Duty Calls:
Federal responsibility in Canada's oil sands

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Duty Calls: Federal Responsibility in Canada's Oil Sands

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"To be frank — on the oil sands, we've got to do a better job environmentally. We hear a lot of pressure on that."

– Prime Minister Stephen Harper[1]

"We're operating this thing like it was the Klondike, and it's not the Klondike. We're going to be there for a century or more. We need to be able to stand up for the oil sands and ask the oil industry to do better. These communities need to become environmentally sustainable, but they also need to become socially sustainable."

– Hon. Michael Ignatieff, Leader of the Official Opposition[2]

"We have called for a halt to any new approvals of tar sands development until there's a plan in place to address the concerns and health consequences for the people of not only Fort Chip but right across the north….Otherwise what are the next generations of Canadians going to ask us? They're going to say "who was in charge when this mess was created? Who was demonstrating so called strong leadership when the north was poisoned?" And I believe it's time for the kind of leadership that says we're not going to allow that to happen."

– Hon. Jack Layton, Leader of the New Democratic Party[3]

"If they want to produce that kind of oil, the players have to pay the consequences of their own production….What we're basically saying is that we should put an end to preferential treatment of oil companies."

– Hon. Gilles Duceppe, Leader of the Bloc Québécois[4]

INTRODUCTION

Canada has no choice other than to address the growing impacts of the oil sands industry. Pollution from the industry is rising, the landscape is being damaged by unfettered development, and there are plans to double production over the next few years, which will only increase the damage. Furthermore, the oil sands are preventing Canada from transitioning to a clean energy economy and tackling global warming. Ottawa has so far failed to live up to its duties to enforce existing federal environmental laws in the oil sands and to chart a sustainable future for Canada. The resulting mismanagement and growing controversy leaves Canada no choice other than to address the growing impacts of the oil sands.

Countries around the world are making significant investments to retool their economies for the new industrial revolution – the shift to clean, renewable energy and the phase-out of polluting fossil fuels. Dwindling global oil supply, rising oil prices, concerns about energy security and efforts to combat global warming are driving the international clean energy boom. In fact, if the world wants to contain climate change to less than two degrees Celsius of warming to reduce the risks of catastrophic impacts, developed countries like Canada will need to virtually eliminate emissions from fossil fuels from their economies by 2050.

In this context, exploiting the oil sands – bringing to market fossil fuels with an even higher carbon[5] impact than those we are already using – is a step in the wrong direction if we are to transition to clean energy. There is also growing awareness of the water and air pollution, habitat loss and impacts on First Nations of oil sands production. This has led to a growing international controversy over the oil sands,

and is hurting Canada's reputation abroad. Investors and consumers are now seeing the risk associated with oil sands, and are calling on Canada to address the environmental impacts.

Furthermore, the role of the oil sands within the national climate and energy debate has become a source of inter-provincial friction as concerns mount over the impact of rising oil sands emissions on other provinces, and some regions experience manufacturing job loss stemming from the way oil exports are driving up the Canadian dollar.

While Environment Minister Jim Prentice recently signalled that the federal government may re-engage in the oil sands when he appointed a panel of science experts to review water pollution monitoring in the Athabasca River, to date the federal government has been largely absent in dealing with the environmental management of Canada's oil sands. Despite occasional "tough talk" and vague statements about the need for improvements, the federal government has failed to meets its responsibility to enforce existing federal laws and to follow through on promises for new ones. Instead of fixing the problems through effective regulations to manage cumulative environmental effects, the federal government has been lobbying governments in the U.S. and the E.U. in an attempt to shield the industry from environmental measures elsewhere. Yet, by allowing the oil sands problems to grow in the absence of clear limits to protect the environment, the federal government is instead setting up the industry for even greater controversy and risk in the future.

CANADA HAS LOST APPROXIMATELY 66,000 NEW JOBS OVER THE LAST TWO YEARS THAT WOULD HAVE BEEN CREATED IF WE WERE INVESTING IN THE RENEWABLE ECONOMY AT THE SAME LEVEL (PER PERSON) AS THE U.S.

FEDERAL DUTIES IN THE OIL SANDS

The federal government has both the authority to implement policies to minimize environmental harm, and a legal obligation to do so under several federal laws. For example:

Fisheries Act: The federal Fisheries Act deals with the management of Canada's fisheries resources and the conservation and protection of fish and fish habitat. It applies to all Canadian fisheries waters, including private property and provincial Crown lands. It gives the federal government the power and authority to protect the unobstructed passage of fish, provide sufficient water flow for fish, prevent fish mortality and prohibit harmful alteration, disruption or destruction of fish habitat.[6]

Canadian Environmental Protection Act (CEPA): CEPA aims to prevent pollution and protect the environment and human health. It gives the federal government the authority to prevent and manage the risks posed by harmful substances, and to assess the environmental and human health impacts of new and existing substances.[7] The federal government has the responsibility, therefore, to assess the toxicity of chemicals produced by oil sands extraction, and to develop measures to control their release.

Species at Risk Act (SARA): The purpose of SARA is to prevent Canadian species from becoming extirpated or extinct, to provide for the recovery of endangered or threatened species and prevent other species from becoming at risk. It provides the federal government with the authority to identify species at risk and their critical habitat, and creates a 'safety net' provision for the federal government to step in to protect a species if a province is failing to do so.

Canadian Environmental Assessment Act (CEAA): The need for federal environmental assessments for new oil sands projects is triggered by the impact of oil sands activities on fish and fish habitat. These environmental assessments have taken the form of Joint Panel Reviews with representatives of the federal government and the Alberta government.

Migratory Birds Convention Act (MBCA): The MBCA prohibits the release of substances that can harm migratory birds in waters used by them, and gives the federal government the authority to develop regulations to protect migratory birds. The responsibility of the federal government for migratory birds was recently demonstrated in the prosecution of Syncrude Canada under the MBCA by Canada for the death of 1,600 ducks in a tailings lake.

The federal government is responsible for signing and implementing international treaties such as the Migratory Birds Convention, the Convention on Long Range Transboundary Air Pollution and the Kyoto Protocol. Furthermore, the federal government is responsible for monetary policy and the value of our currency, which has become increasingly linked to the price of oil as oil sands exports have grown.

The federal government also has fiduciary duties to respect Aboriginal and treaty rights as outlined in an upcoming section.

