North American Supply Outlook From the 2003 National Petroleum Council Study - Balancing Natural Gas Policy

Energy Information Administration NEMS/AEO Conference

March 23, 2004

NPC

NPC Study Background

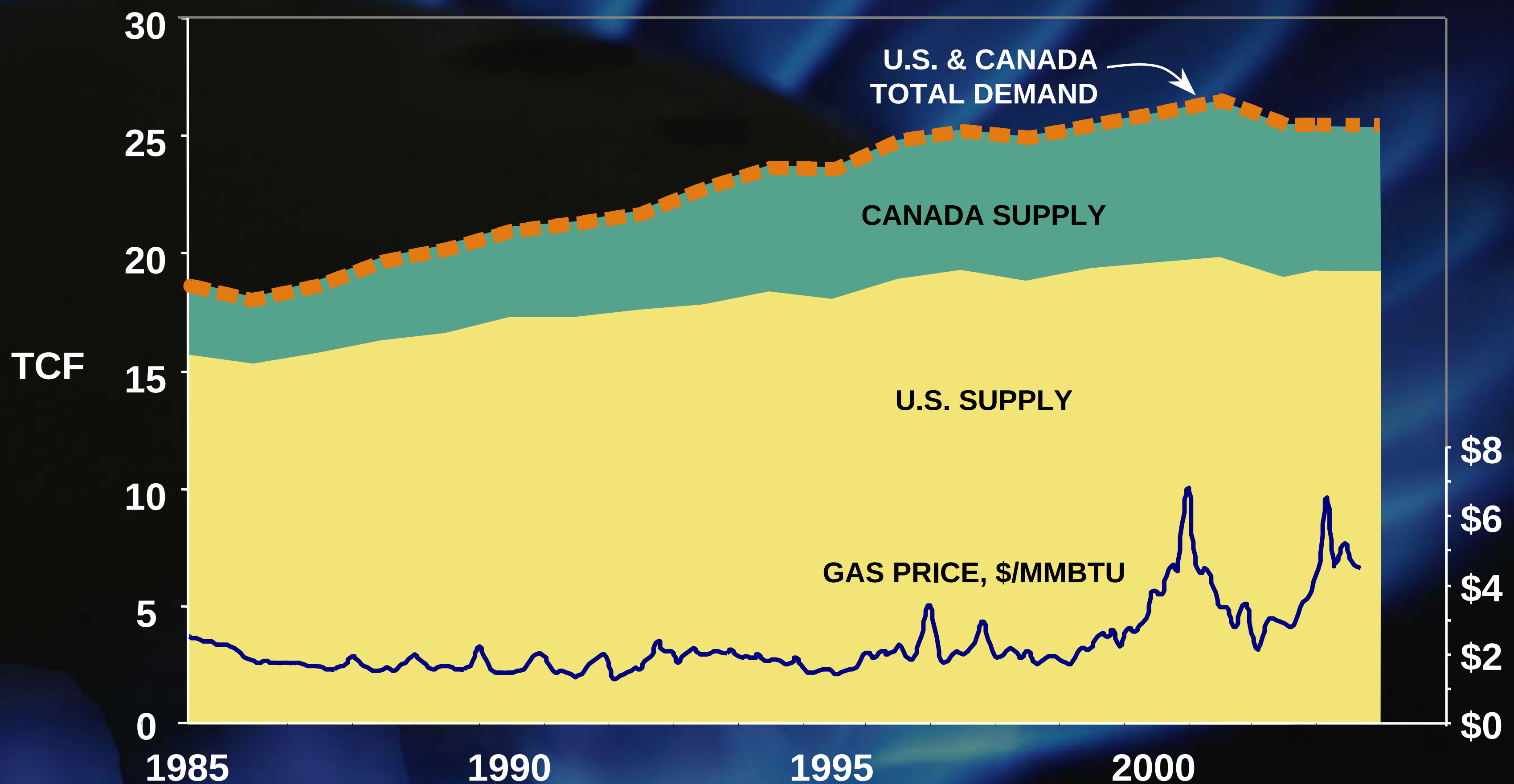
- NPC is a Federally chartered, privately funded advisory committee comprised of representatives from industry, government, and other organizations

- Secretary Abraham requested NPC to study North American natural gas supply and demand outlook to 2025

- NPC presented results to Secretary Abraham October 2003

- Study reports available through NPC

Higher Prices Reflect a Fundamental Shift in Supply & Demand



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The NPC Considered Two Paths Beyond the Status Quo

Reactive Path	Public policies remain in conflict, encouraging consumption while inhibiting supply … resulting in higher prices and volatility
Balanced Future	Public policies aligned: alternate fuels and new natural gas supply sources compete to ensure lowest consumer cost

