



A Federal View of Canada's Oil and Gas Sector

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Outline of Remarks

- Purpose: 15 minute overview to spur discussion

- 1. NRCan and Oil & Gas Division
- 2. Canadian Energy Policy Framework
- 3. Economic Contribution of Oil & Gas Sector
- 4. Crude Oil: Opportunities & Challenges
- 5. Natural Gas: Opportunities and Challenges
- 6. Social Licence and Oil and Gas Projects
- 7. Canadian Perspectives on Mexico as a NAFTA Partner
- 8. Conclusions



1. Introduction

Oil & Gas Policy & Regulatory Affairs Division

- **Mandate: Advise on matters related to crude oil, natural gas and petroleum product markets, pipelines, & regulation**
 - Brief Minister; assist him to fulfill his responsibilities; provide speech material; advise on changes to NEB Act and regulations
 - Recommendations to Minister on pipeline certificate and export licence approvals, which require Cabinet decisions
 - Manage the Pipeline Arbitration Secretariat
 - Draft replies to correspondence; media requests; information for public, e.g.
 - Fuel Focus www.nrcan.gc.ca/energy/1374
 - Pipeline Facts www.nrcan.gc.ca/energy/sources/natural-gas/pipeline-faq/2248





2. Canadian Energy Policy Framework

- Canada's energy policy is market oriented – deregulated prices
 - Market participants determine supply, demand, prices, infrastructure investments, exports & imports
- Targeted interventions and regulations help achieve specific objectives:
 - Human health/safety/environmental protection
 - Regulate market power - rates on pipelines
 - Encourage cleaner energy, efficiency
 - Science and technology
- Both Federal and Provincial gov'ts have jurisdictional powers that are important in energy issues
- Canada requires aboriginal consultation on decisions that may impact aboriginal rights or title



The Crown has a duty to consult Aboriginal Peoples for Major Resource Projects

- **The Courts:** when Crown contemplates conduct that may adversely affect established or potential Aboriginal and treaty rights, it has legal duty to consult Aboriginal peoples holding these rights
 - *Constitution Act* s. 35: Haida, Taku River, Mikisew Cree decisions
- **Scope and content of consultation** proportionate to strength of claim/right(s), seriousness of impact
- **Accommodation** may be required, due to impacts on rights
- **Legal principles** to satisfy:
 - Honour of the Crown
 - Reconciliation
 - Reasonableness
 - Meaningful Consultation
 - Good Faith
 - Responsiveness



3. Economic Contribution of Oil & Gas Sector, 2012*

- 7% of nominal GDP by industry
- \$73B in capital expenditures (19% of total)
- \$110B in exports (26% of total)
- \$22B in tax and royalty payments to governments
 - Helps pay for spending on education, health care, etc
- Over 200,000 well-paid direct jobs
- Stimulation of other industries
 - e.g. over 100,000 jobs in the construction industry

* Includes industries related to oil and gas extraction, processing, transportation and distribution industries. Data are for 2012, except payments to governments (2007-2011 annual average)



4. Crude Oil: Opportunities & Challenges



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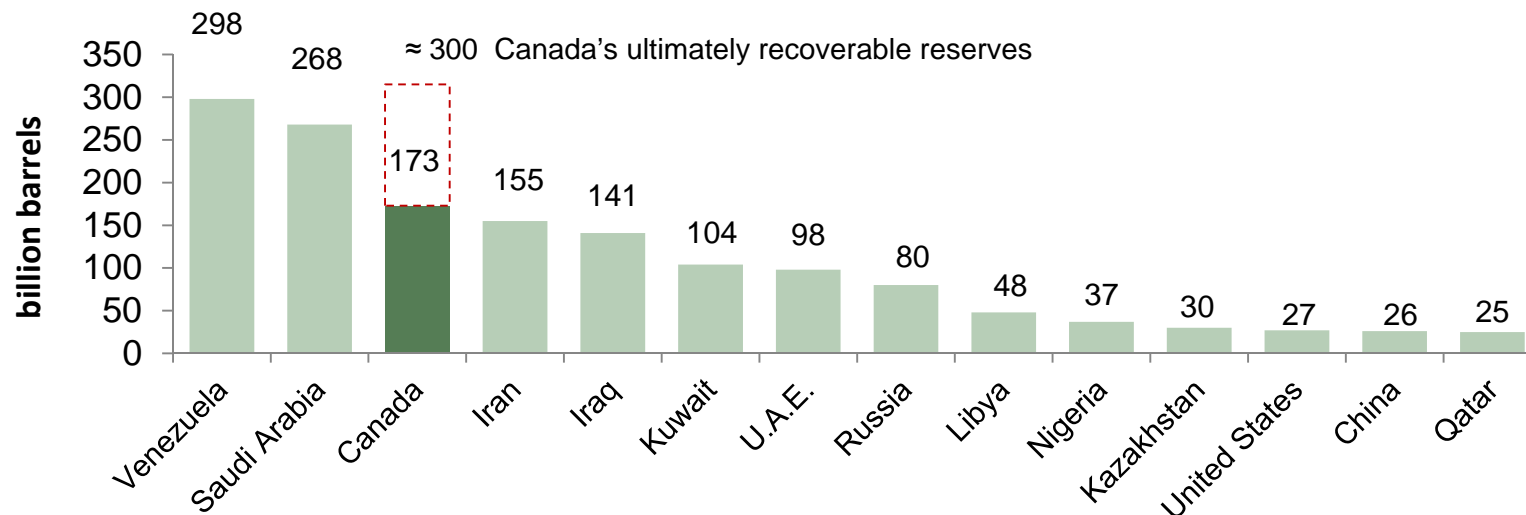
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Canada has vast oil potential

- Fifth largest oil producer, at 3.3 million barrels a day
- Production expected to grow to 6.5 Mb/d by 2035
- Third largest reserves in the world, at 173 billion barrels
 - mostly in the form of oil sands (168 billion barrels)
 - technology advancements could unlock further oil sands resources, to bring Canada's reserves to over 300 billion barrels

Proven Oil Reserves



Source: Oil & Gas Journal, US EIA, CAPP, and Alberta Energy Regulator, data as of November 2013