CATCH UP, CANADA:
THE TRANSITION FROM OIL SANDS TO CLEAN ENERGY

Alongside other G8 countries, Canada has endorsed the goal of staying within two degrees of global warming relative to the pre-industrial level to avoid catastrophic climate change impacts. To have a chance of achieving this goal, global greenhouse gas emissions will need to be cut by 50 per cent from the 1990 level by 2050, and emissions from industrialized countries will need to be cut by at least 80 per cent from 1990 levels by 2050.[8] The most recent science suggests that emissions should be cut even more quickly to avoid serious risks of catastrophic climate change.

For Canada to achieve this level of reduction, the total carbon budget for the country would have to be limited to 118 million tonnes of carbon dioxide equivalent (CO_2e) in 2050[9]. To put this in perspective, this budget is about the same as national emissions from just agriculture and residential heating in 2008, which together accounted for 114 million tonnes of greenhouse gases.[10] By 2050, our energy and transportation systems will need to be virtually carbon-free.

Other countries recognize the implications of carbon constraints and the economic growth opportunity that they present, and are investing heavily in the transition to the clean energy economy. For example, Denmark — a cold northern country like Canada— is planning to eliminate fossil fuel use by investing heavily in public transportation and building the infrastructure and incentives needed for electric vehicles.[11] Clean energy investment in China reached US$34.6 billion in 2009, more than in any other country, and China's government is planning to increase that to US$75 billion per year in the coming years.[12]

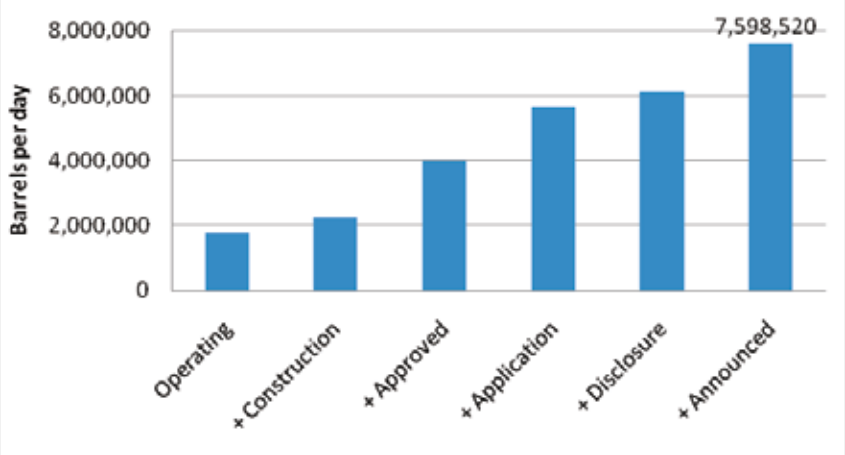
Meanwhile, Canada is falling behind other countries in clean energy investment, and Canadians risk missing out on the job opportunities being created in what will soon be one of the largest industrial sectors worldwide. The Obama Administration plans to invest 18 times more per person this year in renewable energy than the Government of Canada,[13] and Canada has lost approximately 66,000 new jobs over the last two years that would have been created if we were investing at the same level (per person) as the U.S.[14]

Canada needs to catch up in the clean energy economy and join other countries in the transition away from fossil fuels. In the interim, Ottawa has a legislative responsibility to mitigate the most significant impacts of the oil sands industry by implementing the following recommendations.

Figure 1. Oil sands expansion plans

The current production capacity in the oil sands is 1.79 million barrels per day. Projects that have already been approved will increase production to nearly 4 million barrels a day. If all projects that are currently seeking approval or have been announced by oil companies proceed, production will more than quadruple today's levels.[59]

Source: Strategy West Inc. Existing and Proposed Canadian Commercial Oil Sands Projects. September 2010.



1. LIVE UP TO THE FIDUCIARY DUTY TO ABORIGINAL PEOPLES

Section 35 of Canada's *Constitution Act* recognizes and protects Aboriginal and treaty rights. The Crown has a legal duty to consult and accommodate Aboriginal peoples (in Alberta, this means First Nations and Métis) when contemplating activities that might adversely impact Section 35 rights as affirmed by the Supreme Court of Canada in the Haida, Taku River and Mikisew Cree decisions.[15] The oil sands industry impacts land, wildlife and water, meaning that Aboriginal livelihoods and treaty rights are being affected.

Although the Crown's responsibilities are shared, the federal government has largely relied on the Province of Alberta to undertake the Crown's duty to consult Aboriginal peoples. Yet, the provincial government is failing to fulfill these obligations,[16] as Alberta's policies currently:

Ensure consultation happens too late: The courts have ruled that Aboriginal peoples need to be consulted early in the strategic decisionmaking regarding land use, at a point when the discussion is about whether to carry out an activity, not how to carry out an activity that has already been decided on. In Alberta, Aboriginal peoples are not consulted at this stage – mineral licences are handed out prior to the involvement of Aboriginal peoples, thus limiting the ability to accommodate concerns.

Delegate primary responsibility to industry: Alberta delegates significant responsibility for consultation with Aboriginal peoples to industry, and has established several multi-stakeholder bodies that provide some form of consultation with Aboriginal peoples and the public. The province, as a result, tries to play the role of neutral arbiter between industry and Aboriginal peoples, rather than fulfilling its constitutional obligation to protect Aboriginal and treaty rights. Furthermore, participation by Aboriginal peoples in multi-stakeholder bodies does not substitute the need for direct consultation and accommodation with them.

Fail to meet Aboriginal expectations: Alberta has established a First Nations Consultation Policy to guide the government's consultation with First Nations when they do take place. The policy, however, has been rejected by all three treaty organizations representing Alberta's First Nations because it was adopted without consultation or consent of the affected First Nations.

The failure of the province to adequately discharge their duty to consult does not diminish the responsibility of the federal government to maintain the honour of the Crown. Both governments are obligated to fulfill the duty to consult and accommodate Aboriginal peoples regarding whether and how they conduct activity in the oil sands. As a result of the Crown's failure to consult, several First Nations communities are now legally challenging oil sands projects, and until the situation is fixed, the industry remains vulnerable to further legal challenges.

It is essential that Aboriginal peoples are involved in the design of the consultation process. Therefore, it is not appropriate for others – including environmental groups – to suggest what governments must to do to meet their obligations to Aboriginal peoples, because that can only be determined through direct discussions between federal and provincial governments and Aboriginal peoples.

In summary, there is a large gap between the Crown's constitutional obligation to respect Aboriginal and treaty rights and the reality of how decisionmaking is proceeding in the oil sands region. Both the federal and provincial governments are legally obligated to remedy this situation.

