

Canadian Arctic Offshore Oil and Natural Gas and EU Energy Diversification: Towards a New Perspective?



Modis image courtesy of Oceandot.com at www.oceandots.com/arctic/canada/melville.php



Outline of Remarks

- The EU and diversification of natural gas resources
- The Atlantic Basin LNG Market
- The Sverdrup Basin/Melville Island Project
- Greenland/Labrador
- Transportation differentials
- Greenland Transfer Facilities
- High Arctic LNG and the EU?



The Atlantic Basin LNG Market

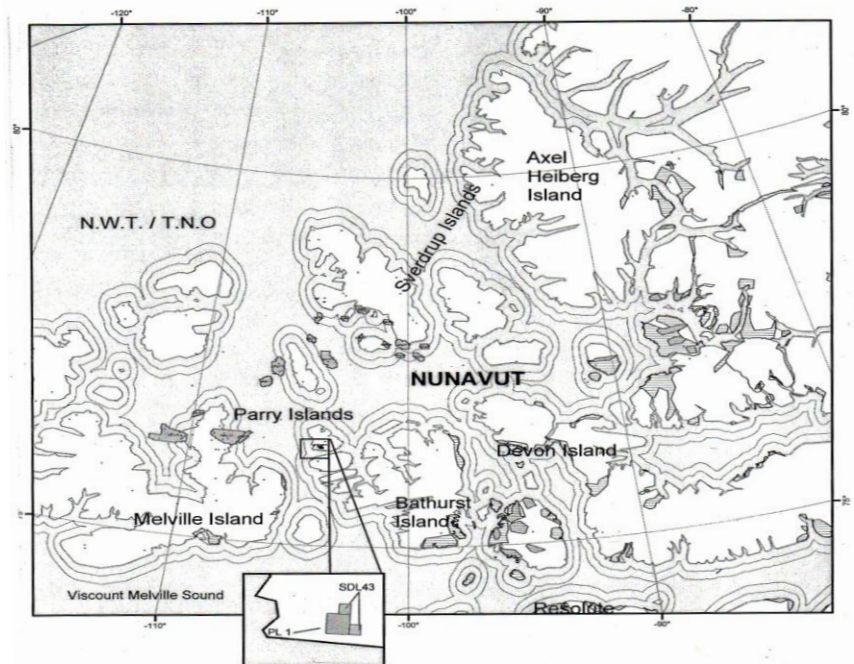
- As opposed to the Pacific Basin
- Include LNG producing countries (Abu Dhabi, Algeria, Egypt, Nigeria, Oman, Qatar, Trinidad and Tobago)
- LNG consumers: Dominican Republic, France, Greece, Italy, Mexico, Portugal, Spain, Belgium, the U.K.
- Future producers; Equatorial Guinea, Norway, Russia, Venezuela
- Future consumers: Germany and the Netherlands

The Sverdrup Basin

Offshore Estimated Undiscovered Natural gas reserves

	----- tcf -----
Sverdrup Basin	8.6
Arctic Alaska	221.3
W. Greenland/ East Canada	51.8
Total N. America	345.07
Total W. Siberia	651.5

