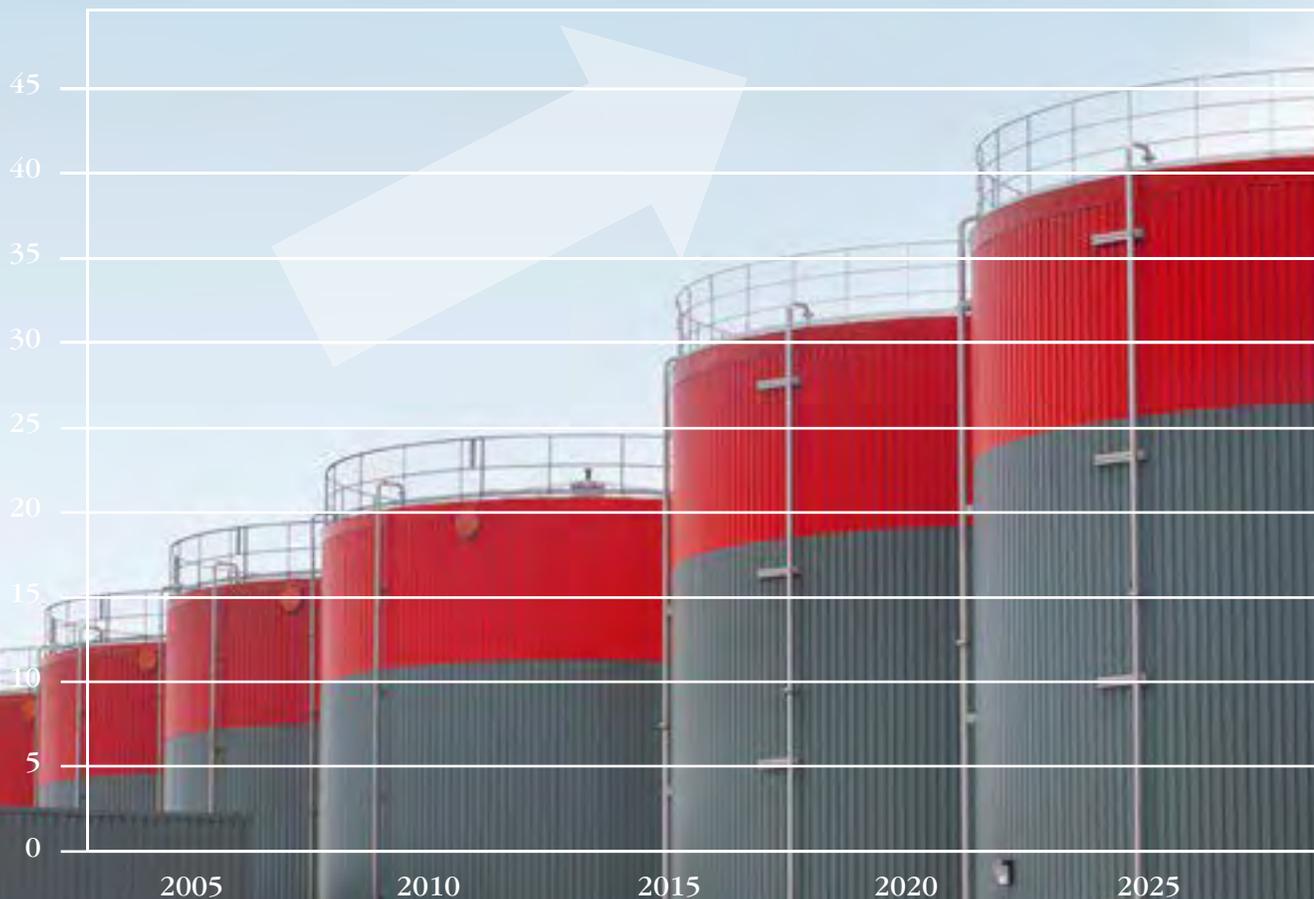


# Sustaining the Crude Economy

Future prospects for Canada's global energy competitiveness

By Laura Dawson and Stefania Bartucci

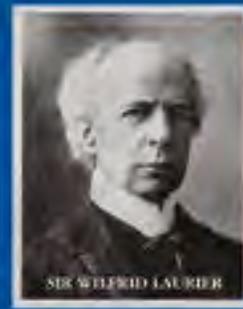
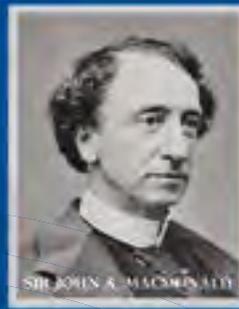
OCTOBER 2012





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# Executive Summary

Canada is a nation rich in energy resources. Oil, natural gas, hydro, uranium, coal, wind – Canada has abundant supplies of renewable and non-renewable resources. Our 173 billion barrels of proven oil reserves place us third globally, behind Saudi Arabia and Venezuela, and we are the only non-OPEC member in the top five. Canada is the largest foreign supplier of oil to the United States and we are the world’s third largest natural gas producer and exporter.

But the game is changing: shrinking US demand for imports, inability to service Asian markets, distribution bottlenecks, inefficient regulatory processes, and labour shortages are hurting Canadian competitiveness. Although the hydroelectric and renewables sectors have challenges in their own right, none has earned the public and political attention given to the oil and gas sector, as stakeholders work to create a competitive and sustainable industry for the 21st century.

The long-term shift in demand towards Asian markets means that the US will account for a diminishing share of Canadian exports, replaced by emerging market customers, China first among them. On the face of it, Canada is in an enviable position: it has a rich endowment of commodities for which

there is an insatiable global demand. What stands in the way of Canada’s ability to take advantage of this economic windfall? There are a number of actions Canada must take today in order to position itself for competitiveness in the global oil and gas sector tomorrow.

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*Canada must take action today to be positioned for competitiveness tomorrow.*

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Distribution is the top priority so that Canadian energy products can get to new markets more efficiently. Perhaps the greatest frustration for Canadian producers is the lack of access to the tidal water in order to reach fast growing Asian markets.

Finding environmentally responsible and efficient ways to transport energy products is a lynchpin of our future success as a global energy leader. As well, although improving access to refineries on the US Gulf Coast and possibly eastern Canada makes more economic sense than building new ca-

capacity in Canada, it is important for governments, industry, and the public to carefully consider the full spectrum of costs and benefits of establishing a more self-sufficient national energy sector.

Regulatory inefficiency is a major impediment to investment and growth. The costs and uncertain timelines associated with the review process pose significant risks to project proponents, which can cause them to reconsider their plans to proceed with a project, or not to invest at all. At the same time, the government has a mandate to protect the public interest, and ensure that the social and environmental externalities of major projects are properly addressed. This is complicated by the fact that major energy projects fall within areas of both federal and provincial jurisdiction, requiring approvals from several government departments and agencies touching on issues ranging from environmental safety to public interest to Aboriginal rights and land and water use.

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### *Distribution is the top priority for improving energy in Canada.*

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Continued streamlining of the regulatory process goes hand in hand with the expansion of distribution capacity. However, progress depends on an approach by business and government that balances economic efficiencies with environmental sustainability and Aboriginal rights. The government's recent reform of the regulatory process may very well improve the efficiency of project approvals in Canada. Time will tell. Working towards a consultative process with Aboriginal communities where roles and responsibilities are more clearly defined will help reduce uncertainty and the potential for legal challenges.

Canada must also work harder to build the skills that are needed in the energy sector. Some of the workforce shortage can be filled through temporary and permanent migration, but education and social policy must be focused on building a skilled domestic labour pool as well. Here, Canada has an opportunity to mobilize underemployed segments of the population, particularly Aboriginal commu-

nities, and provide them with the training needed to participate in the energy sector workforce.

Externally, our formal trade and investment agreements must reflect the priorities of national energy competitiveness and create a level playing field in order for Canada's industry to grow in global markets.

Does Canada need a comprehensive national energy strategy? The notion of a Canadian Energy Strategy (CES) has preoccupied media commentary for much of 2012. We argue that the answer is no. The energy sector across Canada is so diverse that progress in any one subsector would be very difficult, with provincial premiers competing to promote their regional interests. The Council of the Federation is a well-established mechanism to foster and promote interprovincial dialogue. Reinventing this in a separate sphere would serve no purpose. Moreover, Canada's comprehensive consultative mechanism allows many opportunities for input from business and civil society stakeholders.

To be sure, existing policies and programs are not complete. More can be done to address environmental, regulatory, labour, and distribution challenges. However, existing mechanisms and institutions have the capacity and authority to deal with the competitive challenges facing Canada in all areas but one. It is clear that provincial disputes over allocation of resource revenues are going to continue to flare up as the sector grows, and as infrastructure and risk cross provincial boundaries. The existing system of equalization payments will not be enough to address the grievances of provinces that believe that bearing a greater share of the environmental risk imposed by new pipelines and infrastructure entitles them to a greater share of financial compensation. The opportunity cost for Alberta is significant. Growth of the oil and gas sector, and thus the prosperity of the province, depends on the ability to export to new markets. This in turn may require new mechanisms of cooperation between provinces. Certainly, the current debates between Alberta and British Columbia will not be the last. The steps we take today will enable us to deal with similar challenges in the future, so that provincial disputes do not become obstacles to competitiveness.



# Sommaire exécutif

Le Canada est une superpuissance énergétique. Il possède d'abondantes réserves renouvelables et non renouvelables : pétrole, gaz naturel, hydroélectricité, uranium, charbon et énergie éolienne. Pour ses réserves confirmées de pétrole, qui atteignent 173 milliards de barils, il est le troisième au monde, derrière l'Arabie saoudite et le Venezuela, et le seul pays non membre de l'OPEP parmi les cinq premiers. Le Canada est également le plus grand fournisseur des États-Unis en pétrole. Il est le troisième producteur et exportateur de gaz naturel au monde.

Mais les forces en jeu se transforment : baisse de la demande américaine pour les importations, insuffisance d'infrastructures pour approvisionner les marchés asiatiques, goulots d'étranglement dans la distribution, inefficacité des processus de réglementation et pénuries de main-d'œuvre. Ces facteurs nuisent tous à la capacité concurrentielle du Canada. Bien que l'hydroélectricité et les énergies renouvelables posent des défis bien à eux, aucune n'a pu obtenir l'intérêt public et politique suscité par les partenaires de l'industrie pétrolière et gazière, qui oeuvrent à créer une industrie concurrentielle et durable pour le 21e siècle.

