



Alberta: Resourceful. Responsible.

Diana McQueen
Parliamentary Assistant to
the Minister of Energy

Alberta: Secure and responsible

The Facts

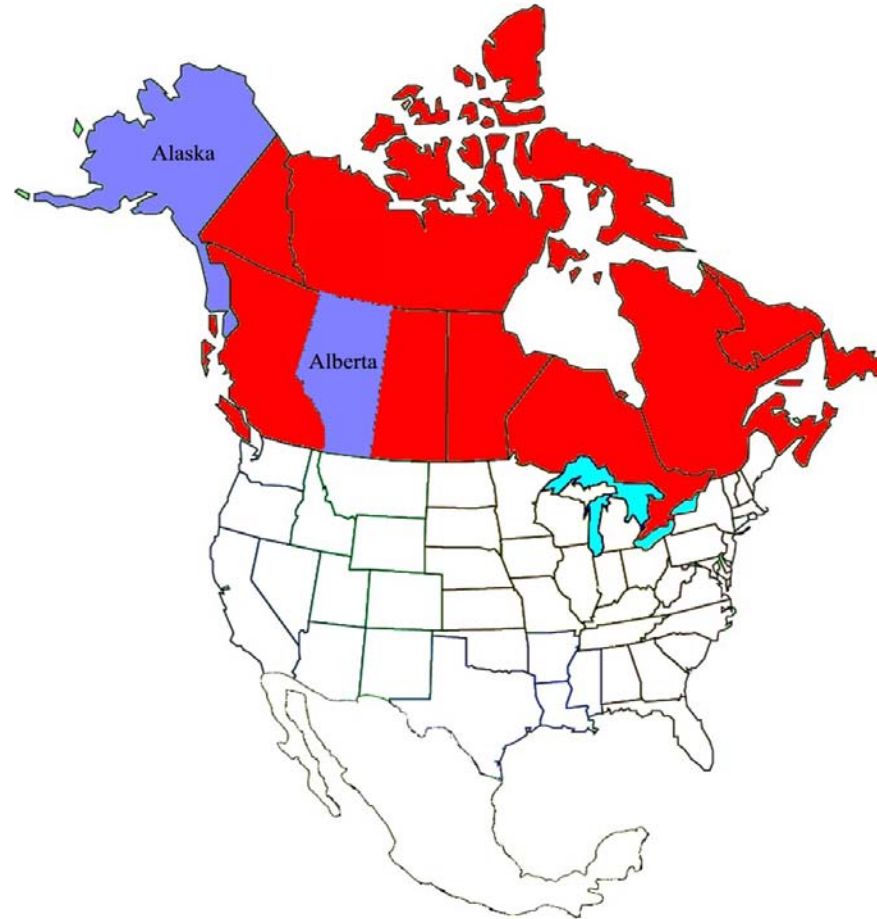
- Secure and responsible supplier of energy
- Attractive investment climate
- Stable political climate
- Abundance of resources

The world demands energy

- Shift to cleaner energy is vital...but the world will still need oil and gas.
- International Energy Agency forecasts energy demand to grow by 30% over next 20 years.
- Demand comes from choices we all make.

