

IOGCC Shale Gas Task Force Presentation to the International Committee



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Tucson, AZ

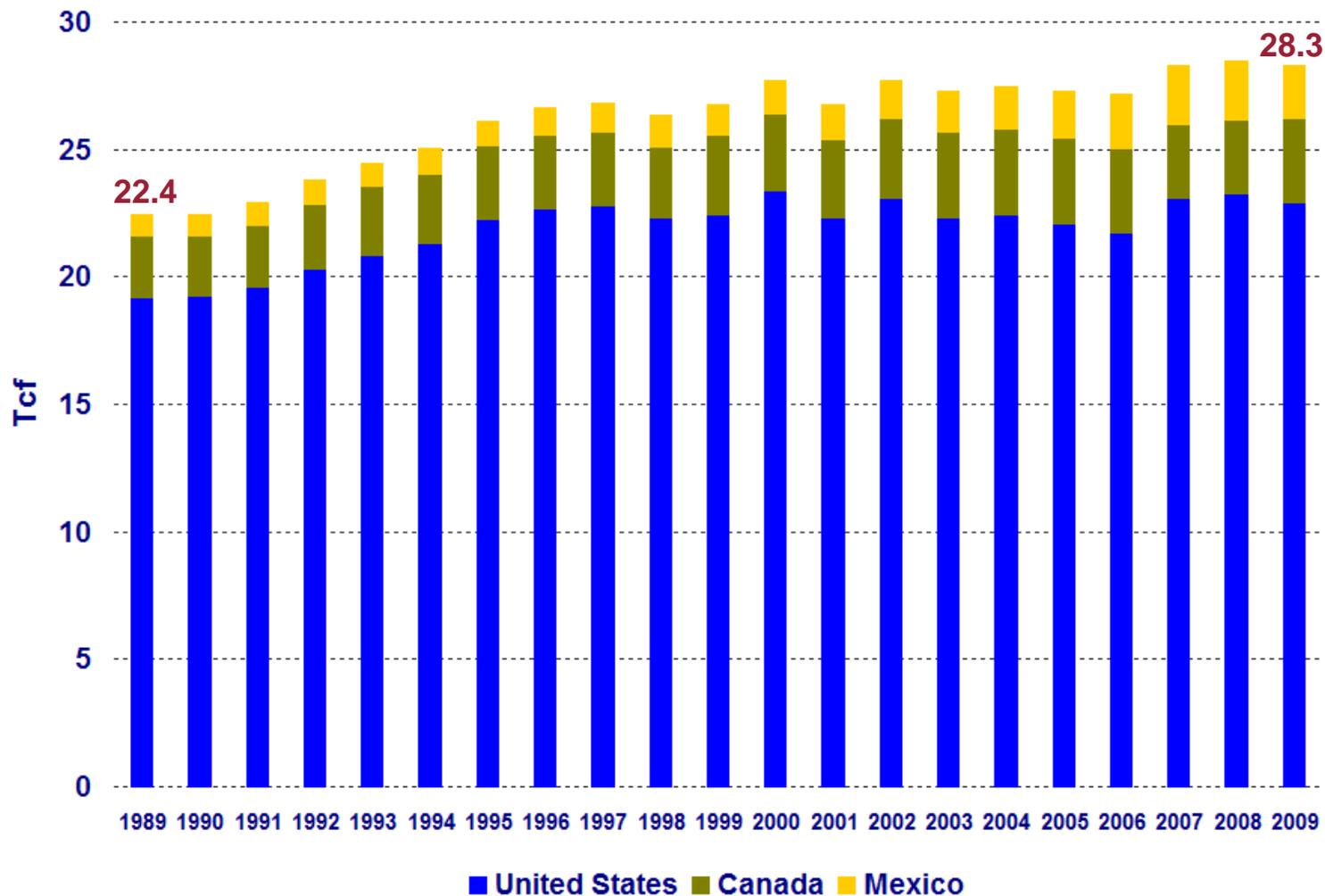
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Overview of Shale Play Development

- Natural gas production from hydrocarbon rich shale formations is one of the most rapidly expanding trends in North American production.
- As traditional sources of natural gas continue to be depleted, new sources of supply, such as shale gas, must be developed in order to continue to meet the energy demands.
- Hydraulic fracturing and horizontal drilling have allowed previously unrecoverable sources of gas to be developed in an economical and environmentally safe manner.
- Because it is located in both traditional and non-traditional production locations, shale gas development presents unique economic opportunities to maximize each province's resources in a manner that is environmentally safe.
- The development of natural resources expands the economy of local communities by creating jobs and indirect economic contributions.
- Provincial governments benefit from increased natural gas production through increased royalty revenues.
- Because of its role in alternative energy strategies and reducing greenhouse gas emissions, natural gas use is expected to continue to rise.