RECOMMENDATIONS

Free, Prior and Informed Consent:[17] Both the federal and provincial governments must ensure that development in the oil sands region is consistent with the constitutionally protected rights of Aboriginal peoples and the internationally accepted doctrine of free, prior, and informed consent. Consultation policies need to be designed in partnership with Aboriginal peoples, instead of imposed by governments.

Health and monitoring: To help address immediate concerns, the federal government must ensure that affected Aboriginal communities have the resources to direct their own baseline health studies and environmental monitoring programs. Both the federal and provincial governments are accountable to communities for the conservation and protection of the environment, community health, and the productive capacity of their lands and resources.

David Dodge, CPAWS

IF EXPANSION OF THE OIL SANDS PROCEEDS AS PLANNED, THE INDUSTRY WILL OUTSPEND ITS PROPORTIONAL SHARE OF CANADA'S CARBON BUDGET BY 3.5 TIMES BY 2020 AND BY NEARLY 40 TIMES IN 2050.

2. RECONCILE OIL SANDS DEVELOPMENT WITH CANADA'S CARBON BUDGET

Oil sands operations are a major and growing source of greenhouse gas (GHG) pollution. In 2008, oil sands plants and upgraders were already producing 37 million tonnes of emissions per year,[18] which alone accounted for five per cent of Canada's total emissions. In fact, oil sands are the fastest growing source of GHG emissions in the country.[19] Projections for growth made before the economic recession indicate that oil sands emissions could nearly triple between 2008 and 2020[20] to 108 million tonnes of CO_2e per year and would account for over 40 per cent of Canada's increase in emissions.[21]

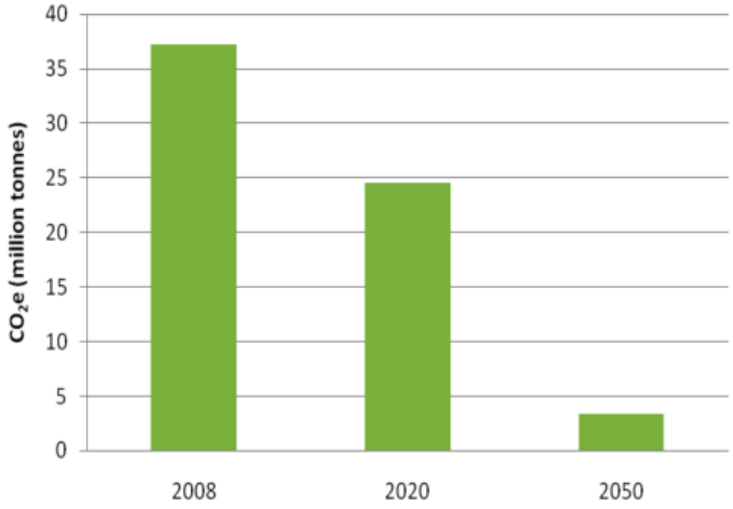
In January 2010, the federal government committed to reduce Canada's GHG emissions to 17 per cent below 2005 levels by 2020. The federal government has also endorsed the goal to limit warming to two degrees above pre-industrial levels through the G8 and the Copenhagen Accord. According to the best available science, this will require industrialized countries like Canada to reduce their emissions by at least 80 per cent below 1990 levels by 2050.[22] This would mean that Canada's total carbon budget will be roughly 607 million tonnes in 2020 and 118 million tonnes in 2050.[23] Canada's 2020 goal is far weaker than what the best available science shows would be our fair contribution to emissions reduction.

The most effective approach for Canada to do its share to fight global warming would be to legislate science-based targets to reduce Canada's total GHG emissions, and to implement a comprehensive plan to meet those targets. An economy-wide price on carbon would be the centerpiece of that plan, supported by complementary regulations and investments.

Instead of adopting this approach, the federal government has signalled that it will regulate emissions by sector,[24] and has recently proposed to implement regulations on emissions from coal-fired electricity that would take effect starting in 2015.

A sector-by-sector approach to regulating carbon emissions means that the federal government needs to develop regulations that require all sectors – including the oil sands industry – to do their fair share in reducing global warming pollution to live within our national carbon budget, the level emissions need to be at to reach the government's commitments. If the oil sands sector is not required to deliver its proportional share of reductions, other sectors will have to shoulder a greater burden. If the oil sands assume their proportional share of reaching the government's commitments,[25] this would translate into absolute limits on emissions from the oil sands by 2020 and 2050 as shown below.[26]

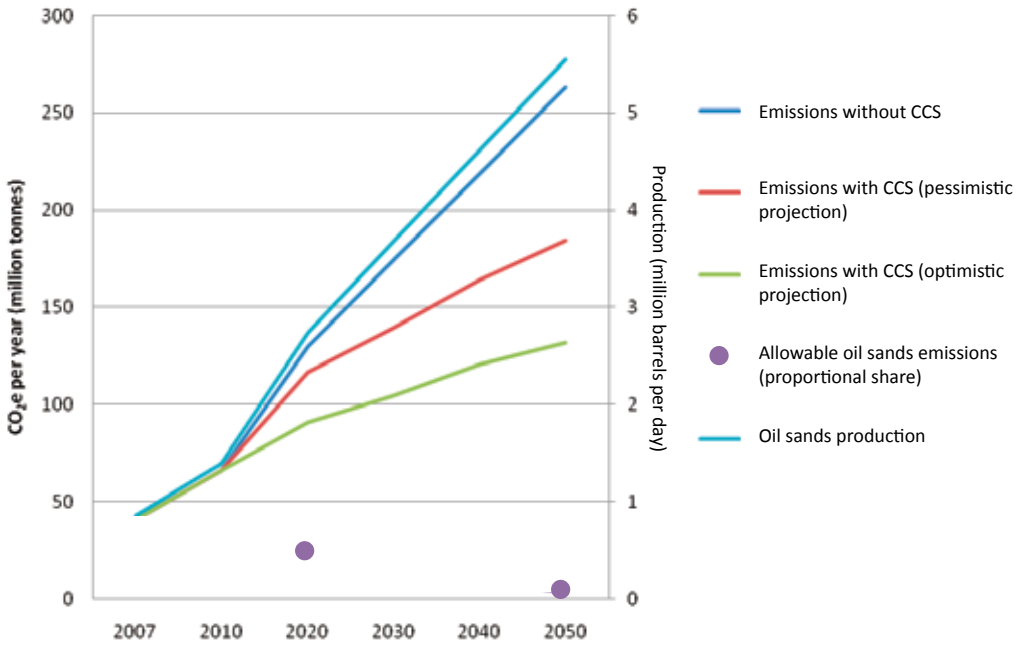
Figure 2: Oil sands GHGs proportional to federal commitment