Ainsi, la demande à long terme se déplace vers les marchés asiatiques. Ceci signifie que la part des États-Unis dans les exportations canadiennes diminuera, mais que celle des marchés émergents, avec la Chine en tête, augmentera. Le Canada se retrouve dans une position enviable : il est riche

en marchandises de base pour lesquelles la demande mondiale est difficile à assouvir. Pour peu que des obstacles n'aliènent le Canada de cette manne économique, des mesures prises dès aujourd'hui lui permettront d'être concurrentiel dans le secteur du pétrole et du gaz de demain.

C'est pourquoi la distribution est au cœur des priorités, car il faut assurer que les produits énergétiques canadiens puissent être écoulés de façon efficace dans les nouveaux marchés. La plus grande irritation des producteurs est probablement leur incapacité à tirer profit de la croissance rapide en Asie parce que l'accès à la côte du Pacifique est déficient.

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***Le Canada doit agir dès aujourd'hui pour être prêt à répondre aux défis concurrentiels de demain.***

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Pour que le Canada soit un chef de file mondial dans le domaine de l'énergie, il est essentiel que la distribution de l'énergie soit efficace et qu'elle respecte les enjeux environnementaux. En outre, même s'il est plus rentable d'améliorer l'accès aux raffineries du golfe du Mexique et

peut-être aussi de l'est du Canada que d'accroître la capacité au pays, les gouvernements, l'industrie et le public devront bien mesurer toute l'étendue des avantages et des coûts d'un accroissement de l'autosuffisance dans le secteur de l'énergie.

L'expansion de la capacité de distribution nécessite l'examen constant des processus de réglementation. Toutefois, les progrès réalisés dépendent de l'approche adoptée par les entreprises et le gouvernement pour équilibrer les objectifs liés à l'efficacité économique, à la protection de l'environnement et au respect des droits des Premières Nations. La réforme récente de la réglementation menée par le gouvernement pourrait rendre plus productifs les processus d'approbation des projets. Seul le temps pourra le confirmer. Travailler à un processus de consultation avec les Premières nations qui définit clairement les rôles et les responsabilités de chacun permettra de réduire l'incertitude et les risques de contestations judiciaires.

L'inefficacité de la réglementation constitue un obstacle majeur à l'investissement et à la croissance. Les coûts et les échéanciers incertains des processus d'examen comportent des risques importants pour les promoteurs et peuvent les amener à réduire, à remettre ou, encore, à se retirer complètement de certains projets. En revanche, le gouvernement a comme mandat de protéger l'intérêt public et de tenir compte des externalités sociales et environnementales. Cette situation se complique par le fait que les grands projets relèvent de compétences à la fois fédérale et provinciale, ce qui nécessite l'approbation de la part de plusieurs ministères et organismes responsables de domaines aussi vastes que la protection de l'environnement, l'intérêt public, les droits des Autochtones et l'utilisation du territoire et des ressources en eau.

Le Canada doit travailler très fort pour acquérir les compétences nécessaires dans le secteur de l'énergie. La pénurie de main-d'œuvre peut être comblée en partie par la migration de travailleurs temporaires et permanents. Elle peut également être allégée par des politiques en éducation et dans le domaine social qui mettent l'accent sur la constitution d'une réserve intérieure de travailleurs qualifiés. Au pays, on peut compter sur certains segments sous-employés de la main-d'œuvre, notamment à l'intérieur des Premières nations, à condition de leur fournir la formation nécessaire.

Mais encore, la compétitivité du secteur doit être au centre des accords internationaux du Canada

dans les domaines de l'investissement et du commerce afin d'assurer à son industrie une place de choix sur les marchés étrangers.

Le Canada a-t-il besoin d'une stratégie énergétique nationale globale? La notion d'une stratégie énergétique canadienne (*Canadian Energy Strategy*) a soulevé bien des débats dans les médias pendant la majeure partie de 2012. Nous soutenons que la réponse à cette question est négative. Le secteur de l'énergie au Canada est si divers qu'un consensus serait très difficile à atteindre dans n'importe lequel de ses sous-secteurs, les premiers ministres provinciaux disputant tous la promotion de leurs intérêts régionaux. D'ailleurs, pour dialoguer entre elles, les provinces peuvent déjà compter sur le Conseil de la fédération, un mécanisme bien établi. Réinventer un tel forum dans une sphère distincte serait infructueux. En outre, l'ensemble des mécanismes de consultation au Canada sollicite abondamment la participation des gens d'affaires et des citoyens.

Certes, les politiques et les programmes existants sont incomplets. Le Canada pourrait faire mieux pour s'attaquer aux problèmes de l'environnement, de la réglementation, du travail et de la distribution de l'énergie. Cependant, il n'y a qu'un terrain sur lequel les mécanismes et les institutions en place n'ont ni la capacité ni l'autorité pour faire face aux défis de la compétitivité canadienne. On parle ici du palier provincial de gouvernement à cause des différends sur la répartition des revenus. Manifestement, ces différends vont continuer de prendre de l'ampleur au fur et à mesure que le secteur se développera et que l'infrastructure et les risques traverseront d'une province à l'autre. Le système actuel des paiements de péréquation ne peut répondre adéquatement aux doléances des provinces qui estiment mériter une compensation financière pour l'accroissement du risque environnemental imposé par les nouveaux pipelines et diverses infrastructures. Le coût d'opportunité pour l'Alberta est considérable. La croissance et la production de pétrole et de gaz, et donc la prospérité de la province, dépendent de sa capacité à exporter vers de nouveaux marchés. De nouveaux mécanismes de coopération seront donc nécessaires, car les problèmes actuels entre l'Alberta et la Colombie-Britannique ne seront pas les derniers. Les mesures prises aujourd'hui nous permettront de faire face à des défis similaires dans l'avenir, afin que les différends provinciaux ne deviennent pas des obstacles à la compétitivité.

# Canada's Energy Endowment

Canada is rich in renewable and non-renewable energy sources including oil, natural gas, wind, hydro, and coal. Most of our natural gas and oil (including bitumen from oil sands) are located in Western Canada (British Columbia [BC], Alberta, and Saskatchewan), the Yukon, and Northwest Territories. Nova Scotia and Newfoundland also have significant reserves of offshore oil, while Quebec and New Brunswick boast large stores of shale gas. Canada has hydropower assets across the country, with the greatest concentration in Ontario, Quebec, and the Maritime provinces. Saskatchewan is a major producer of uranium for the nuclear industry. Alberta and BC are also large coal producers, some of which is used for domestic consumption and most for export.

Although we have strong export shares for other energy commodities, it is Canadian oil and gas that has earned us the reputation as an “energy superpower”. Our 173 billion barrels of proven oil reserves place us third globally, behind Saudi Arabia and Venezuela, and we are the only non-OPEC member in the top five. Canada is also the largest foreign supplier of oil to the United States (US). Canada is the world’s third largest natural gas producer and exporter.<sup>1</sup>

But the game is changing: shrinking US demand, inability to service Asian markets, distribution bottlenecks, inefficient regulatory processes, and labour shortages are hurting Canadian competitiveness. Although the hydroelectric and renewables sectors have challenges in their own right, none has earned the public and political attention of the oil and gas sector as stakeholders work to create a competitive and sustainable industry for the 21st century.

This paper will explore the challenges affecting Canada’s oil and gas sector competitiveness and discuss which actions – public and private – should be taken to maximize the benefits of Canada’s resource endowment.

The first question is one of approach: do the relevant provincial and federal governments have the authority and the capacity needed to deal with these challenges or are new mechanisms or institutions necessary? The notion of a Canadian Energy Strategy (CES) has preoccupied media commentary for much of 2012. Is there really a policy gap that must be filled by another federal-provincial institution or does the CES debate simply provide a platform to air interprovincial grievances?

## Backdrop to a Canadian Energy Strategy

In Canada, jurisdiction over natural resources and energy is divided between the provinces and the federal government. The provinces have authority over resources within their territories. The federal government is responsible for resources on federal and Aboriginal lands and regulates the international and interprovincial movement of energy and energy goods.

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*Jurisdiction over natural resources is divided between the provinces and the federal government.*

---

In November 2011, Alberta Premier Alison Redford proposed a Canadian Energy Strategy in a speech to the Economic Club in Toronto. Although her proposal lacked specifics, she cited the need to “use energy to foster our economic growth and competitiveness.”<sup>2</sup> Among the goals she identified were sustainability and environmental protection, addressing regulatory concerns and infrastructure gaps, reduced dependence on US markets, and the ability to service Asian market demands more effectively. The CES mechanisms for achieving these goals would include collective action, transparency, and broad-based consultation.

The notion of a CES did not come out of the blue. In 1980, the Trudeau government’s National Energy Program (NEP) sought to ensure domestic control of the oil industry by restricting foreign investment. This hurt not only foreign investors

but also the Canadian companies with whom they collaborated. Restrictions on foreign investment, together with other federal interventions to tax the predominantly western industry and establish a 'made-in-Canada' oil price across the country, were perceived in the west as unreasonable meddling by central Canada.<sup>3</sup> The animosity created by the NEP still resonates with Albertans today.

In 2007, the provincial premiers, through the Council of the Federation, aimed to rehabilitate the concept of federal-provincial cooperation on energy. Their seven point plan for energy growth and sustainability<sup>4</sup> hit on many of the problems with which the industry continues to struggle, among them infrastructure, regulatory duplication, environmental sustainability, and labour market shortages. But without a budget and with responsibility for moving the agenda forward divided among ten provinces and three territories, little progress has been made.

Given the legacy of the NEP and the minefields of interprovincial relations, it is not surprising that the Prime Minister and his Cabinet have been mostly mum on a possible CES. When asked to comment on the Redford proposal in January, Prime Minister Harper responded by saying he wasn't sure what a Canadian energy strategy means.<sup>5</sup> More recently, Natural Resources Minister Joe Oliver commented

that there is no need for a Canadian energy strategy because Ottawa already has one.<sup>6</sup>

Lack of involvement at the federal level stems from a reluctance to impinge on provincial authority. Since taking office, Stephen Harper's approach to federal-provincial relations has been to leave the provinces alone,<sup>7</sup> and as such, it's unlikely that the federal government will get involved on the issue of a Canadian Energy Strategy unless the provinces request specific intervention pertaining to issues of federal jurisdiction.