North America Natural Gas Consumption from 1989 to 2009

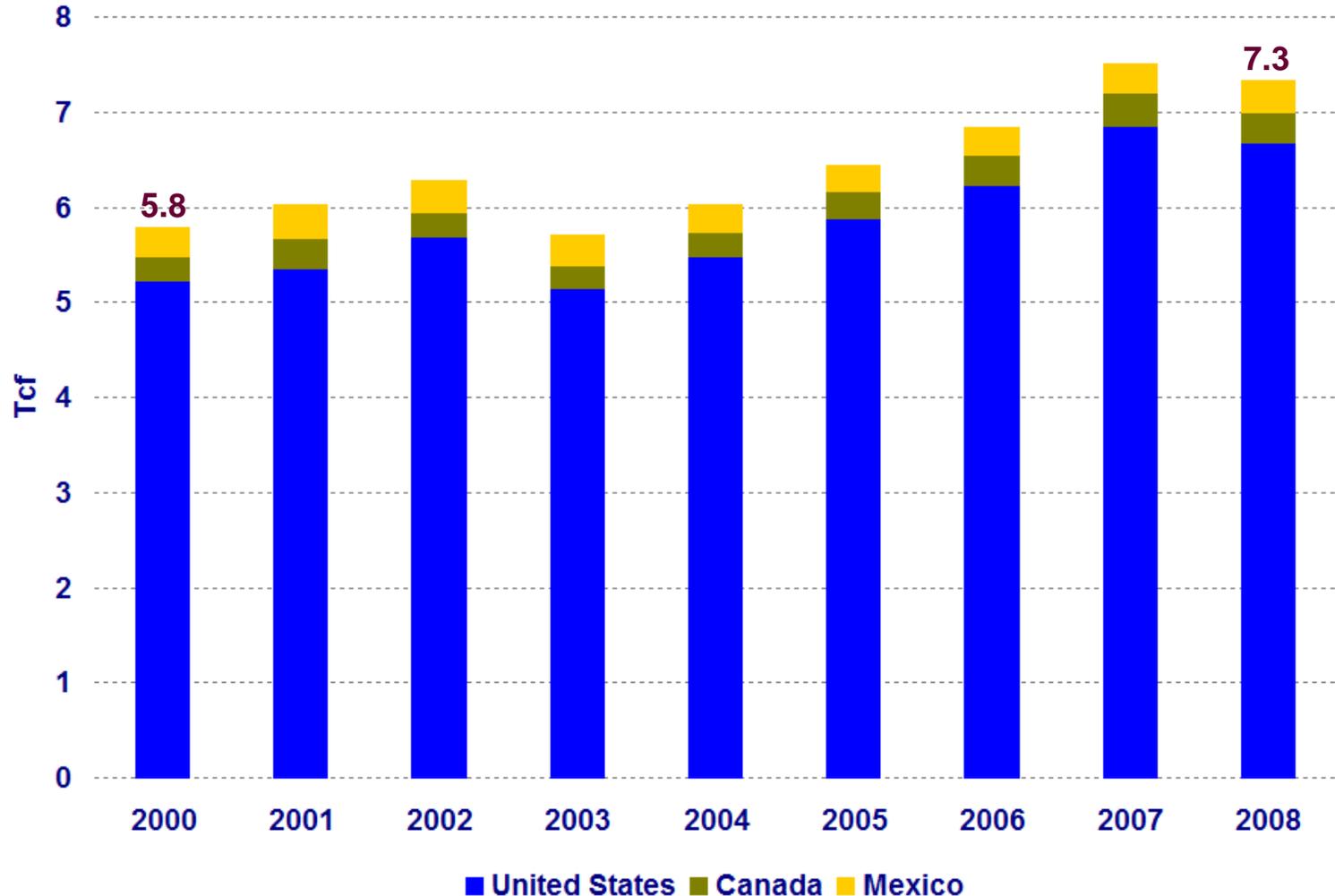
Over the last 20 years, consumption of natural gas has risen by 26 percent.



Source: Based on data from EIA International Energy Statistic, Natural Gas Consumption

