

# Transmission Pipelines - Enabling Infrastructure

GPAC - O & M Conference

May 11, 2012



Canadian Energy  
Pipeline Association

Association canadienne  
de pipelines d'énergie

# About Our Industry

- Transport 97% of the natural gas and onshore crude oil produced in Canada
- Operate over 100,000 kilometres of pipeline in Canada and the United States
- Pipelines are the safest and most environmentally sound way to transport oil and gas; we have a world class industry in Canada

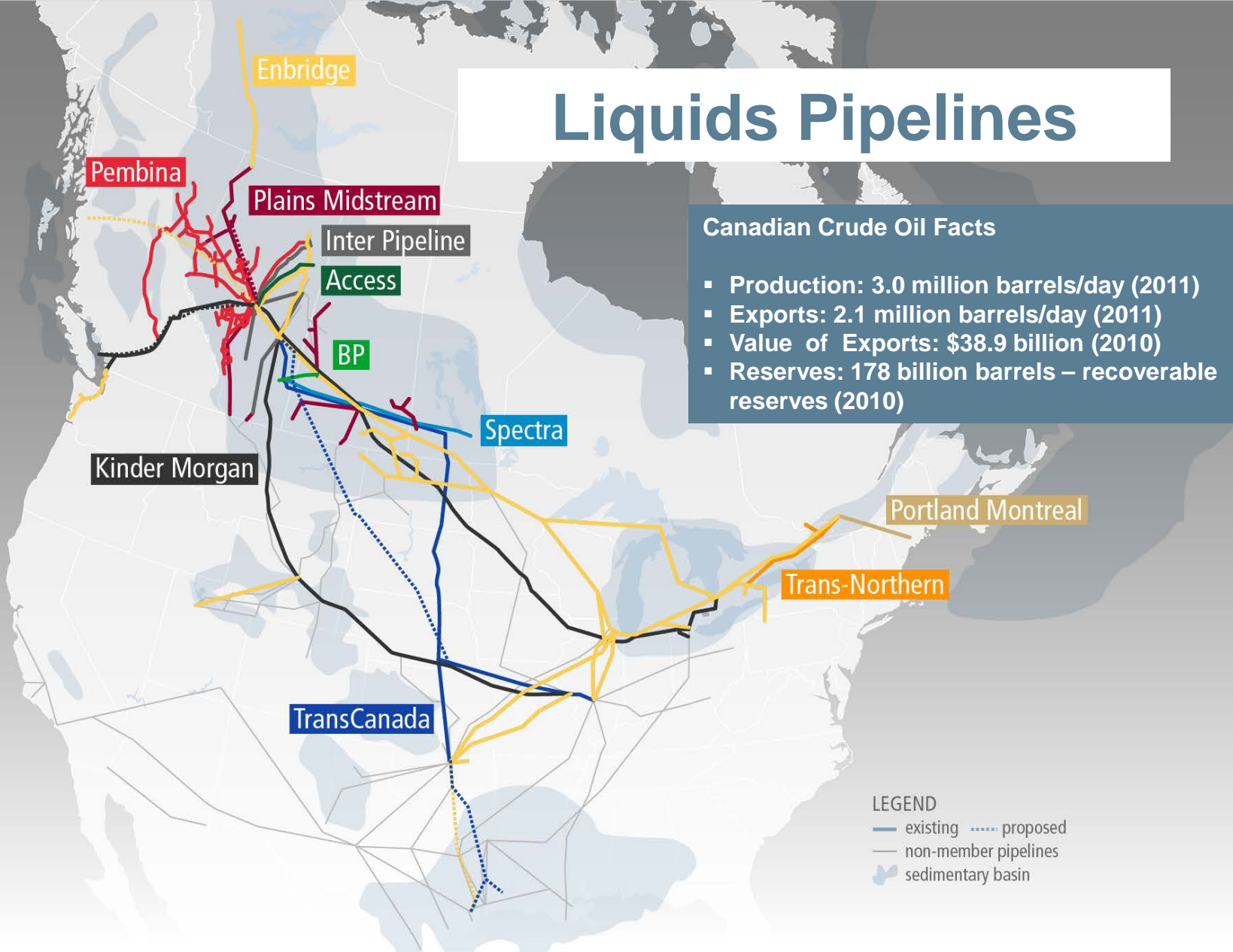
# CEPA Members



# Liquids Pipelines

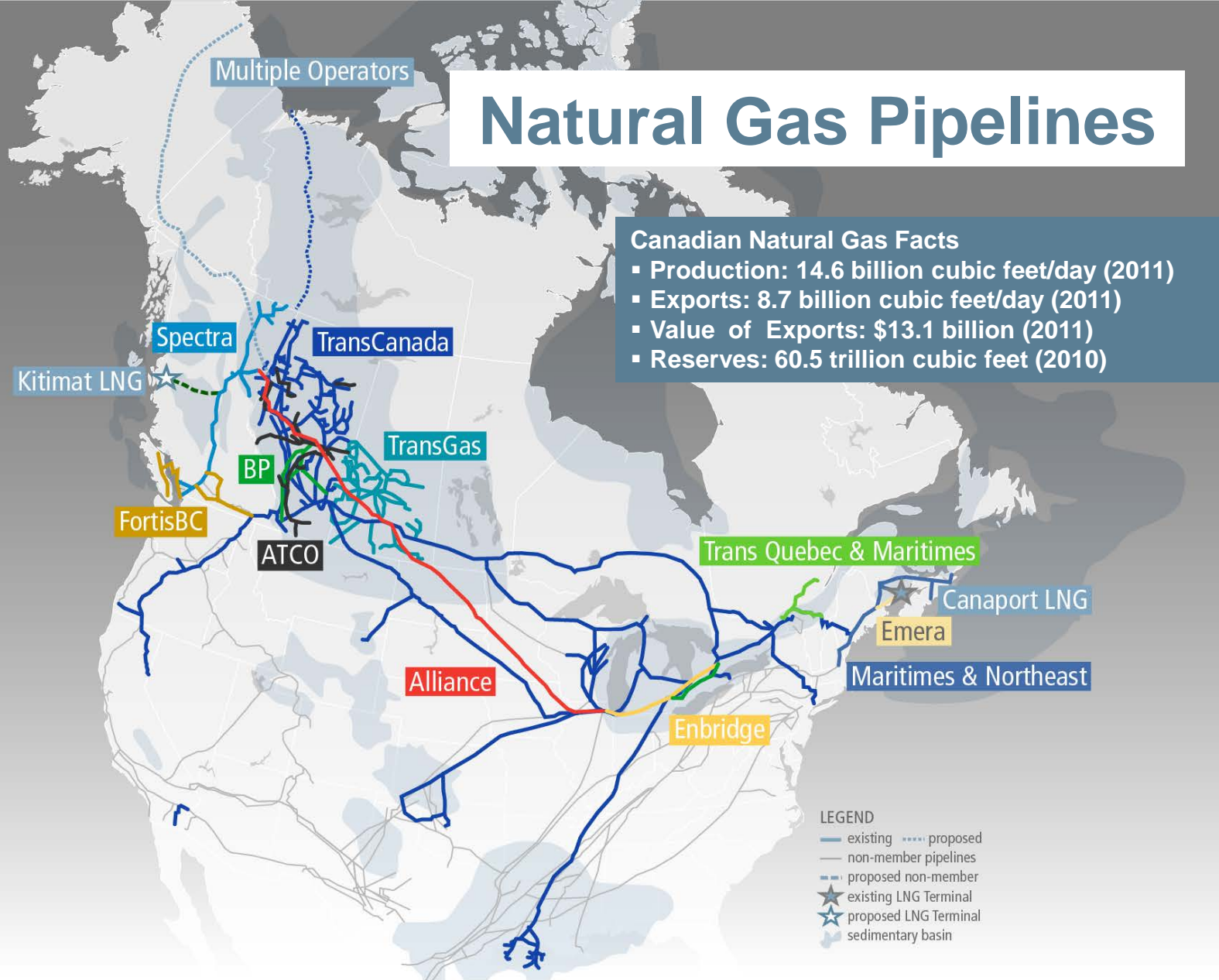
## Canadian Crude Oil Facts

- Production: 3.0 million barrels/day (2011)
- Exports: 2.1 million barrels/day (2011)
- Value of Exports: \$38.9 billion (2010)
- Reserves: 178 billion barrels – recoverable reserves (2010)