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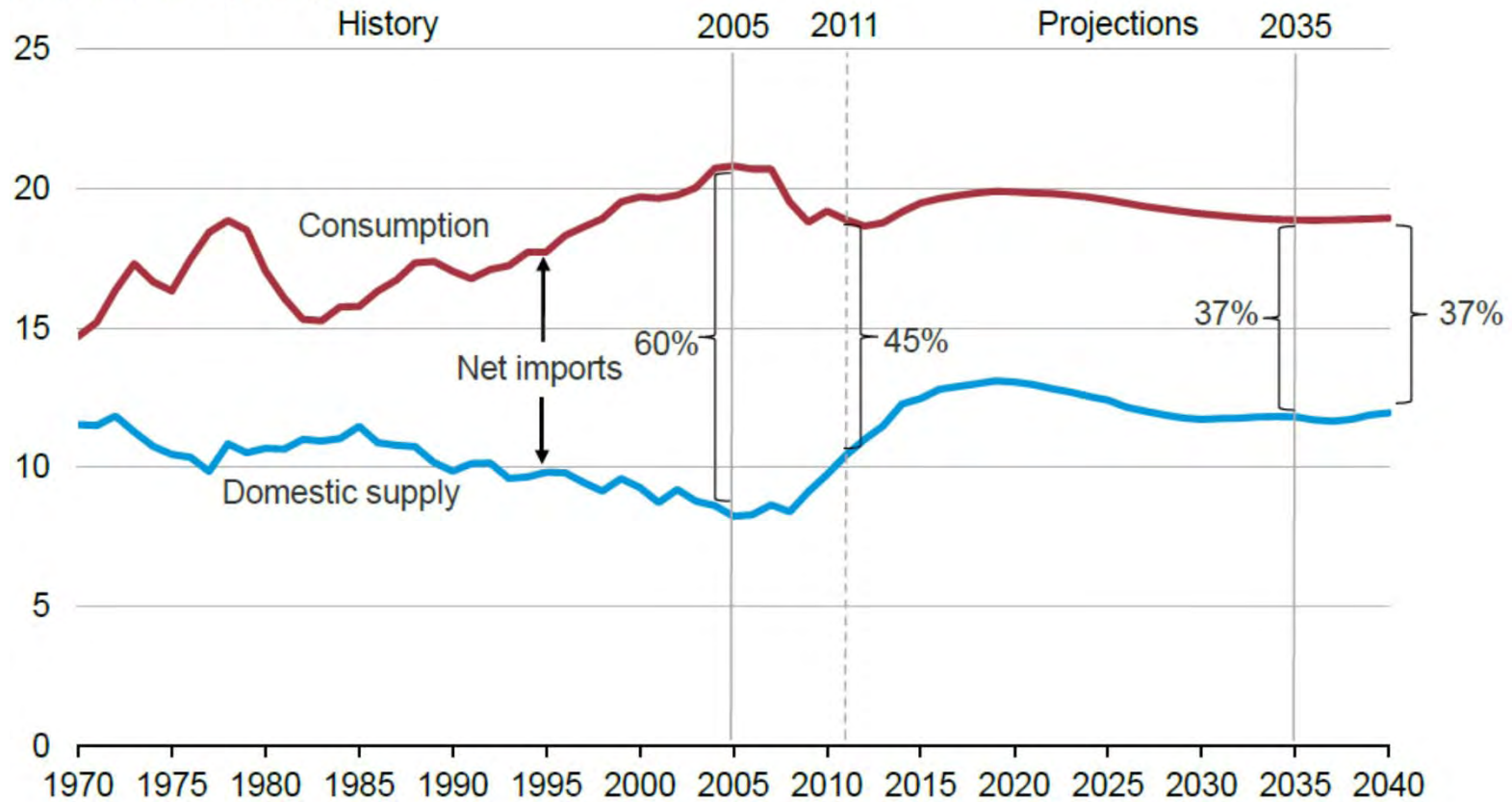
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Canada needs markets for its oil supply, and the US accounts for 99% of Canadian oil exports

U.S. dependence on imported liquids declines

U.S. liquid fuel supply
million barrels per day



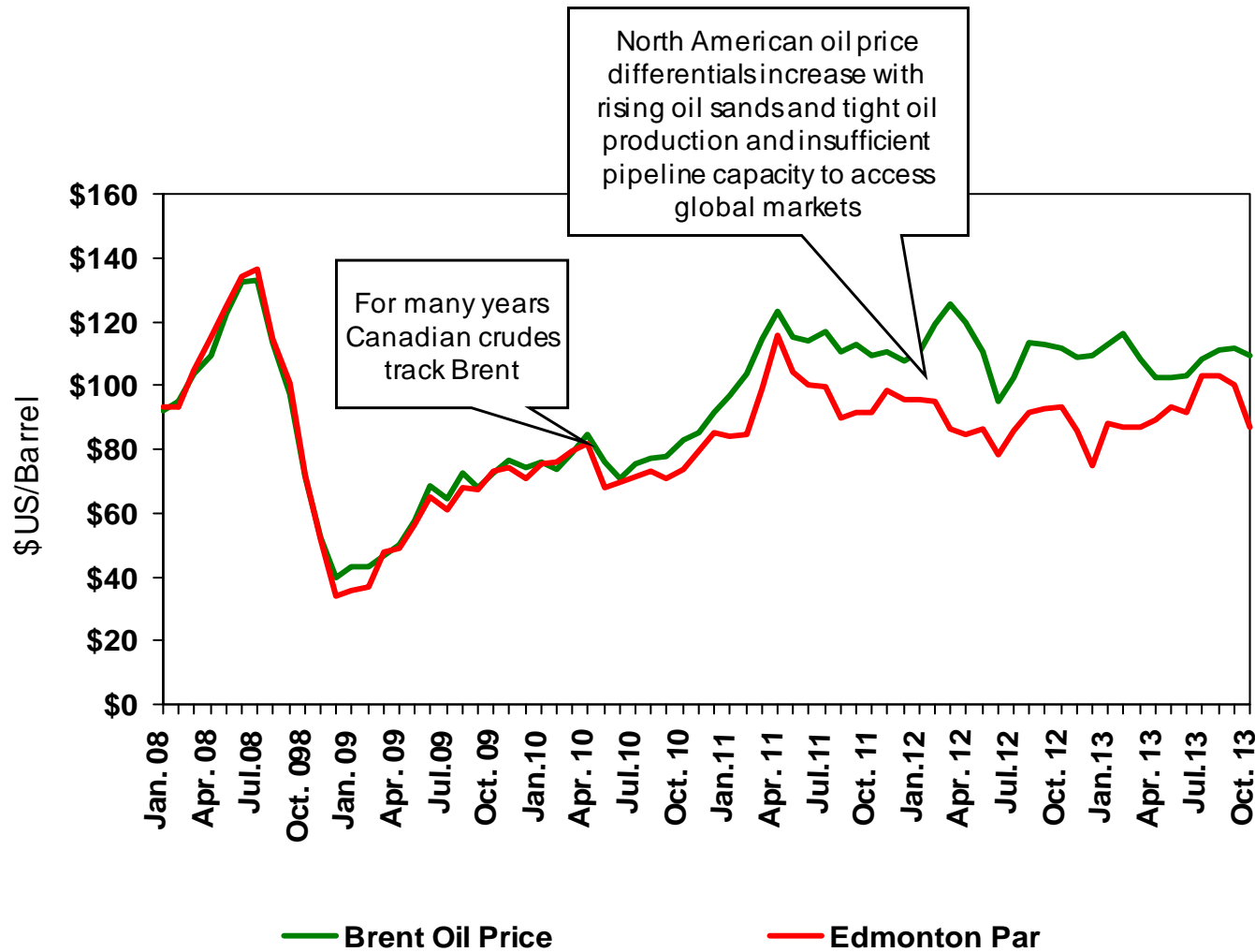
Source: EIA, Annual Energy Outlook 2013 Early Release



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Then there's the price Canada receives for its oil sales - global light oil prices are higher ...