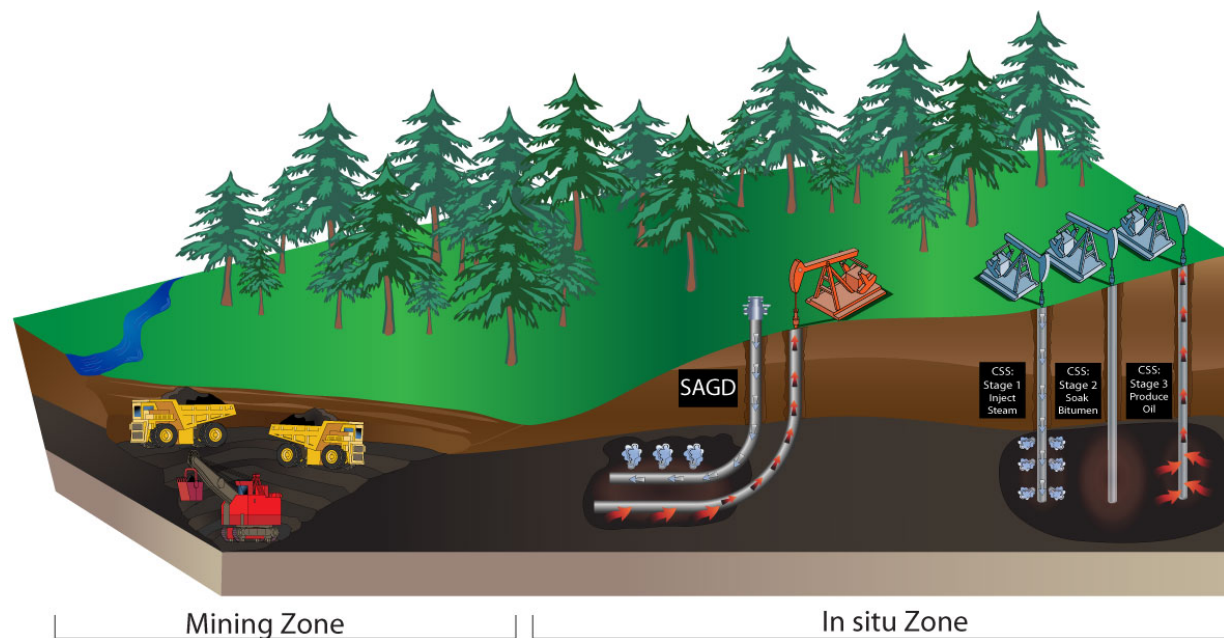


Where are the oil sands?



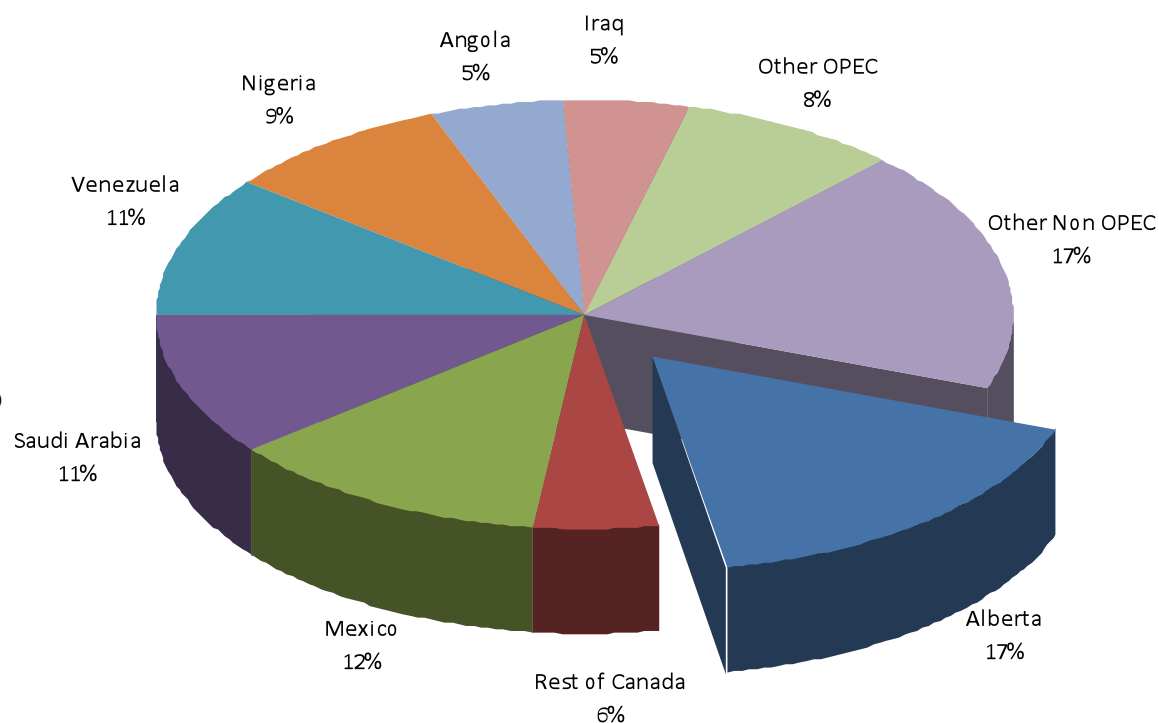
How much is there?

- 170 billion barrels of recoverable oil (potentially 315 billion barrels)
- 20% recoverable by mining, 80% recoverable through in-situ techniques



Sources of U.S. imports 2009

- > Total U.S. Demand: 18.7 million bbl/d
- > Total Imports: 9.1 million bbl/d



Note: Total does not add up to 100% due to rounding .

Sources: U.S. Energy Information Administration and Alberta Energy Resources Conservation Board

Energy and security

“Significant growth in oil sands imports into the United States will reduce the required volume of oil imports from elsewhere in the world.”

“The oil sands are sourced from a politically stable and secure country adjacent to the United States.”