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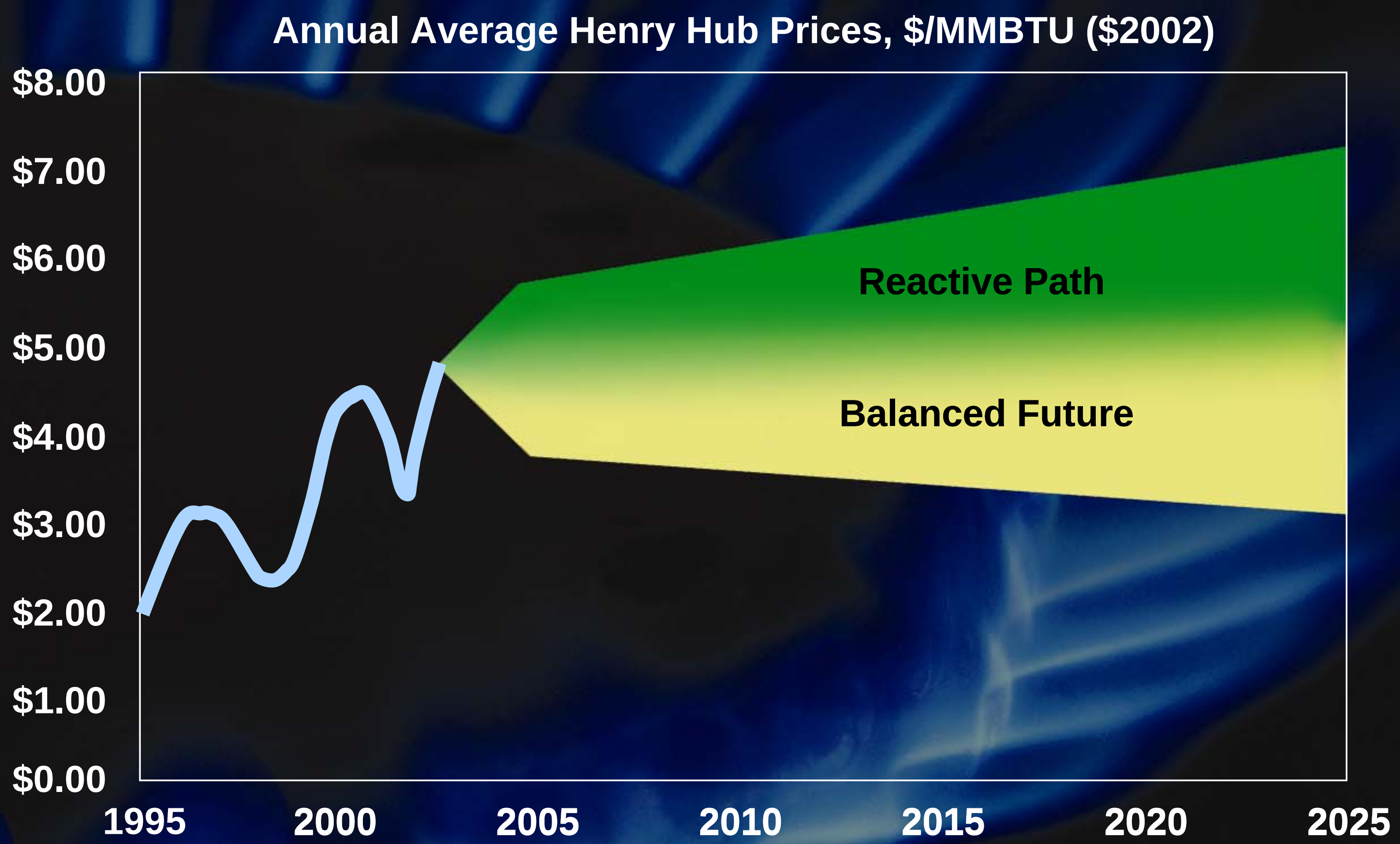
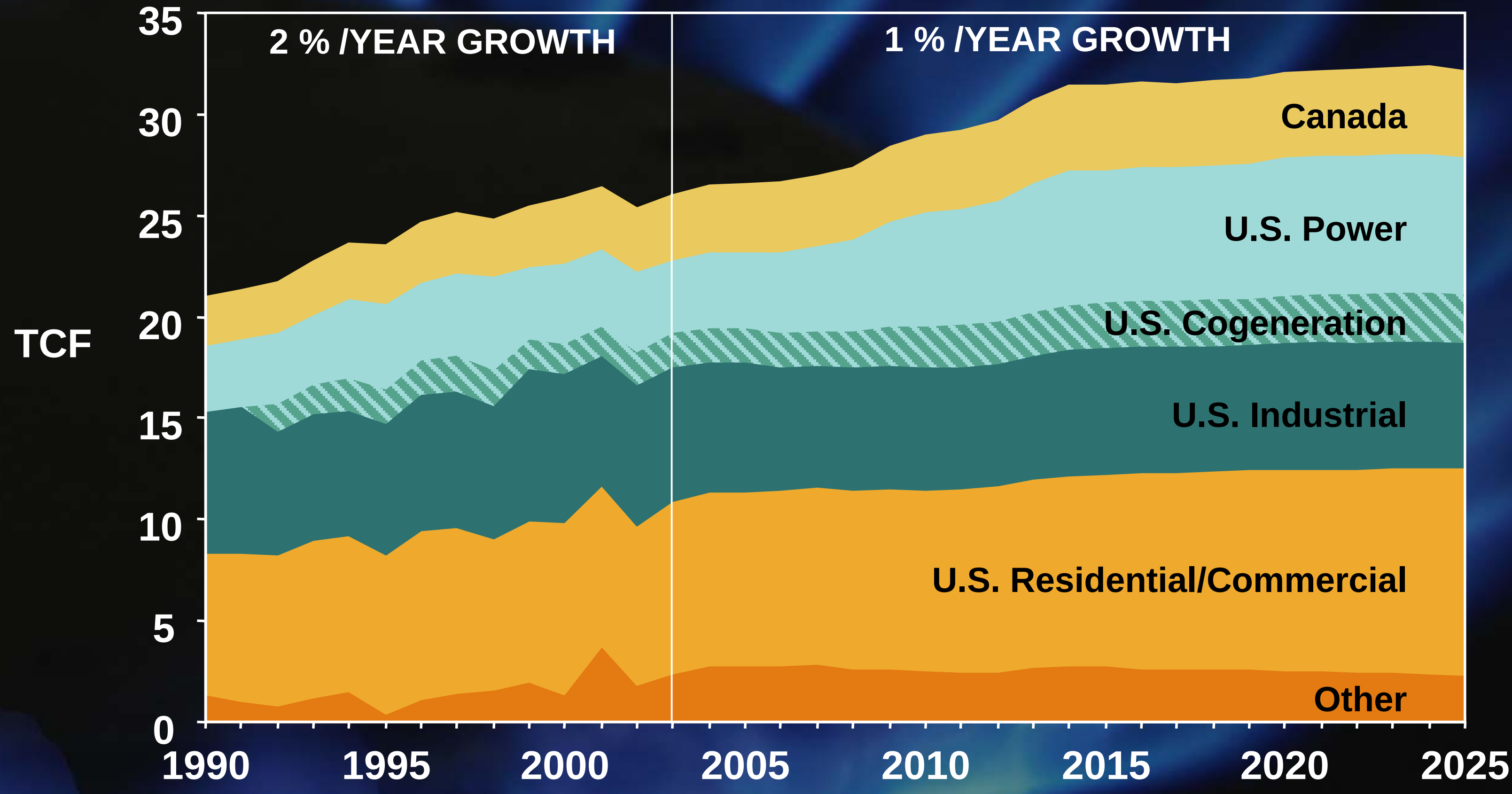
Potential Price Range