# Natural Gas Pipelines

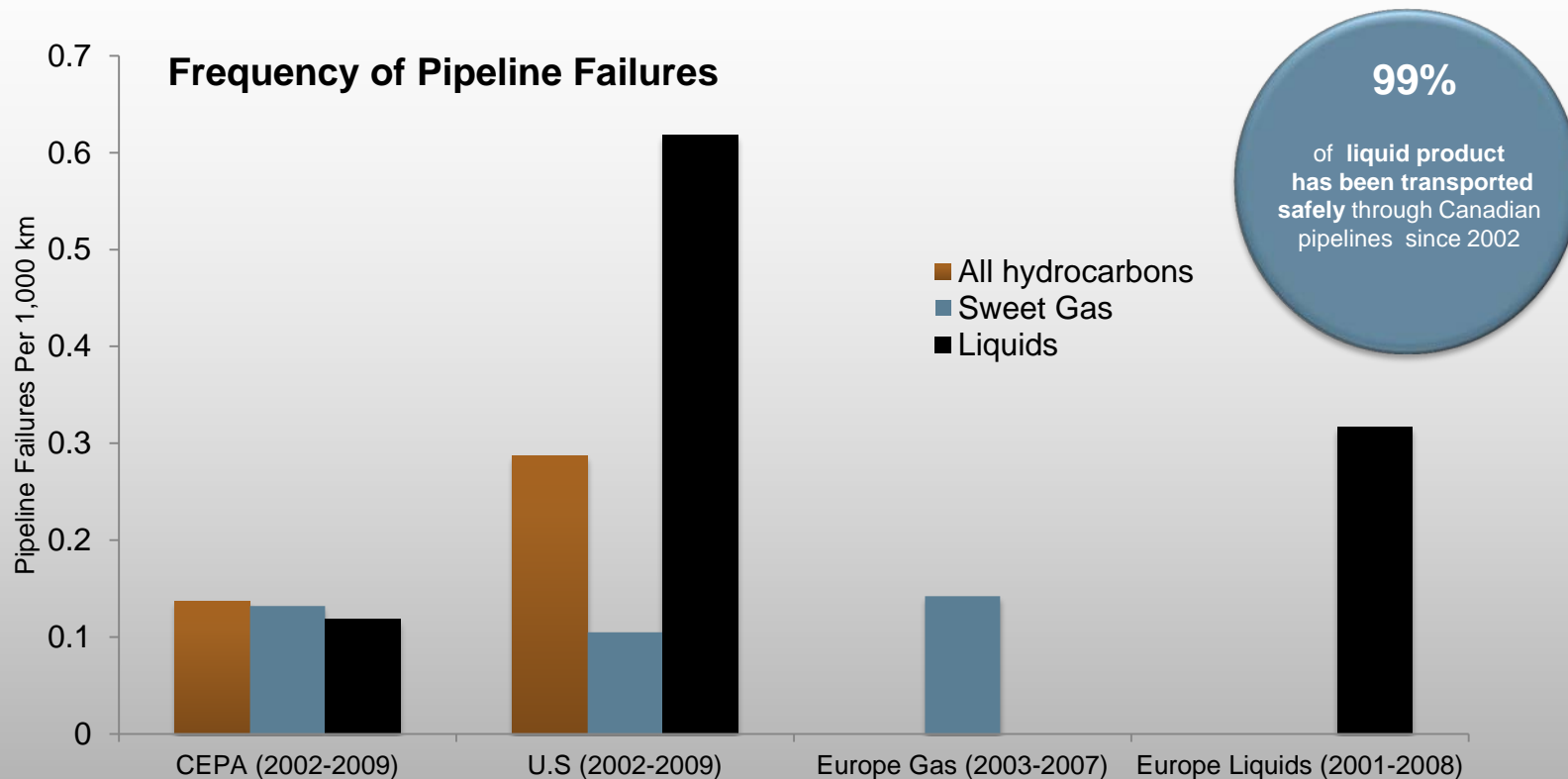




# Safe and Efficient Energy Highways

- CEPA member pipelines transport 1.2 billion barrels of crude and refined products and 5.5 trillion cubic feet of natural gas each year with 99.99% reliability
- Pipelines are underground and safe
  - The only feasible and safest means of transporting vast quantities of crude and natural gas over land
  - Inherently safer than other modes of transportation

