East Coast Canada’s – Offshore Regulatory Environment

Kim Doane
Manager, Petroleum Resources Branch
Nova Scotia Department of Energy

IOGCC – Council of State Oil and Gas Attorneys
October 17, 2011
Presentation Outline

• East Coast Offshore
• Offshore Accords
• Status on Regulatory Reform
  – FORRI, OHS, Wells Recommendations
• Environmental Items
  – SEA, Protected Areas
• Strategic Plan
Offshore Atlantic Canada Gas Resources

- Nova Scotia

Newfoundland and Labrador

Commercial / Discovered / Potential
2 / 16 / >85 tcf *

* Old estimate
The Accords

- 1984 – Supreme Court of Canada ruling (NL)
- 1985 – Canada-Newfoundland Atlantic Accord
- 1986 – Canada-Nova Scotia Offshore Petroleum Resources Accord
- 1986/87 – Canada-Newfoundland and Labrador Atlantic Accord Implementation Newfoundland and Labrador Act
- 1988 - Canada-Nova Scotia Offshore Implementation Act
Accord Acts

• Gives Province right to set and receive royalties

• Administrative responsibility to an appointed offshore board

• Retains right for Energy Ministers to:
  ▪ give joint directives in specific circumstances
  ▪ approve or reject CNSOPB/CNLOPB decisions in specific areas of activity (fundamental decisions)

• In all other areas, gives the Boards decision making authority within the Accord Acts and Regulations
Regulatory Structure

Provincial Governments: Newfoundland and Labrador Nova Scotia

Accord Implementation Act

Government of Canada

Accord Implementation Act

CNLOPB CNSOPB

Administrative & Regulatory Role Offshore Area

Fundamental Decisions

Exploration
Board Mandates

1. Resource Management
2. Operations & Safety
3. Environmental Protection
4. Canada - NL Benefits/NS Benefits
Frontier Offshore Regulatory Renewal Initiative (FORRI)

• Built on Smart Regulation Initiative and Atlantic Energy Roundtable

• Partnership of federal, provincial and territorial departments and regulators
  – Participants: NRCan, NEB, CNSOPB, CNLOPB, NS , NL, BC, Quebec, NB, PEI, Yukon, Northwest Territories, Nunavut, others

• Consistent with international jurisdictions and Red Tape Reduction Initiative
What are we trying to achieve with FORRI?

• The FORRI vision is essentially a *goal-oriented approach*, developing a regulatory regime that is characterized by:
  - improved safety, environmental and conservation outcomes
  - flexibility and continuous improvement
  - minimal administrative burden
  - clarity
  - international competitiveness
FORRI Work Plan

Existing Regulations

- Drilling
- Production & Conservation
- Installation
- Diving
- Geophysical Operations
- Operations
- Spills & Debris Liability
- Certificate of Fitness

Work Plan

- Completed new Drilling and Production Regulations in Dec. 2010
- Currently working on a consolidated framework regulation (3-4 year project)
Accord Act OHS

- Offshore Occupational Health and Safety (OHS)
  - Amendment to the Accord Acts to insert Part III.I to deal with OHS
  - Lengthy complex multi-jurisdictional effort nearing completion
  - Expect introduction of the draft bill in Canadian parliament, NS and NL legislatures early 2012
  - Will clarify roles and responsibilities for work place parties employees, employers, contractors, suppliers, operators
Wells Recommendations

• Newfoundland Helicopter Crash Inquiry Report
  – Justice Well's recommendations are influencing changes in the NS offshore

• Canada NS Offshore Petroleum Board had already implemented a governance structure to separate safety decision making from economic decisions
  – CSO reports directly to the Board of Directors not to the CEO
  – New measure - the Board of Directors now has created a safety sub-committee to advise it on safety matters

• Further implications of Wells recommendations to be discussed by the three jurisdictions
Protected Areas

• Protected Areas
  - St. Ann's Bank MPA Area of Interest process is underway. NS is working with federal Department of Fisheries to ensure interests are respected.