Demand is Diverse and Power Generation Will Drive Growth



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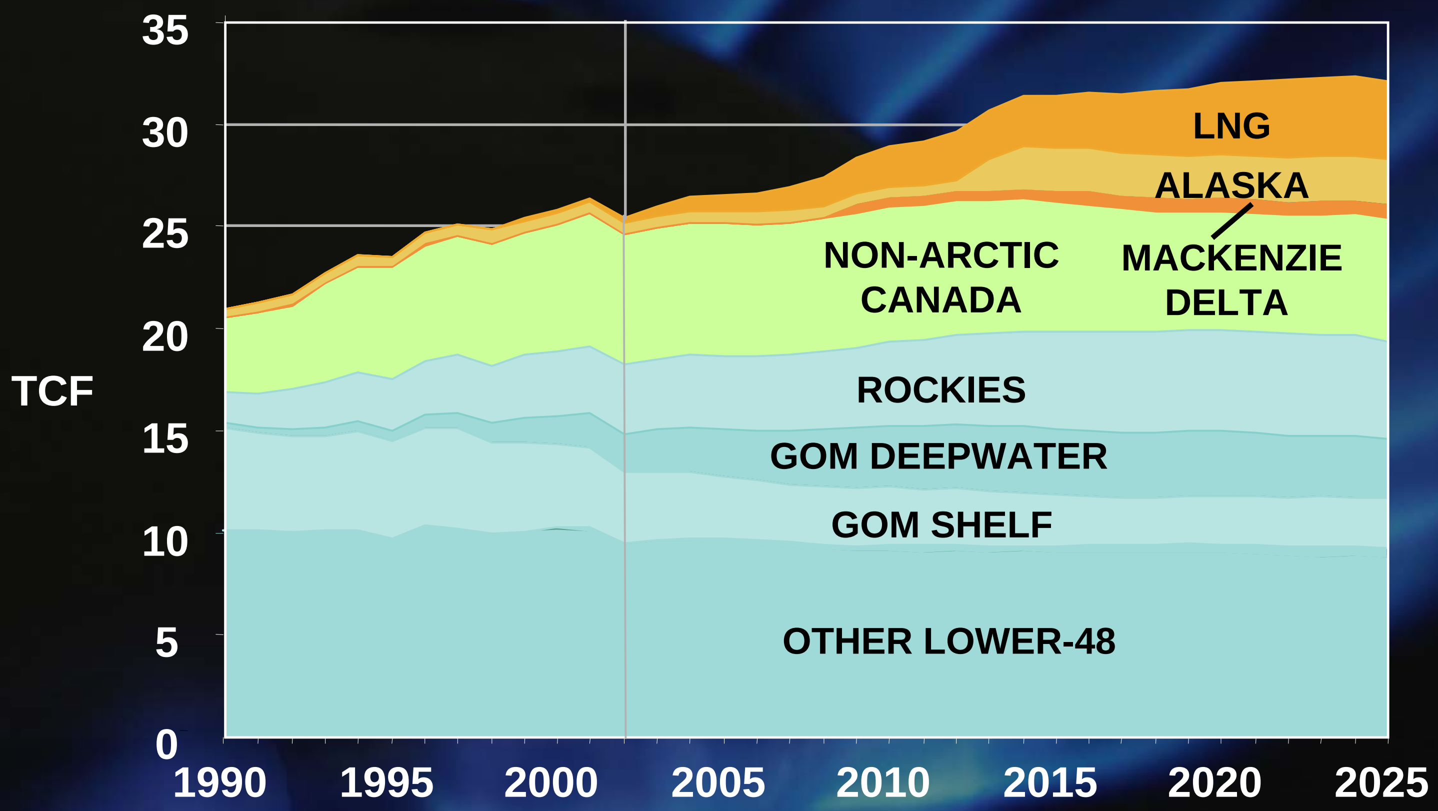
Future Supplies Come from Traditional and New Sources



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The Supply Task Group Approach Was Comprehensive

- Conduct a review of the North American resource base
- Analyze historical production performance
- Evaluate new supply sources (LNG, Arctic)
- Consider effects of advancing technology and regulatory environment
- Focus on production outlook

