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Risk Reduction in Oil Transportation in the Great Lakes Region

Great Lakes and St. Lawrence Cities Initiative

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Who is CEPA?

The **Canadian Energy Pipeline Association** (CEPA) represents Canada's transmission pipeline companies who operate about 130,000 kilometres of pipeline in Canada and the United States.

VISION

A safe, socially and environmentally sustainable energy pipeline industry for Canadians.

MISSION

Continually enhance the operating excellence, business environment and recognized responsibility of the Canadian energy transmission pipeline industry through leadership and credible engagement between member companies, governments, the public and stakeholders.



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CEPA members



- Access Pipeline Inc.
- Alliance Pipeline Ltd.
- ATCO Pipelines
- Enbridge Pipelines Inc.
- Inter Pipeline Ltd.
- Kinder Morgan Canada
- Pembina Pipeline Corporation
- Plains Midstream Canada
- Spectra Energy
- TransCanada PipeLines Limited
- TransGas Limited
- Trans-Northern Pipelines Inc.



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Over 800,000 km of pipelines

	Gathering	Feeder	Transmission	Distribution
Function	Move crude and natural gas from well heads to oil batteries and natural gas processing plants	Transport crude and natural gas from batteries, processing facilities and storage tanks to transmission pipelines	Energy highways transporting crude oil and natural gas within and across provincial or international boundaries	Deliver natural gas to homes, businesses and industries
Network	250,000 km	25,000 km	115,000 km	450,000 km
Location	Mostly AB	Mostly AB	50% AB, 23% SK, 13% ON, 8% BC	Across Canada
Operator	Producers	Producers, pipeline companies	Pipeline companies	LDCs or provincial cooperatives (AB)
Regulator	Provincial	Provincial	Provincial and Federal	Provincial



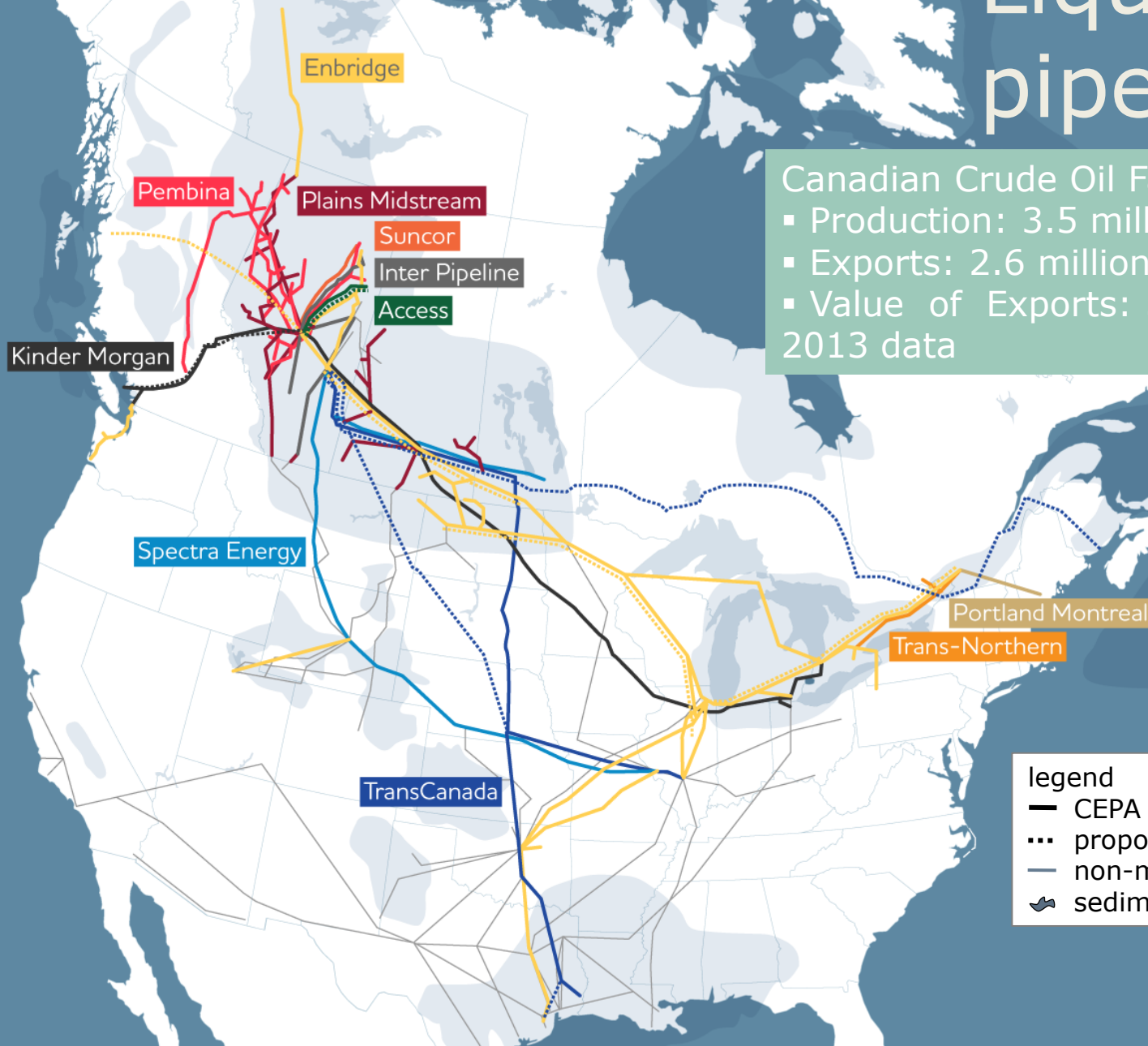
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Liquids pipelines

