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Canada's tar sands and climate change

A major greenhouse gas emitter

The production of oil from the tar sands is the fastest growing source of greenhouse gas (GHG) emissions in Canada. The goal of expanding this production is also the main reason why the Harper government continues to hinder and block any fair, ambitious and binding international agreement to reduce GHG emissions.

Extracting the tar-like bitumen that is mixed in with the sand, soil and clay under the Boreal Forest of northern Alberta and upgrading it into synthetic crude oil resulted in 37.2 million tonnes of greenhouse gas emissions in 2008 (an amount greater than the national emissions of Uganda or Croatia), up from 16.8 million tonnes in 1990.ⁱ

And that doesn't include the emissions that result from refining this oil and then burning the resulting fuel in vehicles, homes and factories. Or the emissions associated with releasing the carbon stored in the trees and soils of the Boreal Forest as the land is strip-mined or criss-crossed with seismic lines, access roads and pipelines.

Canada in the top ten of climate polluters

Canada is among the top ten greenhouse gas emitters in the world in both absolute and per capita terms. The average Canadian puts out 22 tonnes of greenhouse gases, which is more than double the per capita emissions of the EU (10.3 tonnes) or Japan (10.6 tonnes), and four times the per capita emissions of China (5.5 tonnes).ⁱⁱ

Yet, Environment Canada anticipates that tar sands emissions will triple over the next ten yearsⁱⁱⁱ as part of Prime Minister Harper's strategy of becoming an "energy superpower" based on "an ocean of oil-soaked sand".^{iv} In the long-term, these emissions could go even higher.

Dirty oil

The tar sands are the largest proven reserve of oil outside of Saudi Arabia, and the world's largest reserve of "unconventional" oil, which requires much more energy and water to extract and process than conventional oil.

The tar-like bitumen has to be melted out of the ground and processed in a highly energy-intensive way before it can be refined like regular oil. The US Environmental Protection Agency says that "GHG emissions from the Canadian oil sands crude would be approximately 82 per cent greater than the average crude refined in the U.S. on a well-to-tank basis."^v And in confidential briefing notes, the Canadian government has acknowledged that the emissions-per-barrel will likely increase as the industry is forced to pursue harder-to-access reserves deeper underground.^{vi}

The tar sands lie underneath 140,800 square kilometres of forests and wetlands.^{vii} If fully exploited, an area larger than Greece and almost one and half times the size of Florida could be deforested, drained of clean water, and polluted with toxic effluent.

Kyoto targets

Canada is the only country that has indicated that it does not intend to meet its obligations under the Kyoto Protocol.

Canada ratified the Kyoto Protocol in 2002, committing to reducing greenhouse gas emissions by six per cent from 1990 levels in the 2008-2012 period.

Yet in 2008, emissions were more than 30 per cent above this target and the Harper government has no plan in place to reduce them.

Further expansion of the tar sands, which are the fastest growing source of greenhouse gas emissions in Canada and biggest energy project in the world, would lock Canada into a high-carbon economy for decades to come.

Greenpeace is an independently funded organization that works to protect the environment. We challenge government and industry to halt harmful practices by negotiating solutions, conducting scientific research, introducing clean alternatives, carrying out peaceful acts of civil disobedience and educating and engaging the public.

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The expansion of the tar sands truly is scraping the bottom of the barrel in the new world of “tough oil”. It is increasing Canada’s greenhouse gas emissions and undermining Canadian climate policy, polluting the air and water in the region, destroying wildlife habitat, and infringing on the treaty rights of First Nations peoples in Canada.

Go Beyond Oil

The world is quickly running out of the easy-to-reach oil. Oil companies are going to greater and greater extremes to squeeze the last drops of oil from the earth – scraping the bottom of the barrel in the tar sands, risking lives and marine life in ultra-deep water drilling, and potentially violating the pristine and fragile Arctic.

If the world goes down the path of exploiting unconventional fossil fuels rather than switching to renewable energy, we will be on track for a six degree rise in average global temperatures resulting in “massive climatic change and irreparable damage to the planet.”^{viii}

This is the path we are on right now. But if we transform our energy and transportation systems, this doesn’t have to be the pathway we follow.

Going beyond oil is still going to require energy from somewhere. Luckily nature offers a variety of freely available options for producing energy. Their exploitation is mainly a question of how to convert sunlight, wind, biomass or water into electricity and heat as efficiently, sustainably and cost-effectively as possible.

Energy use can also be reduced dramatically with a more efficient, modern, and increasingly electrically powered transport system. A shift to high quality, high speed public transport, cycling and walking, more efficient vehicles would dramatically reduce our energy needs.

Worldwide, the switch to clean energy has already started and Canada shouldn’t risk being left behind as this energy revolution takes root. Ambitious support for clean energy will bring benefits - not just of clean, carbon-free energy, but the jobs and economic growth that come from pioneering new industries and technology.

This is the possible future laid out in the Energy [R]evolution blueprint developed by Greenpeace and the European Renewable Energy Council for transitioning our economy off of fossil fuels here in Canada and globally. To find out more, go to www.greenpeace.ca/enrevcan.

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- ⁱ Environment Canada, *National Inventory Report: Greenhouse Gas Sources and Sinks in Canada 1990-2008*, (April 2010), p. 86.
- ⁱⁱ Climate Analysis Indicators Tool (CAIT) Version 7.0. (Washington, DC: World Resources Institute, 2010).
- ⁱⁱⁱ Environment Canada, *Turning the Corner: Detailed Emissions and Economic Modelling* (2008), p. 42.
- ^{iv} Stephen Harper, "Address by the Prime Minister at the Canada-UK Chamber of Commerce," 14 July 2006. .
- ^v June 16, 2010 Letter from Cynthia Giles of the US Environmental Protection Agency to Jose Fernandez and Kerri-Ann Jones of the US State Department on the Environmental Impact Statement for the Keystone XL pipeline.
- ^{vi} Natural Resources Canada, "Oil Sands – GHG Emissions" Issue Paper, (December 5, 2008). Document released under the Access to Information Act.
- ^{vii} Energy Resources Conservation Board, "Frequently asked questions on the development of Alberta's energy resources: Oil Sands" (September 2010).
- ^{viii} International Energy Agency, *World Energy Outlook 2009*, p. 44.