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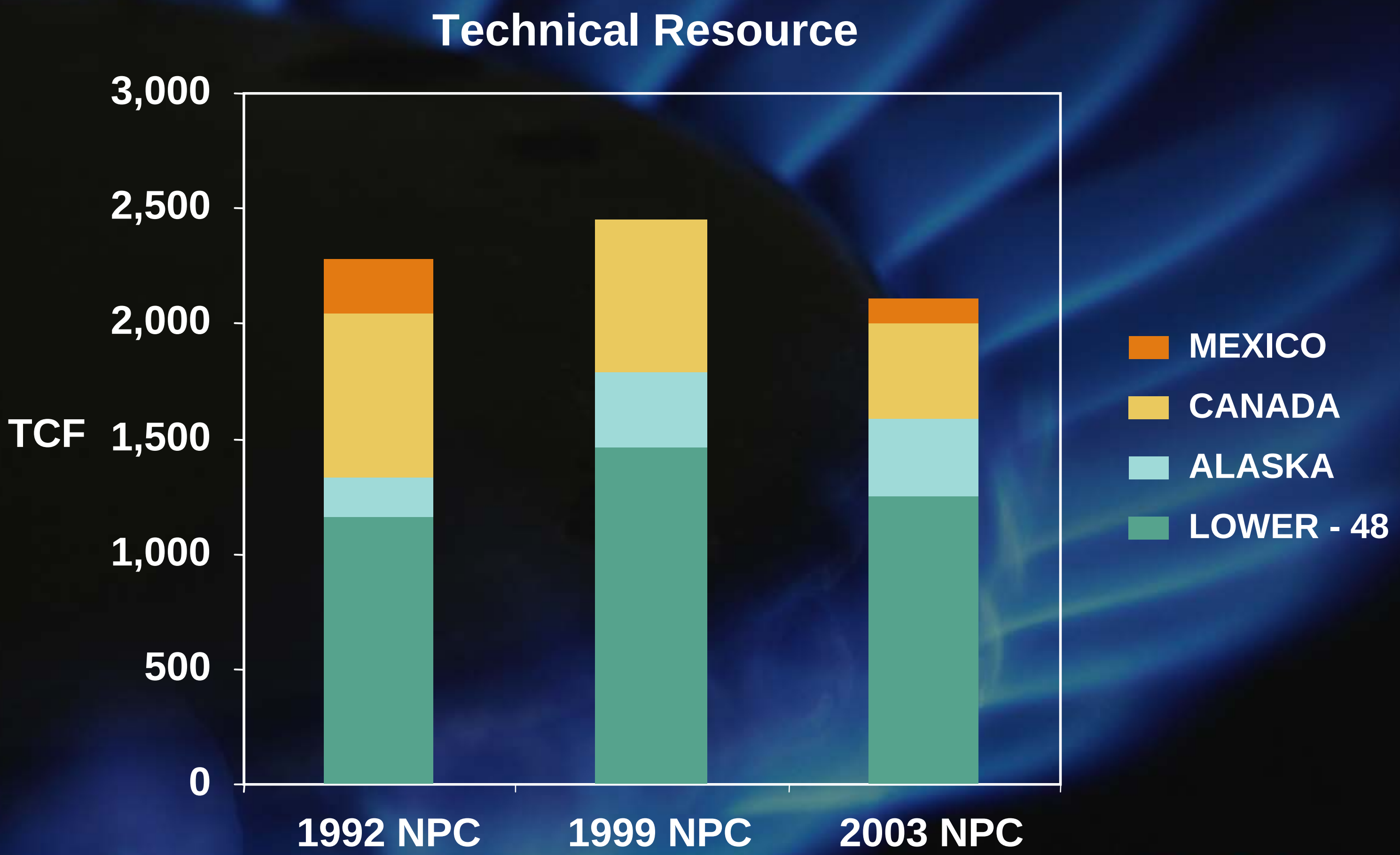
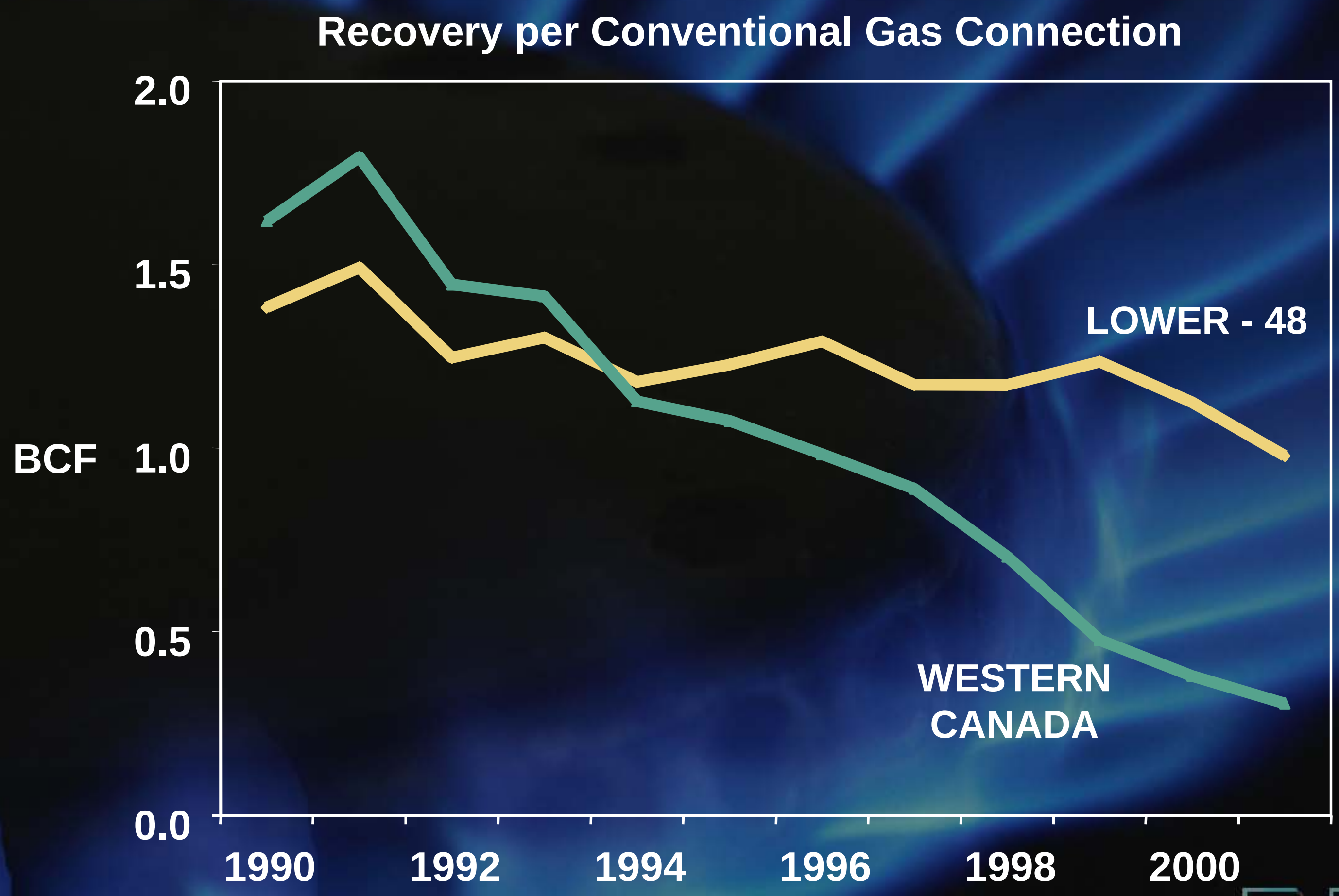
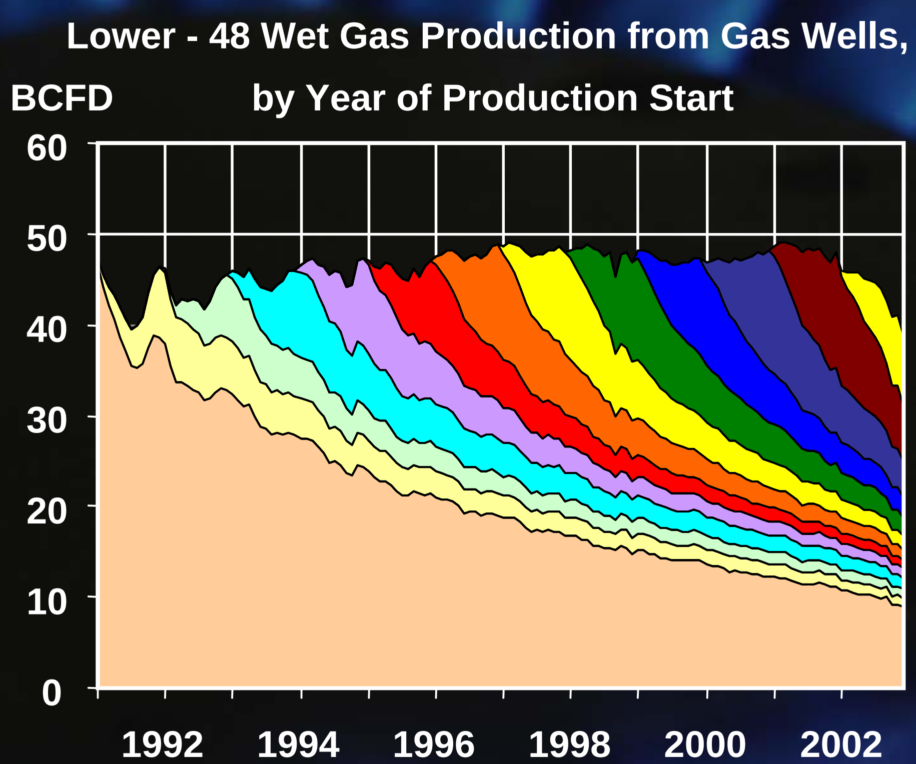
North American Resource Base Was Comprehensively Reviewed