Canadian Crude Oil Facts

- Production: 3.5 million barrels/day
 - Exports: 2.6 million barrels/day
 - Value of Exports: \$75 billion
- 2013 data



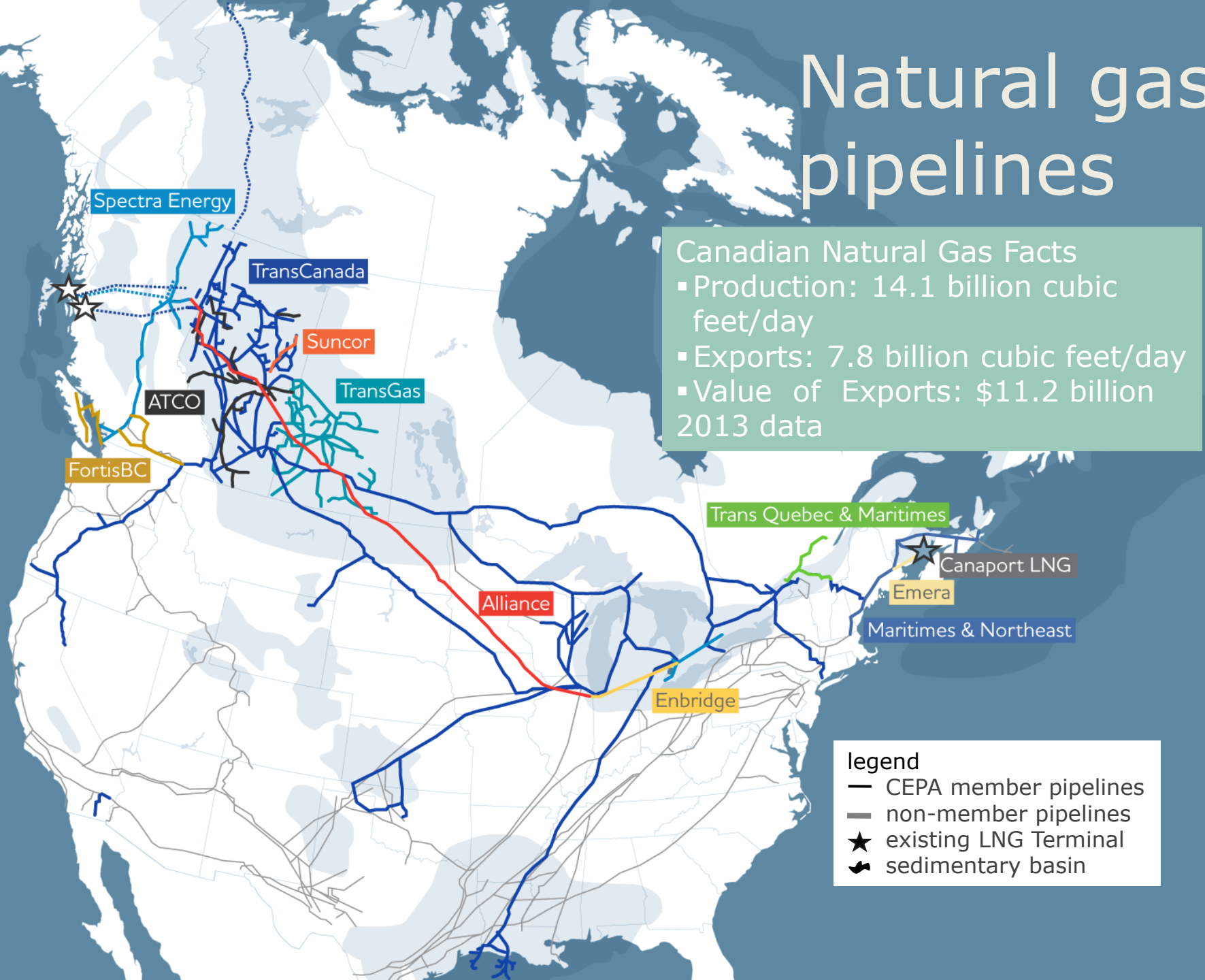
legend

- CEPA member pipelines
- ... proposed pipelines
- non-member pipelines
- ⤿ sedimentary basin

