

How will the proposed Enbridge Northern Gateway pipeline affect the  
distribution of jobs nation-wide?

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## How will the proposed Enbridge Northern Gateway pipeline affect the distribution of jobs nation-wide?

### Executive summary

In this report I investigate how the proposed Enbridge Northern Gateway pipeline may affect the distribution of jobs nation-wide in Canada. The pipeline proposed, if built, will transport oil from the Albertan oil sands to the coast of BC at Kitimat. The nature of this study, which looks at Dutch Disease, means a focus on how job opportunities will shift industries and shift provinces from manufacturing in Eastern Canada to oil extraction in Alberta, Western Canada. In this report I will only briefly look at how jobs in Western Canada may be affected. The jobs in Western Canada are more positively affected by the proposed pipeline, however a large (pro)portion of these jobs are (jobs) expected to come about as an indirect result of the pipeline, rather than jobs directly created and therefore are difficult to calculate/take into consideration. Adding to the difficulty calculating the jobs creation, economies on the West coast are also threatened by oil spills.

In Eastern Canada the effect on the job situation is a more abstract phenomena created through processes and characteristics in the economy. If the pipeline is built it will ship one kind of oil (bitumen) to markets in the Asia-Pacific region. Being able to charge more for oil in Asia (Asia premium) may cause a real exchange appreciation in the Canadian dollar. One of the effects is positive as it enables Canadians to buy more exports with their dollar. However this may be offset by the rise in the price of Canadian oil too and rise in cost of living.

A second effect, and the concern that is related to Dutch Disease, is that the Canadian dollar changes in value. This change happens in such a way as to make goods that the Canadian manufacturing industry produces less competitive on a world market. This means that the demand for Canadian goods goes down; therefore, to keep the manufacturing industry going, jobs are cut. Some may point out that while this is the case jobs are being created in the booming sector – tar

sands extraction in Alberta. This is the case but the geography of Canada, i.e. the size, makes it not possible for people to just swap industries without moving geographically. If the contraction of the Canadian manufacturing industry happens quickly not only will people not be able to move to the booming sector but additional economies, e.g. service sector economies, may not be able to grow quickly enough to fill the void the manufacturing industry left. In addition the politics of Canada, i.e. the structure of federal and provincial governments, complicates things still.

In this report I look at how other countries have been able to mitigate Dutch Disease, the effect on the manufacturing industry, after discovering oil. However I find that Canada cannot simply do what these countries did because of the political structure. As a result I come to the conclusion that the Enbridge pipeline and any expansion of existing pipelines with a view to ship oil to the Asia-pacific market would be too great of a risk to the Canadian economy. If the tar sands are to expand and increase in output without 'diversifying' into the Asia-pacific markets there are a number of steps that can be taken to mitigate any negative economic impacts as outlined in the section headed 'Curing Dutch Disease'.

This report has only been able to explore a small part of the economic issues around tar sands expansion and associated pipelines. The issues go much further into other parts of the economy and environmental and social issues. The economic risks, some of which are explored in this paper need to be considered in conjunction with social and environmental risks for a true assessment of the cost-benefits that the tar sands and its pipelines will cause.

## Introduction

The Northern Gateway Pipeline is a pipeline proposed by Enbridge to transport bitumen (a form of oil) from the tar sands in Alberta to the coast of BC at Kitimat (Huges, 2011). The end destination for this crude oil is the Asia-Pacific market (Huges, 2011). There have been a number of criticisms regarding the pipeline's potential environmental impacts and risk from the tankers that will transport the bitumen from the BC coast to Asia (Huges, 2011 and Lee, 2012). It has been suggested that the tar sands development and associated pipelines - Northern Gateway Pipeline, are a case of environment impacts, versus economics gains (Beine, Bos & Coulombe, 2012); that Canada has to sacrifice aspects of its environment to ensure its place as a global 'energy super power' and gain economic security. This is a belief held by many in the current government and many see tar sands development as essential for the growth of Canada. For example the Natural Resource Minister Joe Oliver said "For our government, the choice is clear: we need to diversify our markets in order to create jobs and economic growth for Canadians across this country. We must expand our trade with the fast growing Asian economies. We know that increasing trade will help ensure the financial security of Canadians and their families." - (Natural Resource Minister Joe Oliver, quoted in Lee, 2012).