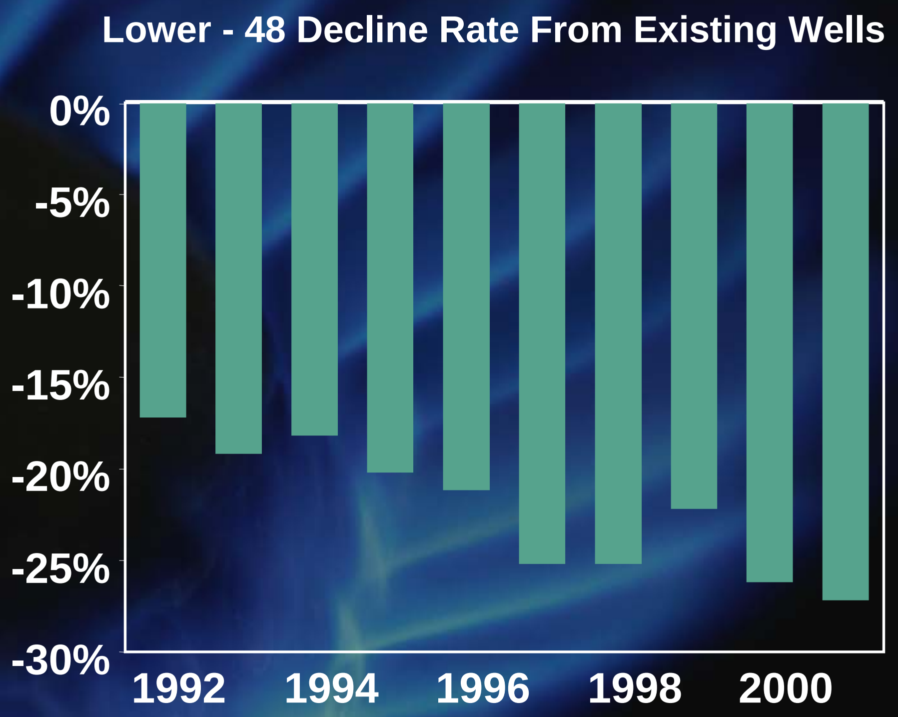
Production History Confirms a Maturing Resource Base



The Rate of Production Decline is Increasing



Source: Base data from IHS



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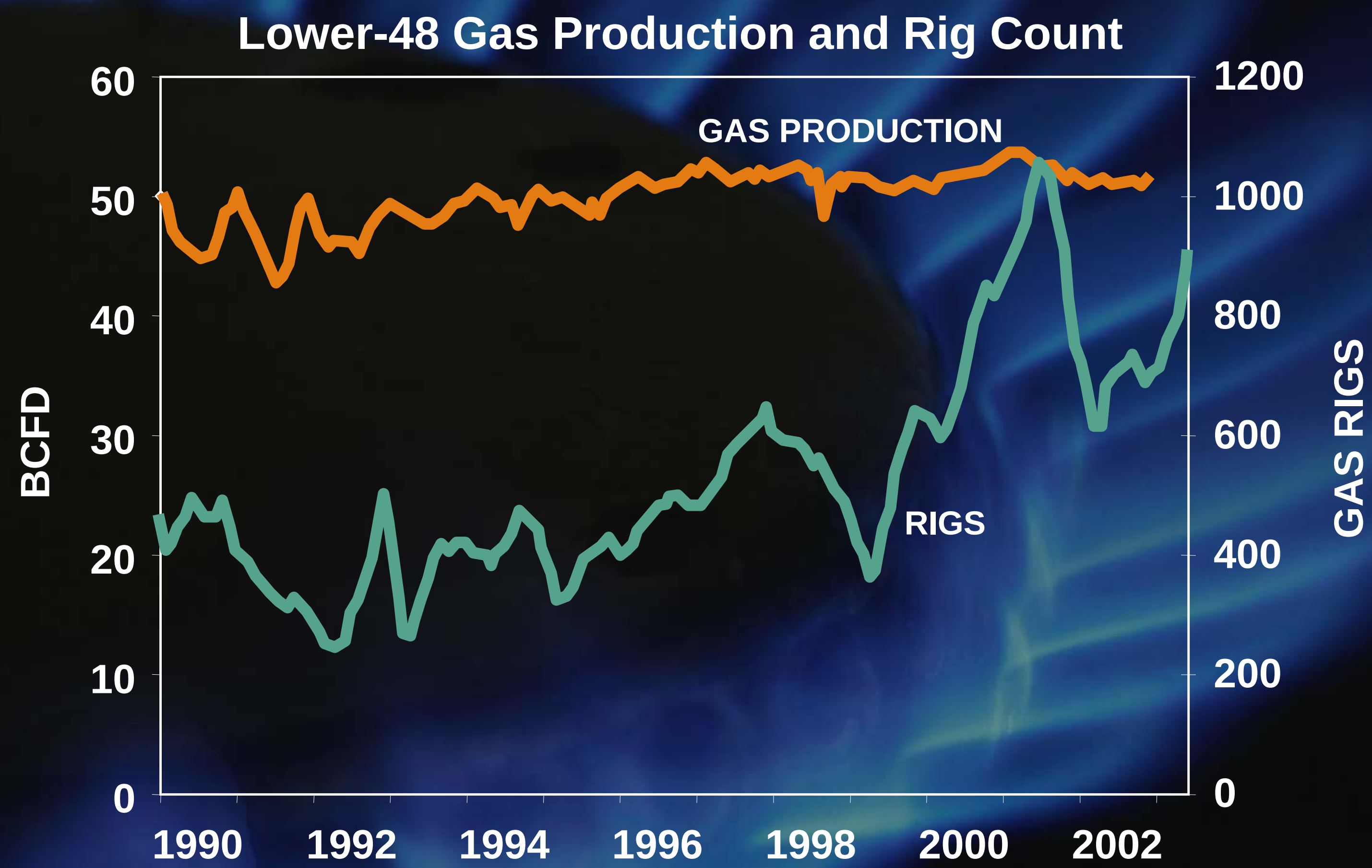
Production Response from Increased Drilling Has Been Modest



