoundland and Labrador a unique model has been developed to promote effective communication among the fishing and offshore petroleum industries.
- Successful coexistence between the offshore fishing and petroleum industries in Newfoundland and Labrador.
- One Ocean was launched in 2002 with a mandate to serve as the medium for information exchange regarding industry operational activities between the fishing and petroleum industries.
- As an informed entity, One Ocean initiates research and industry specific activities to meet industry challenges and promotes cooperation, transparency and information dissemination between the two industry sectors.
- The One Ocean concept is relatively straightforward: provide a neutral, practical forum that facilitates mutual understanding and effective communication between the fishing and petroleum sectors. (Maureen Murphy Rustad, 2011)

http://www.oneocean.ca/index.htm
PROJECT-BASED ENVIRONMENTAL ASSESSMENTS

- The Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) undertakes an Environmental Assessment (EA) of petroleum exploration and production works or activities proposed for the Newfoundland and Labrador Offshore Area for which an EA, pursuant to the Canadian Environmental Assessment Act 2012 (CEAA 2012) is not required. EAs required by the C-NLOPB are referred to as Accord ActEAs. (Source: C-NLOPB)

- Designated Projects under CEAA 2012, are managed by the Canadian Environmental Assessment Agency (CEA Agency).
ENVIRONMENTAL ASSESSMENT (EA) PROCESS UNDER THE ATLANTIC ACCORD ACTS

ACCORD ACT EAs

STEP 1:
Project Description (PD) Review by the C-NLOPB (Up to 1 Week)
- Proponent submits PD
- PD is reviewed for completeness.
- PD is accepted or returned for more information
- A Draft Scoping Document (SD) is created.

STEP 2:
External Review of PD and Draft SD (Up to 2 Weeks)
- PD and Draft SD forwarded to government departments and agencies, One Ocean, and Fishing Interest Organizations.
- PD and draft SD posted on EA Registry for public review and comment

STEP 3:
Consolidation of Comments and Finalization of SD (Up to 1 Week)
- Draft SD revised in consideration of comments received.
- Final SD and comments within the scope of the EA transmitted to the Proponent.
- Comments and Final SD posted on the EA Registry.

STEP 4:
Review of Draft EA Report (Up to 8 weeks)
- Proponent submits EA Report, including a report on consultations
- EA Report reviewed for completeness.
- Draft EA Report forwarded to government departments and agencies, One Ocean, and Fishing Interest Organizations for review.
- Draft EA Report posted on the EA Registry for public comment

STEP 5:
Consolidation of Comments on EA Report (Up to 1 Week)
- Comments within the scope of EA consolidated and forwarded to proponent for a response.
- All comments posted on the EA Registry.

STEP 6:
Review of Proponent Response to EA Report Comments (Addendum) (Up to 3 Weeks)
- Addendum sent to the relevant reviewers for consideration
- Outstanding comments forwarded to Proponent, if applicable.
- Addendum on EA Report revised, as appropriate, by Proponent

STEP 7:
Determining the Likelihood of Significant Adverse Environmental Effects (Up to 3 Weeks)
- Technical review of the EA Report and associated documents is complete if EA Report and Proponent’s response addresses all outstanding issues.
- A determination is made on the likelihood of significant adverse environmental effects of the project
- Proponent receives determination with applicable conditions

Follow-up and Enforcement

- Opportunity for public input
- Timeline for EA process completion is up to 19 Weeks
- Timelines do not include time required by the proponent to provide information
- Consultation with Indigenous People may be integrated into the process at the request of governments
Strategic Environmental Assessment (SEA) is a broad-based approach to environmental assessment that examines the environmental effects which may be associated with a plan, program or policy proposal and that allows for the incorporation of environmental considerations at the earliest stages of program planning.

SEA typically involves a broader-scale environmental assessment (EA) that considers the larger ecological setting, rather than a project-specific environmental assessment that focuses on site-specific issues with defined boundaries. The C-NLOPB decided in 2002 to conduct a SEA of portions of the Newfoundland and Labrador Offshore Area that may have the potential for offshore oil and gas exploration activity but that were not subject to recent SEA nor to recent and substantial site-specific assessments. (C-NLOPB)

There are currently no active SEAs

http://www.cnlopb.ca/sea/
THANK YOU FOR YOUR ATTENTION