- Cambridge Energy Research Associates: *Growth in the Canadian Oil Sands: Finding the New Balance*, May 2009

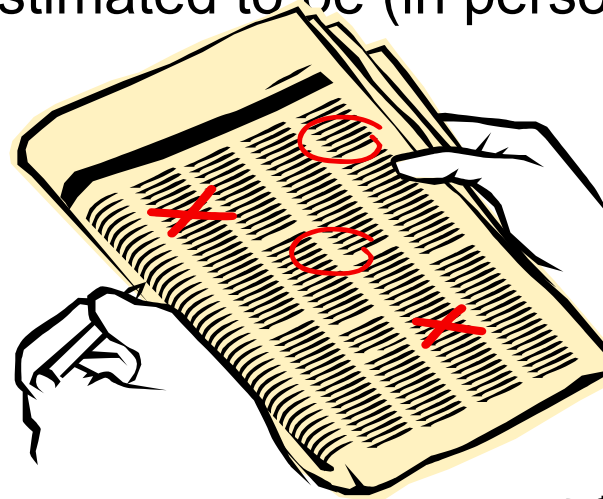
Investment in the oil sands

- Capital investment in oil sands was nearly \$13.5 billion in 2009.
- More than \$140 billion in projects underway or proposed through 2012.

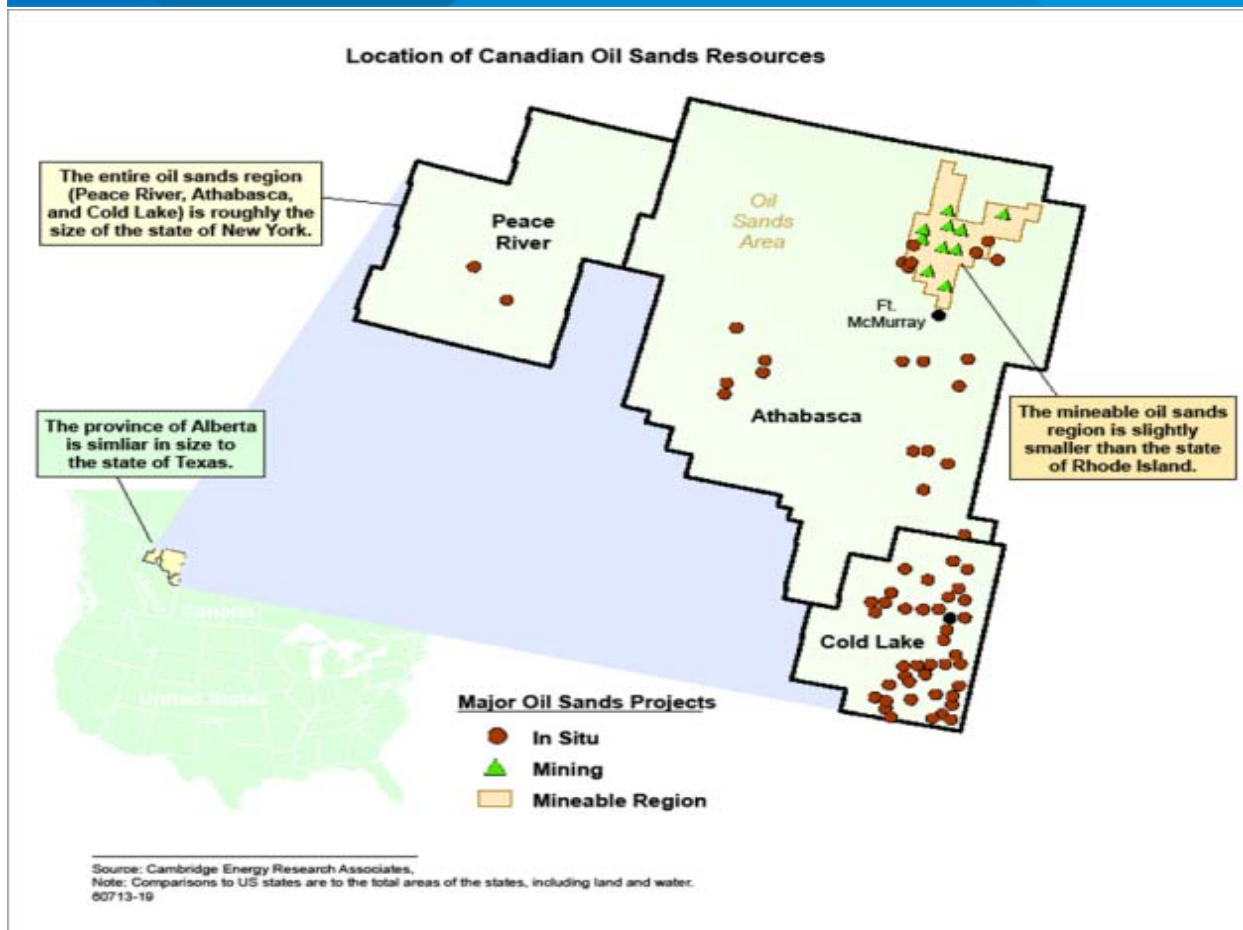


Impact of oil sands on U.S.

