Canada's Role in the Global Energy Markets

The Oil Sands of Canada

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The Oil Sands of Canada

- Canada has third largest oil reserves in the world. 97% are in the oil sands.
- reserves found in three regions in Alberta: Peace River, Cold Lake and Athabasca
- oil is recovered using two methods: mining and in-situ

80% drilling (in-situ)

Reserves too deep to be mined so are recovered in place (in-situ) by drilling wells to inject steam or to insert heating electrodes and then bitumen is recovered through recovery wells.

20% mining

Reserves are close enough to the surface and so are recovered using large shovel excavators and trucks.

shallower

200 ft depth

deeper

Canada has third largest oil reserves in the world

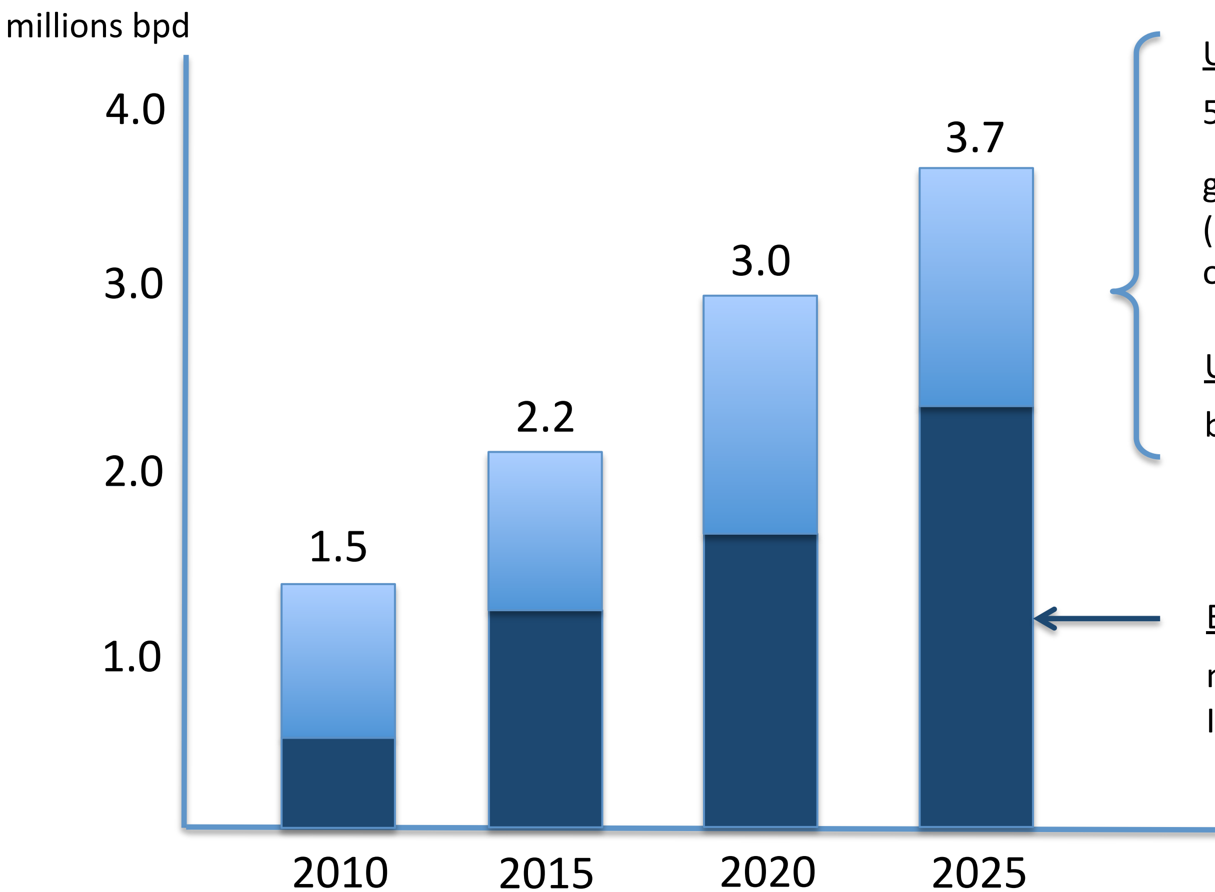
Energy **security**

Fueling North America

- Canada has 175 billion barrels that can be recovered using today's technology; 170 billion of those barrels found in the oil sands
- new technology has been critical to developing oil sands and improving environmental performance
- Canada expected to produce 4.7 million bpd by 2025 with 3.7 million bpd from oil sands CAPP 2011
- Canada is largest importer of crude oil and petroleum products into the US with 2.5 million bpd in 2010
- two forms of crude exported:
  - bitumen blends (heavy crude plus diluent)
  - synthetic crude oil (SCO) from upgraded bitumen (light, sweet crude look-alike)