Source: USGS (2008) Circum-Arctic Resource Appraisal.
USGS Fact Sheet 2008-3049



The Melville Island Fields

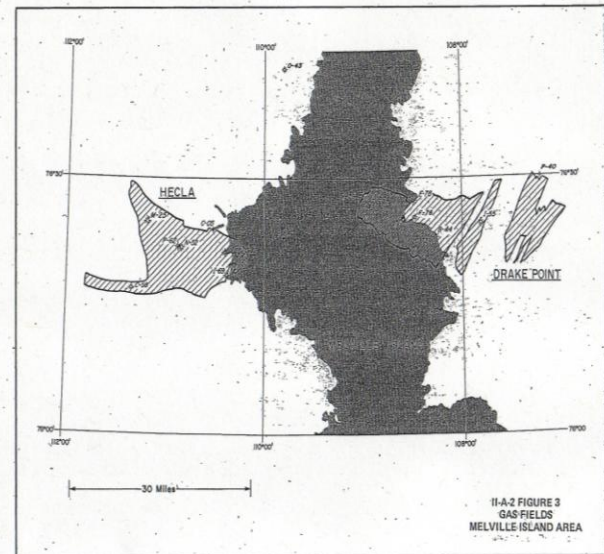
The Project depends on two fields

- Hecla
- Drake Point

Total Proved Reserves

8.7 Tcf

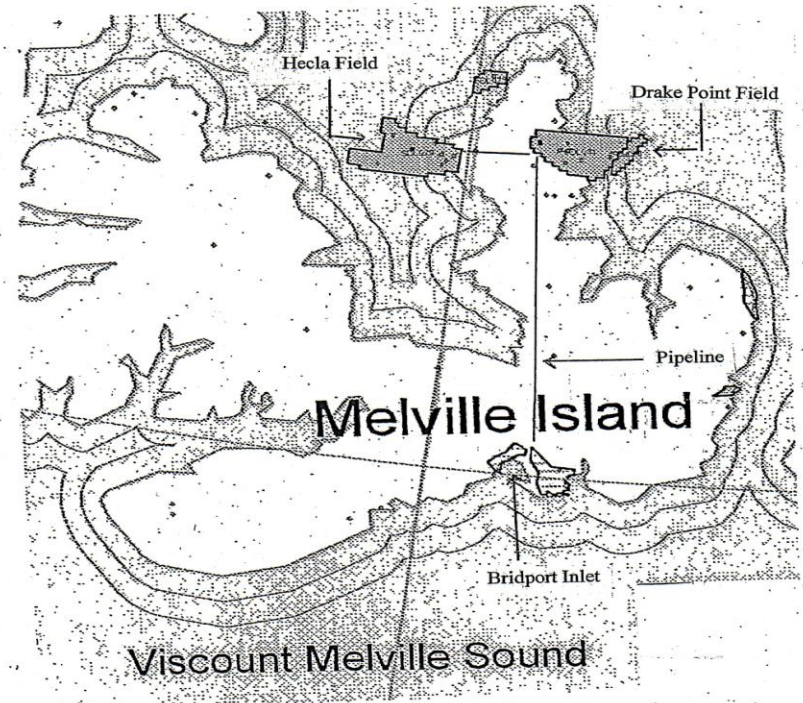
Daily Production 1 billion
ft³/day



Melville Island: The Project

Capital Costs -- \$CAD mio-

Field development	458
161km transmission pipeline	338
Liquefaction facilities	
Bridport Inlet	2,011
7 Arctic Class 7 LNG carriers	1,875
Transit terminal	381
2 x 200,000m ³ LNG carriers	412



Some N. American –EU Transport Differentials

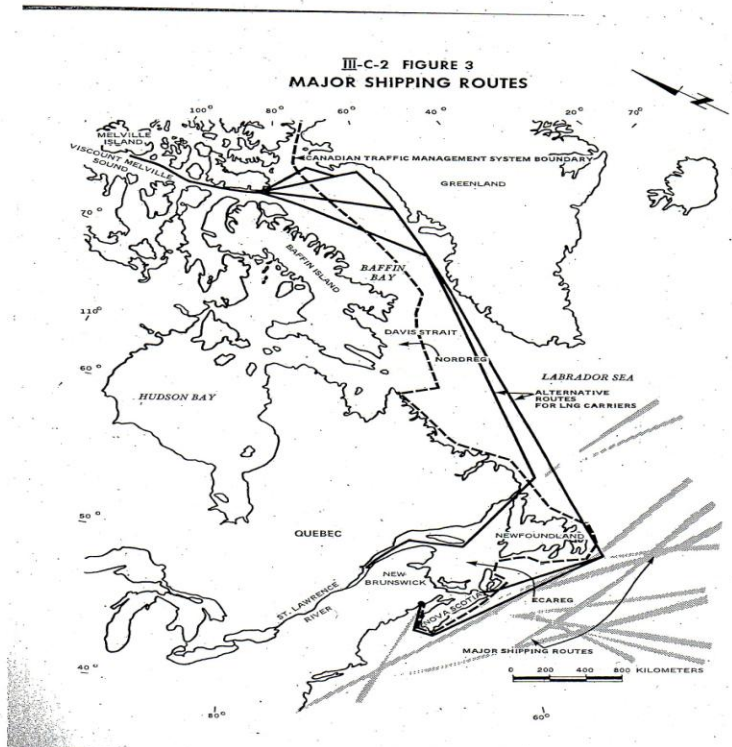
○ To Cove Point Lake Charles Milford Haven Le Havre
From -----nautical miles-----

Melville Is.	3709	5064	3156	3404
Shtokman	4801	6093	2163	2099
Port Harcourt	5293	6131	4162	4209
Arzew	3742	4962	1366	1413
Doha	8465	9685	6089	6136

Source: Asia Maritime, 'Distances.com' at
<http://shippingdistance.com/index.php>.

Accessed October 17, 2008

An EU Option?



An additional LNG tanker
(ca. US\$0.26/MMcfd?)

Reserves on E.

Canadian/Greenland Shelf

- Greenland 6 offshore wells/1 discovery
- Atlantic Canada 28 wells
5 discoveries >3.5Tcf

Nunavut and Greenland
Resource developments

- Sept. Protocol
- Greenland Vote for
independence Nov 25



Some Problems

- Nunavut-Ottawa Relationship
- NAFTA Proportionality
- Hecla/Drake Point Ownership Structure
- Environmental Considerations

Map Credits

Map sources: Indian and Northern Affairs, 'Land and Exploration Maps' Available at http://ww.aicn-inac.gc.ca/act/lan/index_e.html

Arctic Pilot Project (1979)
'Application to the NEB' vol. 2