# Our Industry has a World-Class Safety Record

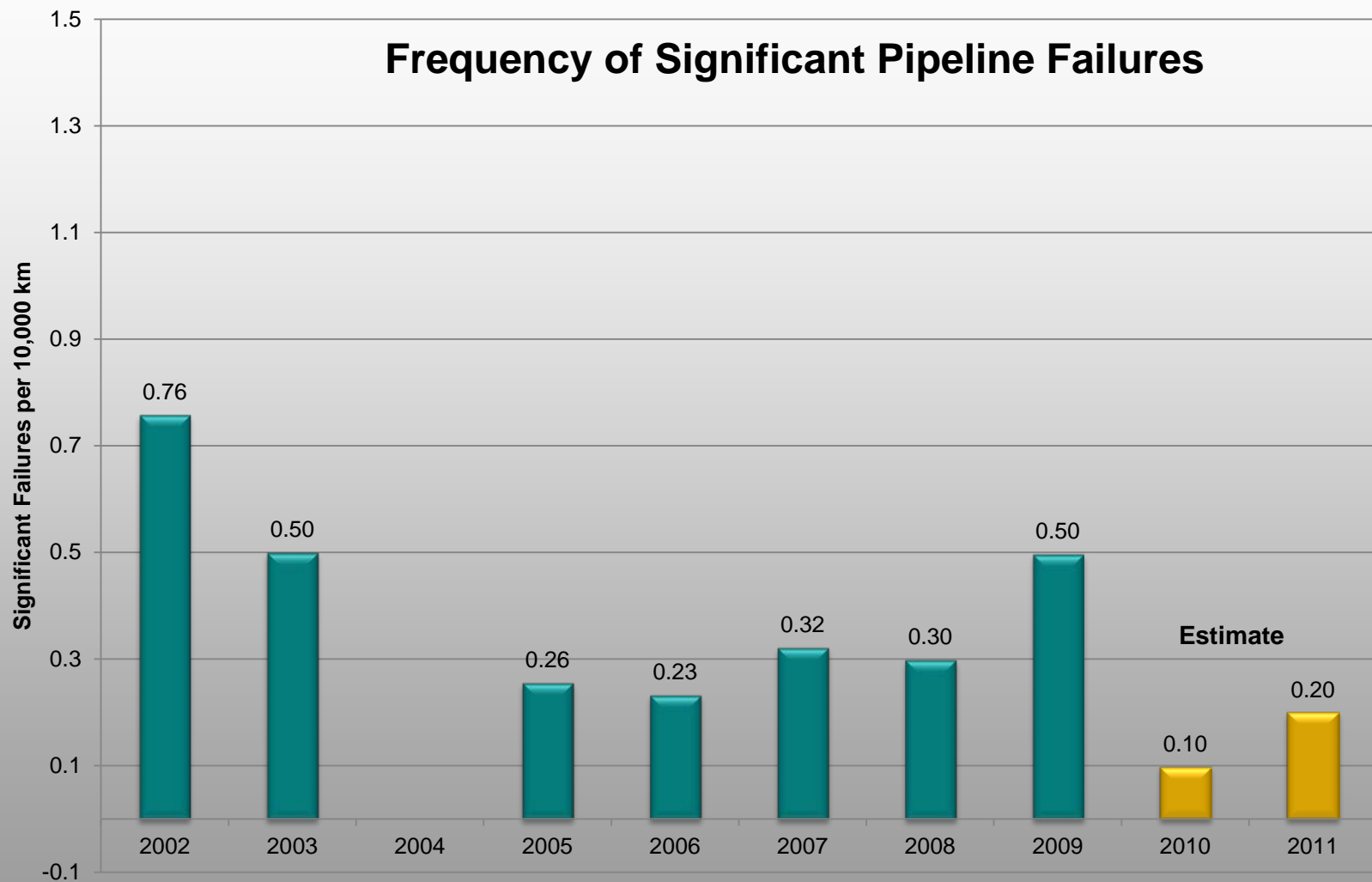


Sources: CEPA, OPS, EGIG and CONCAWE

## Notes:

1. CEPA: Any unplanned release of product due to failure of a pipe
2. Europe Liquids data (CONCAWE) includes releases that occur in equipment, components and stations
3. US Ops data include all releases in onshore pipe meeting the following criteria :
  - Gas: Any event involving release of gas from pipeline, or death, or personal injury requiring hospitalization , or property damage of \$50K or more, or deemed significant by operator
  - Liquid: Release of hazardous liquid or carbon dioxide resulting in unintentional fire or release of 0.016 m<sup>3</sup> or more