Supply **projection**

Oil sands only, millions barrels per day crude and bitumen



Upgraded to synthetic by 2020

5-6 miners	1400 kbpd

growth in bitumen conversion (upgrading) to synthetic crude oil in Alberta slows post 2020

Upgrader bitumen demand (2025)

bitumen feed	1800 kbpd

Bitumen (2025)

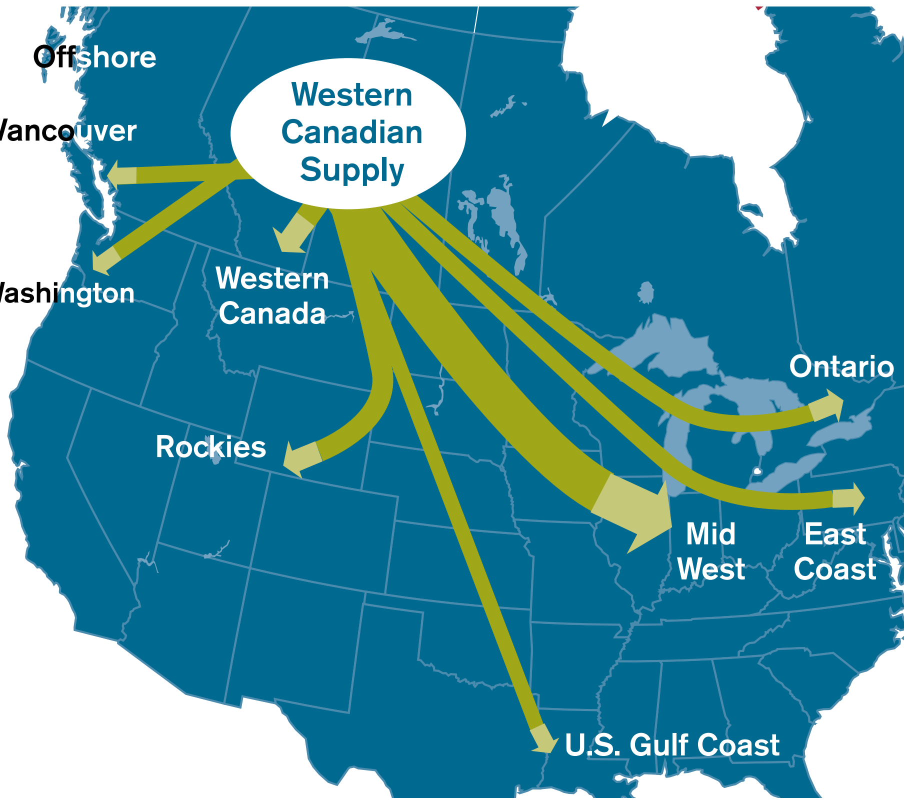
mined	300 kbpd
In-situ	2000 kbpd

- in-situ supply passes mined volumes in 2016 in forecasting model source CAPP 2011