• Sable Island National Park
  - National Park announced Oct. 17, 2011
  - will enshrine in law current drilling ban on surface of island and within one nautical mile
  - preserves access to petroleum resources under and around the island
  - voluntary amendment by industry of current SDLs on the island to adopt drilling ban
Strategic Environmental Assessment

• Current Strategic Environmental Assessment (SEA) being conducted by CNSOPB
  - covers area of southwestern Scotia Shelf in area of CNSOPB Call for Bids NS 11-1
  - available for public comment period ending Oct. 27, 2011

• Participating in update of SEA being conducted by CNLOPB
  - covers offshore western NL in area of Old Harry prospect
  - draft scope will be out for public comment over the next few weeks
Nova Scotia Offshore Renewal Plan

Action Plan Set In Late 2008

**Geoscience**
1. Resource Analysis Project
2. Data Package Project

**New Policy**
3. Access to Infrastructure Project
4. Data Release Project
5. Rights Issuance Project
6. Research and Development (R&D) Incentives Project
7. Global Competitiveness Project

**Regulation**
8. Coastal Trading Act Project
9. Frontier Offshore Regulatory Renewal Initiative (FORRI) Project
10. Occupational Health and Safety (OHS) Project
11. Drilling Rig Pool Project
12. Extended Rig Duty Relief Project

**Investment Attraction**
13. Interim Investment Attraction Project
Input Data for PFA

- ~70000 km 2D
- ~30000 sq km 3D
- 20 key wells – Std Log suite
- Biostratigraphy data
- Synthetic seismograms
- Variable spatial distribution
Plate Tectonics Project

ION-GX Data Reprocessing

New Refraction Line Acquired

Offshore Morocco Data Reprocessing

Grav Mag Data Reprocessing

Pre, Syn and Post Rift Modeling

Plate Reconstruction

Plate Tectonics – 3D Basin Evolution Model

Seismic interpretation

Strat Model

Build database

Synthetics/Data Conditioning/ base maps/reports and wells

Bible Line Reprocessing

Bio Stratigraphy

Reservoir Quality

GDE maps

Petroleum systems

Source Rock identification and type

Oil typing from seeps and shows

Fluid Inclusions

Thermal Evolution of basin

Vitrinite Reflectance

Rock Eval

AFTA

Geochemistry Project

Volumes & Risks

CRS mapping

External Contractors

Halifax academic/GSC

PFA Project - BEICIP

Energy

NOVA SCOTIA
### PFA Results:

<table>
<thead>
<tr>
<th>Zone</th>
<th>Total Gas Volume (Tcf)</th>
<th>Total Oil Volume (Mbbl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone 1</td>
<td>14</td>
<td>2416</td>
</tr>
<tr>
<td>Zone 3</td>
<td>35</td>
<td>1097</td>
</tr>
<tr>
<td>Zone 5</td>
<td>27</td>
<td>1605</td>
</tr>
<tr>
<td>Zone 6</td>
<td>26</td>
<td>1067</td>
</tr>
<tr>
<td>Zone 4</td>
<td>16</td>
<td>966</td>
</tr>
<tr>
<td>Zone 2</td>
<td>4</td>
<td>798</td>
</tr>
<tr>
<td>Whole Basin</td>
<td>121</td>
<td>7950</td>
</tr>
</tbody>
</table>

**Energy**

**Nova Scotia**
Offshore Marketing Strategy and Implementation Plan

Key Features:

Technical (the geoscience):
- Focus on marketing the PFA first
- One-on-ones with supermajors
- Technical seminars at select international sites, marketing with seismic industry

Non-Technical (strategic media relations):
- Change our current operating reputation
- Ensure our environmental and safety regime is internationally recognized
- Manage media to advance project messages

Completed in March, 2011
(RPS Energy and Cohn&Wolfe)
Questions?

Kim Doane
Manager, Petroleum Resources
Nova Scotia Department of Energy
doaneka@gov.ns.ca
Ph(902) 424-7146

www.gov.ns.ca/energy