This paper will explore the economic side of the Enbridge's Northern Gateway Pipeline to investigate the impact on Canadian jobs, in particular a phenomenon called 'Dutch Disease' and its effect on Canadian manufacturing jobs. The reason these changes affect the distribution of jobs is that the boom, oil sands extraction, is happening mainly in Alberta but the losses in manufacturing jobs are seen in Ontario and Quebec. The tar sands and associated pipelines are so complex ranging from environmental to social and economic with even finer divergence into every aspect of Canadian society, I have only been able to explore a small corner of the issues that need to be addressed.

In this paper I will use the terms oil sands and tar sands interchangeably.

## Western Canada

One of the positive outcomes put forward for the construction of Enbridge's Northern Gateway Pipeline, is the jobs created in western Canada "Enbridge ...– pipeline will create 63,000 person-years of employment during construction phase, and 1,146 full-time jobs once complete." (Lee, 2012). Compare this to the jobs estimated to already have been lost to Dutch disease in the manufacturing industry "...our range of gross job losses in the manufacturing sector due to the resource boom is between 196000 and 220000 jobs lost in the manufacturing sector for Canada as a whole over the 2002-2007 period." (Beine, Bos, & Coulombe, 2012). The distribution and numbers of jobs lost and gained clearly has a geographical importance. In addition there is criticism that up to two-fifths of the jobs are induced, which is very difficult to calculate (Lee, 2012). (Induced jobs means jobs assumed to be created by demand as a result of the definite business and jobs that will be created.)

Another point made against Enbridge's employment figures is that it is assumed that if the workers were not employed by Enbridge they would not be employed at all which Lee (2012) demonstrated would not be the case using figures from BC hydro: "... a recent study for the BC government and BC Hydro that estimates labour demand will exceed supply in North-western BC starting in 2012 due to the large number of resource industry projects underway." (Lee, 2012).

Geography (and politics) is an issue for Canada in this context. Canadian Energy Research Institute (CERI) (Honarvar et al, 2011), produced a pro industry report a part of which identified that all the jobs that will be directly created by the tar sands and pipeline development will be mainly in Alberta with some in BC. The rest of Canada has to benefit indirectly through induced job creation and even these jobs are highly concentrated in Alberta "About 76 per cent of the total Canadian induced jobs are expected to be created and preserved in Alberta 13% in Ontario, 6 per cent in British Columbia, and the remaining 5 per cent in the rest of Canada." (Honarvar. et al, 2011).

As for other sectors of the economy in Western Canada, the concern for jobs seems to be coming from the potential effect an oil spill would have on the coastal economies and subsistence economies. (For a more detailed report on environment and tankers see “Tanker Traffic on BC’s North Coast: Full-Cost Accounting and the Evaluation of the Ecological, Economic and Socio-cultural Costs of a Marine Oil Spill.”, website address given in bibliography.) Although this report looks at how the Enbridge Northern Gateway pipeline will affect the distribution of Canadian jobs it will focus on how the distribution will shift from Eastern Canada mainly to Alberta. This focus comes about because of the nature of the impacts of the pipeline. The way the impacts affect the economy means that the biggest changes in jobs will be felt by those in Eastern Canada. This is not to say that there will not be a risk to jobs in Western Canada, just this report will not look at it in any more depth. This subject would perhaps be something to look into further and some authors have done so already (Lee, 2012).

### Dutch Disease

Dutch disease is a phenomenon that threatens manufacturing industries, including Canada’s. “Dutch Disease refers to the case where a resource boom in an economy leads to a real exchange appreciation and to the crowding out of the tradable manufacturing sector.” (Beine, Bos & Coulombe, 2012). Real exchange appreciation means goods manufactured in Canada become less desirable because they become more expensive on world market. The disease part has been identified by some as the inability of the manufacturing industry to rebound after the resource boom because of irreversible losses in skills, knowledge and ability (Beine, Bos & Coulombe, 2012).

