

The Keystone XL Pipeline:

An Objective Guide to the Facts

Introduction

The proposed Keystone XL Pipeline is a contentious issue that is currently gaining a great deal of media attention. A lot of the news reported is heavily biased either for or against the idea. On the following pages I have outlined background information on the process, the pros and cons of the proposed pipeline extension, an alternative to the pipeline, and statistical information that will help you make an educated decision on your opinion of the project.

The Basics

Oil sand is a naturally occurring mixture of sand, clay, minerals, water, and bitumen, which is a heavy and extremely thick oil that must be treated before it can be used by refineries to produce usable fuels such as gasoline and diesel (1). The bitumen must be removed from the sand and water prior to being upgraded into crude oil and other petroleum products. For deeper oil sands reservoirs, such as those in Alberta, an in situ recovery method is used to produce oil. This is the method that would be used for the Keystone XL Pipeline. It involves pumping steam underground through a horizontal well to liquefy the bitumen and then pumping the bitumen to the surface through a second well (2).

The Background

The Keystone Pipeline System already consists of two operating phases:

Phase 1- Active as of June 2010, the 3,456 km pipeline runs from Hardisty, Alberta to the United States refineries in Illinois. The Canadian section involves approximately 864 km of pipeline.

Phase 2- Active as of February 2011, 468 km of the pipeline was routed from Nebraska through Kansas to the oil hub and tank farm in Cushing, Oklahoma (3).

There are now two new phases that are being proposed as an extension of the current system that will result in the Keystone XL Pipeline:

Phase 3- This phase would start from Cushing, Oklahoma where domestic oil would be added to the pipeline. The pipeline would then expand 700 km to a delivery point in Texas.

Phase 4- Starting in Alberta, this phase would consist of 529 km of new pipeline travelling through Montana, where domestic oil would be added to the pipeline. It would then travel through South Dakota and Nebraska where the pipeline would join the existing Keystone pipelines in Nebraska (3).

The Controversy

The expansion of the Keystone Pipeline system has resulted in a great deal of controversy over the past year. Those in favour of the pipeline are encouraged by the increase in jobs and positive economic outlook that will result in increased oil production. Those against the project are concerned about the negative impact that the pipeline will have on the environment.

