Offshore Newfoundland and Labrador
Gas Flaring Reduction

- Region and Production Overview
- Legislation
- Gas Conservation
- Gas Flaring Reduction Achievements
- Improvement Opportunities
Newfoundland and Labrador Offshore Area

- Relatively New Oil Producing region
- Potentially prospective area >200,000 sq. miles
- Wells Drilled (July 2007): 288
  - Exploration 138
  - Delineation 44
  - Development 106
- 49 Significant Discoveries
- 6 Commercial Discoveries
Currently concentrated on Oil production

For Year 2006
- Oil
  \[= 17,622 \times 10^3 \text{ m}^3\]
- Gas
  \[= 3,568 \times 10^6 \text{ m}^3\]
- Over 800 million barrels of oil produced in 10 years
- Hebron Field
Newfoundland and Labrador Offshore Area Oil Reserves and Resources 2006

Source: CNLOPB Annual Report 2005
Newfoundland and Labrador Offshore Area Gas Resources 2006

- Whiterose: 2722
- North Bjarni: 2247
- Hibernia: 1794
- Gudrid: 924
- Bjarni: 863
- North Dana: 472
- Ben Nevis: 429
- Springdale: 238
- South Mara: 144
- North Ben Nevis: 116
- Hopedale: 105
- Snorri: 105
- Terra Nova: 45
- Trave: 30

Billion cu. Ft.
Gas Conservation Legislation

- Accord Act Section 154 addresses “Waste” and Paragraph (f) deals with gas flaring specifically: *the escape or flaring of gas that could be economically recovered and processed or economically injected into an underground reservoir.*

- Production and Conservation Regulations: *The Chiefs may approve the flaring or venting of gas during a production operation at a rate and volume and for the period set out in the approval where the flaring or venting does not constitute waste or an undue safety hazard.*

- Development Plan Approvals
GAS DISPOSITION: OIL FIELDS

- Gas Utilization in the Field
- Gas Utilization in other Fields
- Market Gas
- Gas Storage

Source: Petro-Canada
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<th>Gas Flaring</th>
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<tbody>
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<td><strong>Offshore Newfoundland and Labrador</strong></td>
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<tr>
<td>➢ <strong>During production</strong></td>
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<td>an operator is issued an approval</td>
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<td>➢ <strong>During Start-up</strong></td>
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<td>larger gas flaring volumes are permitted as oil production is stabilized</td>
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<td><strong>During Production</strong></td>
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<td>Once gas compression is initiated, gas flaring is monitored</td>
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<td>Gas Flare Volumes are reduced based on expected operating efficiency of gas compression system and facilities</td>
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Gas Flaring
Offshore Newfoundland and Labrador

- Gas Flaring Approval is issued for six month period (1 year later)

- Prior to issuing an approval
  Examination of performance and meet with operators to discuss opportunities to reduce gas flaring

- If Gas compression is down for a period of time, the operator is expected to reduce oil production

- Each operator has put in place a gas flaring management system and is considered by operational personal

- As production from the field increases, Gas flaring has not increased the Board seeks further reduction
Offshore Newfoundland and Labrador
Gas Flaring Reduction and Achievement

Flared Gas Yearly Cumulative Totals
And Daily Average Oil Produced

- Volume of Gas Flared (10^6 m^3)
- Daily Average Oil Production (m^3/d)

- Hibernia
- Terra Nova
- White Rose
- Daily Average Oil Produced
Offshore Newfoundland and Labrador Gas Flaring Reduction and Achievement

**Total Gas Usage Breakdown**

- **Fuel Gas**
- **Flared Gas**
- **Gas Injected**

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Improvement Opportunities for Gas Flaring Reduction

- Commissioning
  lessons learned

- Operations
  ✓ Maintenance/Spare Parts
  ✓ Operating Procedures
  ✓ Elimination of Background Flare

- Working with Operators

- Tracking the gas flare amounts on a monthly basis
Gas Flaring Reduction

Source: Government Newfoundland and Labrador