

Tar Sands and Climate Change



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Tar sands oil production is the fastest growing source of greenhouse gas (GHG) emissions in Canada,¹ and greatly increases this country's contribution to global warming. Canada now stands as one of the top 10 emitters of GHGs per capita in the world.² If production increases as planned, annual tar sands emissions are expected to quadruple from 27 to 126 million tonnes by 2015³ - and to reach nearly 142 million tonnes by 2020.⁴

Current statistics on GHG emissions only account for tar sands production, so they fail to give a true picture of the total CO₂ released.⁵ Other emissions:

- Additional GHGs are produced once the bitumen is refined and used for fuel, but no published studies have actually produced a full life cycle analysis of GHG emissions from bitumen sands operations.⁶
- The boreal forest is a major storehouse for carbon and its destruction for tar sands extraction releases huge amounts of GHG emissions into the atmosphere. These additional emissions are so far uncounted but are significant.
- Canada is one of the highest consumers of energy per person in the world. Canada produces 18.81 tons of CO₂ per capita, per year, the third highest amount in the world after Australia, at 20.58 tons and the U.S. at 19.78. By comparison, France produces 6.60 tons of CO₂ per person per year, Italy 8.05 and China 4.58.⁷

The Alberta government has approved increases in development for oil companies, but 71 per cent of Albertans polled want a moratorium on tar sands operations until environmental and infrastructure issues are resolved.⁸

The amount of oil available for extraction from the tar sands is second only to reserves in Saudi Arabia. The tar sands deposits contain at least 173 billion barrels of oil. The largest deposits are in Athabasca, the rest in Cold Lake, and Peace River.⁹ But processing oil from the tar sands releases three to five times more GHG emissions per barrel than processing it from conventional wells.¹⁰

What fuels the tar sands industry?

About 20 per cent of Canada's total natural gas production is used to extract oil from the tar sands. As much as 1,400 cubic feet (nearly 40 cubic metres) of natural gas, is needed to produce a barrel of bitumen and upgrade it into synthetic crude oil. This

Kyoto targets

The Canadian government has not honoured its commitments to the Kyoto agreement.¹¹

In 2002, Canada promised to meet the Kyoto targets. But so far, it has failed, and the Harper government is making no attempts to deliver on the promise. The target Canada committed to was to reduce greenhouse gas emissions by six per cent from 1990 levels by 2012.

Instead of reducing emissions, Canada has allowed emissions to increase significantly. In 2007, Canada's greenhouse gas emissions were 747 megatonnes, about 34 per cent above the Kyoto target of 558.4.

Tar sands development, the fastest growing source of greenhouse gas emissions in Canada and biggest energy project in the world, will cause greenhouse gas emissions to increase even more.

amount equals nearly one-third of the barrel's energy content.¹² The crude needs further refinement before it is ready to use.

The consumption of natural gas in the tar sands has nearly tripled to 1.1 billion cubic feet (bcf) a day since 2000,¹³ enough fuel to heat six million average-sized homes every day.¹⁴ By 2015, the tar sands could consume 16 per cent of Canada's gas supply, enough to warm 12 million homes 24 hours a day. By 2030, the amount the tar sands development will need is about 92 per cent of the country's gas, leaving little to heat its homes.¹⁵

Canada's natural gas supplies, a main source of fossil fuel energy for the tar sands, are diminishing. In December 2008, Alberta released a policy allowing in situ projects to switch from burning natural gas to using dirty fossil fuels, such as the waste from tar sands upgrading, a switch that increases the GHGs released from the tar sands.¹⁶



Nuclear is not the answer

Fear of running out of fuel has the federal government and the Crown corporation, Atomic Energy of Canada Limited (AECL), championing nuclear energy as a clean replacement to natural gas. Electricity use by the industrial sector in the region could grow by 91 per cent.¹⁷ This could be a controversial driver for nuclear power and an idea that fails to resolve the tar sands energy problems.

Nuclear power is the most expensive fuel on the planet. Public utilities served by nuclear power are plagued by cost overruns and expensive technical failures. In Canada, not one nuclear plant has been built on budget or without taxpayers' money.

In addition, it takes a lot of fossil fuels to process uranium ore into fuel rods needed for nuclear power; nuclear power indirectly releases about 250,000 tonnes of CO₂ a year. Nuclear waste becomes a toxic burden for thousands of years and many future generations.¹⁸

1. <http://www.tarssandswatch.org/u-s-canadian-groups-gear-halt-oil-sands-development>
2. http://www.globalforestwatch.ca/climateandforests/bitumenbiocarbon/BioCarbon_WEB_LR.pdf, page 4
3. Polaris Institute www.tarssandswatch.org/tags/global-warming
4. http://www.environmentaldefence.ca/reports/pdf/TarSands_TheReport.pdf, pg, 21
5. Tar Sands: Dirty Oil and the Future of a Continent by Andrew Nikiforuk, page 119 [TS].
6. http://www.environmentaldefence.ca/reports/pdf/TarSands_TheReport.pdf, page 14
7. Union of Concerned Scientists, 2006 report at: <http://www.ucsusa.org/>
8. Pembina Institute 2007 survey http://pubs.pembina.org/reports/Poll_Env_mediaBG_Final.pdf
9. <http://www.ercb.ca/docs/public/EnerFAQs/PDF/EnerFAQs12-OilSands.pdf>, page 1
10. Tar Sands: Dirty Oil and the Future of a Continent by Andrew Nikiforuk, page 21
11. Pembina Institute report: Oil Sands Myths, Clearing the Air <http://pubs.pembina.org/reports/clearing-the-air-report.pdf>
12. TS, page 131
13. TS, pg. 131
14. Energy Canada (NRCAN), Canadian Natural Gas: Review of 2007/08 and Outlook to 2020, December 2008. Available at: <http://www.nrcan.gc.ca/eneene/sources/natnat/revrev-eng.php>.
15. TS page 132
16. Pembina Institute report: Oil Sands Myths, Clearing the Air <http://pubs.pembina.org/reports/clearing-the-air-report.pdf>, page 14
17. Government of Alberta, Report On Nuclear Power and Alberta, Nuclear power expert panel report, Alberta Energy, February 2009. Online at: www.energy.alberta.ca/Electricity/pdfs/NuclearPowerReport.pdf.
18. TS, page 132-135