Canada continues to explore access to new markets

Market **access**

U.S. and Asia are natural fits for Canadian supply

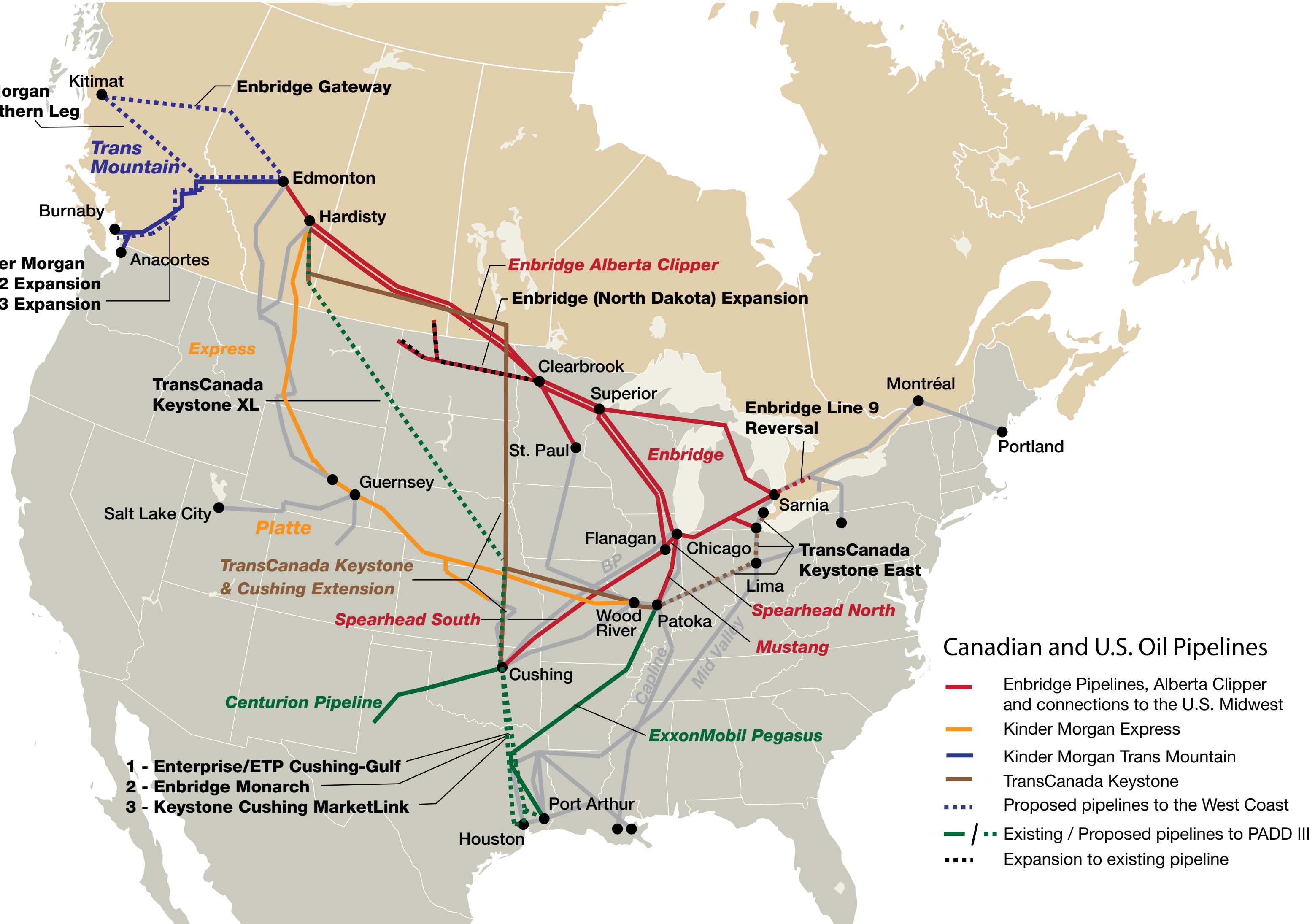


- existing infrastructure can export crude oil from Western Canada to Eastern Canada, the U.S. and some offshore markets
- 2010 exports averaged 2 million bpd

- new pipelines to expand take-away capacity are needed – Keystone and Gateway

The Oil Sands of Canada

Pipeline map



Oil sands development contributes $84 billion/yr to the Canadian economy

Economic **benefits**

Canada and U.S.

Taxes the oil sands industry will pay an estimated $766 billion in Provincial ($122 billion) and Federal ($311 billion) taxes and royalties per year over the next 25 years. source CERI 2011

Jobs As a result of new oil sands developments, employment in Canada is estimated to grow from from 75,000 jobs to 905,000 jobs in 2035. source CERI 2011

