



# Oil SANDS Fever

FACT SHEET

THE ENVIRONMENTAL IMPLICATIONS OF CANADA'S OIL SANDS RUSH

## The untold story

### Oil sands rush risks squandering a public resource and creating a legacy of environmental degradation

**Some people are quite shocked the first time they see the oil sands mines north of Fort McMurray. Mines just like these may eventually cover 3,000 km<sup>2</sup> of boreal forest.**

But this only takes into account the oil sands mines. When you add in the deep oil sands operations, 149,000 km<sup>2</sup> of Alberta's boreal forest (an area the size of Florida) could be dramatically transformed into an industrialized landscape.

The bitumen found in the oil sands is thick, molasses-like and low-grade. It must be upgraded before it can be sent to refineries. Depending on the depth of the reserves, oil

sands are either strip mined from 80-metre-deep open pits or heated so the bitumen can flow to a well and be pumped to the surface (in situ extraction). Both forms of oil sands extraction require considerable amounts of energy and water, and lead to significant environmental and climate change impacts.

The goal in 1995 was to produce a million barrels of oil per day by 2020.

As a result of the very low royalties collected by the Alberta government, federal tax breaks, reductions in operating costs and the rising price of crude oil, an unprecedented oil sands rush is underway. Between 1995 and 2004 oil sands production more than doubled to 1.1 million barrels per day – 16 years ahead of schedule.

In the absence of stringent fuel efficiency standards, demand for transportation fuels in North America continues unabated. As conventional oil production begins to decline, the oil sands are being touted as the panacea. Consequently, increased oil sands production is projected to reach 2.7 million barrels per day by 2015, and 5 million barrels per day by 2030. Given these projections, the question of how to manage the associated environmental impacts becomes even more urgent.

The magnitude of the risks and opportunities is unprecedented in the history of Canadian energy production. All Canadians, including future generations, have a stake in the outcome.

▲ *Oil sands mining has radically transformed the boreal forest landscape north of Fort McMurray. Above are tailings ponds and the Syncrude operation.*

PHOTO: DAVID DODGE, THE PEMBINA INSTITUTE

# 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 m<sup>3</sup>** 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 km<sup>2</sup>**
- Area of boreal forest leased for deep (in situ) oil sands development: **35,680 km<sup>2</sup>** (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 international guidelines

*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







◀ Looking north, you can see the Suncor operation (middle) and the Syncrude operation (top left) and numerous tailings ponds.

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# Shortchanging Albertans & Canadians

## *Outdated and inappropriate oil sands royalty and tax regime*

**Between 1995 and 2004, oil sands production increased 133%; amazingly government royalties decreased by 30%. The oil sands rush is creating unmanageable environmental impacts and shortchanging the public.**

Albertans are the owners of the oil sands resource. As steward of the oil sands, the government is responsible for ensuring that the owners receive the maximum benefit from their development.

Under a 1996 regime, the Alberta government collects a 1% royalty until all capital and operating costs – and a return on investment – are recovered. Then the royalty increases to 25% of net revenue.

The 1% royalty rate until project payout is a powerful incentive to reinvest profits into expansion of operations, which

further delays Albertans receiving the return they deserve as owners of the resource.

The federal government also provides generous allowances for writing off capital costs to encourage investment in the oil sands.

The federal Department of Finance estimates that the tax cuts granted to oil sands companies are worth between \$5 and \$40 million for every \$1 billion invested. This tax break reduces federal tax revenue and represents a subsidy that is no longer necessary or appropriate for the oil sands industry.

### A Growing Environmental Footprint

Oil sands development currently threatens an area larger than Vancouver Island. If all potential leases are developed, development will dramatically affect 23 % of Alberta – an area the size of Florida. The boreal forest ecosystem is resilient, but it can only withstand so much degradation before its ability to recover is exceeded. The tipping point, or environmental limit, represents the extent of change that an ecosystem can endure before this change is irreversible.

## Summary of recommendations

The following Pembina Institute recommendations are essential for government and industry to assume *accountability* to Albertans and Canadians and to demonstrate *global leadership*:

1. **Demonstrate leadership in the more efficient use of natural resources** by developing a national energy strategy with targets and supporting policies for energy efficiency, energy conservation, renewable energy and conventional energy
2. **Protect the climate** by requiring carbon neutral (net zero GHG emissions) oil sands production by 2020
3. **Protect Alberta's environment** by setting environmental limits that protect human health and the environmental integrity of the region before approving additional oil sands development *and* protecting an area of high conservation value boreal forest
4. **Ensure a fair economic return** for Albertans, the owners of this public resource, and Canadians by maximizing collection of royalties and taxes and investing a portion of this wealth into a permanent fund for *sustainable energy to foster further innovation in energy conservation and energy efficiency and the production of low-impact renewable energy*

PHOTO: DAVID DODGE, THE PEMBINA INSTITUTE

## Want more information?

For more information and a complete list of recommendations, download our full report *Oil Sands Fever: The Environmental Implications of Canada's Oil Sands Rush*. It is available from [www.oilsandswatch.org](http://www.oilsandswatch.org). There you will also find photos and videos and other information and reports on oil sands.

This report was prepared by Dan Woynillowicz, Chris Severson-Baker and Marlo Raynolds of the Pembina Institute [www.pembina.org](http://www.pembina.org).

## National Energy Strategy Is Essential

Development of the oil sands must be done in the context of a national strategy for the transition to an economy based on sustainable energy. A sustainable energy system is one that:

- Provides the services of energy to meet peoples' needs today and the needs of future generations in an accessible, equitable and most efficient manner;
- Enables stabilization of atmospheric concentrations of greenhouse gases;
- Protects or restores the earth's air, land and water resources throughout its life cycle;
- Is safe and results in no burdens of risk for future generations; and
- Empowers communities to live satisfying and healthy lives.

MINING OIL SANDS AT SYNCRUDE'S MINE NORTH OF FORT McMURRAY.



PHOTO: DAVID DODGE, THE PEMBINA INSTITUTE