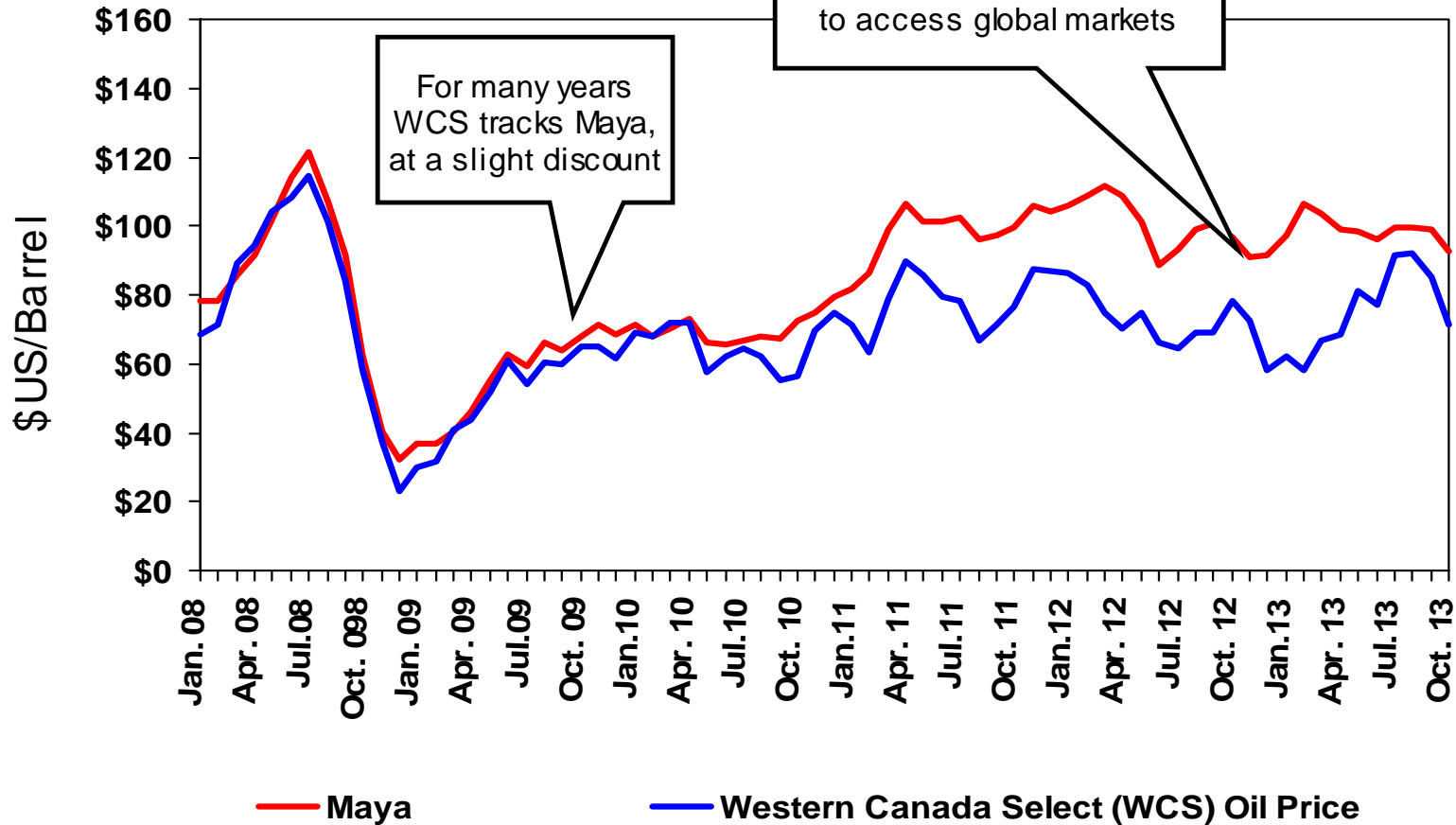


As are global heavy oil prices ...

WCS = 20°API at Hardisty, AB
 Maya = 22° API at tidewater

Heavy oil price differentials widen with rising oil sands and tight oil production and insufficient pipeline capacity to access global markets

For many years WCS tracks Maya, at a slight discount



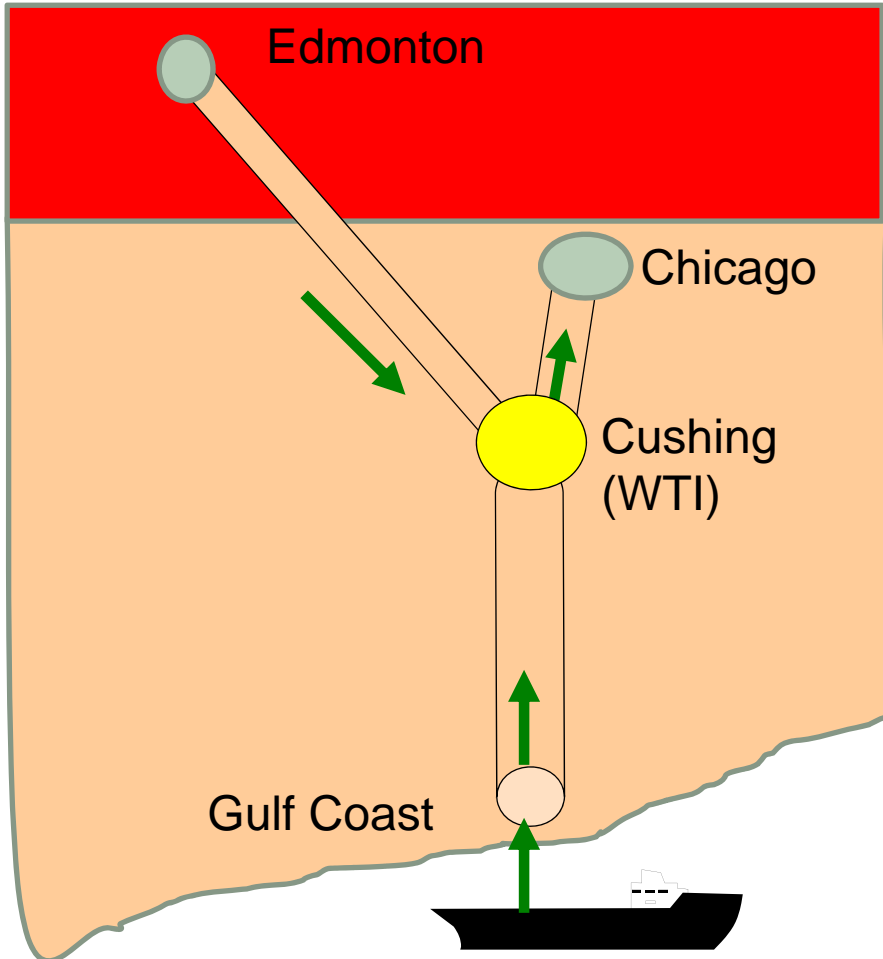
This has hurt producer revenues

- Pre-2011: Canadian crudes were sold at prices similar to global crude prices
- 2011 to early 2013: price differentials negatively affected Canadian producers
 - Inland US and Canadian oil markets flooded
 - Pipeline system could not bring increased production to new markets
 - NRCan estimated that Canadian producers lost \$13.3 Billion in revenues in 2012*
- Price differentials decreased in mid-2013 but returned in the fall (the WCS-Maya oil price differential was US \$31.07 per barrel as of mid-November).
- * see NRCan Fuel Focus issue of June 14, 2013