Natural gas pipelines

Canadian Natural Gas Facts

- Production: 14.1 billion cubic feet/day
- Exports: 7.8 billion cubic feet/day
- Value of Exports: \$11.2 billion 2013 data



Pipelines are critical infrastructure



Challenges



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Socio-political context



Unprecedented public and stakeholder interest, resistance and mistrust



Frustration and misinformation as a result of global challenges: climate change, population and energy needs



Heightened public sensitivity



Concerns about risk and environmental impact about industrial facilities



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Trust - a critical cornerstone



$$= \frac{\text{CREDIBILITY} + \text{RELIABILITY} + \text{INTIMACY}}{\text{SELF INTEREST}}$$

CREDIBILITY = Technical competence/expertise

RELIABILITY = Perceptions of dependability, consistency and predictability

INTIMACY = Closeness and depth of the relationship/mutual understanding

SELF-INTEREST = Perceived or real: focus on personal gain/power/glory



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Getting to zero incidents

ACCOUNTABILITY, PERFORMANCE AND EXECUTION



Continual improvement
leading to zero incidents



Leadership and governance

CEPA Integrity First®
management systems and operating practices

Safety culture

Technology and innovation



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CEPA Integrity First®

IMPROVE TRUST AND CONFIDENCE IN THE INDUSTRY



PERFORMANCE:

- defining & implementing best practices for pipeline safety.
- providing environmental protection & socio-economic benefits

ZERO INCIDENTS:

- Reaching pipeline companies' goal of zero incidents.

ACCOUNTABILITY:

- challenging each other's safety, environmental and engagement practices.
- ensuring transparency and accountability.



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Principles and priorities



Ensuring safe communities and workplaces



Minimizing the impact on the environment and biodiversity throughout every phase of pipeline operations



Creating lasting social and economic benefits to communities, regions and countries where we operate

PRIORITIES

- Worker safety
- Damage prevention
- Emergency management
- Pipeline integrity
- Control room management
- Public awareness

PRIORITIES

- Land management
- Air emissions
- Water impacts
- Wildlife
- Noise

PRIORITIES

- Land use and access
- Economic benefits
- Aboriginal relations
- Workforce



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Safety culture

MINDSET – THE GOAL IS BEYOND COMPLIANCE

- Leadership
- Reward success, investigate failure
- Information is actively communicated
- New ideas
- Learning and training is ongoing and continuous
- Employees are empowered and accountable for safety



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Technology and innovation

CANADA IS #2 IN PIPELINE RESEARCH ACTIVITY



Pipeline needs and opportunities:

- Performance improvements
- Public trust and market access
- Efficiencies
- Regulatory readiness for new technologies



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Current projects

Guidance documents and practices completed/underway:

- ✓ Pipeline Integrity
- ✓ Emergency Management
- ✓ Control Room Management
- ✓ Water Impacts
- ✓ Damage Prevention



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Current projects

- ✓ Mutual Emergency Assistance Agreement signed
- ✓ Adoption of Incident Command System (ICS) to ensure interoperability
- ✓ CEPA Joint Industry Emergency Response Exercise
- ✓ New CSA Standards for Emergency Management
- ✓ Emergency Response Plan (ERP) Transparency



Current projects

Watercourse Crossing Guidelines

- 5th edition under review
- NEB responsible for assessing potential impacts on fisheries for NEB regulated projects
- Guidelines (PAWC) applies to new crossings under DFO authority
- New guidelines will improve self-assessment process

Royal Society Research Study

- CEPA and CAPP are co-sponsoring an independent science-based study to better understand behavior of crude types
- Results to inform spill preparedness and response capabilities
- Study done by the Royal Society of Canada
- Report published in Fall 2015



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Concluding thoughts



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Questions?

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Pipeline industry vitals



Over 60 years in
Canada



Highly regulated
industry

97%

Transports 97% of the natural
gas and onshore crude oil
produced in Canada

~130,000km



~130,000 kilometres of
pipeline in Canada and
the U.S.



Safe and
environmentally sound



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Safety performance

SIGNIFICANT INCIDENTS ARE RARE

- Absolute number of incidents are low
- From 2002-2013 there was an average of 3.75 significant incidents/year*

Definition of a significant incident



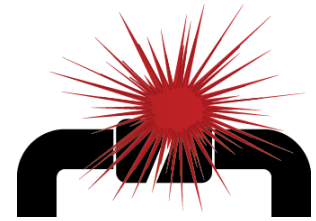
A serious injury
or fatality



A liquid release
of great than
50 barrels of
product (8m³)



An unintentional
ignition or fire



A line break

[Note: * when considering liquids alone, it becomes 2.0 significant incidents/year]

Safety focus throughout lifecycle



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