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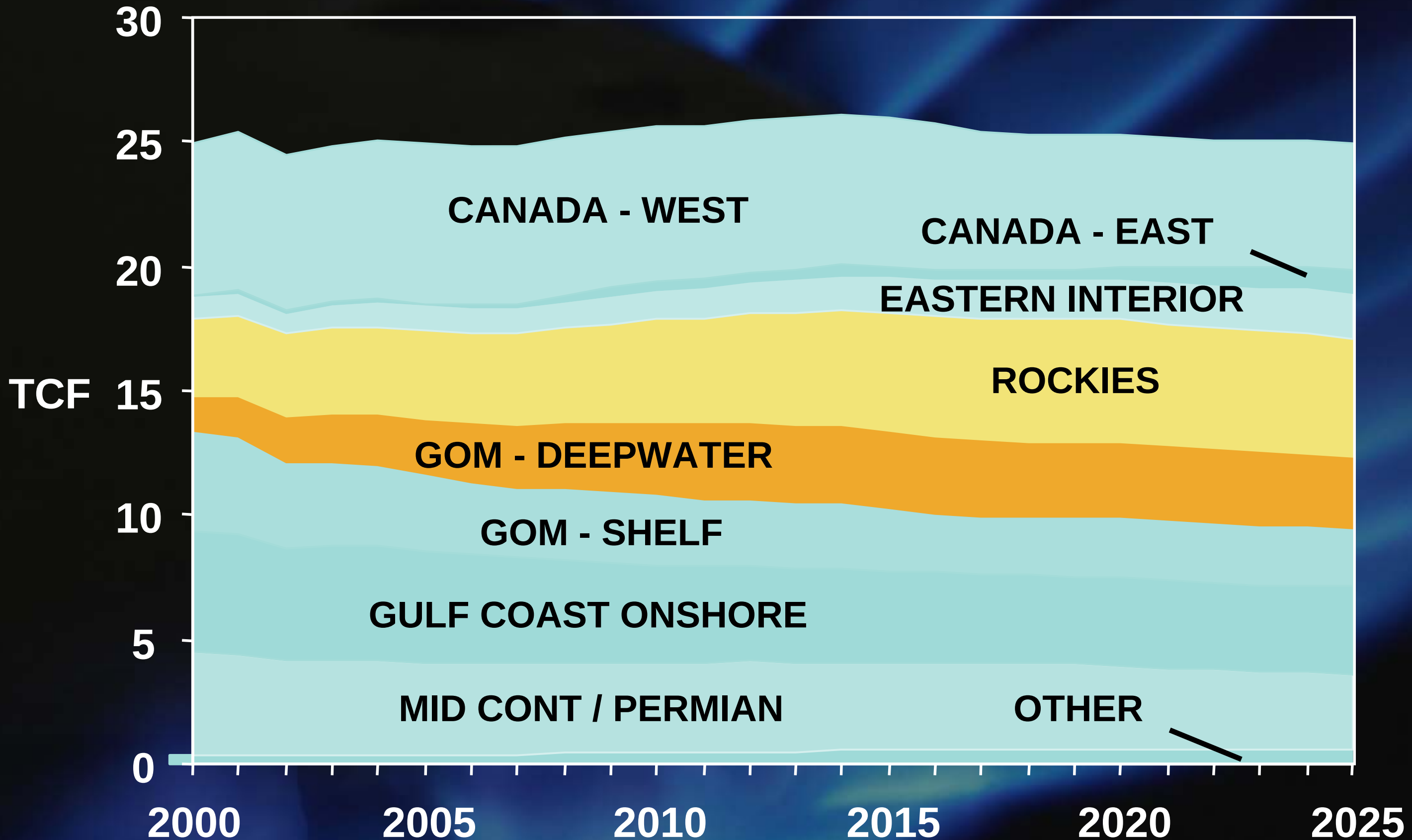
Rockies and Deepwater Gulf of Mexico Production Must Grow