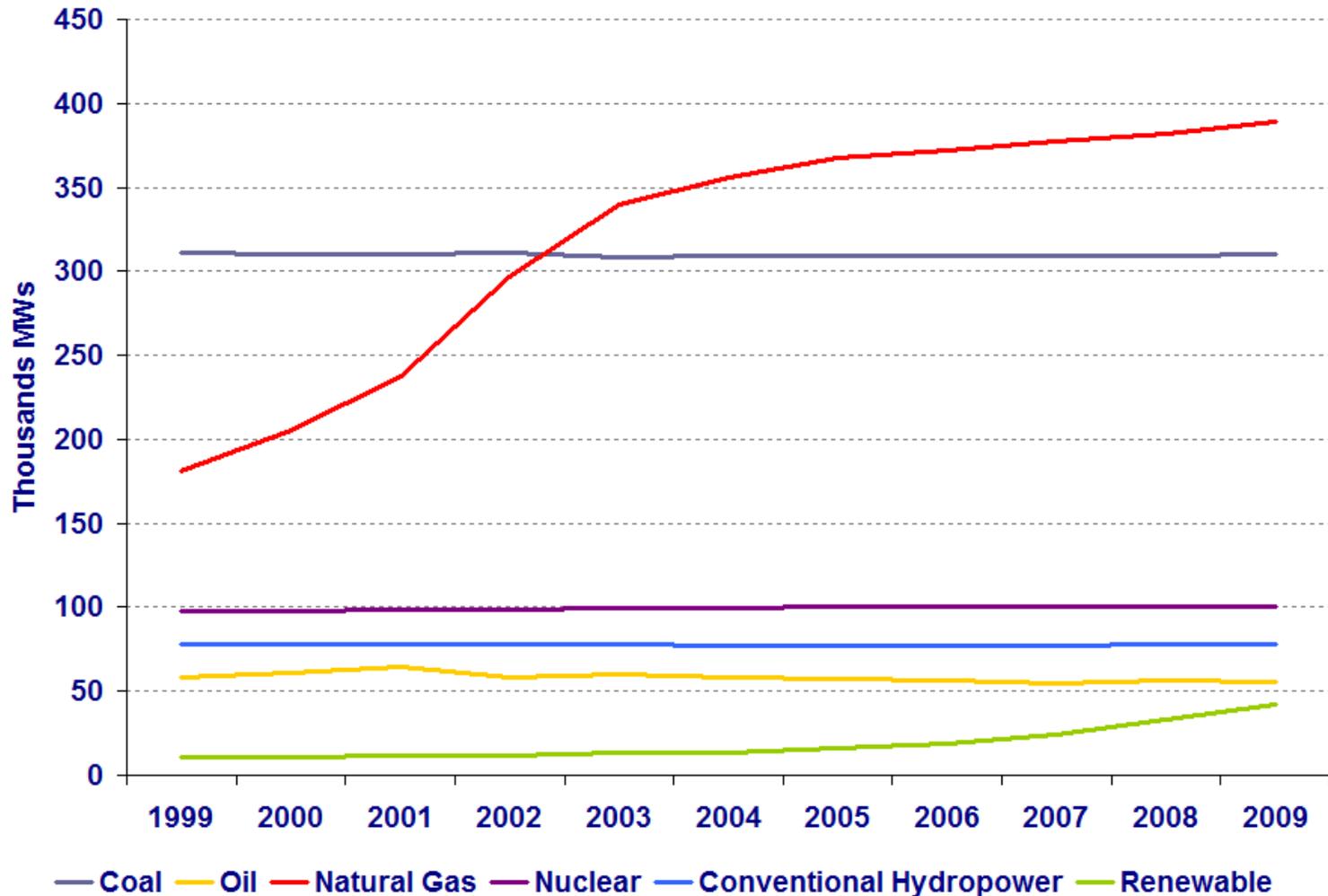
Natural Gas Fuel Use for Electric Power 2000 to 2008

Since 2000, natural gas fuel use in electric power generation has grown 27 percent.



Source: Based on data from Statistics Canada, Mexico Ministry of Energy and EIA Natural Gas Consumption

Existing Net Summer Capacity by Energy Source



Source: Based on data from EIA Annual Energy Review, Electricity 2009

North American Natural Gas Resource Base Could Support Current Levels of Gas Use for Almost 140 Years

U.S. and Canada Natural Gas Resource Base

(Tcf of Economically Recoverable Resource, Assuming Current E&P Technologies)