Although the federal government has not been significantly involved in energy talks among the provinces, the resource economy is clearly a priority for Harper, as demonstrated by recent changes in the environmental assessment process for major projects, the government's support for Enbridge's Northern Gateway pipeline project, and the push for stronger trade ties with Asian nations through the Trans-Pacific Partnership and various bilateral initiatives.

Federal level interest in a Canadian Energy Strategy has come from sources outside of the Prime Minister's Office and Cabinet. The Senate Committee on Energy, the Environment and Natural Resources released a report in July 2012 outlining 13 priorities for energy development in Canada. The report

## RESPONSIBILITY FOR ENERGY AND ENVIRONMENT MATTERS IN CANADA

### Provincial/Territorial Jurisdiction

- Resource exploration, development, and management within provincial borders (including electricity systems within provincial borders)
- Regulation and legislative framework as it pertains to energy supplies to consumers
- Taxation policy and resource royalties on resources within provincial boundaries
- Intraprovincial movement of energy and goods
- Property and civil rights, including land use, environmental, health, and safety issues
- Environmental issues associated with land use planning; hazardous waste; water, and wastewater; air emissions; wildlife protection

### Federal Jurisdiction

- Resource exploration, development, and management on federally owned land in the North and offshore areas
- Uranium and the regulation of nuclear safety and waste management
- Trans-boundary environmental impacts (air and marine pollution, fisheries, navigable waters, wildlife protection) environmental assessments and environmental permits
- Taxation policy and resource royalties on resources on federal lands
- Interprovincial and international movement of energy and energy goods
- Policies in the national interest (including economic development, energy security, R&D, energy product standards, and labelling)

is the result of three years of study, and has the bipartisan support of all committee members. Its major competitiveness building recommendations include building a comprehensive and safe energy infrastructure, fostering a skilled workforce, and a creating a streamlined project regulatory system.<sup>8</sup>

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### *A comprehensive Canadian Energy Strategy is controversial.*

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Is there a need for a new mechanism, in the form of a Canadian energy strategy or otherwise, to manage interprovincial and/or federal-provincial cooperation on energy issues to fill a gap not already served by existing mechanisms? Responses from stakeholders have been varied. Although diametrically opposed on many issues, both the business community and many NGOs support the concept.<sup>9</sup> Support among Aboriginal groups is more guarded. Many are willing to go along with a new arrangement as long as they are viewed as an equal partner.<sup>10</sup> Others are more pessimistic. *Calgary Herald* editorialist Licia Corbella argues that Redford's CES is a way to score political points at the expense of Alberta's sovereignty over its energy resources.<sup>11</sup> The Frontier Centre for Public Policy, a Western Canadian think tank, argues that energy markets have existed without a single coordinated strategy for centuries and warns that a Canadian energy strategy would be dominated by "environmental entrepreneurs" who will impose higher prices to subsidize "doom fantasies of a vocal minority."<sup>12</sup>

The push for a Canadian Energy Strategy has been led by Alberta with support from Saskatchewan, but even among premiers there is little agreement about what such a strategy would look like. One thing that has become clear is that BC Premier Christy Clark intends to oppose a Canadian Energy Strategy if BC's interests vis-à-vis the Northern Gateway pipeline are not met.<sup>13</sup> At first blush, Ontario Premier Dalton McGuinty appeared unopposed to the concept, arguing that the strength of Alberta's resource economy has driven up the dollar and, as a result, disadvantaged Ontario's

manufacturers.<sup>14</sup> Premier McGuinty has since come around to support the concept of a national strategy, but only insofar as Ontario's interests in hydro, renewables, and energy efficiency would be represented. This will inevitably be the position of every Canadian premier: their province's interests must be represented in order to garner their support for a CES.

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### *Diverse provincial strengths complicate agreement on the focus of a national strategy.*

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These reactions highlight the differences in each province's energy interests, stemming from the differences in energy endowments and each premier's political circumstances. It also shows the great risk of such a strategy becoming incoherent due to such divergent interests, or of becoming bogged down by interprovincial politics.<sup>15</sup>

### **Whither a Canadian strategy?**

There is a rich academic literature that attempts to explain why governments and organizations cooperate. Whether one studies game theory to discuss the rationality of cooperation among individuals<sup>16</sup> or regime theory to understand why states sacrifice sovereignty and autonomy to work together,<sup>17</sup> the answer boils down to the same thing – entities cooperate when collective action will help them to solve a problem that individual action, or the status quo, cannot.

In this paper, we adopt two assumptions. First, for the CES to be justified, it must provide mechanisms to achieve public policy goals that could not be achieved through the status quo. Secondly, if a strategy can be justified, it would not be practical to apply it across all energy sectors, at least not all at once.<sup>18</sup> Since most of the current public debate focuses on the oil and gas sector, we focus our attentions there. If a strategy is necessary, then the structures and lessons from oil and gas could be extended outwards. Indeed, many of the same reg-

ulatory, Aboriginal, and interprovincial issues are common to hydro and megaprojects of all sorts.

The next section will set the context of Canada’s current role in global markets and outline the rationale for diversification. We will examine the challenges facing oil sector competitiveness in Canada, and then return to a discussion of whether a Canadian strategy could further the achievement of competitiveness goals at the conclusion of the paper.

## Canada’s Role in Global Markets and the Need for Diversification

Canada is a net energy exporter. Oil and natural gas make up approximately 23 percent of our exports.<sup>19</sup> The US is by far Canada’s largest export market, consuming 91 percent of our total energy exports in 2011.

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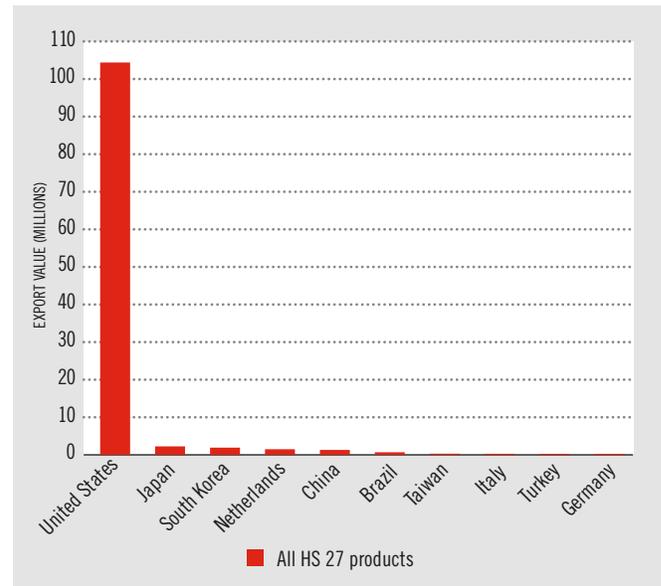
*Canada is a net energy exporter.*

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Economists describe Canada’s energy export market as a monopsony (a demand side monopoly). Whatever terminology is used, many find Canada’s dependence on a single customer worrisome. Others are more sanguine about Canada’s ability to diversify in order to respond to global demand, wherever it comes from.

Currently, a very small percentage of our energy exports are destined for Asian markets (see figure 1).

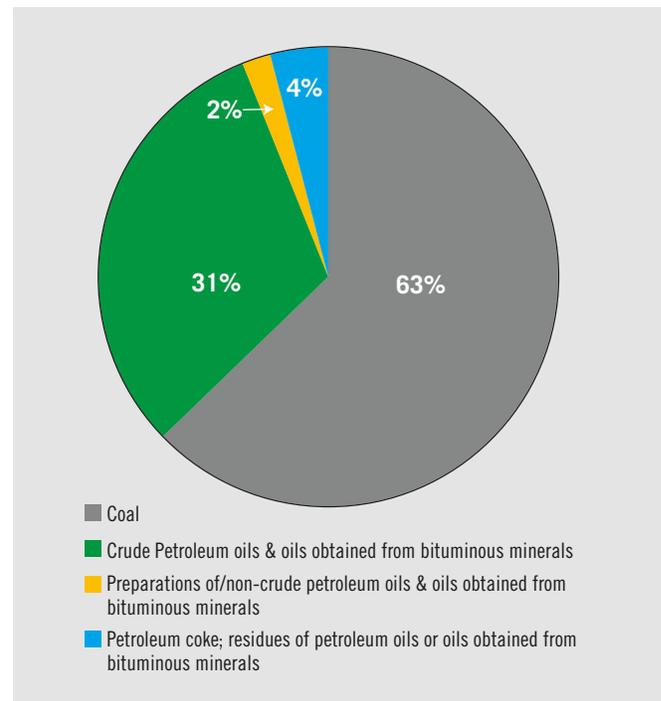
**FIGURE 1 Top 10 destinations for Canadian energy exports, 2011**



Although Japan, South Korea and China placed in the top five destinations for energy exports in 2011, each accounted for less than a 2 percent share.<sup>20</sup>

China is Canada’s fifth largest customer for all energy exports. Figure 2 shows the breakdown of energy exports to China in 2011.