Non-Arctic U.S. and Canadian Production Outlook



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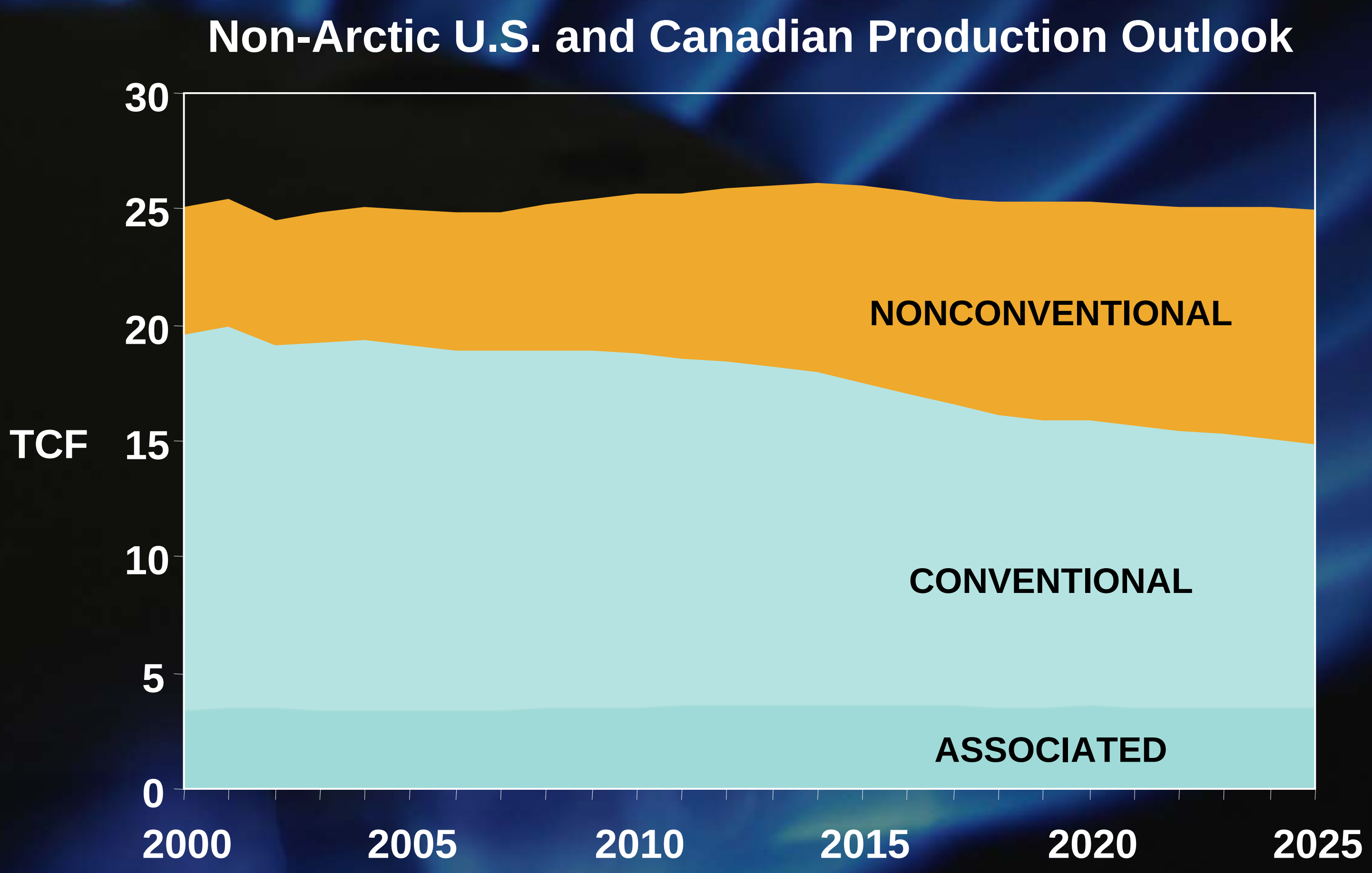
Nonconventional Production Must Grow



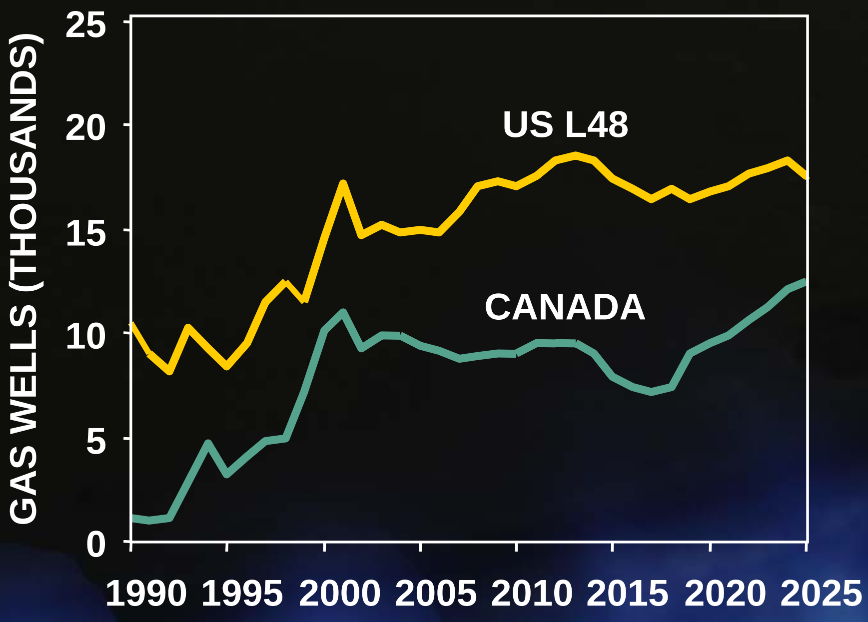
Technology Improvement Parameters

Technology Area	% Annual Improvement*	% Improvement Extrapolated for 25 Years
Exploration Success	0.53	14
Development Success	0.46	11
Recovery per Well	0.87	24
Drilling Cost	1.81	37
Completion Cost	1.37	29
Initial Production	0.74	20
Infrastructure Cost	1.18	26
Operating Expense	1.00	22

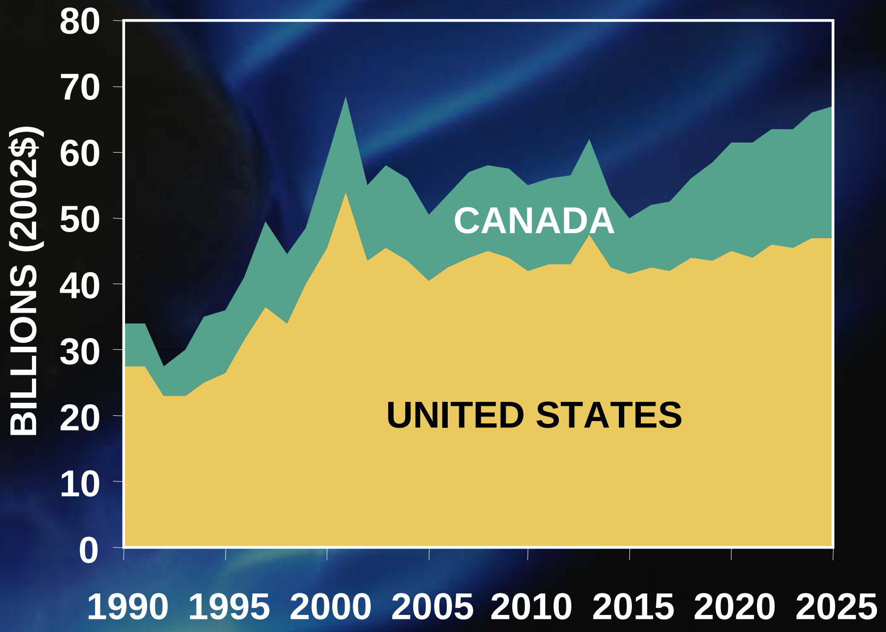
* These numbers reflect the average of the parameters, not the actual parameters used in the supply model.