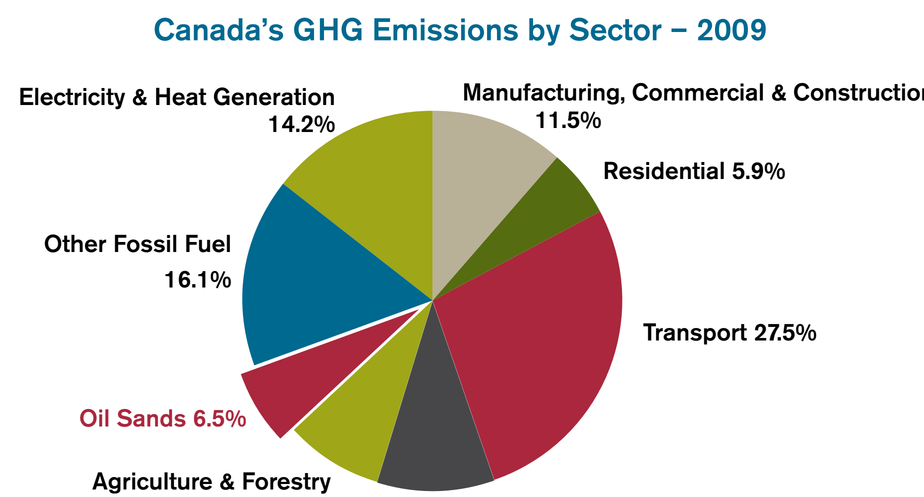
Procurement It is estimated that the oil sands industry will purchase $117 billion in supplies and services from Canadian provinces outside of Alberta over the next 25 years. source CERI 2011

U.S. benefits The demand for U.S. goods and services will climb between 2011 and 2035, adding an estimated $5.8 billion to U.S. GDP in 2015, $12.9 billion in 2020 and 42.6 billion in 2035. source CERI 2011

Environment

Greenhouse gases

- Canada produces 2% of global GHG emissions, and Oil Sands produces 6.5% of Canadian GHG emissions
- Carbon dioxide (CO_2) is a GHG. CO2 is emitted into the air by burning fossil fuels for electricity generation, industrial uses, transportation and home heating.



Source: Environment Canada 2011

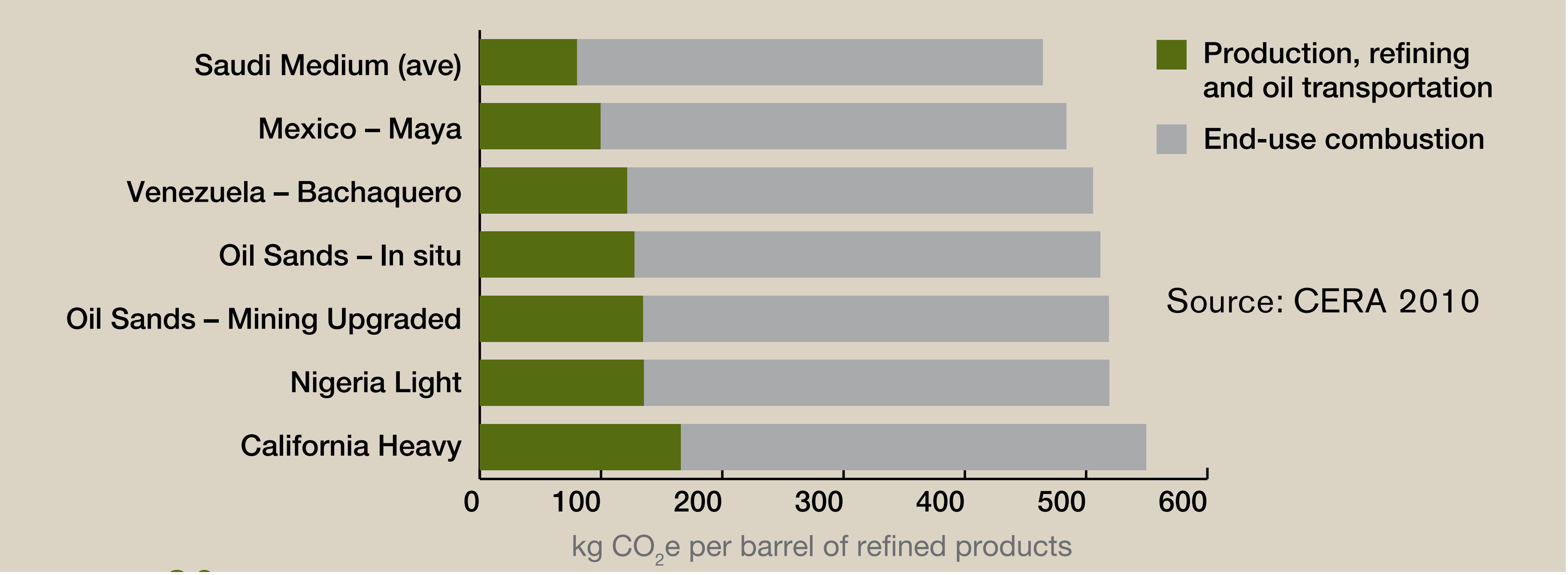
Wells-to-Wheels Measuring CO2 emissions from the start of oil production (wells) through to final combustion (wheels) is called a wells-to-wheels or life-cycle analysis.