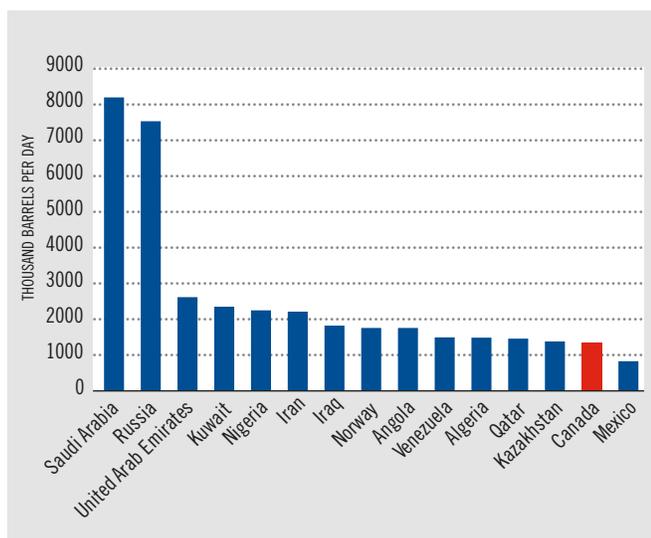
**FIGURE 2 Canadian energy exports to China, 2011**



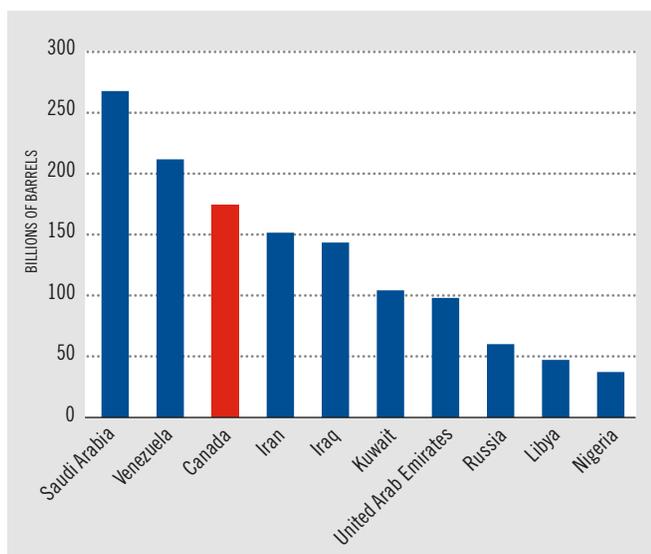
As discussed below, we expect significant growth in Chinese demand for all forms of Canadian energy in the future, but coal – despite media hype about China’s thirst for Canadian oil – makes up most of Canada’s energy exports to China (around 63 percent).<sup>21</sup>

Canada ranks as the world’s 14th largest oil net exporter (see figure 3a), but is third only to Saudi Arabia and Venezuela in proven reserves (see figure 3b).

**FIGURE 3A Top world net oil exporters, 2011**



**FIGURE 3B World proved oil reserves, 2011**



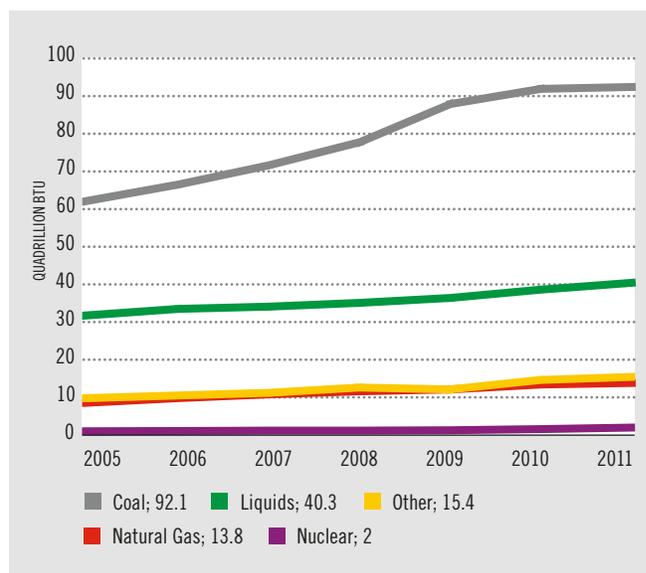
This indicates a great potential for Canada to move up the ranks and become one of the world’s largest

exporters of oil, but we will have to be able compete in a global market where other oil producing nations are capable of fulfilling market demand .

## Global Demand

The global energy market is changing. Fast growing emerging market economies are replacing OECD countries in terms of global demand (see figure 4).

**FIGURE 4 Non-OECD total energy consumption, 2005-2011**



In 2011, Asia eclipsed the OECD as the world’s largest energy consumer and China and India accounted for over 75 percent of energy consumption in Asia.<sup>22</sup> (For more information, see the sidebar on China’s energy outlook.)

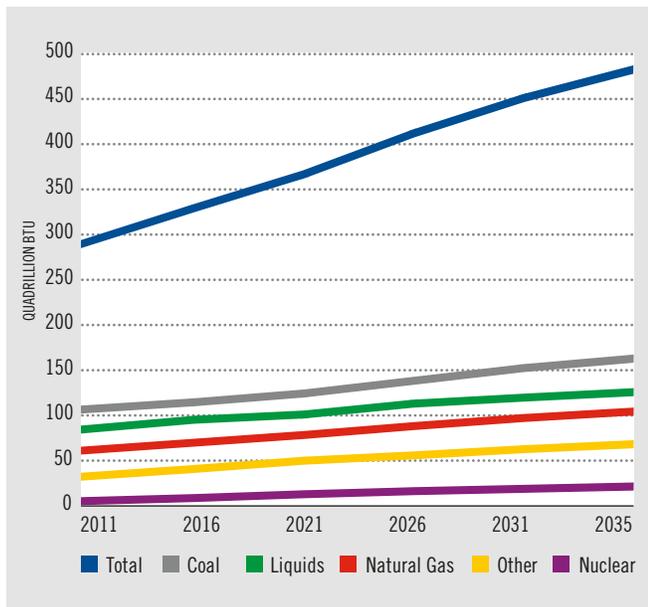
### CHINA’S ENERGY OUTLOOK

- China’s energy demand is growing at 18 percent per annum
- Imports are expected to make up 70 percent of China’s total consumption by 2020
- China will consume 70 percent more energy than the US by 2035
- China will account for 21 percent of world energy consumption by 2025

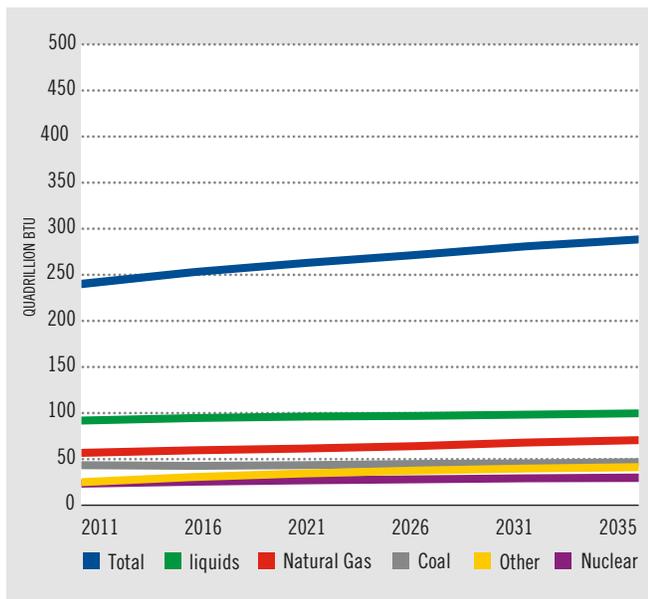
Source: Alberta Department of Energy

As demand from emerging markets is expanding, demand from mature economies is shrinking in both absolute and relative terms. Energy consumption in OECD countries, particularly those in Europe, has decreased steadily since 2001. Figures 5a and 5b show US Energy Information Administration (EIA) projections through 2035 for world energy consumption.

**FIGURE 5A Projected total energy consumption for non-OECD Asia, 2011-2035**



**FIGURE 5B Projected total energy consumption in OECD countries, 2011-2035**



By 2035, the EIA predicts that non-OECD states will account for the largest global share of energy consumption. Total non-OECD energy use is expected to grow by 72 percent, compared with an 18 percent increase in energy use among OECD countries.<sup>23</sup>

## International Competition

In terms of international competition, Canada remains a global energy supplier of choice due to its stable governance and political situation, adherence to trade and investment rules, and fair regulatory regime. Other markets that currently supply the US and Asia (such as Iran and Nigeria) cannot boast these attributes. However, should Canada be unable to supply these nations due to its own challenges, there are other energy exporting nations that will fill the demand, leaving Canada with an ever shrinking share of the pie.

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*Canada's reputation for stability and fair play makes us internationally competitive.*

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Interestingly, the shale gas boom in the US Midwest, Gulf Coast, and in the eastern Great Lakes region means that the US is fast transitioning from customer to competitor.<sup>24</sup> Shale gas extraction only became economically viable in the late 1990s as a result of advancements in seismic imaging technology, horizontal drilling, and hydraulic fracturing (fracking).<sup>25</sup> Shale gas is providing a growing share of US natural gas, and the US EIA forecasts that by 2022 the country will become a net exporter of natural gas. This major shift in domestic production indicates that the days of the US absorbing unlimited supplies of Canadian natural gas are over. As Maria van der Hoeven, executive director of the International Energy Agency, pointedly stated, “the future of Canadian gas is in Asia.”<sup>26</sup> In addition to a growth in domestic supply of natural gas, US demand for oil imports is expected to decline from its current level of about 50 percent of total consumption to 36 percent by 2035. Tighter fuel efficiency

standards, increased use of biofuels, and greater production of domestic petroleum are all contributing to US energy self-sufficiency.<sup>27</sup>

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*The future of Canadian gas is in Asia.* Maria van der Hoeven, IEA

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In addition to competing in global markets with liquefied natural gas (LNG) exports<sup>28</sup> from the US, Canada's LNG exports will also compete in Asia with Australian LNG. In 2010, Australia was the world's fourth largest LNG exporter and, over the past decade, its LNG exports have increased 60 percent.<sup>29</sup> The vast majority of these exports are destined for markets in Asia (primarily Japan) but also China, South Korea, and Taiwan. Australian LNG exports are expected to more than triple by 2017 as the country plays a greater role in satisfying global energy demand.<sup>30</sup>

The long term shift in demand towards Asian markets means that the US will account for a diminishing share of Canadian exports, replaced by emerging market customers, China first among them. On the face of it, Canada is in an enviable position: it has a rich endowment of commodities for which there is an insatiable global demand. What stands in the way of Canada's ability to take advantage of this economic windfall? We will examine potential roadblocks in the next section.

## Canada's Competitiveness Challenges

### Distribution and Infrastructure

**D**istribution gaps are the number one impediment to Canada's competitiveness as an energy exporter.<sup>31</sup> Inability to move

product freely to processing facilities and to a broad range of customers exacerbates Canada's dependency on a single buyer. Any reduction in US demand directly affects the viability of the Canadian industry. Canada's ability to ship oil to Asia is severely limited. Diversification is necessary to ensure security of demand and to ensure that producers receive a fair price for their product. (A detailed discussion on the economics of refining and processing is found in appendix 1.)