Drilling Activity and Capital Investments Must Continue at High Levels

Gas Well Activity Level



North America Exploration And Production CAPEX



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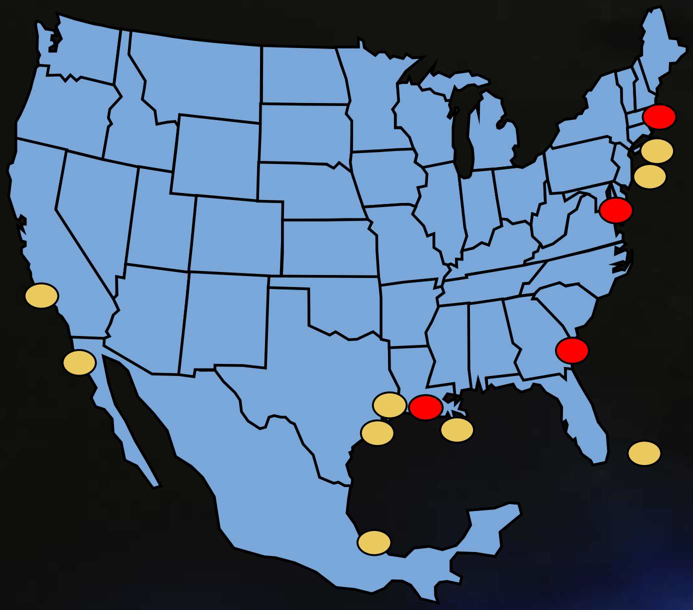
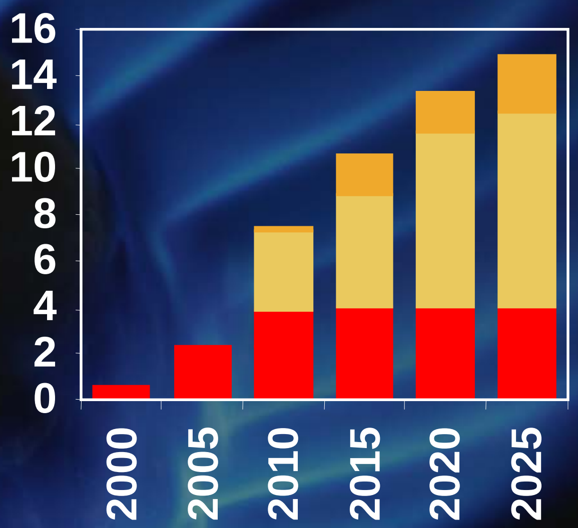
LNG Imports Are Needed, But Face Obstacles

Import Terminals



Existing
Potential

Projected Imports BCFD



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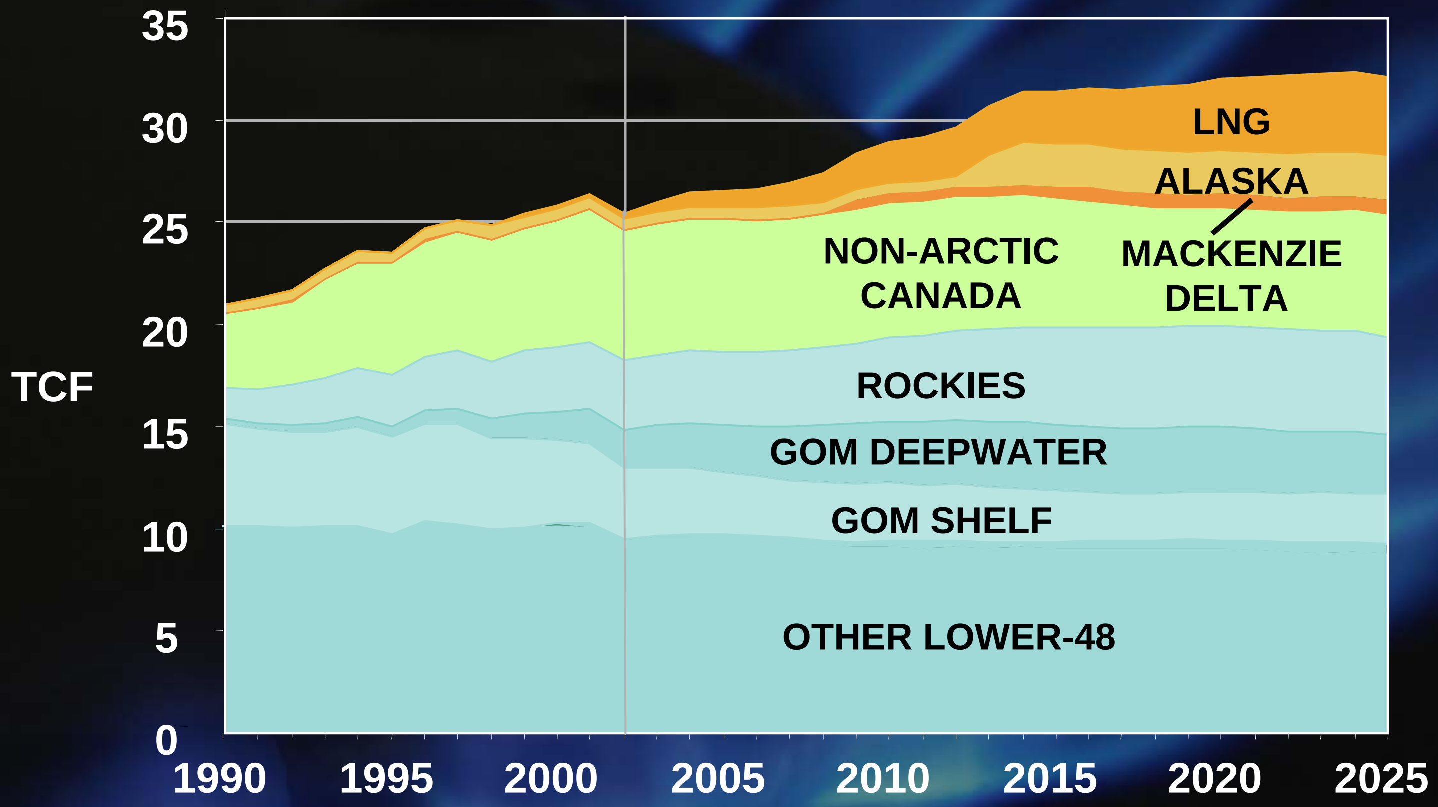
Diverse Supplies Sources will be Required to Meet Future Demand



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