# Significant Pipeline Failures Rare







# Economic Value Delivered by Pipelines

- Over \$100 billion of energy products delivered annually since 2007
- Compares against a cost of service of less than \$5 billion/yr – huge value added
- Energy exports account for over 1/5<sup>th</sup> of Canada's total merchandise exports
- In 2008, hydrocarbon production contributed over \$30 billion in govt tax revenue
- All enabled by efficient pipeline infrastructure

# Pipeline Development Issues

- Development of new pipeline assets is critical to opening new markets for Canadian oil and gas
- The industry makes, and must continue to make, huge investments in pipelines to provide cost competitive infrastructure

\$100 billion

Over the past five years the annual value of energy transported over NEB regulated pipelines to domestic and export customers

**Infrastructure = Choice & Responsiveness = Energy Security**

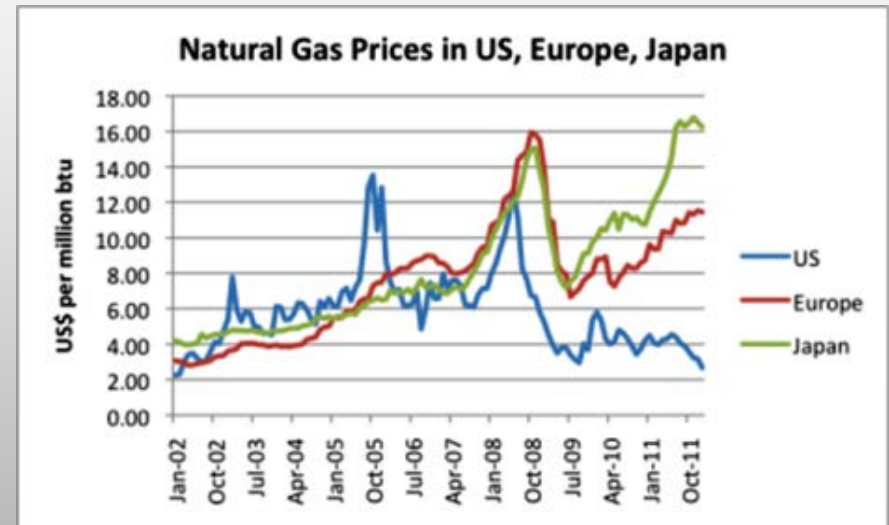


# Inadequate Pipeline Capacity

- Inadequate capacity means natural gas or oil becomes “trapped” – it cannot reach markets
- Oversupply results in the trapped areas, depressing prices
- Trapped oil and gas cannot access world markets and world prices