Unfortunately, the scope of oil sands expansion that has already been planned and approved can only mean that other sectors of the Canadian economy must do more than their proportional share to reduce emissions. Even if carbon capture and storage (CCS) is actually able to reduce emissions substantially in the oil sands (a claim that is still far from certain), current oil sands expansion plans would still exceed the oil sands emissions budget if the sector does its share to meet the government's commitments. Even the most optimistic estimates by industry experts indicate that by 2020, CCS may reduce oil sands emissions by 10–30 per cent below business as usual, and by 2050, 30–50 per cent below business as usual.[27]

As the graph below shows, this would still mean that the oil sands industry will exceed a proportional share of Canada's carbon budget by 3.5 times in 2020, and by nearly 40 times in 2050 if expansion proceeds as planned. Oil sands production would therefore need to peak at or near current levels if the sector is to do its proportional share.

Figure 3. Oil sands GHG emissions with CCS



Source: WWF UK and the Cooperative Bank, "Carbon Capture and Storage in the Alberta Oil Sands: A Dangerous Myth" (2009).

RECOMMENDATIONS

Regulate the oil sands' GHG emissions: Ideally the federal government would set an economy-wide price on carbon. If it takes a sector-by-sector regulatory approach instead, regulations need to be implemented that require absolute emissions reductions from the oil sands sector. These regulations need to put a limit on emissions that is consistent with reaching the federal government's national emissions commitments for 2020 and 2050.

Set a science-based limit or "budget" for national emissions: Legislate science-based limits to reduce Canada's total GHG emissions that are based on the best available science and a fair contribution by Canada to the global effort to tackle climate change. Legislation that sets science-based limits on emissions should also establish independent, transparent oversight of government action to ensure compliance.

Put a price on carbon: As the centrepiece of a plan to meet legislated GHG reductions, implement a national, economy-wide cap-and-trade system or emissions levy. The price on carbon needs to be set to reach the legislated limit for national emissions, go into effect as soon as possible and be fair for all sectors and regions.

Mandate CCS: Adopt regulations to require all new oil sands facilities that begin operations in 2010 or later to implement full-scale carbon capture and storage (CCS) by 2015.

David Dodge, Pembina Institute

BY 2050, OUR ENERGY AND TRANSPORTATION SYSTEMS WILL NEED TO BE VIRTUALLY CARBON-FREE.

3. ENFORCE THE *FISHERIES ACT*

Oil sands extraction processes have a number of impacts on water. Clearing forests and wetlands for mine pits, roads, well sites and pipelines destroys habitat and harms the ecosystem's ability to store, recharge and filter water. In fact, freshwater use has been identified as one of the top four key challenges for mining operations.[28] Typical extraction and upgrading processes consume two to four barrels of water to produce one barrel of bitumen.[29]

The majority of the water used for oil sands mining is drawn from the Athabasca River[30] and current operations are licensed to divert up to 652 million cubic metres of water each year from the Athabasca River and surrounding area.[31] These large volumes of water withdrawals are a significant risk to the health of the river's ecosystems. Fish populations are considered to be the most vulnerable component of the aquatic ecosystem, particularly during the winter low flows, when water withdrawals could significantly reduce the availability of habitat for those species that overwinter in the Athabasca River.[32] With the rapid pace of growth in the oil sands industry, water use will increase significantly. According to awarded water licenses, the current and proposed projects could withdraw more than 15 per cent of the Athabasca River's water flow during its lowest flow periods.[33]

Compounding the issue of water supply is climate change, where the Athabasca River's annual flows have declined by 29.5 per cent from 1958-2008.[34] Declines in supply of freshwater combined with rapid expansion of oil sands production pose a serious risk to water supply and environmental health.

Oil sands mining operations return almost none of the water they use to the natural cycle, and the wastewater that is not recycled is stored in tailings lakes.[35] This accumulation of tailings is a large volume of toxic[36] materials that contain contaminants including naphthenic acids, polycyclic aromatic hydrocarbons, phenolic compounds, ammonia, mercury and other trace metals.[37] To date, there is no safe disposal plan for the tailings, which means that water quality could be negatively affected as surface water and groundwater passes over and through the tailings lakes. Furthermore, there are over $15 billion in unaccounted reclamation liabilities created by oil sands mining and tailings lakes, that are not covered under current Alberta government reclamation security programs. This leaves taxpayers with a significant risk of footing the clean up bill, if a mine is unable to pay for reclamation.[38]

New evidence that the oil sands industry is causing pollution in the Athabasca River has come to light recently. A pair of independent studies by internationally-renowned water expert Dr. David Schindler and Dr. Erin Kelly found both elevated levels of polycyclic aromatic compounds and heavy metals immediately downriver of oil sands operations.[39] The same studies brought into question official estimates of pollution levels from the industry, and the industry-funded monitoring body that failed to detect the pollution.

RECOMMENDATIONS

Eliminate water and air pollution discharge from tailings ponds by 2020: The federal government can regulate pollution discharge from the tailings ponds through Section 36(3) of the *Fisheries Act* and by identifying substances associated with tailings ponds as toxic under the *Canadian Environmental Protection Act (CEPA)*. This authority can be used to develop new regulations for the oil sands under the *Fisheries Act* and management plans to deal with the toxic substances under CEPA. These measures should require the elimination of discharge of air and water pollution from tailings ponds by 2020 — effectively phasing out tailings ponds — and include requirements to eliminate the discharge from existing tailings ponds (see air pollution section below). This would also help to address the federal government's responsibility to protect migratory birds under the *Migratory Birds Convention Act.*

Set enforceable limits on water pollution: Develop and implement science based, precautionary water quality standards for all substances that may enter water (on the surface and underground) as a result of oil sands development.

Set limits on water withdrawals: Require existing holders of *Fisheries Act* water licenses to comply with an ecosystem base flow, which would set an absolute cutoff point for water withdrawls from the Athabasca River when fisheries are threatened due to low flows.

Monitor water quality and aquatic ecosystems: Working with the governments of Alberta, Saskatchewan and the Northwest Territories, and with First Nations and Métis communities, to implement a comprehensive, scientifically rigorous water quality monitoring program for the Athabasca River watershed that is independent (arms length from industry), regularly peer-reviewed, transparent and responsible for providing public reports.

Develop a federal emergency response plan: Strengthen the Mackenzie River Basin Transboundary Waters Master Agreement to require a federal emergency response plan in the case of a failure of a tailings lake dyke.