- Canadian oil sands development and production will result in employment increases across the U.S.
- Incremental employment is estimated to be (in person years):
 - 2009-2010 = 172,000
 - 2011-2015 = 343,000
 - 2016-2020 = 88,000
 - 2021-2025 = 22,000
- American GDP estimated to grow by an average of \$31.2 billion per year.



How big are the oil sands?



Oil sands deposits:
-54,903 miles²

Surface mineable deposit:
-1,853 miles²
about 1.25% of Alberta's Boreal forest area

Less than 30% of mineable area has been approved for mining

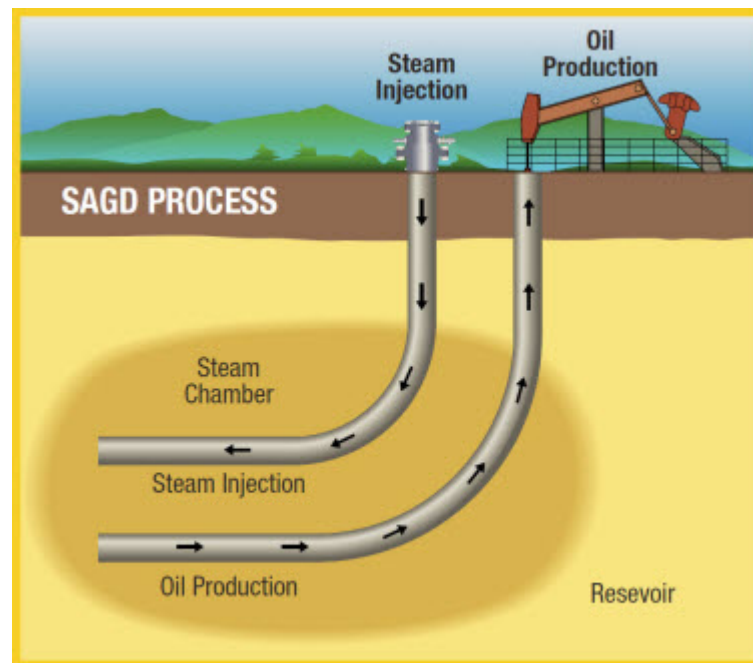
Land disturbed to date:
- 232 miles²

Oil sands and the forest



In-situ technology

80% of Alberta's oil sands will require some form of in-situ recovery.