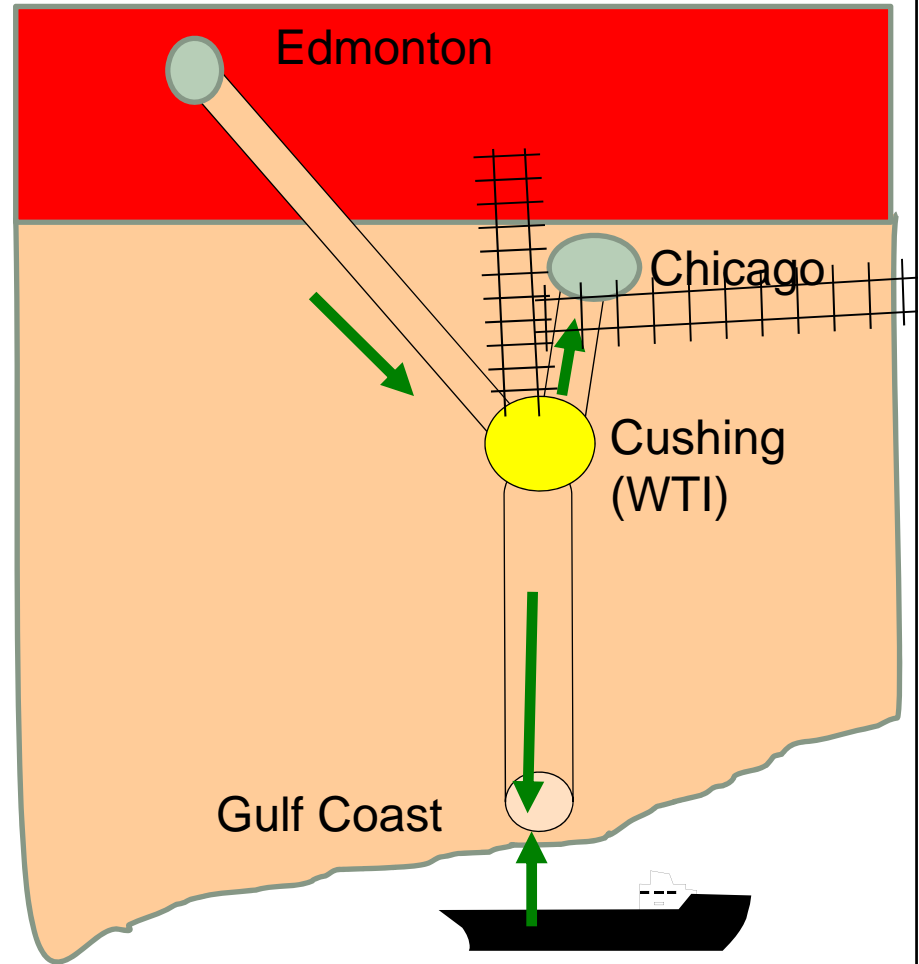
Crude Price Differentials

2005



$$\begin{aligned} \text{WTI} &= \text{Brent} + \text{Toll} \\ \text{Edmonton} &= \text{WTI} - \text{Toll} \end{aligned}$$

2013



$$\begin{aligned} \text{WTI} &= \text{Brent} - \text{Toll} \\ \text{Edmonton} &= \text{WTI} - \text{Toll} \end{aligned}$$