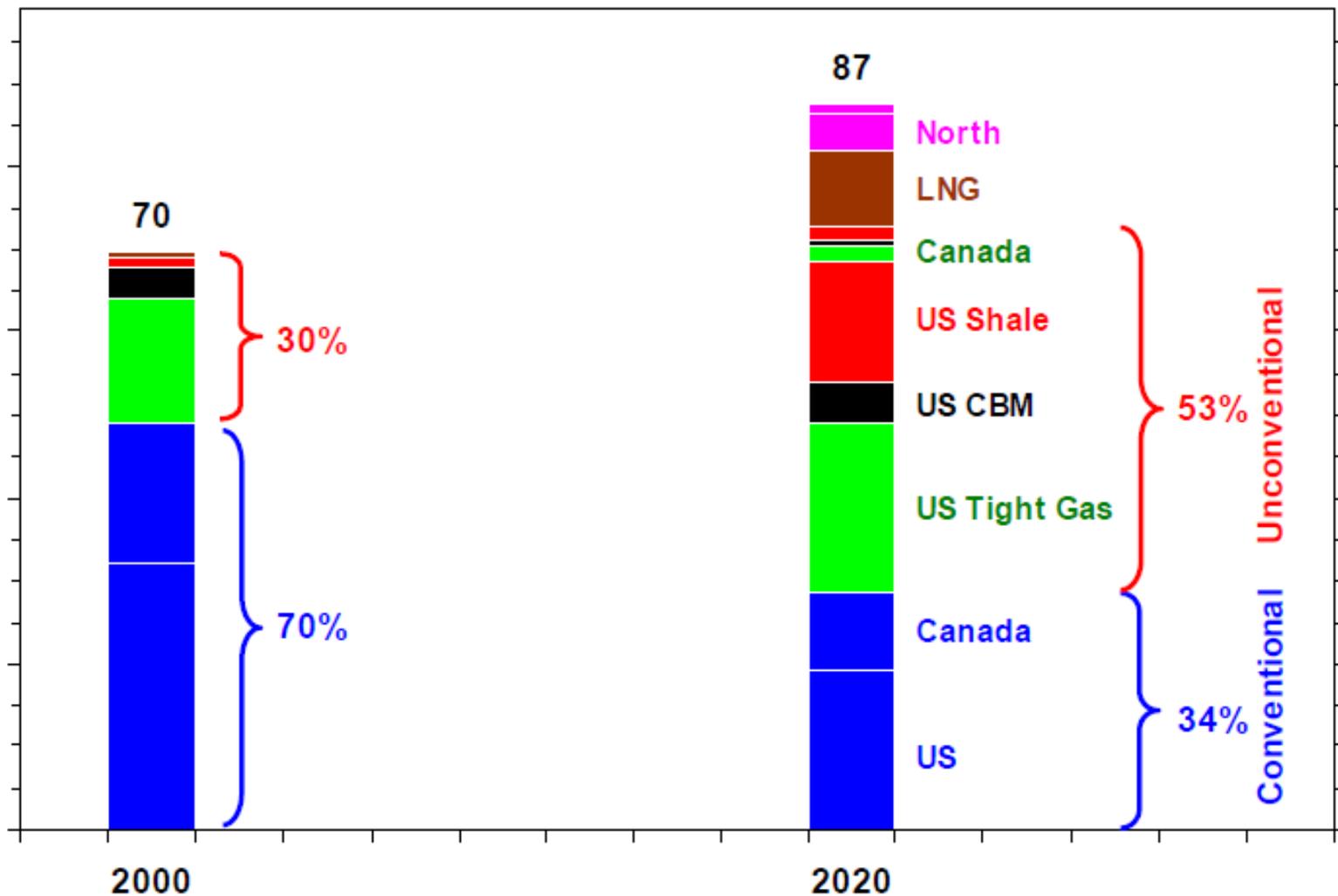
	Proven Reserves	Unproved Plus Discovered Undeveloped	Total Remaining Resource	Shale Resource ¹
Alaska	7.7	153.6	161.3	0.0
West Coast Onshore	2.3	24.6	27.0	0.3
Rockies & Great Basin	66.7	388.3	454.9	37.9
West Texas	27.6	47.7	75.3	17.5
Gulf Coast Onshore	70.1	684.7	754.8	476.9
Mid-continent	37.0	205.0	241.9	133.9
Eastern Interior ²	18.6	795.7	814.3	728.1
Gulf of Mexico	14.0	238.6	252.5	0.0
U.S. Atlantic Offshore	0.0	32.8	32.8	0.0
U.S. Pacific Offshore	0.8	31.7	32.5	0.0
WCSB	60.4	664.0	724.4	508.8
Arctic Canada	0.4	45.0	45.4	0.0
Eastern Canada Onshore	0.0	12.8	12.8	0.0
Eastern Canada Offshore	0.5	71.8	72.3	0.0
Western British Columbia	0.0	10.9	10.9	0.0
US Total	244.7	2,602.6	2,847.3	1,394.5
Canada Total	61.3	804.5	865.8	508.8
US and Canada Total	306.0	3,407.1	3,713.0	1,903.3

1. Shale Resource is a subset of Total Remaining Resource

2. Reference case assumes drilling levels are constant at today's level over time, reflecting restricted access to the full resource development.