Source: Canadian Centre for Energy Information

Cold Lake in-situ operation



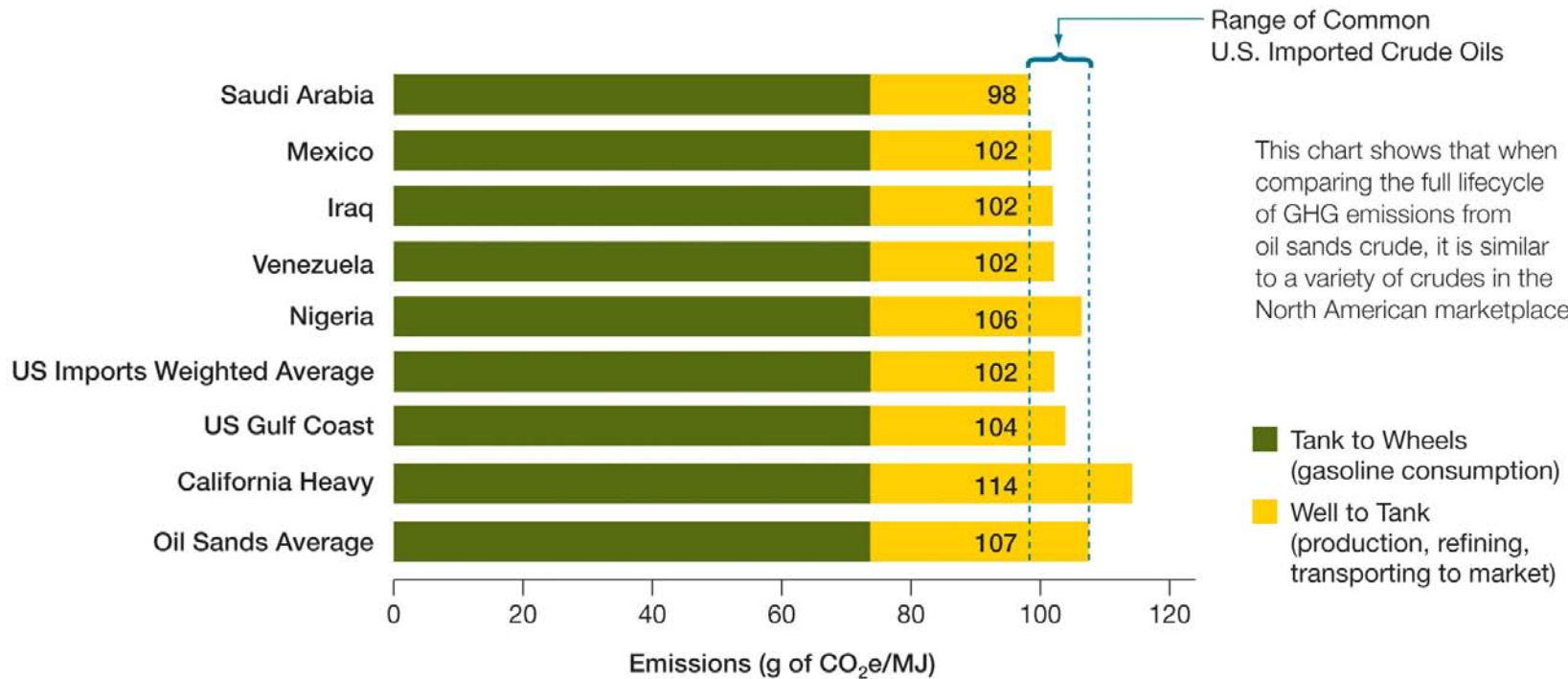
Gateway Hill reclamation



GHG emissions (full life cycle)

➤ Similar to other crudes in market place

Well-to-Wheels –
Full Life Cycle GHG Emissions

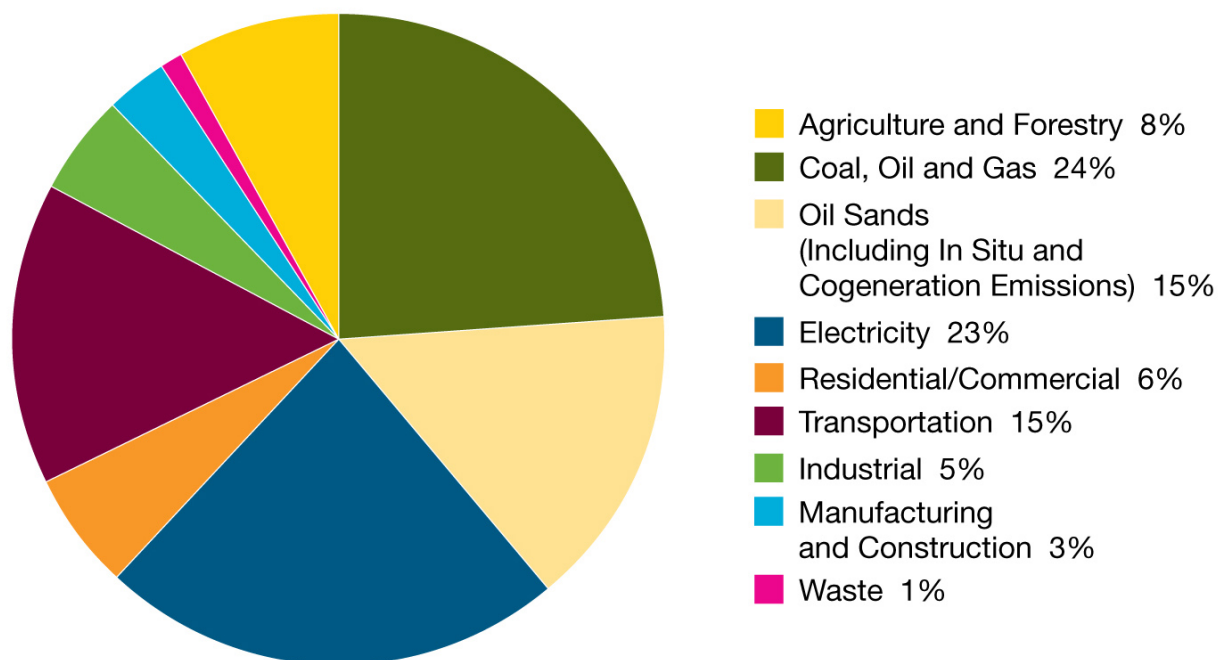


Source: Jacobs Consultancy and Life Cycle Associates, *Life Cycle Assessment Comparison for North American and Imported Crudes*, July 2009