Complete a comprehensive health study: Conduct a comprehensive health study of the impacts of oil sands development on surrounding communities, and identify and implement measures to reduce any health impacts identified by that study.

"It is time to stop talking and assert federal powers….Given widening concerns about the environmental and climate impacts of the oil sands and broader fossil fuels sector, continued government inaction could also place the future of oil sands bitumen exports at risk."

NEW DEMOCRAT REPORT OF THE STANDING COMMITTEE REVIEW OF THE IMPACTS OF OIL SANDS DEVELOPMENTS ON WATER RESOURCES[40]

"The federal government does not fully exercise its responsibility to monitor water quality in the oil sands (and downstream) or enforce the relevant provisions of the Fisheries Act with respect to industry impacts on fish-bearing waters. Ottawa appears to have de facto devolved and diluted this constitutional responsibility."

LIBERAL REPORT FROM THE STUDY OF THE STANDING COMMITTEE ON ENVIRONMENT AND SUSTAINABLE DEVELOPMENT ON THE IMPACT OF OIL SANDS DEVELOPMENT ON CANADA'S FRESHWATER[41]

4. ENFORCE THE SPECIES AT RISK ACT

Oil sands development impacts — and in some cases destroys — wildlife habitat through the construction and use of open-pit mines, toxic tailings lakes, upgraders and refineries, seismic lines associated with in situ development, roads, and pipelines. Waterfowl and songbirds come from all over the Americas to nest in the Boreal and each year between 22 million and 170 million birds breed in the 14 million hectares of Boreal forest that is underlain by oil sands.[42] The rapidly expanding oil sands operations increasingly place these birds at risk.

The tailings lakes associated with oil sands mining operations have received significant public attention, following the death of over 1,600 ducks who landed in tailings in one incident in 2008.[43] Data from a recently released *Freedom of Information and Protection of Privacy* request showed several other incidences of animal deaths, including 27 black bears, 67 deer, 31 red foxes and 21 coyotes over an eight year period.[44]

In situ oil sands development — which does not involve large open pit mines or the creation of tailings lakes — poses an even greater risk to Boreal ecosystems than oil sands mining. The network of seismic lines, roads, pipelines, power lines, well pads and facilities associated with in situ oil sands development contribute to direct habitat loss and the fragmentation of large expanses of land. The forest area leased for in situ oil sands development already covers 79,000 square kilometres.[45] Given the substantial area that may be affected and the current lack of a regional landscape plan for in situ development, there could be significant long-term impacts to wildlife populations even if reclamation is successful.

The woodland caribou is a threatened species in Canada and Alberta. A 2008 review of the scientific literature by Environment Canada concluded that all woodland caribou herds in Alberta are considered to have non-self-sustaining populations.[46] Industrial development within caribou ranges is largely responsible for these declines.[47] To date, in situ oil sands development occurs within the ranges of a number of herds in northern Alberta, and the plans to expand oil sands development poses a serious threat to an already imperiled caribou herd.[48] Local First Nations (Beaver Lake Cree Nation, Enoch Cree Nation, Chipewyan Prairie Dene First Nation and Athabasca Chipewyan First Nation) and environmental organizations have called on the federal Environment Minister to provide emergency protection for caribou herds threatened by oil sands development.[49]

RECOMMENDATIONS

Protect species at risk: Effectively implement the *Species at Risk Act* to ensure that those species threatened by oil sands development are protected, and work with Alberta and Saskatchewan to create a regional system of inter-connected protected areas.

Caribou: As a first priority, develop a recovery strategy for woodland caribou (boreal) under the *Species at Risk Act* that identifies and works with the province to immediately protect critical habitat for woodland caribou based on the best available science.

5. FOLLOW THROUGH ON HARD CAPS FOR AIR POLLUTION

In 2006, the federal government announced its intention to place caps on oil sands air pollution as part of its nation-wide *Clean Air Act*. It said:

> "Past governments relied on voluntary measures, satisfied that industry could set their own standards. Those days are over — from now on, all industry sectors will have mandatory requirements and we will enforce those requirements. Our plan puts the health of Canadians and the health of our environment first."[50]

Oil sands production results in the release of dangerous air pollutants, including nitrogen oxides, sulphur dioxide and volatile organic compounds like benzene, which are linked to asthma, bronchitis, nausea, premature death in people with heart disease, and cancer. Air pollution is released by large facilities like upgraders, but also through off-gassing of the tailings lakes and machinery like trucks and shovels.

The oil sands industry reports per barrel decreases in key air pollutants. However, the overall trends are worsening. Between 2002 and 2008, oil sands facilities reported a near doubling of volatile organic compounds and particulate matter, a 50 per cent increase in nitrogen oxides and a 14-times increase in hydrogen sulphide emissions.[51]

Air quality has also worsened dramatically in the oil sands region, with air pollution levels exceeding the targets set by the Alberta government 1,556 times in 2009, compared to 47 times in 2004.[52]

In terms of acid rain from the oil sands, relative success with one acidifying emission – sulphur dioxide – is undermined by the steady rise in another acidifying emission – nitrogen oxides. While studies on the existing damage to regional lakes by acid rain are inconclusive,[53] future damage seems inevitable given the example of La Loche Lake in Saskatchewan just across from the oil sands, where falling rain has been measured as having three times the acid level as unpolluted rain, about the same acidity as coffee.[54]

RECOMMENDATIONS

Set binding caps on air pollution: Follow through on the promise to establish a binding cap on oil sands air pollution (sulphur and nitrogen oxides, volatile organic compounds, particulates) that is strong enough to reverse acidification of surrounding areas and prevent human health impacts as part of a new Clean Air Section in the *Canadian Environmental Protection Act*.[55]

Independently monitor air quality: Work with First Nations and the governments of Alberta, Saskatchewan and the Northwest Territories to implement a comprehensive and scientifically rigorous air quality and deposition monitoring program that is arm's-length from industry, regularly peer-reviewed and transparent.

6. SOCIO-ECONOMIC IMPACTS OF OIL SANDS EXPANSION

Clean energy is projected to become the third largest industrial sector worldwide within the next decade. Countries that lead the clean energy revolution are already harnessing the jobs that come along with the design, manufacture and installation of clean energy technologies, and will be poised to feed the growing demand.

Canada is at risk of hitching its economic fate to an industry that will become increasingly at odds with the clean energy revolution. While the oil sands industry provides economic benefits and jobs for Canadians today, Canada must adequately invest in the transition to clean energy or risk getting left behind the emerging clean energy superpowers of the E.U., China and the U.S.