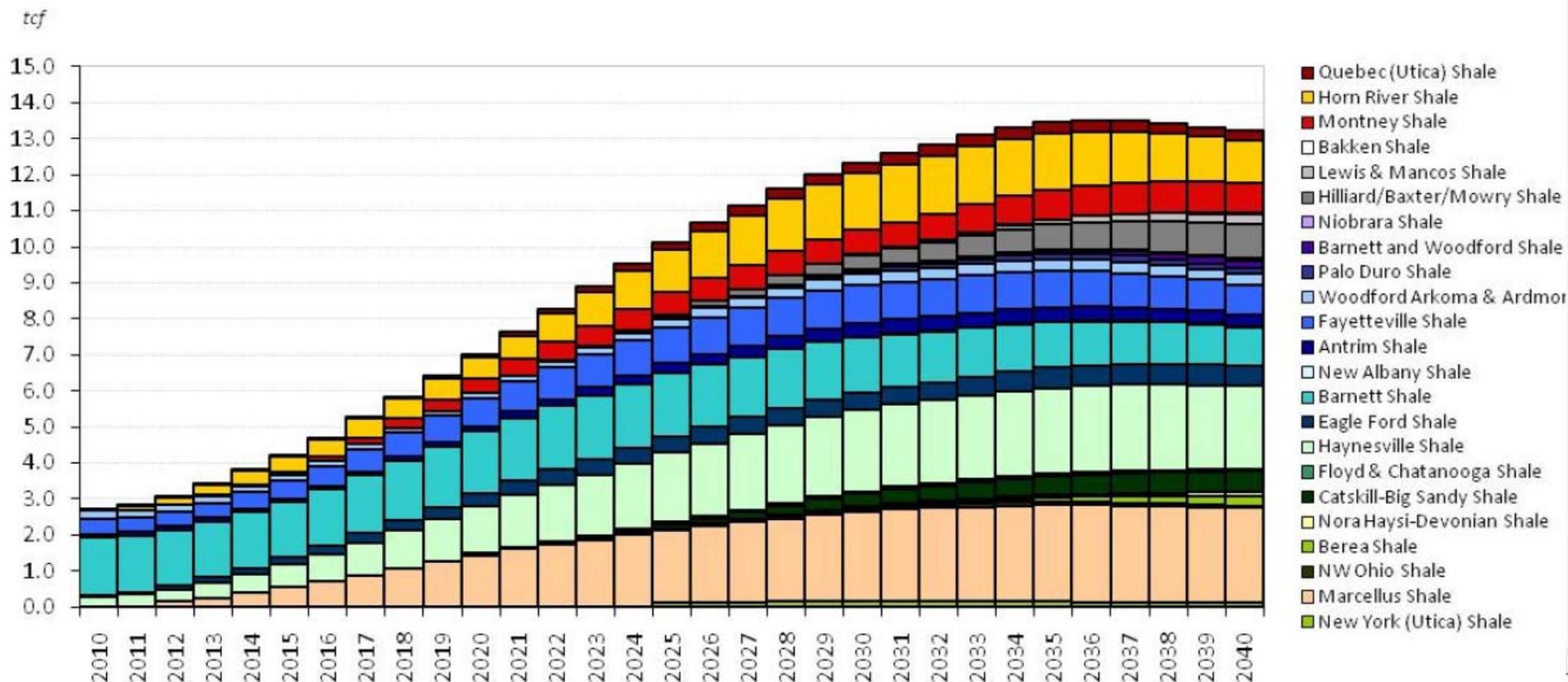
Source: ICF International's Compass Report for July 2010.

North American Unconventional Gas Growth (in Bcf/d)



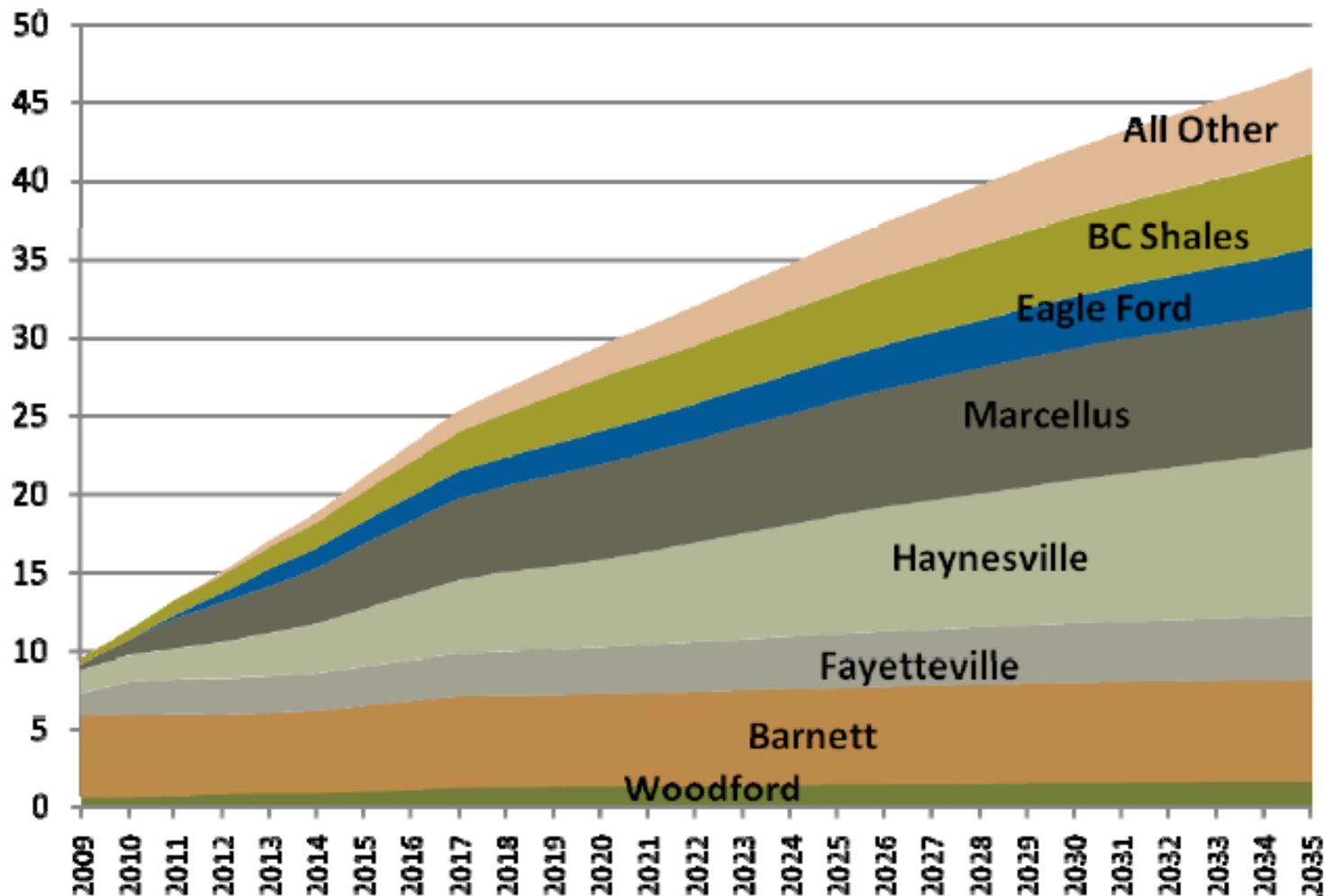
Source: Ziff Energy Group "Shale Gas Outlook to 2020" April 8, 2009