### PIPELINES AND ALTERNATIVES

Perhaps the greatest frustration for Canadian producers is the lack of access to the Pacific coast in order to reach fast growing Asian markets. China, in particular, is showing its enthusiasm for Canada's resource sector by investing billions of dollars in projects in Alberta's oil sands. Although China is seeking to build energy capacity at home, its economic growth is fuelled by imported energy. The Government of China has called on Chinese enterprises to secure, explore, and extract additional energy and resources from around the world, as evidenced by its growing acquisitions in Canada and worldwide.<sup>32</sup>

The Canadian oil and gas industry developed with a focus on serving the US market. Canada had neither the market size nor the geographical proximity to induce producers in Alberta to invest in infrastructure to serve Eastern Canadian markets. Similarly, when oil resources were first being developed in Alberta, American companies essentially controlled these operations. Canadian banks didn't see value in the sector and as a result, very little in-

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*Canadian producers need access to tide water to reach Asian markets.*

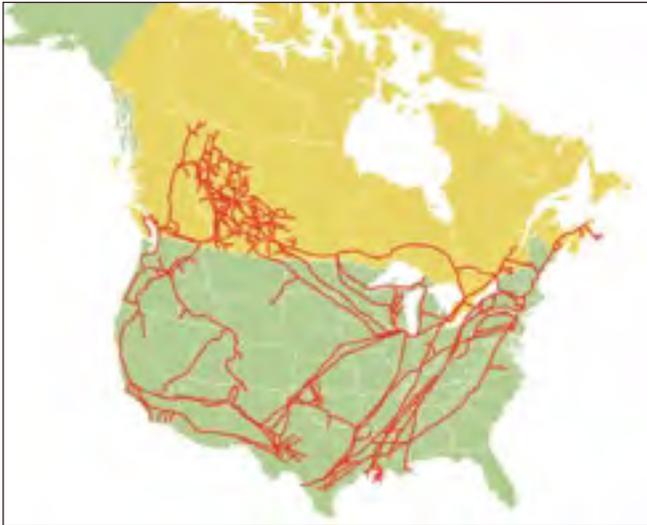
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vestment from Eastern Canada made its way out west. Paul Chastko, in his seminal work on the development of Alberta's oil industry, argues "Large American multinationals, like Standard Oil of New

Jersey, Chevron, and Amoco, with their large transportation and refining capacities enabled Alberta's growth to take place."<sup>33</sup>

Because Americans were some of the first investors to start developing western Canadian oil and gas resources, a lot of the infrastructure was built to service the US (see figures 6a and 6b).

**FIGURE 6A Canada-US natural gas pipelines**



**FIGURE 6B Canada-US oil pipelines<sup>34</sup>**



American companies were shipping to their home country both to serve the market and to build up US strategic reserves. Another reason for the north-south orientation of energy infrastructure is that

north-south transportation costs are lower than east-west costs given the significant difference in proximity to major Albertan oil hubs. (Consider that the distance between Edmonton and Cushing, Oklahoma is 3100 km and the distance between Edmonton and Halifax is 4800 km.) Furthermore, by extending infrastructure into the US, producers were able to access a competitive refining sector in the US Midwest. The legacy is that distribution infrastructure more effectively serves the US market.

While some Western Canadian oil does make it to Ontario and parts of Quebec, markets in Eastern Canada are still largely served by imports from the Middle East, Central Asia, Africa, and Norway. These imports, which more accurately reflect current world prices, sell at higher prices than domestically produced oil. This accounts for the price disparity between these eastern Canadian markets, supplied by imports, and western markets, supplied by domestic sources.<sup>35</sup>

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*Markets in Eastern Canada are still largely served by oil imports.*

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Pipelines tend to be the most effective and lowest cost means of shipping large volumes of crude oil and natural gas. Building more pipelines seems the most obvious way to expand Canada's energy capacity and competitiveness, yet several factors mitigate against the easy expansion of pipeline infrastructure. These include:

- the regulatory review process in Canada and the US,
- Aboriginal land use rights,
- safety concerns about land and marine spills, and tanker traffic in ports,
- lack of sufficient skilled labour, and
- lack of related infrastructure, such as marine terminals, to handle large tankers.

Rail transport has been promoted as an alternative means to move product from Alberta to the West

## CLEARING THE MIDWEST BOTTLENECK

In previous years when US domestic production and supply was low, a network of pipelines moved crude oil from Cushing, Oklahoma to Gulf Coast refineries and then refined products from the coasts to the interior. However, the development of shale oil potential in Montana, North Dakota, and Texas, plus an increase of Canadian imports into the US Midwest, has placed great demands on existing pipeline infrastructure, to the extent where production could exceed pipeline capacity within the decade.

As a result, pipeline companies are racing to build new pipelines (or reverse the flow of existing ones) in order to bring distribution infrastructure into line with current realities:

- In late May, the 500 mile Seaway pipeline was reversed to carry up to 850,000 barrels of crude per day from Cushing to Freeport, Texas.
- By the end of 2013, TransCanada should be finished building the \$2.4 billion southern leg of its Keystone pipeline that will also run from Cushing to the Texas Gulf coast.
- By 2014, Enbridge, a part owner of the Seaway pipeline, plans to connect Cushing to a system of pipes that converge south of Chicago.
- In April 2012, Kinder Morgan said it would spend \$4.1 billion to double the capacity of the Trans-Mountain pipeline to Vancouver, the only existing line to Canada's west coast.\*
- In July 2012, the National Energy Board approved the reversal of Enbridge's Line 9 from Sarnia to Westover, Ontario. This reversal will make it easier for Western crude to reach refineries in Ontario and eventually Quebec. If the flow of another pipeline is reversed, oil refined in Montreal could be exported through Portland, Maine.\*\*
- TransCanada is actively pursuing an option to convert the Mainline pipeline, which currently carries natural gas from western to eastern Canada, to carry oil.

\* *Economist*. May 26, 2012. "The great pipeline battle: The energy industry and Stephen Harper's government try to ensure tar-sands oil gets to market." *Economist*. <http://www.economist.com/node/21555928>.

\*\* Enbridge Press Release, July 2012. <http://www.enbridge.com/Line9ReversalProject/ProjectOverview.aspx>.

Coast.<sup>36</sup> Canadian National Railway (CN) joined the race to supply oil to Asian markets in early 2009 but their "pipeline on rails" idea has really gained momentum in the past year.<sup>37</sup> Given its continental rail network, oil from Alberta can be transported from Fort McMurray to marine terminals in Vancouver, Kitimat, and Prince Rupert, as well as to refineries in the southern US and US Gulf Coast. CN operates in 8 provinces and 16 US states. CN already transports diluents, liquid petroleum gases (LPG), coal, diesel, sulphur, and petroleum coke to the west coast and various other parts of North America. The company suggests that it can transport 200,000 billion barrels per day or more oil to market.

Rail transportation has the advantage of significant infrastructure already in place but it is more expensive, with cost estimates running at \$2 to \$5 more per barrel by rail than by pipeline.<sup>38</sup>

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*Pipelines are the most efficient means of shipping crude oil and natural gas.*

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## REFINING INFRASTRUCTURE

Bitumen from the oil sands is a tricky substance. Before it can be transported in a pipeline, it must be either diluted with a light viscosity substance (which transforms it into 'dilbit') or upgraded to a product called synthetic crude oil (SCO), which can then be further refined into fuels we all use such as gasoline, jet fuel, and diesel. Currently, about 56 percent of bitumen is upgraded in Alberta.<sup>39</sup>

Upgraders and refineries are designed for the kind of oil products they refine, and there are very few countries that have the capacity to upgrade bitumen and transform it into transportation fuel. In

the US, many of these refineries are located in the Gulf Coast and the Midwest, where the majority of Canadian dilbit and SCO is shipped. Although Alberta aims to boost the current amount of bitumen processed in the province to two thirds, the Energy Resources Conservation Board predicts that only 47 percent of Alberta's bitumen will be processed locally by 2020. Plans to expand bitumen extraction simply outstrip plans to expand domestic upgrading capacity.

Outside of the US, China has limited capacity to refine bitumen, but it is working to build the facilities required to do so. Xingyi Wang, vice president of China National Petroleum Corp. America Ltd., commented in July 2012 that China plans to develop coking<sup>40</sup> refineries to process greater amounts of heavy crude oil, but will do so gradually by upgrades to existing facilities. Currently, only 15 percent of Chinese refineries have coking capacity, most of which is dedicated to metallurgical coke production.<sup>41</sup> Meanwhile, in Jamnagar, India, Reliance Industries is expanding their current refinery operations to create what will be the world's largest refinery with the capacity to process cheaper, heavy crudes into high value products.<sup>42</sup>

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*China and India are increasing their capacity to refine bitumen.*

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The ongoing debate in Canada over whether or not to expand domestic upgrading and refining capacity highlights some important implications for Canada's ability to compete in global markets. The concentration of capacity to refine bitumen in the US is one cause of the monopsony structure of the oil sands industry. Refining bitumen and heavy oil transforms a cheaper form of oil into a more valuable product for immediate use. Proponents of expanding domestic refining capacity assert that more capacity will allow Canadian companies to sell higher value products in global markets, and receive a higher price for their product. Diversification of Canada's exports will make us less reliant on base commodity prices and thus less vulnerable

to market fluctuations. Refining at home will also allow Canadian producers to ship to a larger consumer base, and alleviate the risks of depending on a single buyer.

The flip side of that argument is that in order to process more bitumen at home, Canadian refineries would have to invest billions of dollars in the necessary infrastructure.<sup>43</sup> In North America, increased fuel efficiency and changing consumer preferences have reduced the demand for refined products, leaving the refining industry in parts of the US and Canada with excess capacity.<sup>44</sup> This trend is likely to continue. On the Gulf Coast, there is excess capacity to process heavy crudes because imports of heavy crude from Mexico and Venezuela are declining. It is difficult to justify high capital investment in Canada's refining sector when existing North American refineries are not operating at full capacity.<sup>45</sup>

Industry is unlikely to make the investment to build new refineries in Canada under current economic circumstances. These investments would likely require public funding. Whether Canada will choose to pay this premium in order to become more self-sufficient by controlling processing at home, or respond to economic logic and continue to refine in US facilities at lower costs is an important question. (The answer is linked to whether we think of the energy sector in terms of a Canadian or a North American one.)