The concern is that the oil extraction (and subsequent exporting to Asia-Pacific market) will cause a boom in Alberta. This oil extraction boom in Alberta is not a first for Canada. Oil was discovered and subsequently extracted in Newfoundland without any obvious or severe Dutch

disease affects. The reason for this is differences in the oil industries of the regions. "In contrast to Newfoundland and Labrador, Alberta has had among the lowest growth rates for human capital and labour productivity..." (Coulombe, 2011) this is because of the nature of the oil sands. What this means basically is that in contrast to New Foundland, Alberta creates low numbers of jobs for the amount of growth (in size and money) of the oil sands extraction. In addition difficulties in extracting bitumen from the tar sands and then separating it from the 'sand' means it "requires more labour and capital per dollar of output than did past oil and gas reserves."(Coulombe, 2011).

Recent trends point towards Dutch disease manifesting itself in Canada; however one paper found it is only part of the reason for the recent decline in Canadian manufacturing (Beine, Bos & Coulombe, 2012). The other main reason is a depreciating US dollar (Beine, Bos & Coulombe, 2012). When you take into the account the effect of the depreciating USD the authors found that "...Canadian economy has been subject to a partial Dutch Disease phenomenon."<sup>1</sup> (Beine, Bos & Coulombe, 2012). Another paper suggests recent trends in the Canadian economy are displaying 'China syndrome' rather than Dutch disease (Macdonald, 2007). Macdonald puts forward the idea that Canada has lost its competitiveness against cheaper commodity prices coming from Asia manufacturing.

However the existence of Dutch Disease cannot be denied. The aforementioned paper (Beine, Bos & Coulombe, 2012) only found a *partial* Dutch Disease but Dutch Disease none the less and other findings presented this year (2012) state "We find confirmation of a Dutch disease in Canadian provinces." (Beine, Columbe and Vermeulen 2012). The two works found evidence of Dutch disease from the 2002-2007/8 resource boom, if the pipeline were to go ahead the Canadian economy would be exposed to a high risk of appreciation because of something called the Asia premium.

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### Asia premium

Asia premium is the higher price oil can fetch in Asia-Pacific markets for historical reasons (Allen, 2012). This could mean a \$1.88 to \$2.98 increase on the price of oil per barrel, (price difference comes from market price fluctuations)(Lee, 2012). This Asia premium is important for Enbridge “85% of the projected gross netback benefit to Canadian producers is dependent upon the Asia Premium.” (Allen, 2012). If the premium ceases to exist there is no economic argument for the Northern Gateway pipeline (Allen, 2011). Canada isn’t the only country with an eye on the ‘Asia Premium’, Russia is also planning on expanding supply to Asia by 2014 (Allen, 2012). If Asia has more options for purchasing oil, the Asia premium may weaken or even disappear. This (and the Dutch disease phenomenon) directly contradicts the benefits seen by Natural Resource Minister Joe Oliver and his call to diversify markets.

### Supporters of the pipeline/oil sands development

David Emerson, a supporter of the pipeline, wrote “The Pacific Gateway Strategy is a linchpin in strengthening and diversifying the Canadian economy by ensuring strong and competitive trade linkages with the world’s fastest-growing economies.” (Emerson, 2010). The consequences of accessing the Asia Pacific market are seen as positive by others too. A paper by Dissou concludes that oil shocks will be good for the Canadian economy because of “improvement in Canadian terms of trade, real GDP [gross domestic product] increases during most periods the consumption profile is higher in all periods.”(Dissou, 2010) What this means is Canadians can buy more for their dollar (in terms of imports). He comes to this conclusion despite recognising the shift in labour and capital from manufacturing towards the booming sector (oil extraction) and subsequent appreciation of the real exchange rate that “...may not be benefit traditional manufacturing exports.” (Dissou, 2010).