Meanwhile, the economic impacts of oil sands development are uneven across the country. Parts of Canada are now being affected by "Dutch Disease" – a term coined in the 1970s to describe the hollowing out of manufacturing in the Netherlands following the discovery of a large natural gas field that drove up the country's currency, pricing its manufacturing products out of international markets.

The recent rise of the Canadian dollar cannot be entirely linked to oil prices because the weakness of the U.S. dollar has also played a role. However, a recent study from the University of Ottawa that examines the impact of resource exports (e.g. oil) on the dollar and manufacturing jobs finds that Dutch Disease has a big impact in Canada. It estimates that 42 per cent of manufacturing job loss in Canada due to rising currency has been a result of Dutch Disease stemming from growing oil exports.[56]

As a major oil exporting nation, Norway has taken a proactive approach to warding off Dutch Disease, including the creation of a $450 billion sovereign wealth fund derived from oil revenues, which it has chosen to invest entirely outside of the country so that it doesn't distort the national economy.[57] This policy represents one of many potential lessons Canada ought to learn from the experiences of other energy-exporting nations.

Another risk to Canadian jobs lies with the increasing trend towards exporting raw bitumen from the oil sands for processing elsewhere. The Communications, Energy and Papermakers Union of Canada and the Alberta Federation of Labour have opposed the approval of three recent pipeline proposals on the grounds that each represents the loss of processing jobs in Canada given that they will facilitate raw bitumen exports.[58]

The federal government needs to invest in the transition away from fossil fuels and ensure that Canadians are benefiting from the jobs and economic potential of this rapidly growing sector. And, while the transition is taking place, the federal government needs to understand and manage the impacts of oil sands exports on other sectors of the Canadian economy.

RECOMMENDATIONS

Reinvest in clean energy: Federal government tax revenues from oil sands production should be specifically accounted for and reinvested in renewable energy, energy efficiency and low-impact transportation systems.

Plan for worker and community transition: Develop and execute a plan to diversify the economies of affected communities and train workers to transition from oil sands production to other sectors, and in the interim, maximize employment opportunities for Canadians in the oil sands industry.

Address impacts of 'petro-currency': Convene a Parliamentary Finance Committee study on the implications of a petro-currency for the Canadian economy and how best to mitigate the worst impacts of 'Dutch Disease,' whereby a resource boom puts upward pressure on a nation's currency, thereby pricing manufacturing goods out of world markets. Develop and implement measures to address negative impacts.

THE DEMAND SIDE: U.S. OIL USE

Q: Will U.S. consumers face a fuel shortage if Canada limits oil sands expansion?

A: No. The U.S. is, and will remain, the primary customer for oil sands. Canada is the largest supplier of oil to the U.S., providing 20 per cent of the oil imported each year. Yet the U.S. Energy Information Administration reports a 10 per cent drop in U.S. oil demand between 2005 and 2009.[59] Even without policies in place to reduce oil consumption, U.S. oil imports are projected to decline by 3.8 million barrels per day by 2030 — or by one third.[60]

Furthermore, President Obama has committed to cutting oil use by 3.3 million barrels per day in 10 years, and the federal and state governments are investing in technologies to reduce oil demand. According to the Environmental Protection Agency, the existing light vehicle GHG and fuel efficiency standards will save 1.8 million barrels per day, or more than double the amount of current oil sands imports. By 2030, a combination of polices including fuel efficiency standards, a low carbon fuel standard, and investment in transit could cut oil use by 10 million barrels per day in the U.S.

The U.S. is taking significant steps to transition away from oil, and the argument that Canada needs to expand oil sands production to feed America's growing demand for oil does not match the reality of what is happening south of the border.

THE TERM DUTCH DISEASE WAS COINED IN THE 1970S, WHEN THE DISCOVERY OF A LARGE NATURAL GAS FIELD DROVE UP THE COUNTRY'S CURRENCY AND PRICED ITS MANUFACTURED GOODS OUT OF INTERNATIONAL MARKETS. CANADA IS ALSO SEEING THE IMPACTS OF DUTCH DISEASE, AS 42 PER CENT OF MANUFACTURING JOB LOSS RELATED TO THE RISING DOLLAR IS LINKED TO THE GROWTH IN OIL EXPORTS, WHICH HAS DRIVEN UP THE VALUE OF THE LOONIE.

(ENDNOTES)

1. Renata D'Aliesio and Jason Fekete, "Oilsands on the agenda for Obama visit: Harper," Calgary Herald. January 13, 2009. http://www.calgaryherald.com/business/Oilsands+agenda+Obama+visit+Harper/1172590/story.html

2. Bob Weber, "Ignatieff: Alberta's oilsands essential to nation's future. Seeks federal commitment on CO2 problem," The Canadian Press, February 28, 2009.

3. Jack Layton, speech in Fort Smith following oil sands visit, October 6, 2008. Available at http://www.youtube.com/watch?v=qFX3wmdgCa0

4. "Quebec quietly promotes oil sands opportunities," Canadian Press, February 12, 2010.

5. In this document, the word "carbon" is a shorthand expression that includes all six of the greenhouse gases covered by the Kyoto Protocol (of which carbon dioxide is the largest component). The abbreviation "CO_2e" refers to "carbon dioxide equivalent," a standard measure which incorporates all six of these gases.

6. Fisheries and Oceans Canada, "Fisheries Act," August 12, 2010. http://www.dfo-mpo.gc.ca/habitat/role/141/1415/14151-eng.htm

7. Environment Canada, "A Guide to Understand the Canadian Environmental Protection Act, 1999," December 10, 2004. http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=E00B5BD8-1

8. Sujata Gupta et al., "Policies, Instruments and Co-operative Arrangements," in Bert Metz et al., eds, Climate Change 2007: Mitigation. Contribution of Working group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (New York, NY: Cambridge University Press, 2007), 776. http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter13.pdf

   The IPCC's analysis applied to stabilization of the atmospheric concentration of GHGs at 450 parts per million of carbon dioxide equivalent. This will be necessary to have a better than 50 percent chance of limiting average global warming to 2 C relative to the pre-industrial level (see Bill Hare and Malte Meinshausen, "How Much Warming are We Committed to and How Much can be Avoided?," Climatic Change 75, nos 1–2 (2006): 111).