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*Our policy solutions are tied to whether we think of the energy sector as a Canadian or a North American one.*

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The North American refining industry is also under threat from expanded refining capacity in emerging economies. The Conference Board of Canada reports "the majority of incremental refining capacity is being added where demand growth is expected to be strongest going forward – Asia".<sup>46</sup> Countries such as China and India have the large

domestic markets that allow them to build projects of a scale that is simply not possible for Canadian refiners. Canada's largest refinery, for example, has less than half the annual processing capacity of the planned Sinopec refining complex in the Chinese province of Jiangsu.<sup>47</sup> Most of the supply for these projects will come from North American crude production (a boon to upstream producers). However, China's relatively lower wages and lower, scale related operating costs will pose serious competition to Canada's refining sector. A refinery in BC has already experienced the effects of competing with Asian mega-refineries.<sup>48</sup>

Canada faces trade offs whether we choose to refine oil sands products domestically or send them abroad. By refining at home, we increase our potential consumer base and reduce dependence on the US (and vulnerability to US political decisions), but not without huge capital investment. By sending bitumen abroad to be refined, we avoid the financial costs and uncertainty associated with expanding Canadian refining capacity, but we remain limited to exporting to a few markets. Ultimately, these decisions must be made in the interest of our ability to compete in an increasingly competitive global market.

## Regulatory Challenges

Simply building new pipelines is not as easy as it sounds. For example, the proposed Keystone

XL pipeline is intended to provide more efficient transportation to the US south, but the regulatory environment in the US may prevent this expansion. The Keystone XL permitting process is now in its fourth year with no end in sight. This is relatively short compared to the Mackenzie Valley pipeline process, which is approaching its 40th year. (For more information on the Mackenzie Valley pipeline, see sidebar.)

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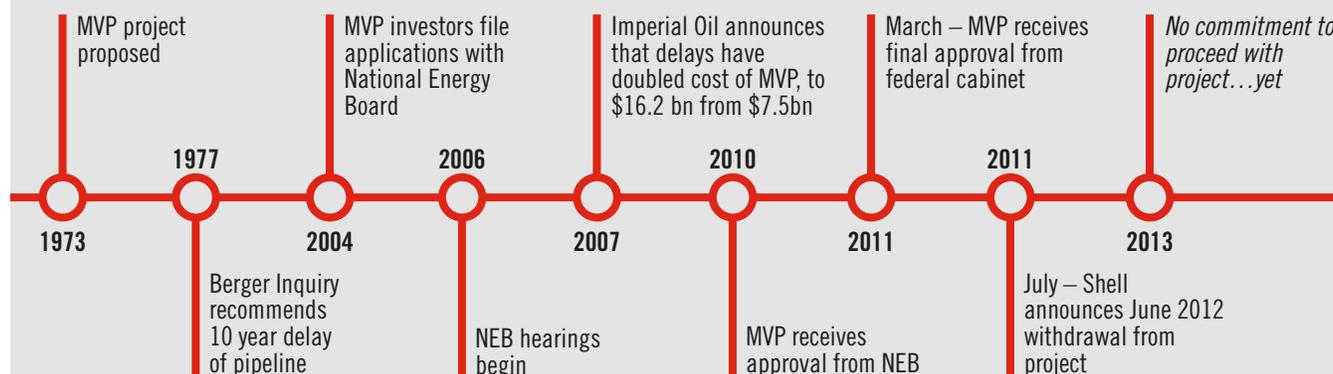
*Regulatory inefficiency is a major impediment to investment and growth.*

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Regulatory inefficiency is a major impediment to investment and growth. The costs and uncertain timelines associated with the review process pose significant risks to project proponents, which can cause them to reconsider their plans to proceed with a project, or not to invest at all. At the same time, the government has a mandate to protect the public interest, and ensure that the social and environmental externalities of major projects are properly addressed.<sup>49</sup> This is complicated by the fact that major energy projects fall within areas of both federal and provincial jurisdiction (see earlier sidebar on responsibility for energy and environment matters in Canada), can require approvals

### THE MACKENZIE VALLEY PIPELINE SAGA

The time horizon on major infrastructure investments deters much needed investment in Canada's strategic sectors. Proposed in the 1970s as the key to northern development, the Mackenzie Valley gas pipeline was nearly abandoned by investors as a result of its epic 38 year review process.



**FIGURE 7 Major projects regulation: federal departments and selected legislation**

Planning	Environmental Assessment Process	Permitting	Follow Up
	Canadian Environmental Assessment Agency		
	National Energy Board		
	Canadian Nuclear Safety Commission		
Aboriginal Affairs and Northern Development Canada (duties include land use plans and impact reviews)			
	Department of Fisheries/Oceans, Environment Canada (Species at Risk Act)		
		Natural Resources Canada (Explosives Act)	
		Department of Fisheries/Oceans, Environment Canada (Metal Mining Effluent Regulations)	
		Department of Fisheries/Oceans (Fisheries Act)	
		Transport Canada (Navigable Waters Protection Act)	

Source: Natural Resources Canada

from several government departments and agencies,<sup>50</sup> and touch on issues ranging from environmental safety to public interest to Aboriginal rights and land and water use (see figure 7).

The process can be convoluted and expensive, creating negative economic consequences for resource development in Canada.

The challenge for government is to create a mechanism to deal with the major and cross-cutting issues that pertain to resource development, while ensuring that the process includes appropriate mechanisms that take into account the considerations of affected stakeholders, including those at the local level. The greatest challenge is to ensure that all of this can be achieved within reasonable cost and time parameters.

The federal government has seemingly recognized that changes to the regulatory regime are important for reducing uncertainty and increasing transparency, thereby allowing project proponents to better plan their investment and operation decisions. Changes made to the regulatory process over the past several years have been aimed at improving coordination and reducing the time required to review a major project.

The Major Project Management Office (MPMO) was created in 2007 to address the challenge of coordination. Under the direction of the Department of Natural Resources, the MPMO has a broad mandate to coordinate all aspects of federal regulation of major projects. It acts as the single point of entry for applicants seeking project approval from the federal government. Industry has been generally favourable in their initial assessments of the MPMO.<sup>51</sup>

In March 2012, the federal government announced major changes to its approach to environmental reviews in order to create a “one project, one review” process to cut down on wait times for major economic projects (see appendix 2). The implementing legislation, Bill C-38, came into force in July 2012. Industry associations have endorsed these reforms but continue to call for greater coordination between federal and provincial regulators.<sup>52</sup>

Improving the efficacy of the public consultation process is part of improving the regulatory process overall. As it stands, there are few guidelines as to the content covered in a particular review; topics listed can be quite broad, thus leaving the door open to broad interpretation by participants.

Lack of specificity is a major contributor to ‘scope creep,’ the unplanned expansion of an initiative.

In order to fulfill their mandate of regulating in the public interest, regulators often choose to hold public hearings to allow a variety of stakeholders to put forth their concerns with a particular project. However, there is significant ambiguity and breadth in the interpretation of public interest, which can compromise the scope of an environmental assessment. For example, the regulation of greenhouse gas (GHG) emissions, though pivotal to improving the regulatory system overall, cannot be dealt with properly within a single project review, and fixating on the issue could affect the quality and efficiency of the process by burdening regulators with consideration of issues over which they have no authority.

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*Companies need social buy-in for projects to succeed.*

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One way to improve consultative efficiency is to provide separate forums for different kinds of stakeholders to make their views known on the broader issues affecting resource development. In the GHG example, a National Energy Board panel may hear from a group on Canada’s broad environmental policy despite the fact that those issues cannot be properly addressed in that forum. Yet many stakeholders feel that it is an opportunity to raise their concerns. By shifting more of the substance of environmental policy making away from the approval/project evaluation process and into another forum, we may be able to improve efficiency and quality of the project evaluation.

Shifting large numbers of stakeholders to alternate venues could be viewed simply as window dressing for meaningful consultation and a way to marginalize the voices of those who oppose energy mega-projects. However, industry seems to be learning a lesson from TransCanada’s experience with the permitting process for the Keystone XL pipeline. The public is watching. Companies are increasingly recognizing that social – especially local – buy-in is tied to a project’s long term commercial viability,

legal exposure, and investor relations. In pursuit of what is being called a social license,<sup>53</sup> firms are becoming proactive in promoting the benefits of a regulatory system that addresses the safety, health, and environmental concerns of all stakeholders. Enbridge’s proposal to spend up to \$500 million to change the design of its Northern Gateway pipeline in a bid to address safety concerns of Aboriginal people and other stakeholders may be indicative of a growing trend by companies to garner public support by going beyond the letter of the law.<sup>54</sup>

## **Uneven or Inadequate Aboriginal Consultation**

The federal and provincial governments have a duty to consult Aboriginal groups and provide accommodations, in some cases, when the Crown is considering an action that might adversely impact potential or established Aboriginal or Treaty rights. The Supreme Court of Canada confirmed these rights in the Haida and Taku River decisions in 2004, and the Mikisew Cree decision in 2005, but the mechanisms through which the Crown exercises its duty to consult are still evolving. The law dictates that the consultation process must be ‘meaningful’, but there has been little definition of what constitutes meaningful consultation.

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*Lack of clarity frustrates the consultation process.*

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The courts have made it clear that government cannot offload the duty to consult to a third party. They may delegate procedural aspects to project proponents, but the ultimate legal responsibility rests with the government. The government is also responsible for any accommodations that are necessary to offset infringement of rights. Accommodations can include adjusting a project to minimize disruption or compensation payments for loss of rights to traditional use of lands and resources.<sup>55</sup> The goal of the consultation process is to reach a compromise, but government does not have to accommodate Aboriginal people when their rights

are infringed, except in cases where the claim is strong and infringement is substantial.<sup>56</sup>

In practice, there is a lack of clarity on who is consulting, how much consultation is required, and when this requirement has been satisfied. This lack of clarity has led to frustration on the part of both companies and Aboriginal groups, in some cases delaying projects that are in the interest of both groups.<sup>57</sup>

Several factors add to the difficulties of achieving meaningful consultations.