Alberta emissions

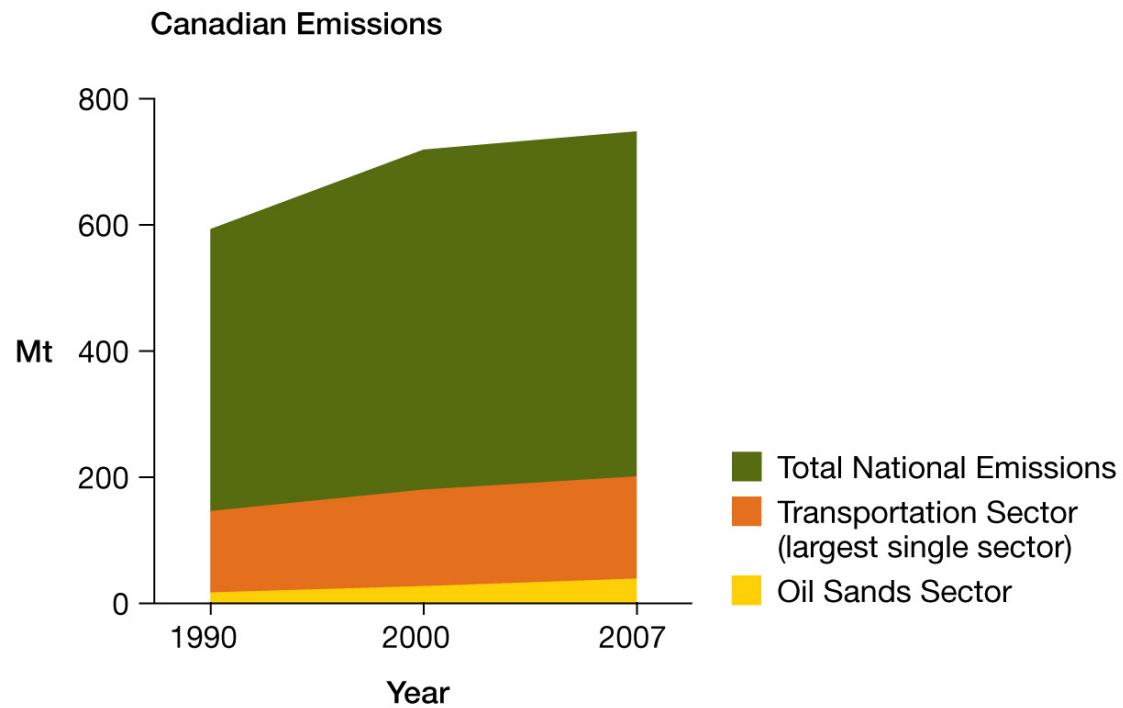
➤ Oil sands make up 15% of Alberta's GHGs