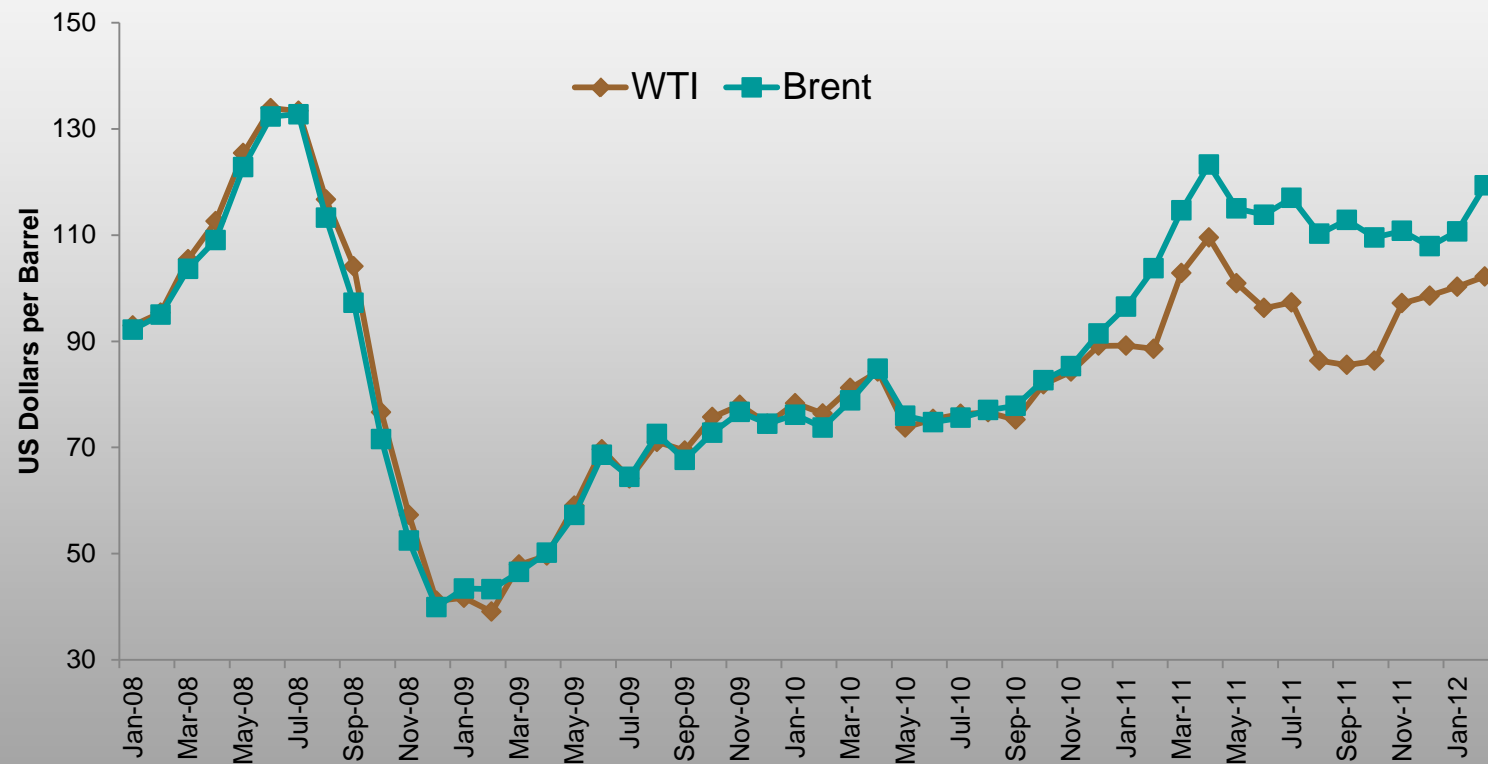
# North American Natural Gas Prices

- At near their lowest levels in more than a decade
  - Over supply caused by growth in shale gas production
  - Demand growth not keeping pace with supply
- Significantly lower than international LNG markets



Source: World Bank Commodity Price Data

# Crude Oil Spot Prices



Source: Energy Information Administration



# Cost of Inadequate Capacity

- With an average price differential of around \$16 a barrel in 2011 on current exports of almost 2 million barrels a day
- Cost to Canadian exporters is:
  - \$33,000,000 per day
  - \$ 12 billion per year
- Canadian governments are losing in the order of \$2.6 billion a year





# Market Access

- Key component of wealth creation for Canada, is for the pipeline industry to have access to existing and new markets
- The U.S. will remain a key market, but Asia is a future strategic market

# Proposed Pipelines

**Energy Infrastructure  
Investment Forecast**  
US\$33 trillion global energy sector  
over next 20 years. (IEA 2010)

Multiple Operators

Enbridge

Plains Midstream

Kitimat LNG

Kinder Morgan

TransCanada

LEGEND  
— proposed liquids pipeline  
..... proposed natural gas pipeline  
- - - proposed non-member pipeline  
★ proposed LNG Terminal  
shaded blue sedimentary basin

