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Climate Impacts

Click each heading for more detailed information.

Average greenhouse gas emissions for oilsands extraction and upgrading are estimated to be 3.2 to 4.5 times as intensive per barrel as for conventional crude oil produced in Canada or the United States.1 (#footnote1_ts3sjt6)

Even on a full life cycle (well-to-wheels) basis, oilsands greenhouse gas emissions intensities are between 8% and 37% higher than conventional crude, due to the greater amount of oilsands production emissions.

About 7% of Canada's total greenhouse gas emissions came from oilsands plants and upgraders in 2010.8

A threat to Canada's international reputation

BIG Scale, BIG Impacts

- Each day 600 million cubic feet of clean natural gas is used to produce oil sands – that's enough to heat more than **three million** Canadian homes
- Producing a barrel of oil from the oil sands produces **three times** more greenhouse gas emissions than a barrel of conventional oil
- Oil sands mining operations are licensed to divert **349 million m³** of water per year from the Athabasca River – twice the amount of water used by the City of Calgary
- At least 90% of this water ends up in toxic tailings ponds. Tailings ponds already cover more than **50 square kilometers** and can be seen from space
- According to Suncor, it has reclaimed 858 hectares of land since it started operations in 1967; this is less than **9%** of the land it has mined to date
- Syncrude says it has reclaimed 4,055 hectares, about **22%** of the land it has mined to date
- **None** of Suncor or Syncrude's "reclaimed" land has been certified as reclaimed by the Government of Alberta
- Area of boreal forest leased for oil sands mining development: **3,000 km²**
- Area of boreal forest leased for deep (in situ) oil sands development: **35,680 km²** (an area larger than Vancouver Island)
- In 2003, Alberta was named the industrial air pollution capital of Canada with more than **one billion kilograms** of emissions – Syncrude's and Suncor's oil sands facilities were ranked number one and two respectively as Alberta's largest polluters
- Computer modelling of approved oil sands projects predicts that smog and acid rain causing nitrogen and sulphur oxides pollution will **exceed** provincial, national and interna-

Oil SANDS Fever

The pace of oil sands development is exceeding industry's and government's ability to manage the environmental impacts

Canada's climate change contradiction

The science of climate change leaves little doubt that deep reductions in global emissions must be achieved if we are to prevent drastic worldwide impacts from climate change.

In Canada, the oil sands are the single largest contributor to greenhouse gas (GHG) emissions growth. Although, Canada has made international commitments to reduce greenhouse gas emissions. oil sands development is taking the country in the opposite direction. For example, the production of synthetic crude oil from the oil sands generates three times more greenhouse gas emissions than the production of conventional oil.

▼ *Oil sands are Canada's fastest growing source of greenhouse gas emissions.* PHOTO: DAVID DODGE, THE PEMBINA INSTITUTE

Climate and Air

Average oilsands production is significantly more greenhouse gas (GHG)-intensive than conventional oil production

- Production emissions typically 3.2 to 4.5 times more greenhouse gas emissions than conventional oil
- Lifecycle emissions are higher than conventional (23% EU, 8-37% Canada/US)