2008 Alberta Greenhouse Gas Emissions (244 Mt Total)



Canadian emissions

➤ Oil sands make up 5% of Canada's GHGs

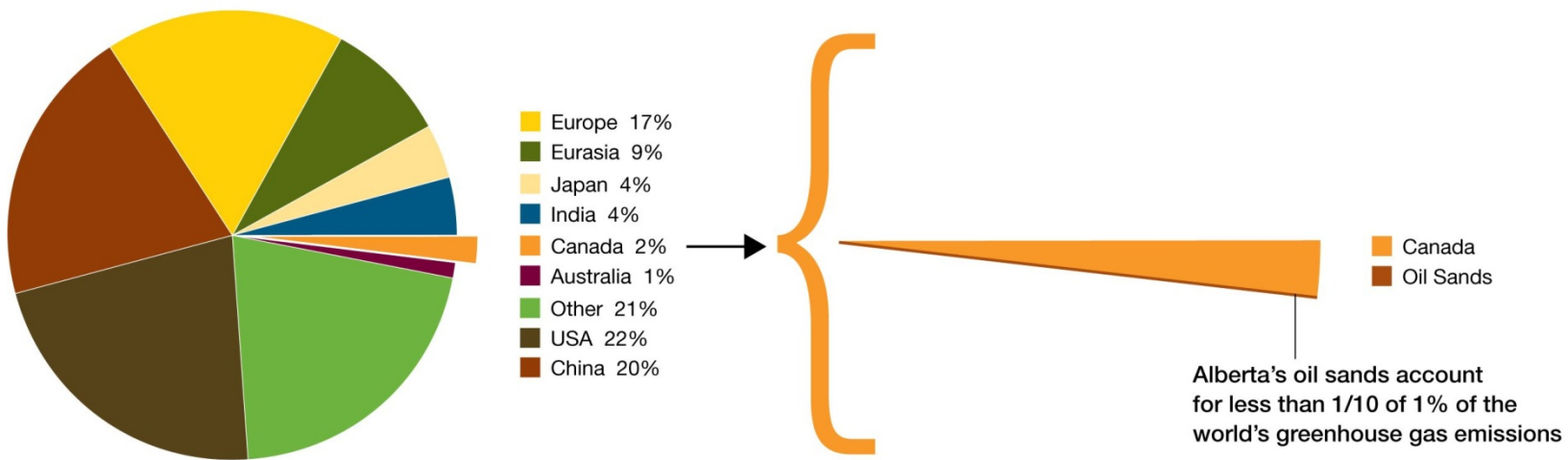


Note: 1Mt = 1 million tonnes

Global emissions

➤ Oil sands make up less than 0.1% of global GHGs

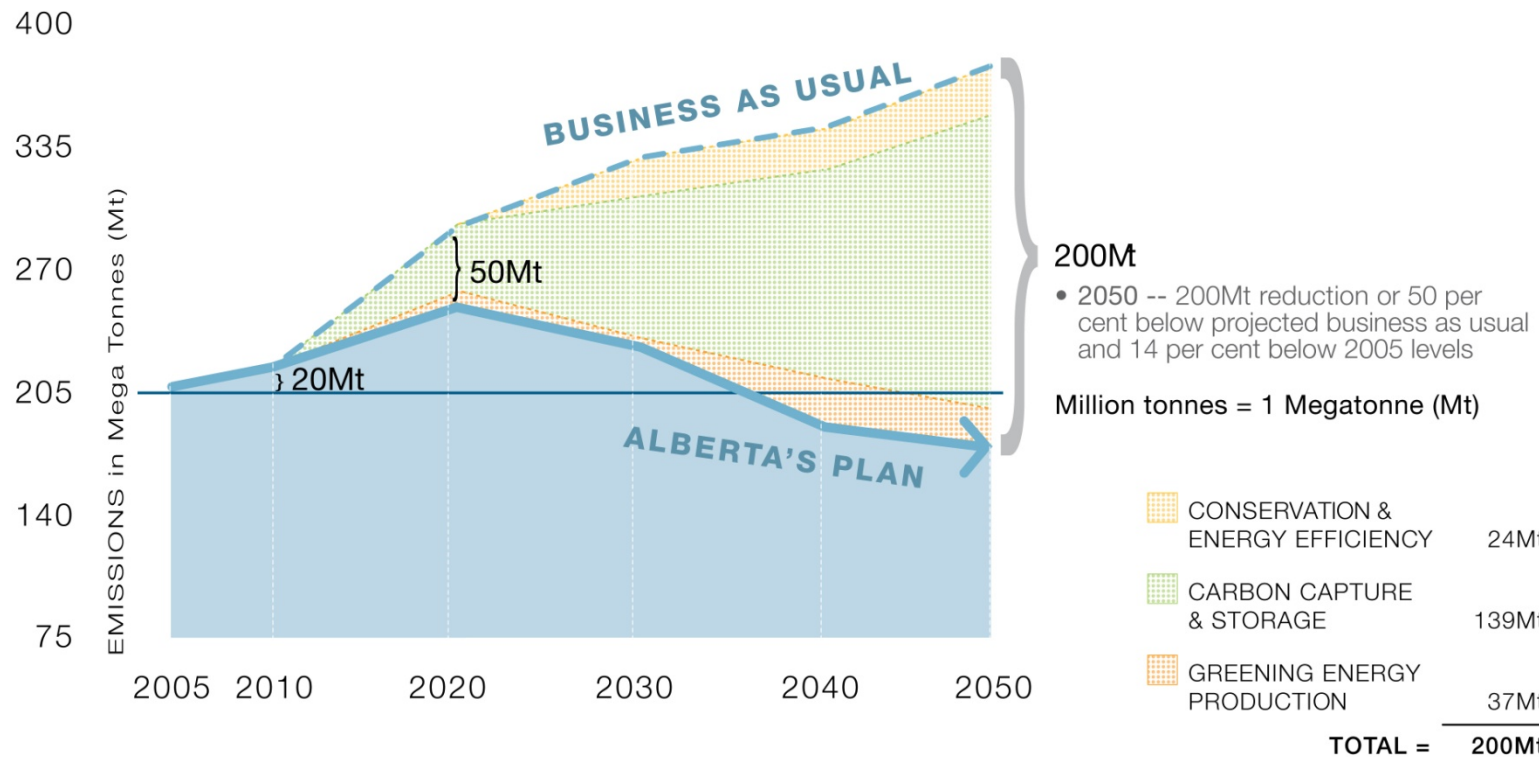
Global Sources of Emissions



Alberta's climate change plan

➤ 200 Million tonne reduction by 2050

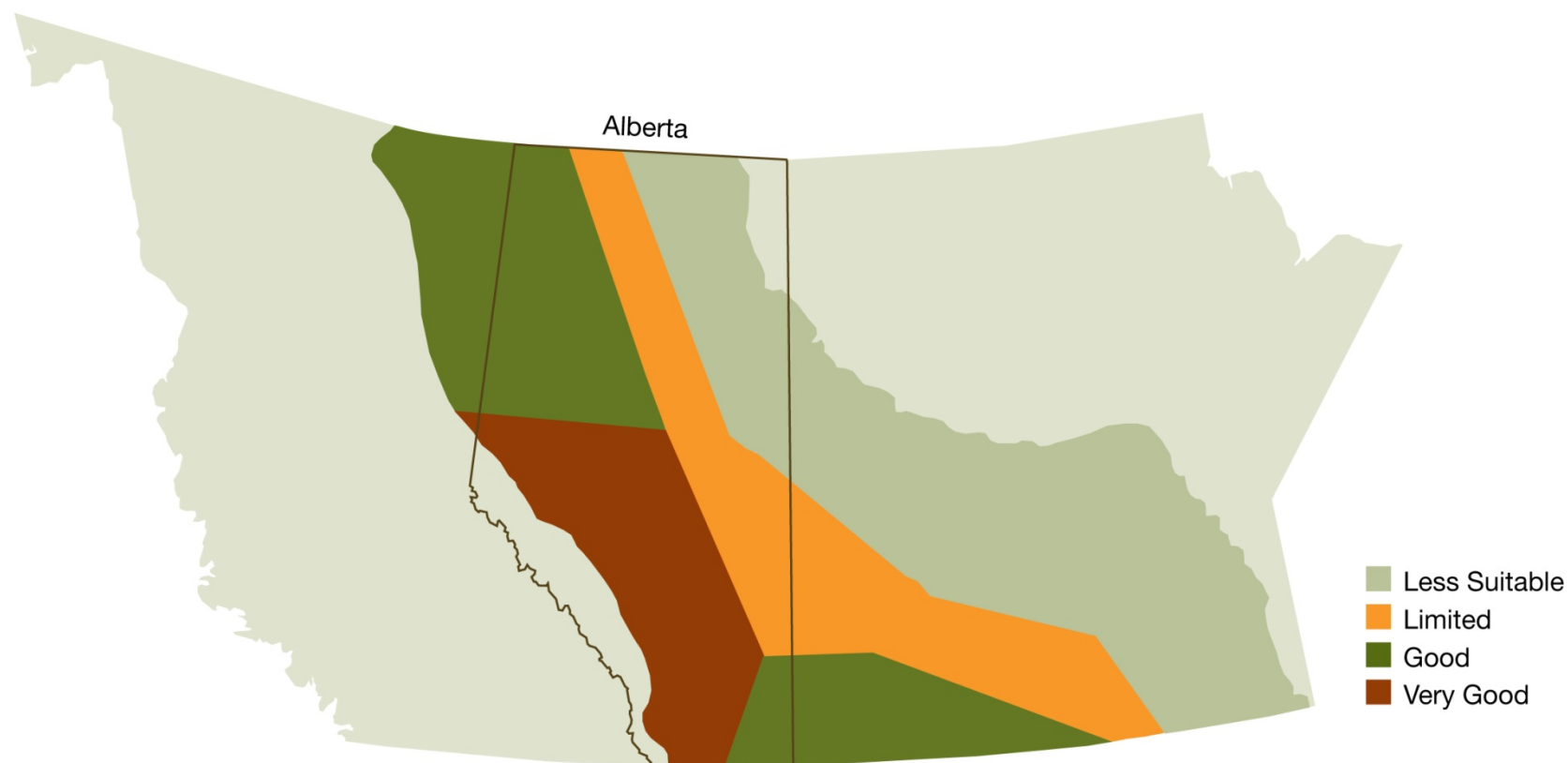
ALBERTA'S REDUCTION COMMITMENTS



Carbon capture and storage (CCS)

➤ \$2-billion commitment: key part of strategy

CCS Suitability in the Western Canadian Sedimentary Basin



Source: Bachu and Stewart, *Geological sequestration of anthropogenic carbon dioxide in the Western Canadian Sedimentary Basin*, 2002

Regulation and results

- Only jurisdiction in North America with mandatory GHG reduction targets for all large emitters.
- Program includes:
 - price on carbon
 - clean energy technology fund
- Results so far:
 - More than 17 million tonnes of GHG reduced
 - \$187 million paid into clean energy tech fund
 - \$71 million invested into clean energy projects

Managing tailings ponds

- New tailings management technologies will shorten lifespan to 10 years or less.
- Industry has committed more than \$1.5 billion in upgrades.
- Suncor Energy is first company in Alberta to successfully reclaim a tailings pond.



Reclaimed tailings pond



Thank you

- For more info on the oil sands:
 - www.oilsands.alberta.ca
- For more info on Alberta:
 - www.alberta.ca