- Lack of capacity to participate – First Nations groups can find themselves having to negotiate with multiple companies and with entities that have far more resources and capacity. In some instances, governments will provide funding for First Nations to help them to participate, but this is not always the case. Related to this is the sheer volume of consultations. Businesses must await the completion of Crown consultations with First Nations before development applications can be approved. The BC government estimates that there are some 200,000 decisions every year that require First Nations consultation in that province alone.<sup>58</sup>
- Unsettled land claims create uncertainty regarding the duty to consult and who might be entitled to accommodation. This can lead to conflict between First Nations, governments, and project proponents, since the government can grant a proponent legal access to property despite Aboriginal opposition.<sup>59</sup>
- Lack of protocol – Currently, there is no clear process, formula, or set of guidelines for companies to follow when they are carrying out consultations. To counter this, companies and industry associations are adopting voluntary codes of conduct for managing First Nations consultations.

Companies have a vested interest in getting the consultation process right since their project may be at risk if a court later determines that consultation was inadequate. There are several examples, such as the case of Solid Gold Resources and the Wahgoshig First Nation in Northern Ontario, where companies did not consult adequately with

Aboriginal communities, resulting in project delays or termination, and costing all parties millions in legal fees.<sup>60</sup>

By consulting with First Nations early on, companies can help build good relationships, share necessary information, and reduce the risk of future legal challenges. An increasing number of companies and industry associations are taking proactive measures to establish programs and protocols for their relations with Aboriginal groups.<sup>61</sup>

## Shortage of Skilled Labour

A shortage of workers with relevant skills is jeopardizing the viability of Canada's energy sector. More than 70 percent of oil sands companies surveyed in late 2011 indicated that labour and skills shortages were their top workforce challenges. The trend is projected to continue, with the greatest labour shortages expected from 2013 to 2015.<sup>62</sup>

According to the Petroleum Human Resources Council, over 30 percent of the oil and gas industry's core workforce is expected to retire within the next decade, driving the need to hire at least 39,000 workers. If the industry expands at projected rates, a staggering 130,000 workers will be needed to fill new positions and keep pace with retirements. Loss of workers to competing industries is a challenge that the industry needs to manage as well.<sup>63</sup>

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### *A shortage of skilled workers is jeopardizing the viability of Canada's energy sector.*

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Alberta Premier Alison Redford sounded the alarm on the skills shortage during meetings with Chicago's union leaders in February 2012, outlining Alberta's labour market needs over the coming decade and the potential role of temporary foreign workers.<sup>64</sup> Although reliance on temporary workers can address temporary shortfalls, it does not address the main problem of disparity between the skills and experience of the available labour supply

and those that are needed by the industry to accommodate growth and replace retiring workers. This has serious implications for production capacity and labour productivity. Without the workers, the show cannot go on.

Canada has had forward leaning policies for foreign skilled workers, but these have been challenged by administrative backlogs. In Budget 2012, the federal government proposed reforms to the Federal Skilled Worker Program that should improve the process for recognition of foreign credentials and reduce waiting times for labour market approvals in high demand occupations.<sup>65</sup>

Worker mobility is a double edged sword for Canada. On one hand, improvements to immigration and temporary worker programs are making it easier to manage the technical and legal complexities of foreign recruitment. On the other, ease of mobility increases the prospects of an exodus of workers from Canada (foreign and domestic) when better opportunities appear. For example, a large Australian company, Santos Ltd, is recruiting Canadian geoscientists, geophysicists, reservoir engineers, and completions specialists for an LNG project, in part for their experience, but also to help offset Australia's personnel losses to competing jurisdictions.<sup>66</sup>

Canada's workforce is aging, and the pool of foreign workers is shrinking because developing countries are now able to offer better employment opportunities that keep workers at home. The challenge for Canada is how to build skills in the domestic workforce and create incentives to lure them to the oil patch.

The Aboriginal population is one of the fastest growing populations in Canada, yet it is also experiencing the highest rates of unemployment. Over the next decade, 400,000 Aboriginal Canadians will reach working age.<sup>67</sup> A July 2012 report by the Conference Board of Canada argues that Canada must work harder to create skills training and educational opportunities for this demographic.<sup>68</sup> Effective integration of Aboriginal workers into the energy sector will not be easy. Obstacles include concentration of Aboriginal populations in remote rural areas (affecting access to training and labour market opportunities), lower levels of educational

opportunities and levels of educational attainment (34 percent of the Aboriginal population does not finish high school), and language and cultural issues (including racism and social exclusion).<sup>69</sup>

## Trade and Investment Rules

The framework of international trade and investment rules has important implications for Canada's energy competitiveness but energy commitments are notoriously under developed in trade agreements. Energy products are different from other cross-border tradeables. Most move without any tariffs at all. The challenge is with non-tariff barriers such as technical barriers to trade (TBT), rules of origin, and trade related environmental measures. Competitiveness is also lost when firms cannot move technicians, service personnel, and equipment easily across borders.

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*Energy commitments are underrepresented in trade and investment agreements.*

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Energy commitments are similarly underrepresented in investment agreements and offer little guidance for dealing with investment by the state owned enterprises that are now the most powerful new actors in the energy sector.

Trade agreements can be a positive force in reducing costs and increasing efficiency in cross-border movement of goods, services, and labour. The New West Partnership Free Trade Agreement<sup>70</sup> – a provincial initiative among the three western provinces – set out to eliminate barriers to provincial trade but it has been slow to deliver. Nevertheless, by the time it is fully implemented in 2013, the integrated western market will be able to operate much more efficiently, making cross-border trade easier and increasing the region's attractiveness to foreign investors.<sup>71</sup>

Canada has a long list of international agreements through which we assert our trade interests. The most important of these is the North American

Free Trade Agreement because the US is our largest trading partner in all products including energy. Since NAFTA was signed, however, there have been significant changes in the North American energy market, including rising demand for Canadian oil sands products, US export capacity in natural gas and LNG, and Mexico's rise as a global energy producer. A 21st century North American Free Trade Agreement would contain a separate energy chapter to help manage the integrated elements of our energy economy.

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*The TPP creates opportunities for access to new markets and improved energy relationships.*

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Looking ahead, the Trans-Pacific Partnership agreement that Canada is currently negotiating<sup>72</sup> provides the opportunity to negotiate new market access arrangements with Asian countries, and also to revisit our energy relationships with the US and Mexico. The TPP is a forward leaning agreement that seeks to deepen its coverage of issues relevant to the 21st century economy such as services, technical barriers, labour mobility, and government procurement. There is also the possibility to expand the agreement to include other large Asian energy importers, such as Japan, South Korea, and maybe even China.<sup>73</sup> As such, it provides Canadian producers with the potential for preferential access to huge populations where domestic consumption of energy is forecasted to grow significantly over the foreseeable future.

#### **TRADE RELATED ENVIRONMENTAL MEASURES**

The nexus between trade and environmental rules is an area of concern for energy exporters. There is a visible trend towards holding governments and industry accountable for the externalities created by resource development. This has a strong potential to translate into market access rules that are conditioned on environmental processes used in extracting or producing resources. These potential trade barriers could become a threat to market access for Canadian oil sands products, especially in the European Union (EU) and the US.

During the early days of the General Agreement on Tariffs and Trade (GATT),<sup>74</sup> energy products were excluded by tacit agreement because the framers did not want to deal with the level of politicization that regulation of a 'strategic resource' would involve. Moreover, petroleum exporters believed they had little to gain from FTAs because they export a high demand product for which market access is not an issue.<sup>75</sup>

The Uruguay Round establishing the World Trade Organization (WTO) brought energy in through the side door through measures limiting the ability to subsidize domestic use of energy products. The late 1990s and early 2000s were also a period of rising debate on the use of the GATT Article XX exceptions which allow a country to restrict imports (and, by some interpretations, exports) in order to conserve an exhaustible natural resource and/or to protect human, plant, and animal life.

The use of these exceptions is limited by the conditions that the measures should be applied in a non-discriminatory manner (apply equally to foreign and domestic producers) and they should be applied in conjunction with domestic conservation measures.

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*It is possible that Canadian oil sands products could be the target of trade restrictions on the basis of GHG emissions during processing.*

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The GATT/WTO framers intended that the use of exceptions should be justified by the characteristics of the product itself, so that the product or its components would contain some element that is endangered, exhaustible, or injurious to human, plant, or animal health. Increasingly, however, environmental advocates are pushing to have process standards added to the test so that an import could be banned if a given method of production caused (or could cause) environmental harm. This reasoning was upheld by the WTO Appellate Body in the

Shrimp/Turtle case, which ruled that the US could apply an embargo on imports of shrimp from countries that did not prevent the accidental capture of sea turtles during shrimp fishing.<sup>76</sup>

Binding precedent does not exist in the international rules based trade regime (WTO). Since the law has been interpreted to allow restrictions of imports based on process and production methods, however, it is possible that Canadian oil sands products could be the target of trade restrictions on the basis of GHG emissions during processing.<sup>77</sup> Whether or not such regulations would be admissible depends on their structure and application, as well as how the law is interpreted by the WTO.

Both the US and the EU have made attempts to restrict imports of certain heavy fuels (mainly bitumen). Measures such as the EU Fuel Quality Directive or the American Clean Energy and Security Act (2009) have the potential to harm Canadian exports in many ways.<sup>78</sup> First, they can restrict access for Canadian products into important export markets. Second, other governments may propose similar regulations in order to align themselves with dominant global policy makers. Third, the mere proposal of these regulations can damage the reputations of the government and the country's industry, which could lead to backlash from civil society groups, consumers, and even other industries.