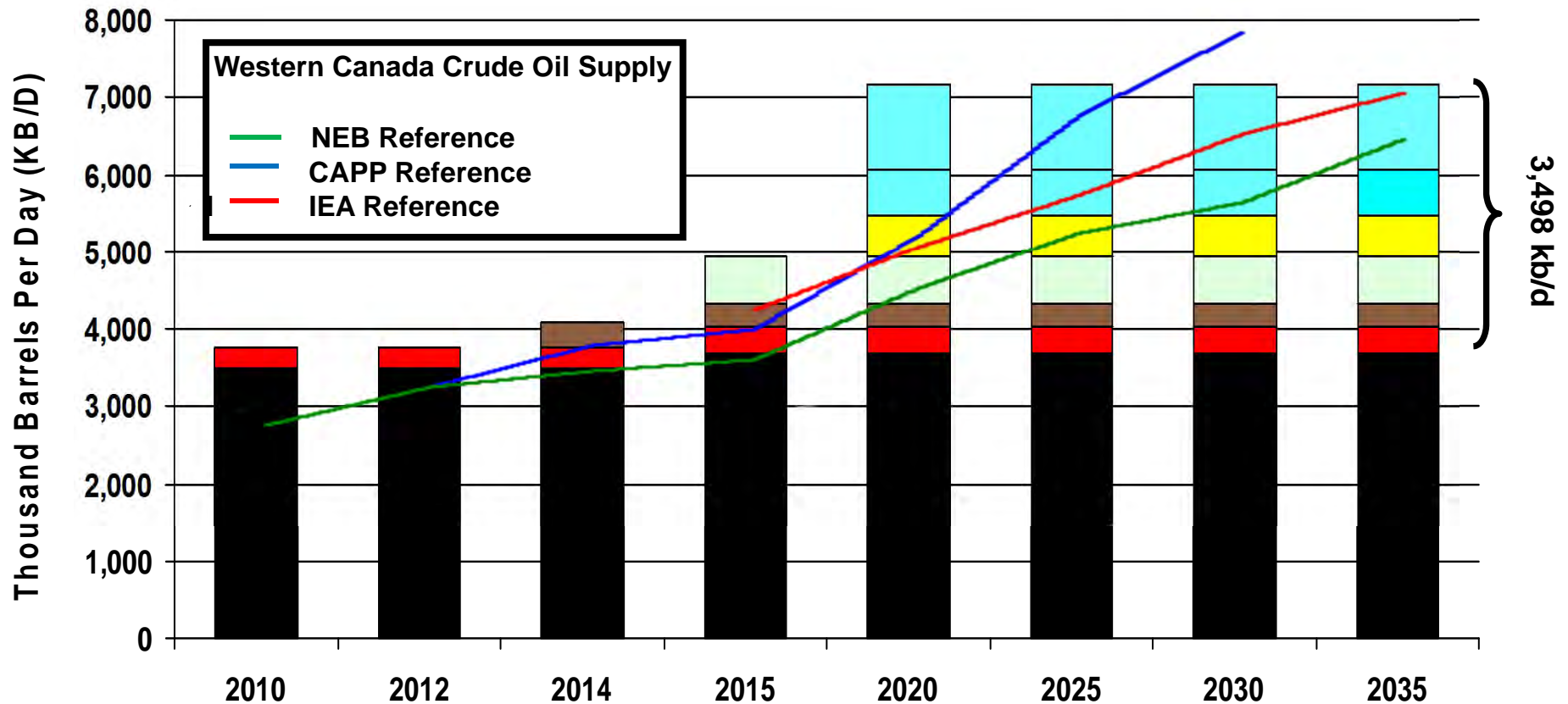


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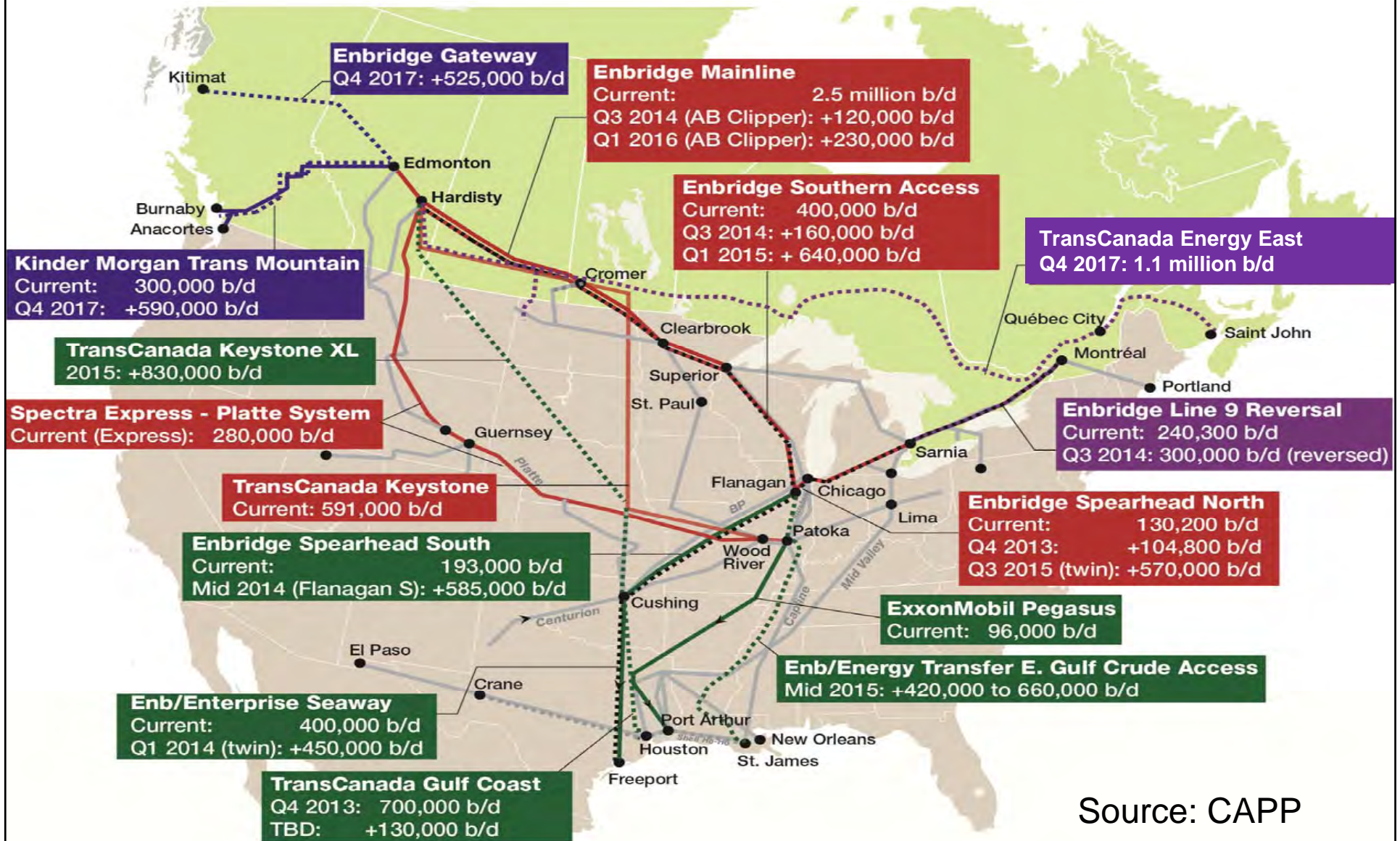
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Key challenge: pipeline capacity



- Existing Western Canada pipeline capacity (3671 kb/d)
- Existing capacity to move crude by rail (270-->360 kb/d)
- Line 9 Reversal (152-->300 kb/d)
- Keystone XL (622.5 kb/d - Canadian Capacity)
- Northern Gateway (525 kb/d)
- Energy East Pipeline (1100 kb/d)
- Trans Mountain Expansion (590 kb/d)

Addressing the issue: Canadian & US crude oil pipelines & proposals



Source: CAPP

5. Natural Gas: Opportunities & Challenges

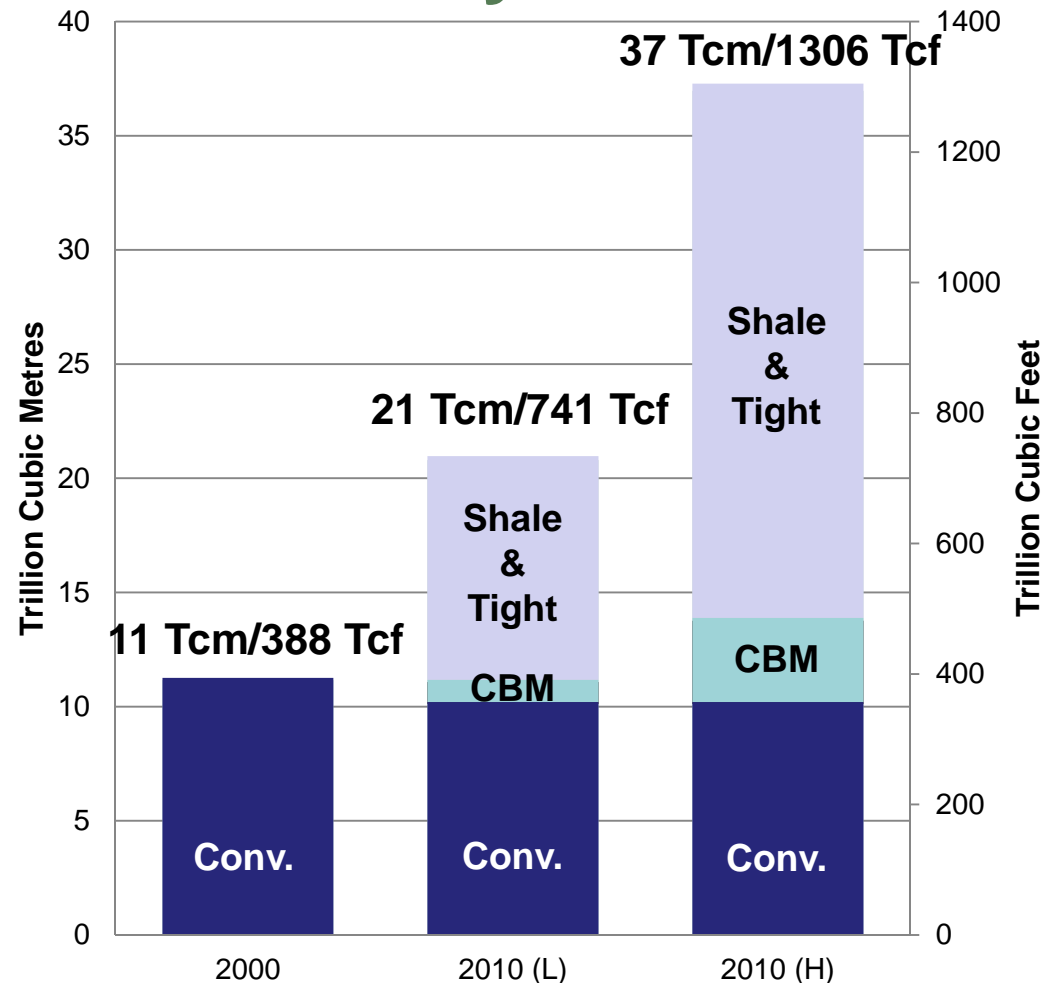


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Canada has large natural gas resources, increased by new fracturing technologies, ...