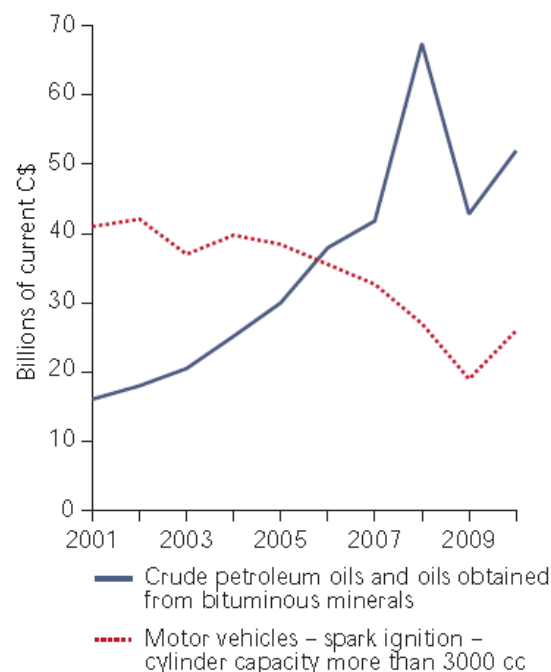


Although Dissou recognises the existence of Dutch Disease in Canada he is not concerned about it, however there are many economists who are.

### Canadian manufacturing jobs, how important are they?

There seems to be a misconception that manufacturing in Eastern Canada is insignificant to the Canadian economy and job market. The graph below shows Canada's two biggest exports, petroleum and bituminous materials, and motor vehicles. Until 2006 motor vehicles were Canada's biggest export, that is to say a manufactured good was Canada's biggest export. Now this misconception has been addressed, I will discuss how the manufacturing industry is already being affected, and may be further affected by Dutch disease.

FIGURE 2. CANADA'S TOP TWO EXPORT PRODUCTS (2001-2010)



[Source: Industry Canada, Trade Data Online (TDO)]

Bimenyimana & Vallee, 2011. The trend at the end of this graph (2006 onwards) has led some to investigate Dutch disease in Canada.

## Eastern Canada

Some see this transition from manufacturing to a resource extraction dominated economy and a service economy as eventually being a positive one "...society ultimately benefits when labour reallocates to more productive uses [e.g service economy]." (Tapp, 2011). However Tapp also recognises that workers who lose their jobs and or change sectors, as would be the case in job loss because of Dutch disease they can suffer "large and persistent earnings losses." (Tapp, 2011). This is for two reasons, one, they have a lower income during unemployment and two, if they are reemployed in a different sector they will likely be paid less because of lack of transferable and applicable skills in the new sector(Tap, 2011). This also apparently results in a 3% cost in the output of the most affected sectors (presumably non-renewable resource sectors as this is where the employment is moving) in the first 3 years after the shocks. "...full economic adjustment is a time-consuming process, taking over 5 years to complete."(Tapp, 2011). Tapp suggests an increase in unemployment benefits from 55% to 65% (of earnings) would not be advised as it prolongs adjustment (to the shift in sectors) by around 2 years. He talks about how firms may take their time in recruiting to get a better match.

In summary of Tapp (2011), a transfer of employment would negatively affect the economy, but only for a relatively short time. What Tapp does not address is how this adjustment works geographically, or might have social impacts (i.e. his suggestion to keep unemployment benefits low to benefit the economy and industry). How do the workers in the manufacturing industry (of which 75% is in Quebec and Ontario) move to oil extraction of which 95% of the reserves are in Alberta (Allen, 2012).