# Northern Gateway

Kitimat

Vancouver

Edmonton

## TMX



# Keystone XL

# Seaway

Cushing

Freeport

Houston

Port Arthur

## LEGEND

- existing    ..... proposed
- non-member pipelines
- sedimentary basin

# Supply and Disposition of Western Canadian Crude Oil - 2010

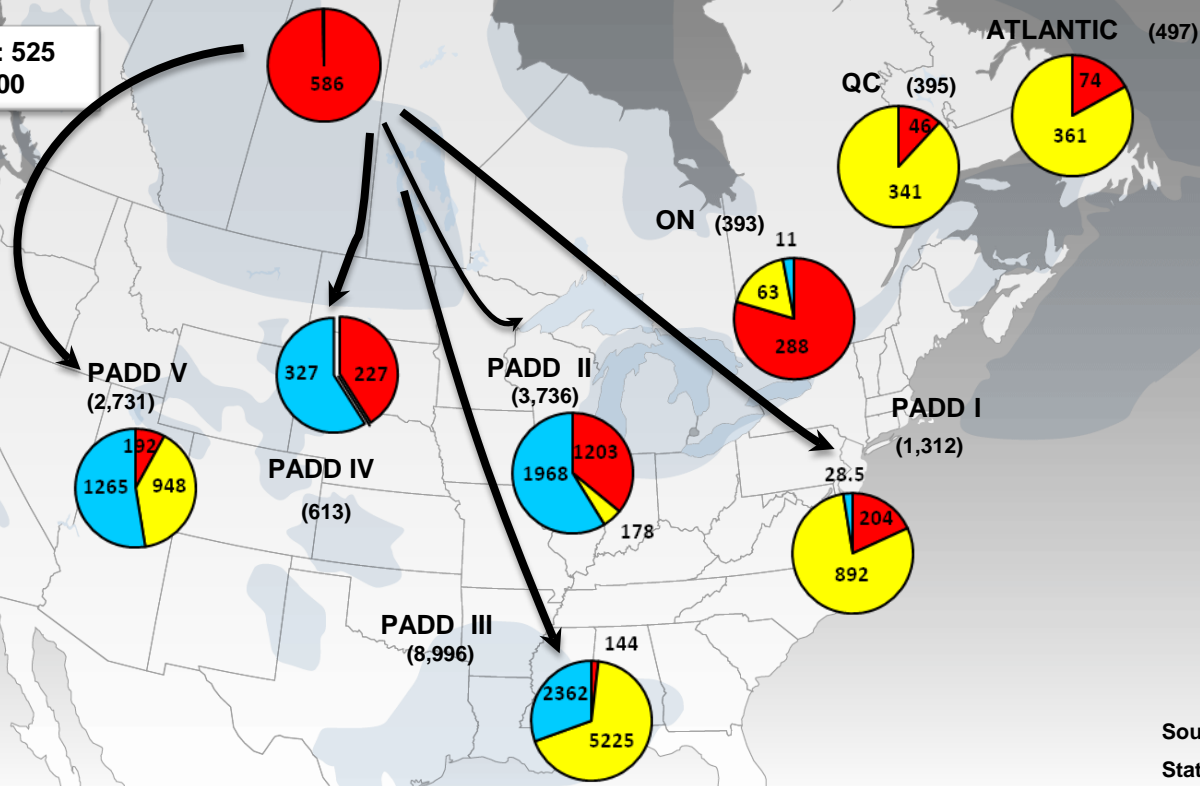
**WESTERN CANADIAN CRUDE SUPPLY**  
2,700

Western Canada (632)