- Unconventional gas doubled Canadian marketable resource estimates
- Nov 6, 2013 – new NEB report indicates one formation – the Montney – contains 450 Tcf (12.7 Tcm) of marketable natural gas resources
- Canada has large and growing natural gas resources, far exceeding domestic requirements
- Production expected to grow (demand limited)

Tcf = Trillion cubic feet
Tcm = Trillion cubic metres

Source: Canadian Society for Unconventional Resources CBM= coal bed methane



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US market's need for Canadian gas declines

(destination of 100% of Canadian gas exports, 60% of production)

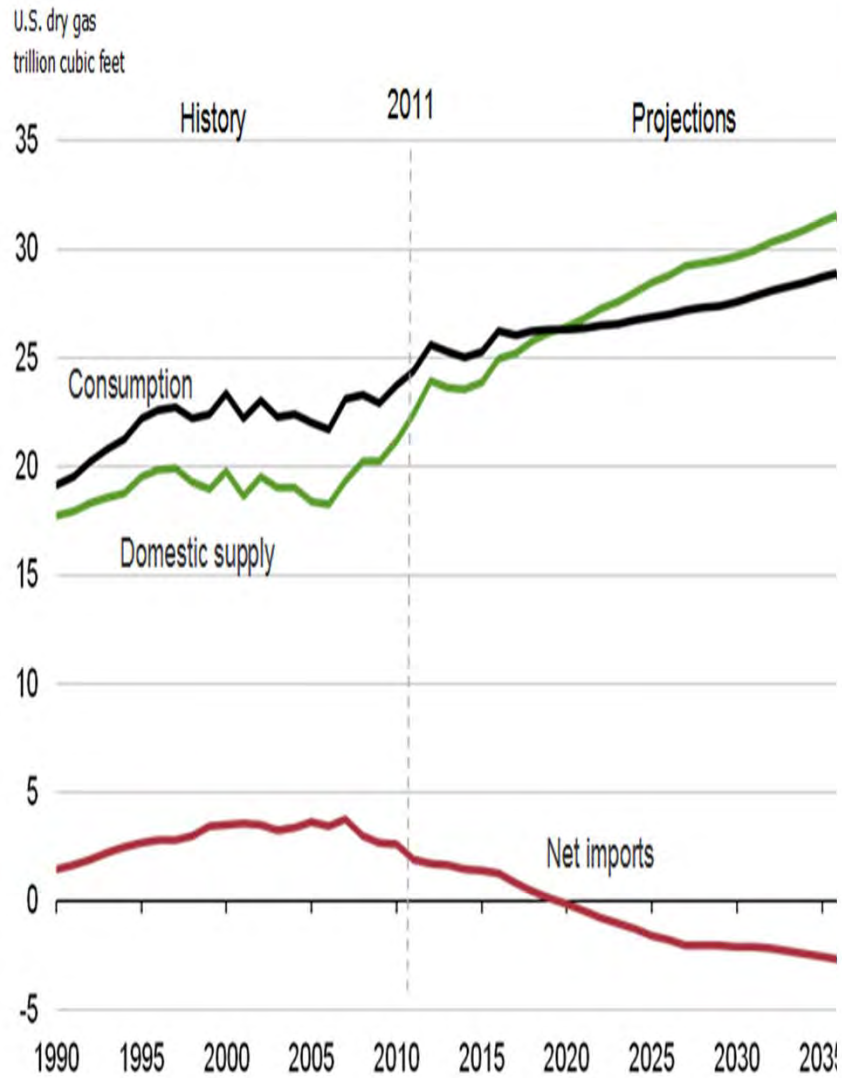
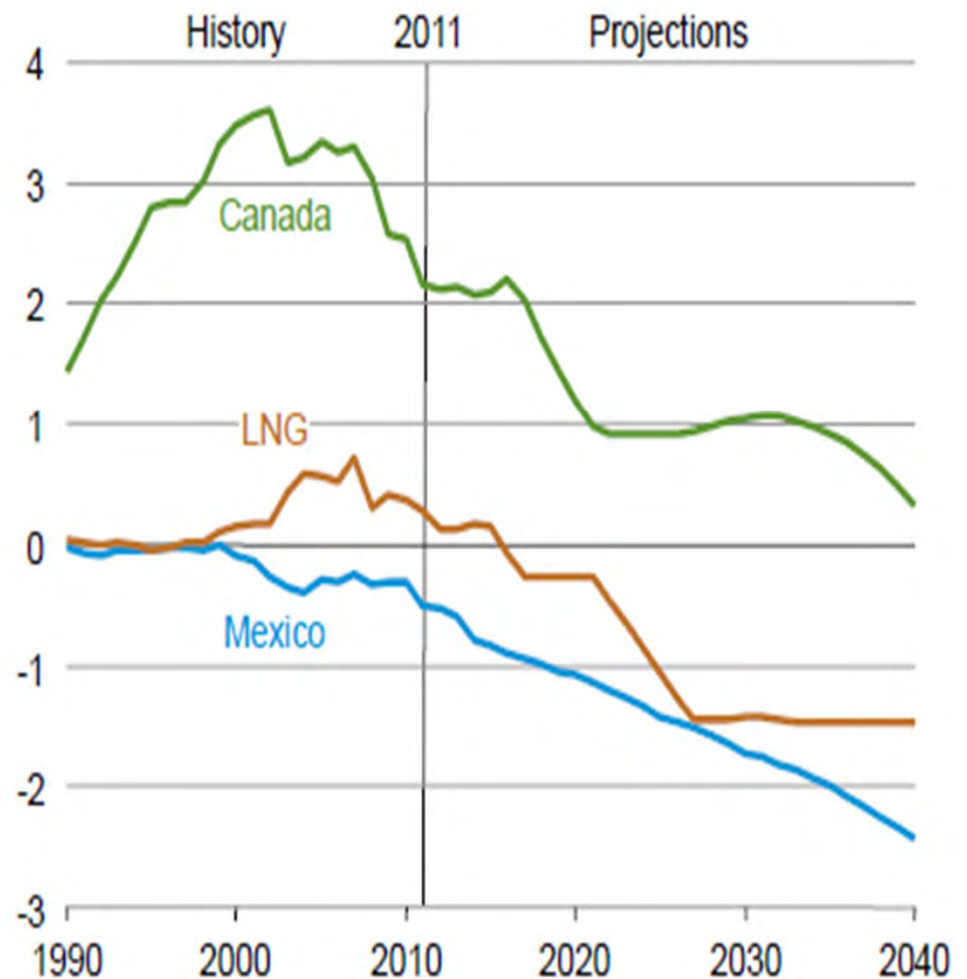
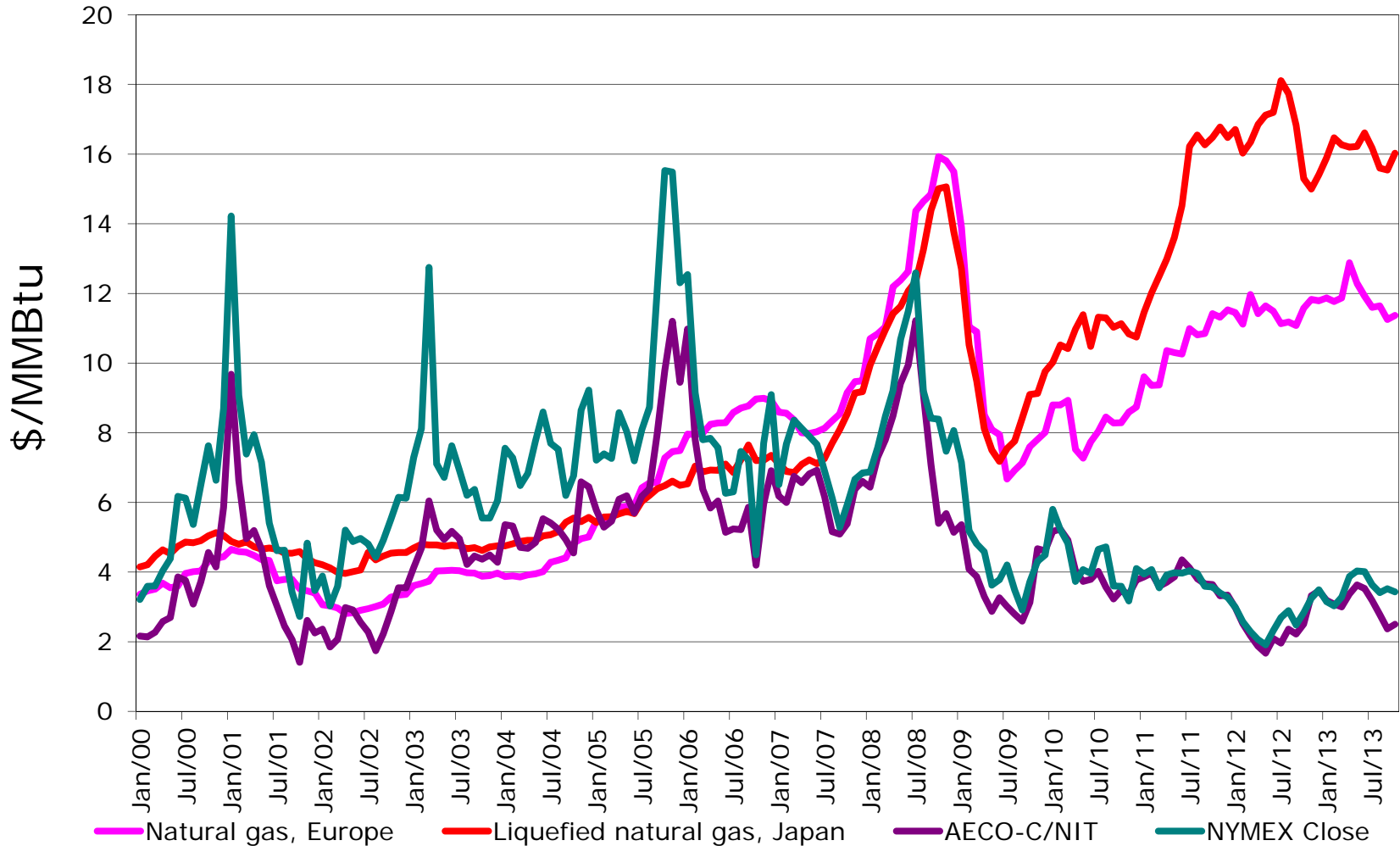