One group of economists think that temporary foreign workers are the answer (Beine, Columbe and Vermeulen 2012). This is because a worker who moves from the non-booming sector, say manufacturing in Ontario, to booming sector, resource extraction in Alberta, will mitigate Dutch disease in Alberta but propagate it further in Ontario (Beine, Columbe and Vermeulen 2012). So a

Canadian worker moving across the country makes Dutch Disease worse in the place they left. Temporary foreign workers mitigate this affect by preventing this movement of Canadian workers (Beine, Columbe and Vermeulen 2012). Of course there are issues here too; one study looks at the problems of workers' rights and working conditions in Alberta and the tar sands expansion (The Alberta Federation of Labour, 2007). This is not to mention potential concerns among Canadians that the jobs that are being created are going to temporary foreign workers.

### Curing Dutch Disease

In a conference on oil and economics it was noted in regard to Norwegian North Sea oil that "it matters a lot whether the rents from oil are invested in paper assets on the world market or in improving the industrial base of Scandinavian countries." (Solow 1986). Norway managed to get it right and avoid Dutch disease but there is no quick fix, and it's especially difficult for Canada.

An IMF working paper recognises the *potential* for "...real exchange appreciation [to] undermine the competitiveness of a country and can have a lasting negative impact in growth and employment creation." (Lama & Medina, 2012). However, through their model they found that Canada should allow its economy "...to adjust to higher commodity prices through real exchange rate appreciation." (Lama & Medina, 2010) and comes to the conclusion that The Bank of Canada should not intervene in the foreign exchange market.

So what other options are there to mitigate the negative effects? Canada could try to follow the lead of Norway (as mentioned earlier in this section) which had a resource boom after the discovery of oil, without any obvious signs of Dutch disease (Larsen, 2004). A significant contributor to avoiding Dutch disease in Norway was avoiding rent seeking (Larsen, 2004) "People are said to seek rents when they try to obtain benefits for themselves through the political arena. They typically do so by getting a subsidy for a good they produce or for being in a particular class of people, by

getting a tariff on a good they produce, or by getting a special regulation that hampers their competitors.” (<http://www.econlib.org>) Canada can put measures in for this however for many of the other Norwegian strategies Canada can’t just do what Norway did because of Geography and politics – decentralised control in the form of provincial governments (Coulombe, 2011).

As mentioned in the previous section, temporary foreign workers could mitigate Dutch disease (Beine, Columbe and Vermeulen 2012). A number of other suggestions have also been made. An article for the Institute of Research on Public Policy (IRPP) suggests a number of solutions, some imitate Norway but some are more specific for Canada

They include:

1) For Alberta to re-start paying into its fund “According to Alberta’s Department of Finance, the province created a resource fund in 1976, the Alberta Heritage Savings Trust Fund, with the goal “to save for the future,...strengthen or diversify the economy, and...improve the quality of life of Albertans.” From 1976 to 1986, up to 30 per cent of the province’s oil and gas revenues went to the fund but contributions ceased in 1987.” (Bimenyimana,& Vallee, 2011)

2) Provide training to those who lose their jobs in manufacturing so they can find jobs in the service sector. As we have seen this adjustment in training and or entering new jobs can affect output for a up to 5 years after the shock (Tapp, 2011)

3) Research and development subsidies and tax credits for the (remaining) manufacturing industry as this sector of the economy relies on learning by doing (Beine, Bos, Coulombe , 2009). Learning by doing “Refers to the improvement in technology that takes place in some industries, early in their history, as they learn by experience, so that average cost falls as accumulated output rises. See infant industry protection,dynamic economies of scale.” (<http://www-personal.umich.edu>)

4) Avoid huge increases in public spending for reasons on inflation and saving in the form of the fund.

5) Remove barriers in interprovincial trade highlights the importance of the politics and geography of Canada in this issue.

A policy has to be created to encourage labour productivity in other avenues for *when* the oil sands are depleted (Coulombe, 2011). “If all of the oil sands projects currently under construction are successfully completed at forecast production rates, including the production from existing facilities, Canadian oil production will peak at about 3.6 million barrels per day in 2018.” (Huges, 2011). This rate of growth would require strict control as an economy that relies on the production of oil and gas should follow the Hartwick Rule “...which states that to sustain a constant flow of consumption, an economy that produces an exhaustible resource should invest the totality of the resource rents in reproducible capital.”. That this means for the Canada economy is it “...should save and invest more than an economy that produces resources that are not exhausted after a single use...” (Coulombe, 2011).