9. Carbon dioxide equivalent refers to a standard measure of the six greenhouse gases covered by the Kyoto Protocol.

10. Environment Canada, National Inventory Report 1990-2008 Greenhouse Gas Sources and Sinks in Canada: Part 1, 2010. http://www.ec.gc.ca/Publications/default.asp?lang=En&xml=492D914C-2EAB-47AB-A045-C62B2CDACC29

11. "Could Denmark Be Fossil Fuel Free by 2050?"reprinted in Scientific American online, October 1, 2010. http://www.scientificamerican.com/article.cfm?id=could-denmark-be-fossil-fuel-free

12. http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Global_warming/G-20%20Report.pdf

13. Tim Weis, "Canada falling even further behind the U.S. in sustainable energy investments per capita," March 11, 2010. http://pubs.pembina.org/reports/110310-renewables-efficiency-usa-vs-canada-2010.pdf

14. Blue Green Canada, Falling Behind: Canada's Lost Clean Energy Jobs, May 2010. http://environmentaldefence.ca/reports/Falling_Behind.html

15. Indian and Northern Affairs Canada, "Consultation and Accommodation." http://www.ainc-inac.gc.ca/ai/arp/cnl/index-eng.asp

16. For a detailed analysis, see: Ross et al. Crown Consultation with Aboriginal Peoples in Oil Sands Development: Is it Adequate, Is it Legal? Canadian Institute of Resource Law Occasional Paper #19, May 2007. http://dspace.ucalgary.ca/bitstream/1880/47190/1/OP19AboriginalOilsands.pdf

17. Consent must be freely given and not coerced, and it must be obtained prior to significant project decisions. Communities must be fully informed, with access to accurate and comprehensive project-related economic, social, and environmental information. Companies must also provide communities with time and access to the technical expertise necessary to acquire a complete understanding of project impacts and benefits. Companies must acknowledge that communities have the right to withhold their consent. (Ethical Funds, Sustainability Perspectives: Winning the Social License to Operate, February 2008. https://www.ethicalfunds.com/SiteCollectionDocuments/docs/FPIC.pdf)

18. Environment Canada, National Inventory Report, 89, Table 2-18. Available at http://www.ec.gc.ca/Publications/default.asp?lang=En&xml=492D914C-2EAB-47AB-A045-C62B2CDACC29

19. Environment Canada, "Turning the Corner: Detailed Emissions and Economic Modelling - Annex 3: Provincial/Territorial Targets and Actions," March 7 2008, 40. http://www.ec.gc.ca/doc/virage-corner/2008-03/571/Annex3_eng.htm

20. Environment Canada, Turning the Corner: Canada's Energy and GHG Emissions Projections 2006-2020, March 2008:. http://www.ec.gc.ca/doc/virage-corner/2008-03/pdf/nat_eng.pdf

21. Environment Canada, "Turning the Corner – Annex 3," 42.

22. Gupta et al., "Policies, Instruments and Co-operative Arrangements."

23. According to the National Inventory Report, total emissions were 731 MT in 2005. A 17% reduction by 2020 would equal 607 MT. Total emissions were 592 MT in 1990. An 80% reduction below 1990 level is equal to 118 MT.

24. Environment Canada, "Government of Canada to Regulate Emissions from Electricity Sector," news release, June 23, 2010. http://www.ec.gc.ca/default.asp?lang=En&n=714D9AAE-1&news=E5B59675-BE60-4759-8FC3-D3513EAA841C and Jim Prentice, Minister of the Environment (speech to the University of Calgary School of Public Policy and the School of Business, Calgary, Alberta, February 1, 2010). http://www.ec.gc.ca/default.asp?lang=En&n=6F2DE1CA-1&news=1E866FB5-273D-46F2-9ED8-5CFFBCE8E069

25. The Government of Canada has not explicitly committed to reduce Canada's emissions to 80 per cent below the 1990 level by 2050, but it has endorsed the two degrees global warming limit and, as noted earlier, this emissions reduction is the minimum required of industrialized countries for the world to have a chance of staying within the two degrees limit, according to the best available science.

26. The National Inventory Report shows oil sands emissions at 16.8 MT in 1990 and 29.6 MT in 2005. The graph shows what emissions would be in 2020 if the oil sands sector meets the government commitment to cut emissions by 17% below 2005 levels (17% below 29.6 = 24.57 MT). The 2050 levels shown is based on an 80% reduction from 1990 levels (80% below 16.8 = 3.36 MT).

27. WWF UK and the Cooperative Bank, Carbon Capture and Storage in the Alberta Oil Sands: A Dangerous Myth (2009). http://www.co-operative.coop/Corporate/PDFs/Tar%20Sands%20CCS.pdf

28. Alberta Chamber of Resources, Oil Sands Technology Roadmap : Unlocking the Potential. Final Report (2004) 21, Figure 3.3. http://www.acr-alberta.com/Projects/Oil_Sands_Technology_Roadmap/OSTR_report.pdf

29. In 2004, the Albian Sands, Suncor and Syncrude mining operations used on average 2.62 cubic metres of water to produce one cubic metre of bitumen. When the upgrading of bitumen to synthetic crude oil is included, the overall average is 4.04 cubic metres of water (Alberta Energy Utilities Board, personal communication, February 8, 2006). Suncor reported using 2.29 cubic metres of water per cubic metre of synthetic crude oil in 2008 (Suncor Energy Ltd., A Closer Look: An Update on Our Progress, 4.) Note that Suncor's operations include in situ projects, which use less water per unit of bitumen produced than do mining operations, so Suncor's average water use for mining operations may exceed 2.29 cubic metres of water per cubic metre of synthetic crude oil. Syncrude reported using 2.26 cubic metres of water per cubic metre of synthetic crude oil in 2008 (Syncrude Canada Ltd., 2007 Sustainability Report. http://sustainability.syncrude.ca/sustainability2007/enviro/water/). See also R. J. Mikula ,V. A. Munoz and O. Omotoso, "Water Use in Bitumen Production: Tailings Management in Surface Mined Oil Sands," presented at the World Heavy Oil Congress, Edmonton, 2008, 1.

30. Alberta Environment, "Water Diversion by Oilsands Mining Projects in 2007," data received September 2008.

31. Oil sands mining water allocations are from Alberta Environment, "Water Diversion by Oilsands Mining Projects in 2008" (data received March 2010). EPCOR Water Services reported treating 92.9 million cubic metres of water for the greater Edmonton area in 2008 (EPCOR, 2008 Performance Based Regulation Progress Report (2009), 8).