North American Shale Production



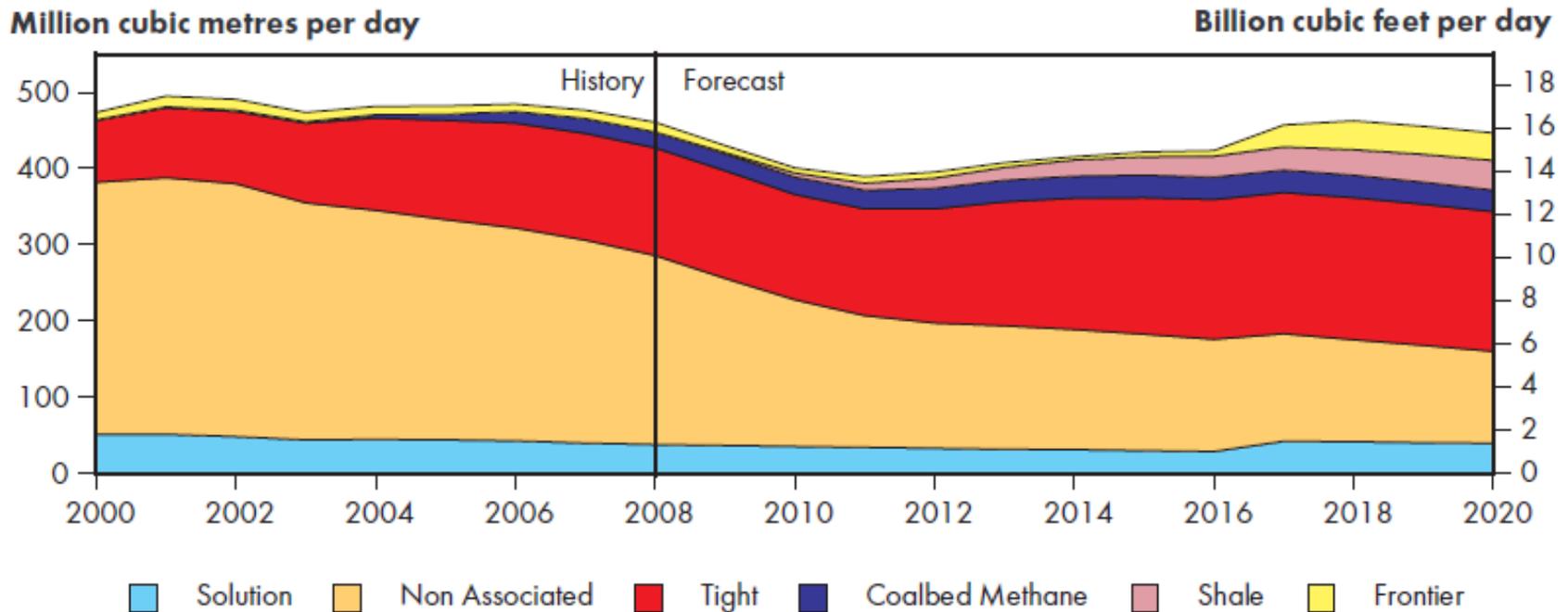
Source: Figure 39 of Energy Market Consequences of an Emerging U.S. Carbon Management Policy – Peter R. Hartley, Ph.D., and Kenneth B. Medlock III, Ph.D.

