

Climate Change PBL #7: Pipelines

Problem

For this PBL, you will be asked to analyze one of three proposed pipeline projects: Keystone XL, Northern Gateway, or Transmountain Pipeline Expansion Project. What are the potential social, economic, and environmental ramifications of the development of this pipeline? What benefits would the pipeline bring? What impact would a spill have on the ecology and resource economy of the region?

Background

One challenge facing the oil and gas sector is how to efficiently transport crude oil to refineries and markets, often over distances of thousands of kilometers. Technological developments have greatly improved the efficiency of pipelines and as a result, are quickly becoming the preferred means of transporting oil and gas over large distances. These developments, along with growth in emerging markets, are expected to cause global oil and gas pipeline length to increase by over 100,000km from 2011-2015.

In the United States, TransCanada has proposed the construction of the Keystone XL pipeline, which will transport bitumen from the Athabasca Oil Sands to American refineries on the gulf coast. If approved, the pipeline will have the capacity to transport 830,000 barrels of crude oil per day. The proposal has received fierce criticism from both environmentalists and some members of congress. In January 2012, the US government denied TransCanada's proposal citing concerns over the pipeline's routing, which would have crossed the Ogallala aquifer and the ecologically sensitive Sandhills region of Nebraska. TransCanada has since re-routed and submitted a new proposal. President Obama is expected to make his decision on granting the project a presidential approval by the end of 2013.

Enbridge's Northern Gateway Pipelines is a proposed development of a twin pipeline that would run 1,172km, connecting the Athabasca oil sands to the coast of British Columbia. This \$5.5 billion dollar project would export approximately 520,000 barrels of crude oil per day, the eastward pipeline will transport roughly 193,000 barrels a day of natural gas condensate, to be used in the transport of crude oil. The pipelines will allow the opening of burgeoning Asian markets to the second largest oil deposits on earth, the Athabasca oil sands. This in turn will diversify and expand the market for Canadian crude oil and reduce Canada's dependence on the United States as the near exclusive importer of Albertan oil. However, the project has been vehemently opposed by environmental organizations and First Nations groups as the pipelines will be crossing the largest intact temperate rainforest in the world as well as increasing oil

tankers traffic along to the BC coast. In May, 2013, Christy Clark announced the Government of BC's official opposition to the proposal.

Kinder Morgan has recently proposed the 'twinning' of its existing Trans mountain pipeline, which runs from Strathcona, Alberta, to Burnaby BC. The existing pipeline is nearly 60 years old and is currently the only pipeline that carries crude oil to the west coast of Canada. If approved, the pipeline will have its capacity expanded to 890,000 barrels per day. This would increase local tanker traffic from 5 tankers per month to 34 per month, most destined for Asian markets. Like the proposed Northern Gateway pipeline, the expansion is very unpopular amongst Environmental groups and First Nations.

Guiding Questions

Because of the large scope of this topic and numerous directions this PBL can be taken, we ask you to choose from one of the following topics to focus your analysis on. However, if you have other ideas or suggestions for directions this topic can be taken, please speak to someone from the teaching team, we are happy to discuss alternatives to the questions below.

1) Canadian Economic Development

Will there be a net benefit to the Canadian economy as a result of the pipeline development? Who will it benefit? If so, at what cost does this come (environment, surrounding communities, natural resources, etc), and is it worth it?

2) Local Economic Development

Will there be a net benefit to the British Columbia economy, and/or to communities along the pipeline route? Who will benefit? What costs and risks will be incurred? Are the potential benefits worth the risk?

3) Alternatives to Pipeline Development/Oil Sand Exploration

What effect will the pipeline development have on global greenhouse emissions? Are there alternative sources of energy that can meet this growing demand? If so, can these technologies feasibly serve as alternatives to continued oil sand development? What role should the Canadian government play in encouraging these technologies?

Resources (Do NOT directly contact individuals in these organizations).

Northern Gateway

SkeenaWild Conservation Trust provides a brief overview on the projects and the area in which it will be built and resources it supports as well as the potential damage the projects may incur. See the bottom of the page for links to other resources from West Coast Law and the Pembina Institute. <http://skeenawild.org/conservation-issues/enbridge/>
http://www.skeenawild.org/uploads/reports/Enbridge_outreach_materials.pdf

<http://www.pembina.org/pubs?topics=pipelines>

Canadian Centre for Policy Alternatives <http://www.policyalternatives.ca/pipedreams>

Taking Renewable Energy to Scale in Asia

http://www.google.ca/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CE4QFjAA&url=http%3A%2F%2Fwww.nbr.org%2Fdownloads%2Fpdfs%2Feta%2FPES_2012_summitpaper_Tawney.pdf&ei=ff3DT5TyGOqTiQLJoOj5Bw&usg=AFQjCNEMtulK6VT9MW3LiQP3OgTOXH E2zQ&sig2=W9x0tXtxQDBqc4o8wUjIzA

<http://www.northerngateway.ca/economic-opportunity/benefits-for-canadians/>

Keystone XL

The climate implications of the proposed Keystone XL oilsands pipeline

<http://www.pembina.org/pub/2407>

Comparative Pipeline Politics: Oil Sands Pipeline Controversies in Canada and the United States

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2108662

Keystone XL Pipeline Project: Key Issues-

http://digitalcommons.ilr.cornell.edu/key_workplace/1011/

Kinder Morgan- Trans Mountain

Challenges to exporting Canadian oilsands crude overseas

<http://www.pembina.org/pub/2317>

Kinder Morgan's Trans Mountain Pipeline shut after second leak in a month-

<http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/kinder-morgans-trans-mountain-pipeline-shut-after-second-leak-in-month/article12855931/>

<http://www.transmountain.com/proposed-expansion>