Figure 92. U.S. net imports of natural gas by source, 1990-2040 (trillion cubic feet)



Source: EIA, Annual Energy Outlook 2013

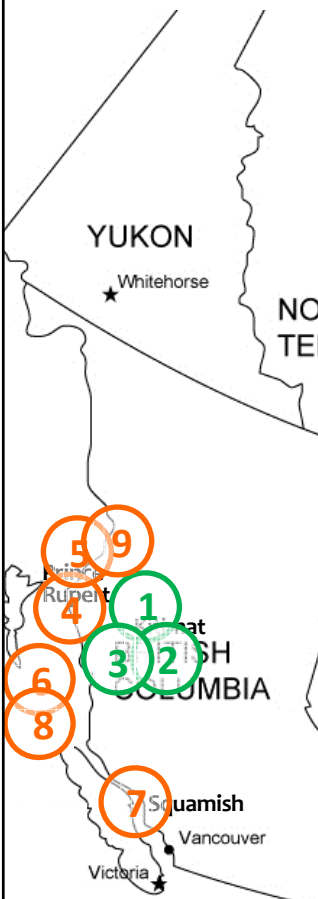
Global natural gas prices much higher than North American prices



Sources: World Bank, Canadian Natural Gas



Export terminals are being proposed to meet global LNG demand



NO.	NAME	CAPACITY	IN SERVICE	EXPORT LICENCE
WEST COAST (proposed) – 135 million tonnes per annum (mtpa) (18.4 bcf/d)				
1	Douglas Channel LNG	1.8 mtpa (0.25 bcf/d)	2015	Davis Approved
2	Kitimat LNG	10 mtpa (1.4 bcf/d)	2017	Approved
3	LNG Canada	24 mtpa (3.4 bcf/d)	2019/20	Approved
4	Prince Rupert LNG	21.6 mtpa (2.91 bcf/d)	2020	Under review
5	Pacific Northwest LNG	19.68 mtpa (2.74 bcf/d)	2018	Under review
6	WCC LNG	30 mtpa (4 bcf/d)	2021	Under review
7	Woodfibre LNG (Squamish)	2.1 mtpa (0.29 bcf/d)	2016	Under review
8	Triton LNG	2.3 mtpa (0.32 bcf/d)	2017	Under review
9	Aurora LNG	24 mtpa (3.1 bcf/d)	2021/23	Under review
EAST COAST (potential) – 10 mtpa (1.4 bcf/d)				
10	Goldboro LNG	10 mtpa (1.4 bcf/d)	2019	Under review
11	Canport LNG	7.5 mtpa	Existing import facility with authority to export LNG	



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6. Social Licence and Pipelines



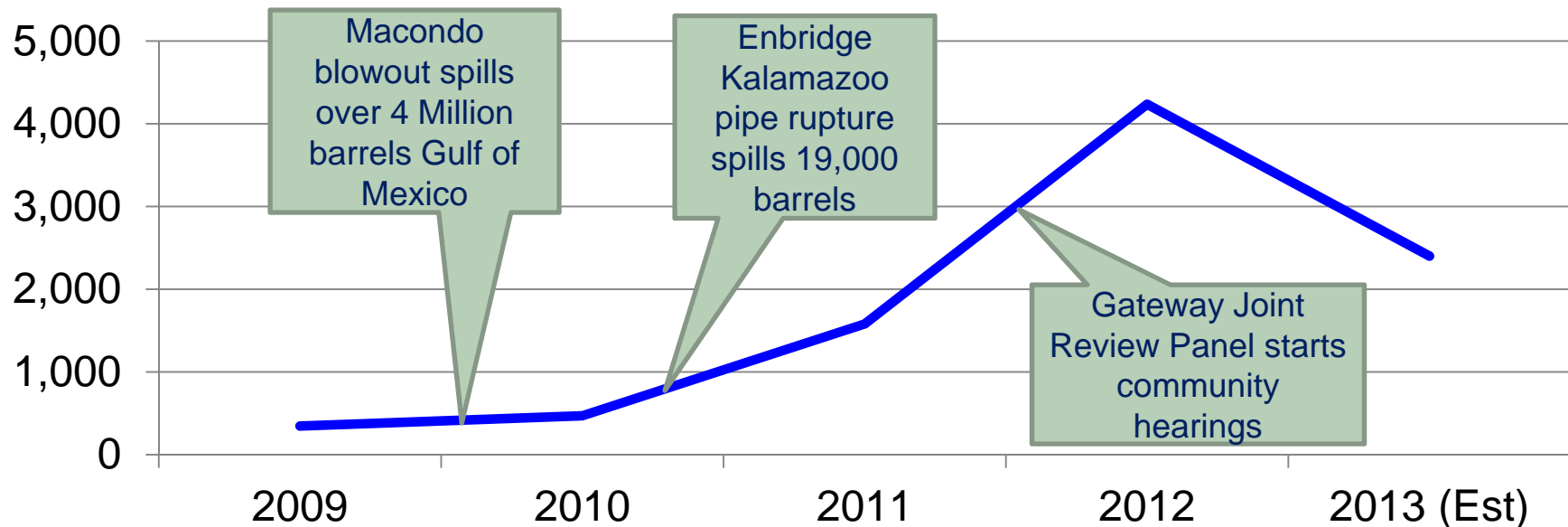
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Public Interest in Pipelines