The Facts

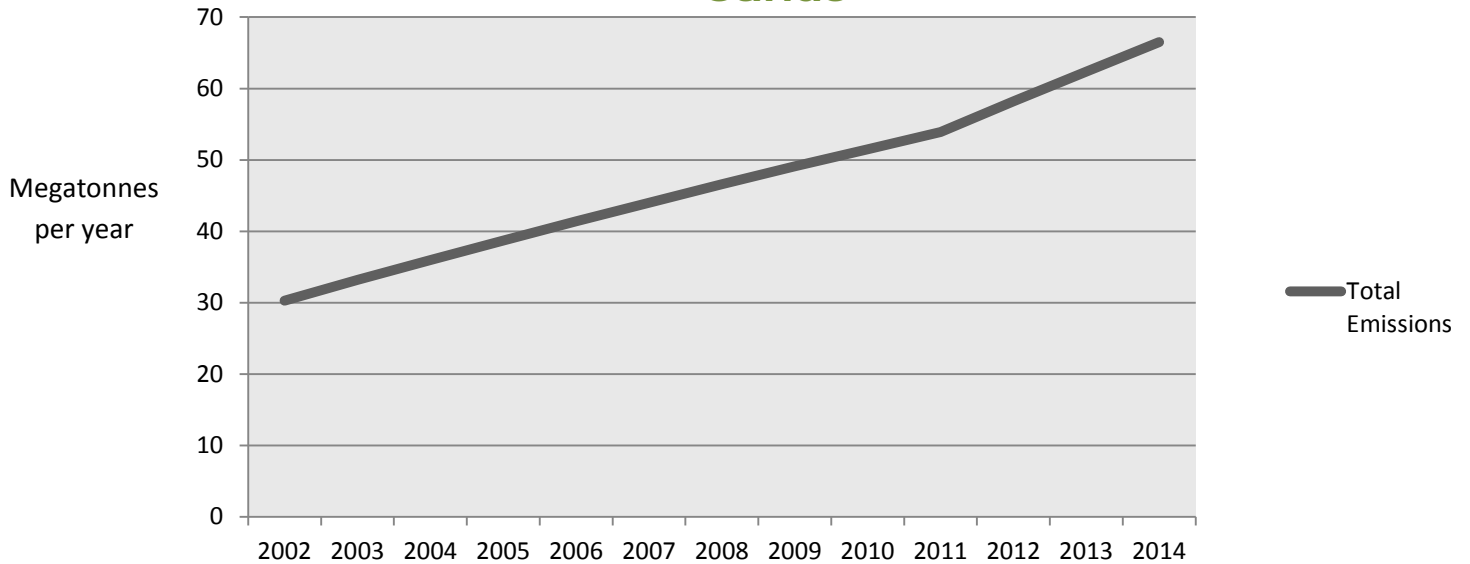
PROS	CONS
Canadian economy: The Alberta oil sands are responsible for over 140,000 Canadian jobs. According to Natural Resources Minister, Joe Oliver, this number has the potential to grow to almost half a million jobs after project completion. Canada is already the largest supplier of energy to the United States (4).	Further cultivation of the Alberta oil sands will result in continuing deforestation (74,000 hectares) of Canada's boreal forests, which are important carbon sinks. The process of extracting the oil is also energy-intensive because the low-grade petroleum product must be melted out of the ground. This process emits up to three times more carbon dioxide than traditional extraction processes (6).
U.S. economy: "An independent economic study by the U.S. economic and financial analysts, the Perryman Group, estimates more than 50,000 full-time construction and spin-off jobs (employed for at least one year) would be created in Texas. The study estimates a permanent increase in stable oil supplies would add more than 250,000 permanent jobs for U.S. workers and more than US\$100 billion in annual total expenditures to the U.S. economy" (4).	Twelve spills have been reported on other TransCanada pipelines over the past year. The size and carrying capacity of the proposed Keystone XL poses risk for pressure-induced spills and explosions (6).
"The U.S. consumes 15 million barrels of oil each day and imports 10 to 11 million barrels per day. Industry forecasts predict oil consumption will continue at these levels for the next two to three decades, so a secure supply of crude oil is critical to U.S. energy security" (5).	Keystone XL crosses and jeopardizes sensitive environment. The 36-inch-wide pipeline, which will stretch from the Alberta tar sands across the Great Plains to the Gulf Coast, will cost \$7 billion. It will cross nearly 2,000 rivers, a huge wetlands ecosystem called the Nebraska Sand hills, and the Ogallala aquifer. The Ogallala aquifer is the country's biggest underground freshwater source and supplies fresh water to over 2 million people (7).

Alternatives

There have been several proposed alternatives to the Keystone XL pipeline:

- Expand the existing TransMountain Pipeline running from Edmonton to B.C from 300,000 barrels per day (bpd) to 700,000 bpd by twinning a pipeline (8).
- Enbridge Inc. is a primary exporter of Canadian crude oil into the U.S. They are currently running at 1.5 million bpd, but have the capacity to run 1.8 million and, through additional pumping power, can expand to 2.4 million bpd (8).
- Canadian railway companies already transport 10,000 bpd to 20,000 bpd by train, and routes currently exist to the West Coast and south to the US. The Canadian National Railway says it can expand to 4 million bpd and the Canadian Pacific Railway says it can expand to ship 45.5 million per year. There are concerns about derailment with rail shipments (8).

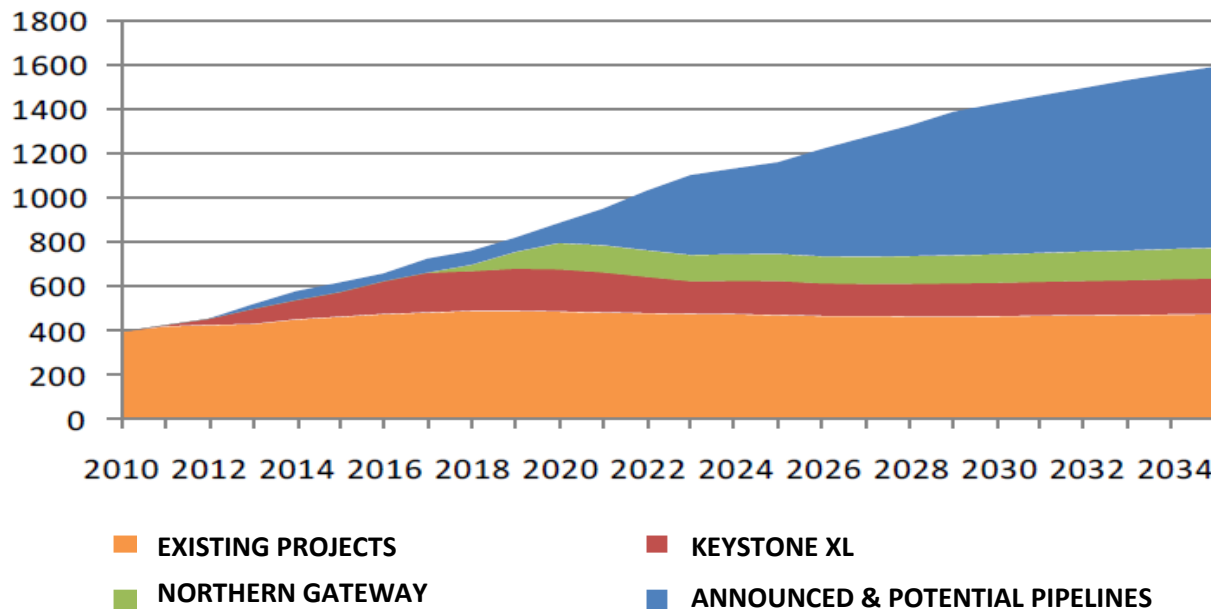
Projected Greenhouse Gas Emissions from Oil Sands