U.S. and Canada Shale Gas Production (Average Annual Bcfd)



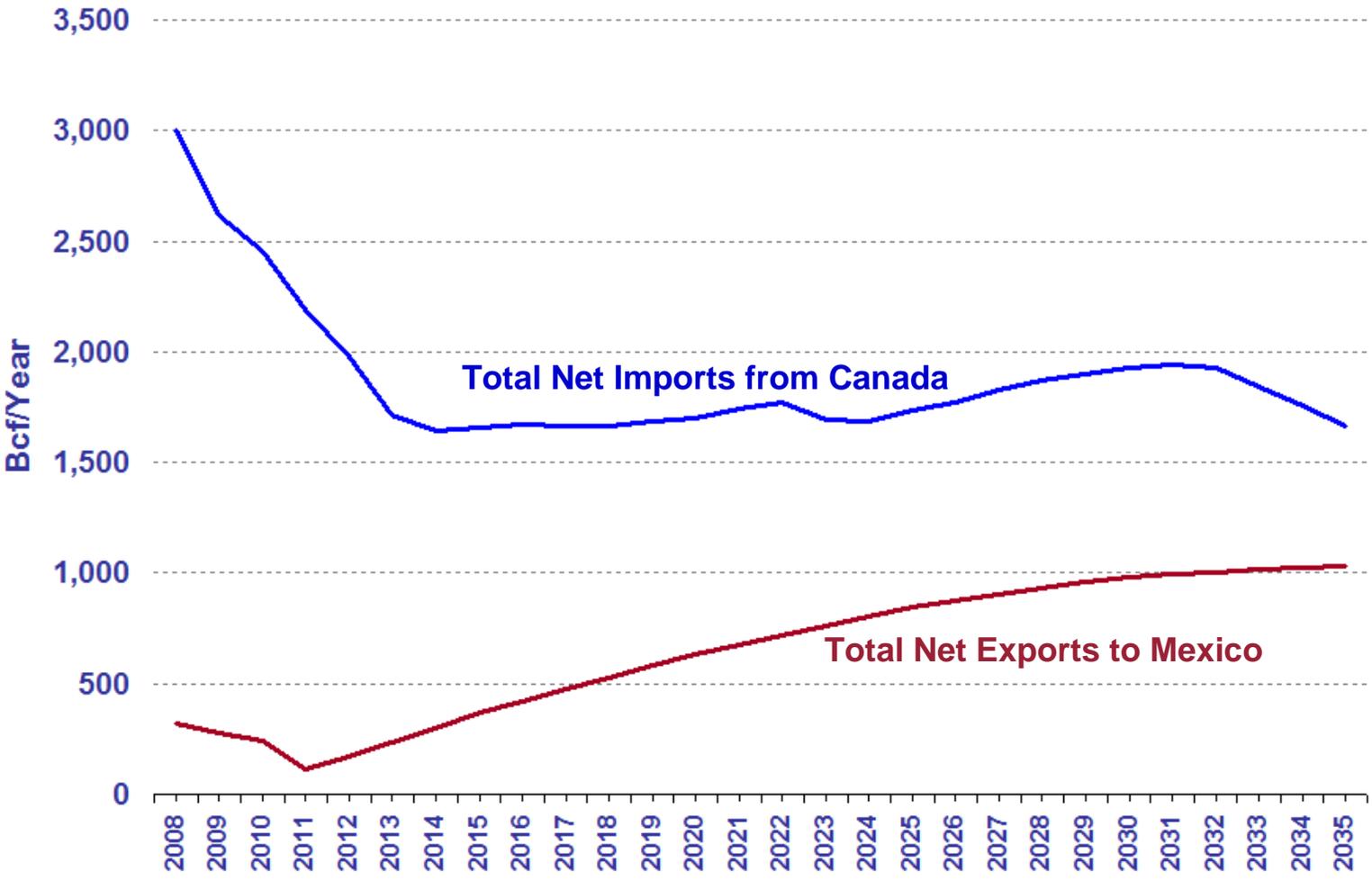
Source: ICF International July 2010 Compass Report

Canadian Natural Gas Production (Reference Case Scenario)



Source: Figure 6.2 of 2009 Reference Case Scenario: Canadian Energy Demand and Supply to 2020 – An Energy Market Assessment July 2009

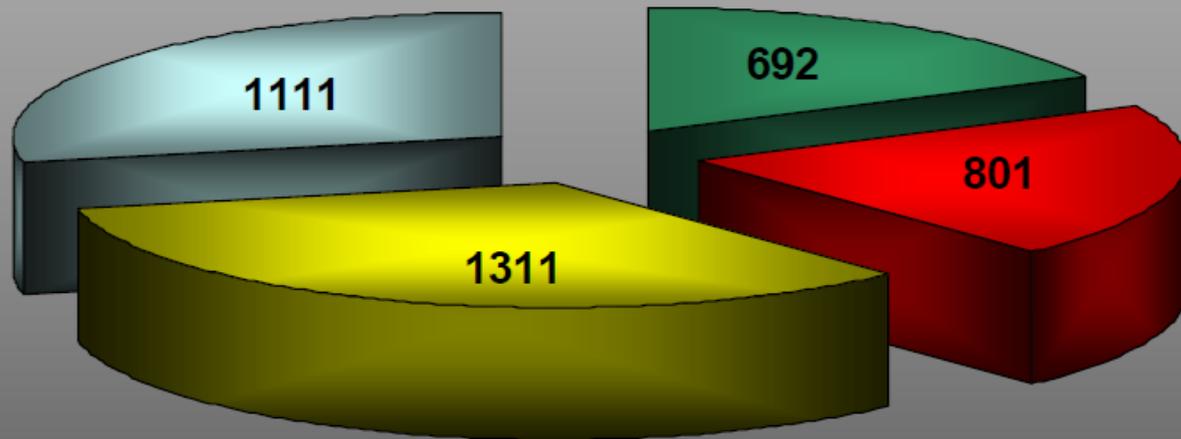
Future Net Canadian Imports and Net Mexican Exports