### Conclusion and recommendations

There is disagreement in the literature about whether appreciation of the Canadian dollar as a result of expanding tar sands extraction and exports to Asia- Pacific markets will ultimately be positive thing or not. For those that argue that it will be positive, they believe the terms of trade (which allow Canadians to buy more for their dollar) will outweigh contractions in the manufacturing industry (i.e. Dissou, 2007 and 2010).

For others there is a serious concern that the contraction in the manufacturing industry will be bad for Canada in the long run. This is a concern across the different types of manufacturing industries “All the affected industries, with the exception of printing are highly exposed to international trade. There is no systematic pattern between the degree of technology intensity (following the OEDC classification for low-, medium-, and high-tech industries) and the degree of

exposure to Dutch disease.” (Beine, Bos & Coulombe, 2012). The main issues seem to be from the characteristics of the boom and contraction, characteristics being the speed, the geography – location of the boom and contraction and the politics around distributing the positive impacts of the boom through time and space. These factors will affect the distribution of jobs nation-wide.

Speed of expansion and desire to export to Asia Pacific market in my opinion is the main cause of the problems. If the tar sands are to be developed, careful planning at the federal and provincial level must occur. Considering Canada’s decentralized system (Coulombe, 2011) this will not be an easy task but it is necessary in order for Canadian citizens of this generation and future generations to be able to benefit from the tar sands. Canada has to do what is best for its future, not what is best for a limited number of people now. “The oil sands represent the vast majority of what is left of Canada’s legacy of recoverable oil.” (Huges, 2011) The oil sands are a non-renewable resource, and once they are gone, Canada will have next to no reserves of oil left “...the current generation is always entitled to take as much out of the common intertemporal pool as it can, provided only that it leaves behind the possibility that each succeeding generation can be as well off as this one.” (Solow 1986). These kind of changes such as ‘saving for a rainy day’ – Alberta fund, may not please the richest 1%, (Yalnizyan, 2010) or the foreign investors but they are necessary (Allen, 2012). The issue of equality across time and space is something I feel would be an interesting future research topic.

In summary a new pipeline (or pipeline expansion) will only benefit a hand full of people compared to those who would be affected if Dutch Disease takes a strong hold. Therefore the Northern Gateway pipeline should not be built and existing pipelines should not increase in capacity with a view to supply Asia-Pacific markets. If tar sands expansion and extraction is to continue then following the 5 steps outlined in ‘Curing Dutch Disease’ section should be followed to mitigate negative economic impacts.

### Limitations and Further research

Enbridge is just one company with interest in building and/or expanding pipelines from Alberta tar sands to the coast (Lemphers, 2010). Some have suggested that the Northern Gateway is not needed but Enbridge wants to have its share of the action by competing with other companies (Lemphers, 2010). One of the limitations of this paper is not addressing other pipelines and plans for expansion, for example "...Kindeer Morgan has publicly disclosed its intension to expand its TransMountain line by 2015/16"( Lee, 2012). If the expansion of the TransMountain pipeline is for the purpose of exporting to Aisa-Pacific markets then this expansion may have a similar effect on the Canadian currency of appreciation of the dollar and subsequent Dutch disease effects. This would be a good avenue for further research around Canada and Dutch disease.

An important area of future research is growing in equalities in Canada. The top 1% hold a greater share of Canada's money than ever before (Yalnizyan, 2010). This paper addressed some potential spatial inequalities in the form of jobs. Another dimension of inequality is temporal, for Canada this could mean concerns surrounding energy security (Huges, 2011) Other inequalities that need to be addressed are aboriginal workers' rights and opportunities (Friedel & Taylor, 2011 ) and the conditions and environment temporary foreign workers have to endure in Alberta (The Alberta Labour Federation).

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