GHG emissions are greenhouse gas emissions that are released into the atmosphere when oil is extracted from sand. Greenhouse gas emissions have negative impacts on the environment resulting in smog, acid rain, and climate change. The above chart is the predicted increase in greenhouse gases that will be released into the atmosphere via oil sand production (10).

Canada Employment- New and Existing Field Related Jobs

(x1000)



The oil industry has a positive impact on the Canadian economy by creating a large number of jobs across Canada. The above chart outlines the number of permanent Canadian jobs the Keystone XL Pipeline will create in contrast to other pipeline projects in Canada (11).

References

1. Government of Alberta, Energy, "What is Oil Sands?" November 4, 2011, retrieved December 4, 2011 <http://www.energy.alberta.ca/OilSands/793.asp>
2. Government of Alberta, "Alberta's Oil Sands", retrieved December 4, 2011 <http://oilsands.alberta.ca/resource.html>
3. Wikipedia, "Keystone Pipeline", December 3, 2011, retrieved December 4, 2011 http://en.wikipedia.org/wiki/Keystone_Pipeline
4. Minicucci, Daniela, Global News, "Pros and Cons of the Keystone XL Pipeline Project", November 6, 2011, retrieved December 4, 2011 <http://www.globalnews.ca/overview/6442489765/story.html>
5. TransCanada, "Keystone Pipeline Project", November 11, 2011, retrieved December 4, 2011 <http://www.transcanada.com/keystone.html>
6. Lister, Meg, EBI Consulting, "Keystone XL: Pros and Cons", August 22, 2011, retrieved December 4, 2011 <http://blog.ebiconsulting.com/public/item/269446>
7. Debatepedia, "Debate: Keystone XL US-Canada Oil Pipeline, Septmeber 6, 2011, retrieved December 4, 2011 http://debatepedia.idebate.org/en/index.php/Debate:_Keystone_XL_US-Canada_oil_pipeline
8. Penty, Rebecca and Dina O'Meara, Calgary Herald, "TransCanada Scrambles to Keep Keystone XL Viable, November 11, 2011, retrieved December 4, 2011 <http://www.calgaryherald.com/business/TransCanada+scrambles+keep+Keystone+viable/5693668/story.html#ixzz1fUKCBwnH>
9. Title page graphic- Woodard, Stephanie, "Planned Oil Pipeline Must Cross Pine Ridge's Water- Water Delivery System, September 21, 2011, retrieved December 4, 2011 <http://indiancountrytodaymedianetwork.com/2011/09/21/planned-oil-pipeline-must-cross-pine-ridge%e2%80%99s-water-delivery-system-54942>
10. National Energy Board, Government of Canada, "Canada's Oil Sands", June 2006, retrieved December 4, 2011 <http://www.neb-one.gc.ca/clf-nsi/rnrgynfmtn/nrgyrprt/lsnd/pprtnsndchllngs20152006/pprtnsndchllngs20152006-eng.pdf>
11. Honarvar, Afshin, Jon Rozhon, Dinara Millington, Thorn Walden, Carlos Murillo, "Economic Impacts of Staged Development of Oil Sands Projects in Alberta (2010-2035)" June 2011, retrieved December 4, 2011 http://dirtyoilsands.org/files/2011-07-08_CERI_Study_125_Section_1.pdf