Northern Gateway: 525  
Trans Mountain: 400

Non-US  
25

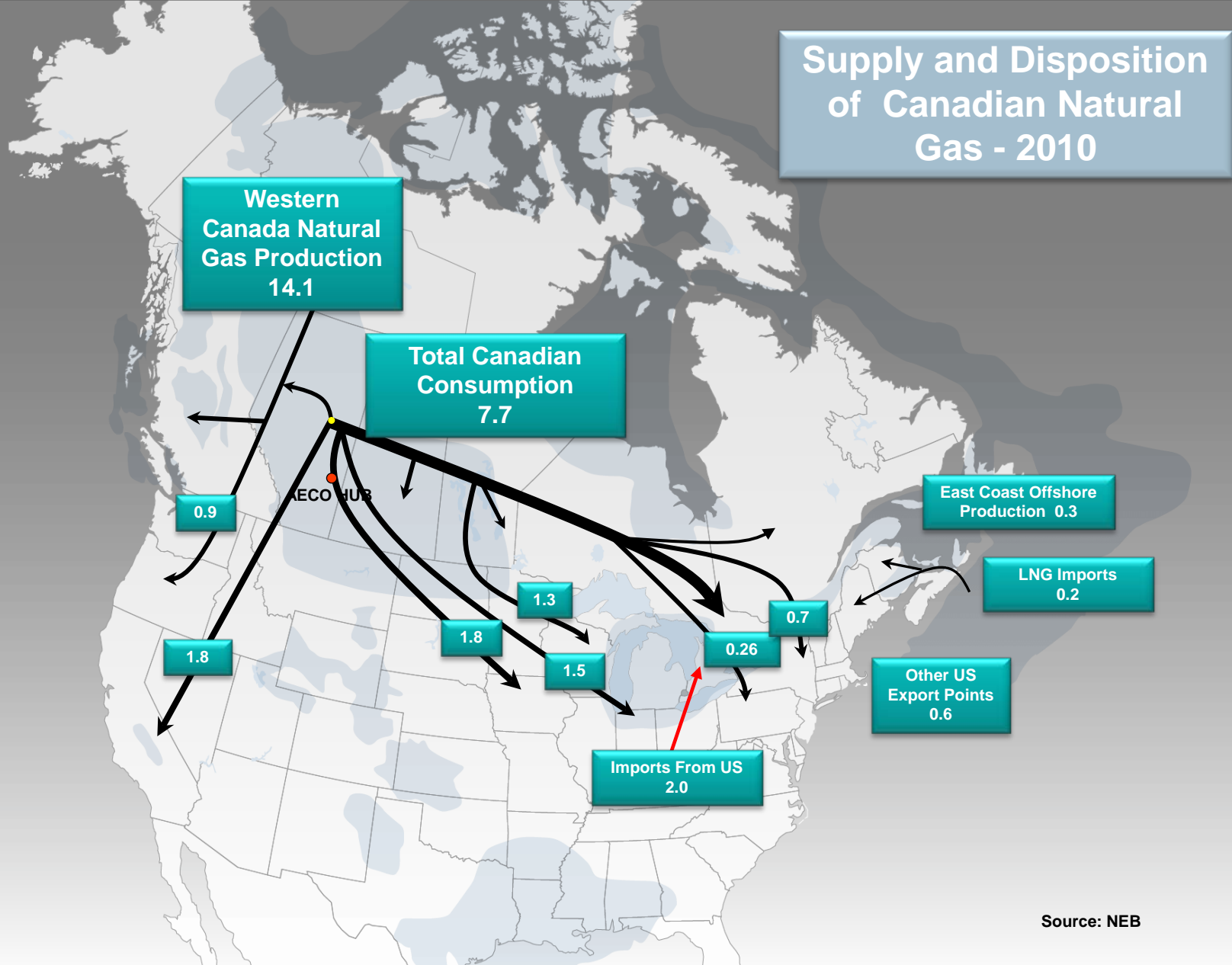
■ Canadian Supply  
■ U.S. Supply  
■ Other imports



Source: NEB,  
Statistics Canada, EIA



# Supply and Disposition of Canadian Natural Gas - 2010





# The Opportunity

- Canada's pipeline industry can be a key element in employment and GDP recovery
- Bringing new projects online near term =
  - Lower costs for big projects
  - Support for key industries
- Private sector projects bring a multiplier effect throughout the economy
- Investments made now ensure infrastructure is in place when investment reoccurs

# New Projects: Regulatory Imperative

Regulatory frameworks are being updated and must deliver:

- Coordination between and within governments, including
  - One project - one review consolidation for new projects
  - Processes and decisions by the best placed regulator
  - Coordination of agencies and departments to eliminate duplication, streamline requirements, and share knowledge and expertise
- Timely and effective processes, ideally with time limits
- Balanced decision making, integrating environment and economy
  - Using facts and expert decision making throughout the life of regulated facilities
- Effective Crown Consultation
  - Fully addressed across departments and jurisdictions
  - Separates assessment from economic negotiations

# Federal Budget 2012 - Regulatory Efficiencies

- “One Project, One Review”
- Predicable and Timely Reviews
  - Major Projects Management Office (MPMO) funding extended (\$54 million over two years)
  - Fixed Review Time
    - ▶ 24 months for panel reviews
    - ▶ 18 months for NEB hearings
    - ▶ 12 months for standard environmental assessments
- Strengthening Environmental Protection
  - Enhancing the inspection and safe navigation of oil tankers (C\$37.5-million over two years)
  - Strengthening pipeline safety (C\$13.5-million over two years funded by industry)
  - Funding of the Northern Pipeline Agency (C\$47-million over two years funded by industry)

# Concluding Remarks

- Canadian transmission pipelines are world leaders in safety and integrity
- Canadian regulatory framework for pipelines is a strategic asset for the country
- A clear, intentional Canadian energy policy framework is a needed beacon for success
- We need new pipelines to secure our economic future

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