Source: Based on data from EIA International Energy Outlook

Canada's Natural Gas Resource Base

Total Gas In Place Resources 3915 Tcf (111x 10¹² m³)

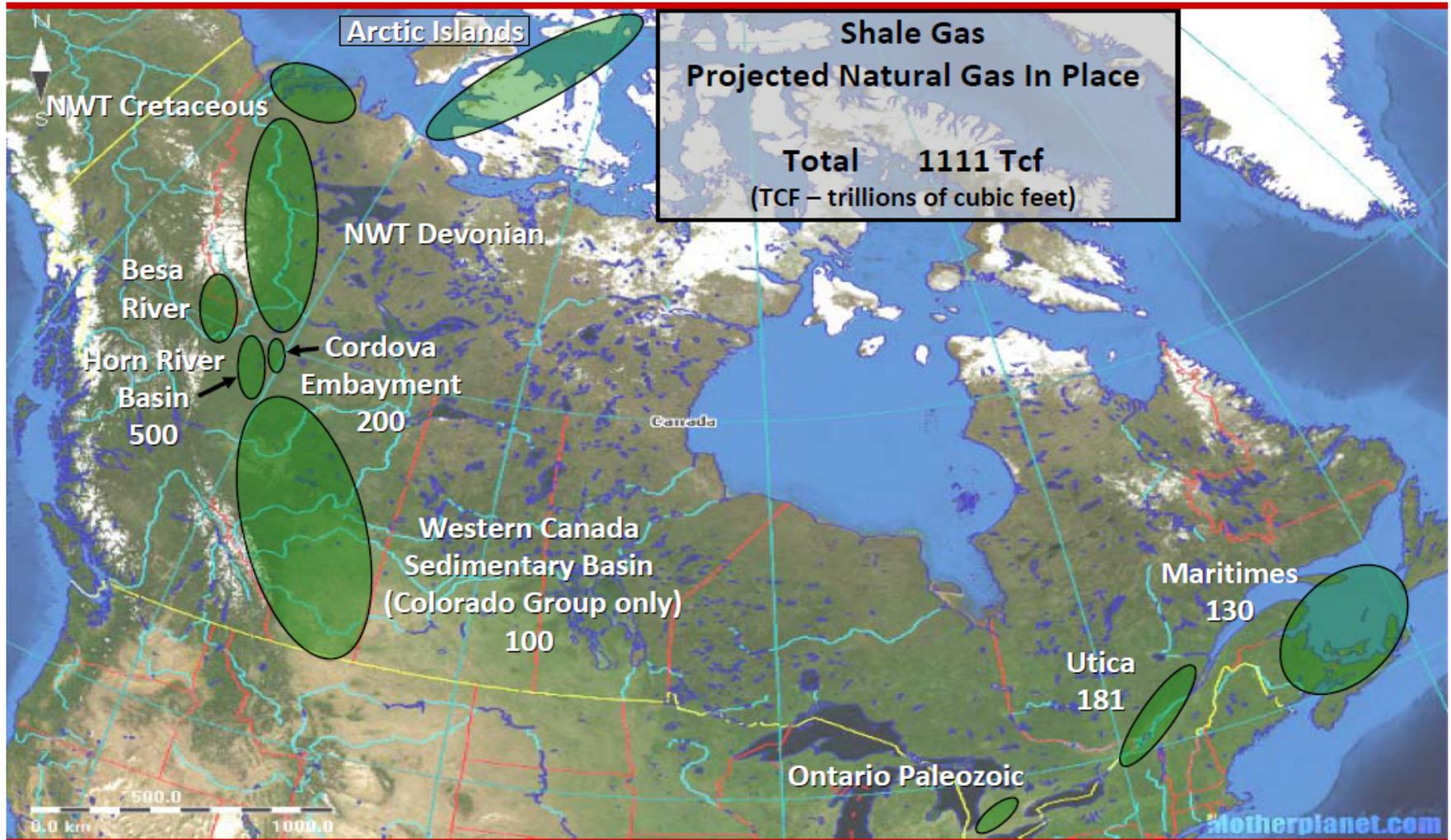


■ Conventional (remaining) ■ NGC/CBM ■ Tight Gas ■ Shale Gas

Estimates from Petrel Robertson Resource Assessment Study completed for CSUG April 2010

Source: Canadian Society for Unconventional Gas, CSUG Technical Luncheon, May12, 2010

Canada's Shale Gas



Source: Canadian Society for Unconventional Gas, CSUG Technical Luncheon, May12, 2010