32. Mary Griffiths, Amy Taylor and Dan Woynillowicz, Troubled Waters, Troubling Trends: Technology and Policy Options to Reduce Water Use in Oil and Oil Sands Development in Alberta (Drayton Valley, AB: The Pembina Institute, 2006), 69. http://www.oilsandswatch.org/pub/612

33. Imperial Oil Limited, Imperial Kearl Oil Sands Mine Application, no. 1408771 & 1414891, volume 4, (Calgary, AB: Imperial Oil Ltd., 2005), 3-31.

34. J.P. Bruce, "Oil and Water: Will They Mix in a Changing Climate? The Athabasca River Story," in Implications of a 2°C global temperature rise for Canada's natural resources: Athabasca River and oil sands development, Great Lakes and hydropower production, Ed. Tina Tin (Winnipeg and Toronto: WWF-World Wide Fund For Nature and The Sage Center, 2006).

35. Griffiths et al., Troubled Waters, Troubling Trends, 33.

36. The water found in oil sands tailings lakes is acutely toxic to aquatic organisms and mammals. Sources: M. D. MacKinnon and H. Boerger, "Description of Two Treatment Methods for Detoxifying Oil Sands Tailings Pond Water," Water Pollution Research Journal of Canada 21 (1986): 496–512 and U.S. Environmental Protection Agency, Office of Toxic Substances, "Fate and Effects of Sediment-bound Chemicals in Aquatic Systems," Proceedings of the Sixth Pellston Workshop, Florissant, CO, August 12–17, 1984.

37. P. G. Nix and R. W. Martin, "Detoxification and Reclamation of Suncor's Oil Sand Tailings Ponds," Environmental Toxicology and Water Quality 7, no. 2 (1992).

38. Nathan Lemphers, Simon Dyer and Jennifer Grant, Toxic Liability: How Albertans Could End Up Paying for Oilsands Mine Reclamation. (The Pembina Institute, 2010). http://www.pembina.org/pub/2075

39. See: Erin Kelly et al, "Oil Sands Development Contributes Polycyclic Aromatic Compounds to the Athabasca River and its Tributaries," Proceedings of the National Academy of Sciences, October 2009, and Erin Kelly et al, "Oil Sands Development Contributes Elements Toxic at Low Concentrations to the Athabasca River and its Tributaries," PNAS, July 2010.

40. New Democratic Party, Missing in Action: the Federal Government and Protection of Water in the Oil Sands, New Democrat Report of the Standing Committee Review of the Impacts of Oil Sands Developments on Water Resources, September 2010.

41. The Hidden Dimension: Water and the Oil Sands, Liberal Report from the Study of the Standing Committee on Environment and Sustainable Development on the Impact of Oil Sands Development on Canada's Freshwater, July 2010. http://francisscarpaleggia.liberal.ca/files/2010/08/The-Hidden-Dimension_Water-and-the-Oil-Sands.pdf

42. Jeff Wells, Susan Casey-Lefkowitz, Gabriela Chavarria and Simon Dyer, Danger in the Nursery - Impact on Birds of Tar Sands Oil Development in Canada ' s Boreal Forest, (Pembina Institute, 2008). http://www.pembina.org/pub/1760

43. Terra Simieritsch, "How sorry is Syncrude? Actions speak louder than words," blog March 2, 2010. http://www.oilsandswatch.org/blog/54

44. Jamie Komamicki, "Waterfowl not only deaths on oilsands: data; At least 164 other animals killed over eight years include bears, deer, moose, wolves," Edmonton Journal, April 9, 2010.

45. Alberta Energy, Alberta's Leased Oil Sands Area, June 24, 2009. http://www.energy.alberta.ca/OurBusiness/1071.asp

46. Environment Canada, Scientific Review for the Identification of Critical Habitat for Woodland Caribou (Rangifer tarandus caribou), Boreal Population, in Canada (Ottawa: Environment Canada, 2008), vi.

47. Ibid., 145.

48. Jeremy Moorhouse, Marc Huot and Simon Dyer, Drilling Deeper: The In Situ Oil Sands Report Card (The Pembina Institute, 2010). http://pubs.pembina.org/reports/in-situ-report-card.pdf

49. Letter to the Hon. Jim Prentice from Ecojustice, August 17, 2010. http://pubs.pembina.org/reports/caribou-sara-lt-minister-august-17-2010final-br.pdf

50. Rona Ambrose, "An Announcement Concerning Canada's Clean Air Act" (speech as Minister of the Environment, Ottawa, Ontario, October 19, 2006). http://www.ec.gc.ca/default.asp?lang=En&n=6F2DE1CA-1&news=549643B6-B2BD-42B8-A6D8-B85B7493F7DF

51. Environmental Defence, Dirty Oil, Dirty Air: Ottawa's Broken Pollution Promise (2010) http://environmentaldefence.ca/reports/Dirty_Oil_Dirty_Air.html

52. Ibid.

53. See, for example, Brent G. Parsons et al, "A Bioassessment of Lakes in the Athabasca Oil Sands Region, Alberta, Using Benthic Macroinvertebrates," Journal of Limnology 69, Suppl. 1 (2010): 105-117.

54. "New Data Suggests Alberta Oilsands Causing Acid Rain in Saskatchewan," The Canadian Press, August 12, 2009.

55. A new Clean Air Section added to the 1999 Canadian Environmental Protection Act (CEPA) would bring about real, significant improvements in local and regional air quality. The new Clean Air Section would authorize the government to establish binding National Ambient Air Quality Standards (NAAQ), monitor and report publicly on their attainment, and implement the standards without duplicating existing provincial systems for implementing air emissions requirements.

56. Coulombe et al. Does the Canadian Economy Suffer from Dutch Disease? Tinbergen Institute Discussion Paper (2009).

57. For a full discussion of Norway and Dutch Disease, see Erling Larsen, "Escaping the Natural Resource Curse and Dutch Disease?" Research Department of Statistics Norway Discussion Papers no. 377 (2004).

58. See: Alberta Federation of Labour, "Approval of second massive bitumen highway to the U.S. proves Ed Stelmach is misleading Albertans when he promises to keep oil sands jobs in Alberta," media release February 22, 2008. http://69.90.195.58/index.php?option=com_customproperties&Itemid=5&lang=en&tagId=74&task=tag

59. U.S. Energy Information Administration, "U.S. Product Supplied for Crude Oil and Petroleum Products," http://tonto.eia.doe.gov/dnav/pet/pet_cons_psup_dc_nus_mbblpd_a.htm

60. U.S. Energy Information Administration, "How dependent are we on foreign oil?" December 10, 2009. http://tonto.eia.doe.gov/energy_in_brief/foreign_oil_dependence.cfm