Environment

Greenhouse gases

about 80% of oil-related GHG comes from combustion – including automobile exhaust

Intensity Oil Sands crude has a similar CO2 emissions intensity to other heavy oils and is 6% more intensive than the U.S. crude supply average on a wells-to-wheels basis. Domestic California Heavy is significantly more GHG intensive relative to oil sands crudes on a wells-to-wheels basis. 2010 CERA Report



the oil sands business is not for the faint of heart

Production **metrics**

development costs

- capital costs for new oil sands projects:
    - in-situ electro-thermal - $20k per daily flowing barrel
    - in-situ steam (SAGD) - $35k per daily flowing barrel
    - mining - $100k per daily flowing barrel
- operating costs for projects:
    - in-situ electro-thermal - $10/bbl
    - in-situ steam (SAGD) - $15/bbl
    - mining - $15/bbl
- typical project sizes, maturity of technology:
    - in-situ electro-thermal – 10k bpd (final field testing)
    - in-situ steam (SAGD) – 25k-75k bpd (optimization)
    - mining – 100k bpd (fully mature)

Current **issues**

costs, human resources and regulatory

- **capital costs** for new oil sands projects continue to increase:
  - shortage of skilled construction labor and supervision
  - shortage of engineering, construction, construction management bandwidth
  - installed cost of facilities 1.5-2.0 times U.S. gulf coast equivalent
- **human resources** to operate and maintain facilities challenging:
  - rapid increase in number of facilities (operating positions) since 2005
  - training & development has not kept pace
  - Alberta too small to source/train all human resource requirements
- **regulatory** multiple challenges:
  - environmental performance (compliance and improvement)
  - multiple regulatory jurisdictions, “politicized”, time consuming

New **technology**

lower costs, reduced environmental impact

ET-DSP™ offers compelling economics and improved environmental impact

- **ET-DSP™** a new in-situ option for depths 50-500 feet below ground:
  - heats bitumen pay zone using electrical energy
  - recovers bitumen via vertical recovery wells
- **Simplicity**:
  - does not require steam, so minimal water treatment
  - only known technology option for depths 200-500 feet below ground
- **Key Metrics** are compelling:
  - initial capital costs \$15k-\$20k per daily flowing barrel (50% less than SAGD)
  - operating costs (including energy) approx \$11 per barrel (33% less than SAGD)
  - energy intensity – equivalent steam-oil-ratio of <1 vs SAGD >3
  - staffing levels significantly lower than SAGD or mining
  - environmental impact much reduced

new technology
ET-DSP™

new company
ET Energy

New **company**

ET Energy has acquired rights to use ET-DSP™

- **ET Energy** testing and developing technology on its own leases:
  - 284 million barrels recoverable using ET-DSP™ McDaniel 2011
  - funded through 2012 final field testing
- **Field Testing** will be completed in 2012:
  - earlier field tests confirmed ET-DSP™ concepts and design specifications
  - new 250 bpd facility, 13 recovery wells, startup Jan 15, 2012
  - expect first oil approximately May 2012
- **Commercial Development** begins 2014:
  - first 10k bpd facility startup 2014; cost estimate $175m CDN (Poplar Creek I)
  - expansion of 40k bpd facility startup 2016; cost estimate $600m CDN

ET energy

rapid commercialization of technology

ET Energy has $700m development plan for commercialization of technology

- **Current Capitalization**:
  - private company; 67m shares outstanding; 80m fully diluted
  - NAV - $28/share based on Company estimates
- **Financing Options** to achieve growth plan:
  - completed $10m shareholder rights offering Dec/Jan 2012
  - current initiative to raise $30-50m to fund critical spending for Poplar Creek I
  - target IPO Q3/Q4 2012 to fund full Poplar Creek development