Letters From Canadians



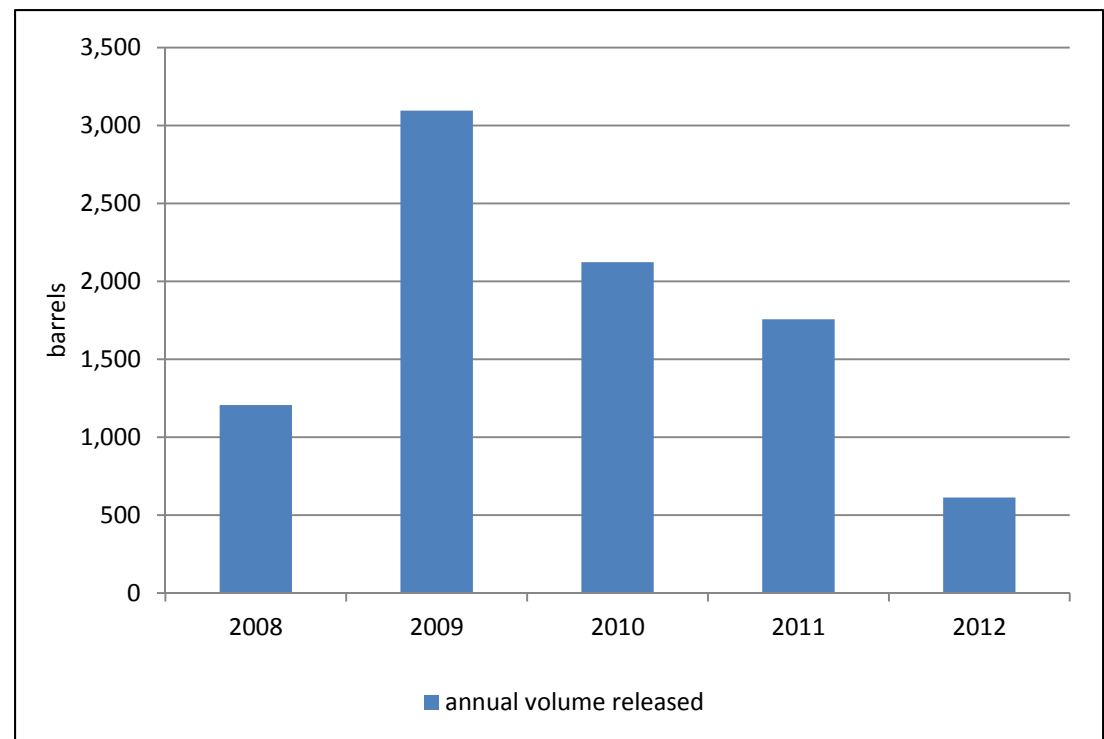
- **Headlines:**
- more than 4,000 register to make statements at Gateway NEB hearing
- thousands join Keystone pipeline protest in Washington
- Robert F. Kennedy Jr., others arrested in Keystone pipeline protest
- Over 50 per cent in B.C. oppose Gateway project
- Nobel winner joins pipeline opposition



Overall, the pipeline safety record in Canada is strong

- Canada has a robust safety regime
 - NEB regulates over 73,000 km of pipelines across the country
- Annual releases very small fraction of oil moved
- Releases must be cleaned, vacuumed up
- 2008-12 releases average ~1,700 barrels/yr, on 1.2 Billion barrels moved/yr
- This works out to 99.999% of oil moving safely

Total Volume of Liquid Released per Year



Source: NEB



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Government working to further improve pipeline safety

- In 2012, in its plan for Responsible Resource Development, the Government provided \$13.5 million over two years to the NEB to:
 - increase the number of oil and gas pipeline inspections by 50 percent annually
 - double, from three to six, the number of annual comprehensive audits to identify potential issues and prevent incidents from occurring
- In 2013, GoC updated the NEB Onshore Pipeline Regulations
 - to reinforce the need for pipeline companies to have a culture of safety focused on protecting the public, workers, and the environment
- In 2013, finalized Administrative Monetary Penalties
 - NEB can now impose penalties of up to \$100,000 per day (companies) or up to \$25,000 per day (individuals) for violations of the NEB Act
- In 2013, Minister announced GoC intention to pursue legislative and regulatory changes to:
 - enshrine in law the “polluter pays” principle (currently it is only implicit)
 - require companies operating major crude oil pipelines to have \$1 Billion in financial capacity to respond to oil spills;
 - ensure companies responsible for abandoned pipelines
 - clarify safety zones along pipelines
 - clarify the NEB’s authority to undertake compliance audits



7. Canadian Perspectives on Mexico as NAFTA Partner



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Mexico is a strong trade partner for Canada

- Canada enjoys excellent relations with Mexico.
- The trade relationship between the two countries has grown exponentially since the signing of the North American Free Trade Agreement (NAFTA) in 1994.
- This includes significant trade in energy commodities. In 2012, Canada's total energy trade with Mexico stood at \$1.2 billion CAD.
 - Crude oil (\$790 million CAD)
 - Refined petroleum products (\$372 million CAD)



Canada's energy cooperation with Mexico

- Good relations, with the two countries working closely on oil and gas issues at the government-to-government level through a variety of mechanisms, including: the Canada-Mexico Partnership's Energy Working Group; and the Energy and the Climate Partnership of the Americas' Heavy Oil Working Group
- These issues include:
 - heavy oil;
 - shale gas;
 - regulations and standards related to energy transport (pipelines, marine, etc.); and
 - public concern/acceptance.
- Canada is closely following the Government of Mexico's ambitious energy reforms, including proposed changes to the constitution.
- A number of Canadian energy companies are in Mexico, including TransCanada, which owns and operates the Tamazunchale Pipeline System.



8. Conclusions

- Minister and Department focussed on Energy Market Diversification
- New pipeline capacity is needed; public concerns expressed about safety
 - pipelines are heavily regulated, have a safe track record
 - Government is taking measures to further enhance pipeline safety



Useful NRCan Links

- Pipeline Safety
 - <http://www.nrcan.gc.ca/media-room/news-release/2013/7227>
 - <http://www.nrcan.gc.ca/media-room/news-release/2013/7225>
- Energy Policy
 - <http://www.nrcan.gc.ca/energy/policy/1352>
- Bitumen-Derived Crudes and Corrosivity
 - <http://www.nrcan.gc.ca/media-room/news-release/2012/6676>
- Pipeline Frequently Asked Questions (FAQs)
 - <http://www.nrcan.gc.ca/energy/sources/natural-gas/pipeline-faq/2248>
- Pipeline Arbitration Secretariat
 - <http://www.nrcan.gc.ca/energy/sources/natural-gas/pipeline-arbitration-secretariat/1601>
- Pipeline Announcements – further measures
 - <http://www.nrcan.gc.ca/media-room/news-release/2013/7229>
- Fuel Focus
 - www.fuelfocus.nrcan.gc.ca



Thank You



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