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*Managing the GHG intensity of oil sands development is a proactive step.*

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Regulations that single out oil sands products on the basis of their GHG emissions during processing may or may not hold up in front of a trade tribunal, but they certainly make an impact in the court of public opinion. In the case of the Fuel Quality Directive (FQD), the regulations as they are structured discriminate specifically against bitumen from oil sands without taking into consideration that many heavy crude oils are similarly GHG intense.<sup>79</sup> Bitumen from oil sands fits into a spectrum

of fossil fuel products, some of which use comparable processes in extraction and production. That the FQD is structured in a discriminatory manner will likely be its demise in the event of a trade dispute. Nevertheless, the mischaracterization of Canada's oil sands products as being more GHG intense than other fuels has impacted public perception of the industry and government. The real economic threat to Canada's industry is implementation of GHG regulation that is applied uniformly to like products. In order for Canadian industry to remain competitive when measured against a GHG yardstick, it is essential for Canadian producers to

### **CAMPAIGNS, CORPORATIONS, AND CANADA'S OIL SANDS**

- In 2010, Forest Ethics, a North American environmental NGO, launched an anti-oil sands campaign urging US companies to avoid using energy from Alberta's oil sands in their transportation supply chains.\* To date, 16 American companies have signed on, including Walgreens, Chiquita,\*\* and Whole Foods.
- Forest Ethics is not the first organization to launch this kind of campaign. In the same year, Corporate Ethics International started the "Re-think Alberta" campaign in North America and the United Kingdom, to discourage tourism to Alberta so long as the province develops its "dirty oil".
- Although these campaigns may have little overall effect on refinery and industry demand for oil sands product, they can mobilize constituencies in the US that in turn, put pressure on politicians to create laws and regulations that discriminate against the importation of Canadian oil sands products. If enacted, such laws and regulations would have serious economic implications for the oil sands industry, particularly should such regulation occur in the market of our largest consumer.

\* Forest Ethics, <http://www.forestethics.org/major-companies-act-to-clean-up-their-transportation-footprints>.

\*\* Chiquita has since clarified its position that it will not discriminate against Canadian oil. See: Alberta Enterprise Group, December 2011 letter from Chiquita Brands International at <http://albertaenterprisegroup.com/MR%20-%20AEG%20Dec%202011.pdf>.

demonstrate meaningful progress on managing the GHG intensity of oil sands development.

Developing countries such as China are similarly concerned that environmental fears will be used to restrict trade. Thus, it is in China's interest to develop "green" and safe approaches, whether via voluntary certification programs such as those of the Forest Stewardship Council, or strict adherence to the Food and Agriculture Organization's *Codex Alimentarius*. In the wake of a series of scandals involving lead in painted toys, melamine contamination, and other problems such as antibiotic residues in aquacultured fish, China has tightened its health and safety regulatory framework, but consumer confidence will need to be rebuilt, likely both domestically and abroad. Arthur Hanson argues that China is aware of the potential for health and safety barriers related to energy, and is taking steps to avoid being the target of these trade barriers.<sup>80</sup>

Economic policy that contributes to environmental sustainability is becoming pivotal to the ability of a nation's producers to compete in global markets but we must ensure that environmental concerns do not provoke discriminatory trade measures and that states adopt the least trade restrictive regulations to achieve a public policy objective.

## INVESTMENT

Competitiveness in global energy markets is not limited to market access for Canadian products. Openness to foreign investment is an important component of a competitive market environment, as is access to other markets for Canadian investors.

As far as Canada's outbound investment is concerned, we need to access markets where Canadian energy firms have a comparative advantage and, once invested, we need guaranteed protections under the law against expropriation and discriminatory treatment. Canada's ever growing network of Foreign Investment Protection Agreements is helping to fulfill market access goals while investors are protected against unfair treatment by the investor-state dispute settlement provisions that are becoming more prevalent in trade agreements.

Inbound investment is more problematic. For the most part, Canada's concerns about state owned enterprises are focused on Chinese investment in the extractive sector. China's Sinopec owns nearly 10 percent of Syncrude, one of Canada's largest joint ventures in the oil sands. Recent Chinese acquisitions include Petrochina's purchase of the MacKay River Project from Athabasca Oil Sands Corp., Sinopec's acquisition of Calgary based Daylight Energy Ltd, CNOOC's acquisition of the oil sands technology company OPTI as well as their bid for Nexen.

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*Chinese investment in Canadian oil sands has yet to be tested by a major dispute.*

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Since all (except Nexen) have passed the federal net benefits test, including the additional competitiveness considerations for state owned enterprises and the general screening on national security, it seems likely that Chinese investment applications in Canada will continue to be approved. To date, however, none of these acquisitions have been tested by a major dispute similar to Canada's 2009 lawsuit against US Steel, or Abitibi Bowater's 2008 complaint against Newfoundland for the expropriation of its hydroelectric assets.<sup>81</sup>

## Royalties and Provincial Cooperation in Energy

The provinces have ownership of natural resources in Canada; as such, the collection of resource royalties falls under provincial jurisdiction. In addition to royalties, the provinces receive bonus bids from the successful auction of mineral leases, rentals and fees associated with the leases, and municipal and corporate income taxes from energy development. Royalty and tax rates vary depending on the province. In Alberta, for example, the gross revenue royalty rate for oil sands projects is indexed to the Canadian dollar price of West Texas Intermedi-

ate (WTI). The rate is 1 percent of gross revenue where that price is less than or equal to \$55 per barrel and increases to a maximum of 9 percent when the WTI price reaches \$120 per barrel.

The revenue that accrues to provinces from resource development is a significant part of overall government revenue. Bitumen royalties accounted for 10 percent of total Alberta government revenues in 2010-2011, and that is expected to climb to approximately 20 percent of total government revenues, or \$9.9 billion dollars by 2014-2015.<sup>82</sup> A 2012 report from the Canadian Energy Research Institute predicts that the royalties Alberta collects from the oil sands will double within four years, to \$10 billion per year, reaching \$30 billion in 2024 and \$52 billion in 2040.<sup>83</sup>

Despite demands from the premier that BC get its “fair share” of revenues from Alberta if it allows the Northern Gateway pipeline to proceed to the Pacific, there is no precedent for sharing resource related revenues between provinces. Instead, collaboration between provinces on energy issues is voluntary, and usually involves agreements to share information or invest in research.<sup>84</sup>

Currently, the way provinces share revenue with one another is through the federal equalization program. Although this is an indirect mechanism for revenue redistribution, it is aimed at addressing the fiscal disparities between provinces. Revenue is transferred from provinces with greater fiscal capacity to those with less fiscal capacity.

In 2010, British Columbia, Alberta, and Saskatchewan signed a Memorandum of Understanding for Collaboration on Energy Initiatives, under the New West Partnership. The MOU includes commitments to exchange information on regulatory streamlining; promote energy technology development; promote energy infrastructure of mutual interest; and coordinate on strategies for increased market access and market diversification of energy goods. However, it is a voluntary agreement that does not create any legally binding obligations.

## Conclusion

There are a number of actions Canada must take today in order to position itself for competitiveness in the global oil and gas sector tomorrow.

Distribution is the top priority so that Canadian energy products can get to new markets more efficiently. Finding environmentally responsible and efficient ways to transport energy products is a lynchpin in our future success as a global energy leader. As well, though improving access to refineries in the US Gulf Coast and possibly eastern Canada makes more economic sense than building new capacity in Canada, it is important for governments, industry, and the public to carefully consider the spectrum of benefits and costs of establishing a more self-sufficient energy sector.

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*The first step towards creating a competitive Canadian energy sector is developing distribution channels.*

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Continued streamlining of the regulatory process goes hand in hand with the expansion of distribution capacity. However, progress depends on an approach by business and government that balances economic efficiencies with environmental sustainability and First Nations rights. The government’s recent reform of the regulatory process may very well improve the efficiency of project approvals in Canada. Time will tell. Working towards a First Nations consultative process where roles and responsibilities are more clearly defined will help reduce uncertainty and the potential for legal challenges.

Canada must work harder to build the skills that are needed in the energy sector. Some of the workforce shortage can be filled through temporary and permanent migration, but education and social policy must be focused on building a skilled do-

mestic labour pool as well. Here, Canada has an opportunity to mobilize underemployed segments of the population, particularly First Nations, and provide them with the training needed to participate in the energy sector workforce.

Externally, our formal trade and investment agreements must reflect the priorities of national energy competitiveness and create a level playing field in order for Canada's industry to grow in global markets.

Does Canada need a comprehensive national energy strategy? We argue that the answer is no. The energy sector across Canada is so diverse that progress in any one subsector would be very difficult with provincial premiers vying to promote their regional interests. The Council of the Federation already has a well established mechanism to foster and promote interprovincial dialogue. Reinventing this in a separate sphere would serve no purpose. Moreover, Canada's comprehensive consultative mechanism allows many opportunities for input from business and civil society stakeholders.

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***Re-thinking mechanisms for provincial cooperation will enhance future competitiveness.***

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Various government policies and programs are already addressing some of the challenges facing Canada's energy sector. The federal government and province of Alberta have implemented the *Joint Canada-Alberta Implementation Plan for Oil Sands Monitoring*, which aims to improve the quality and frequency of monitoring the environmental impacts of oil sands development. Similarly, the Department of Citizenship and Immigration and the Alberta government have recently expanded a temporary foreign worker pilot project, established under the *Agreement for Canada-Alberta Cooperation on Immigration*, to address immediate labour shortages in the oil and gas sector. As well, changes made in Budget 2012 seek to improve the efficiency and clarity of the regulatory approvals process for major projects.

To be sure, existing policies and programs are not complete. More can be done to address environmental, regulatory, labour, and distribution challenges. However, existing mechanisms and institutions have the capacity and authority to deal with the competitiveness challenges facing Canada in all areas but one. It is clear that provincial disputes over allocation of resource revenues are going to continue to flare up as the sector grows, and as infrastructure and risk cross provincial boundaries. The existing system of equalization payments will not be enough to address the grievances of provinces that believe that bearing a greater share of the environmental risk imposed by new pipelines and infrastructure entitles them to a greater share of financial compensation. The opportunity cost for Alberta is significant. Growth and production of the oil and gas sector, and thus the prosperity of the province, depend on the ability to export these products to new markets. This in turn may require new mechanisms of cooperation between provinces. Certainly, the current issues between Alberta and British Columbia will not be the last. The steps we take today will enable us to deal with similar challenges in the future, so that provincial disputes do not become obstacles to competitiveness.

# Appendix 1: The Economics of Petroleum Upgrading and Refining in Canada

Canada's oil economy has long been a dual market. Refineries in Western Canada run domestically produced crude oil, refineries in Quebec and the eastern provinces run primarily imported crude oil, while refineries in Ontario run a mix of both imported and domestically produced crude oil. In fact, crude oil imports satisfy more than half of domestic refinery demand.<sup>85</sup> Sources of imported crude include Algeria, the United Kingdom, Nigeria, Norway, and Saudi Arabia. Regardless of the source, the price is determined according to the supply/demand balance and pricing dynamics on the world oil market. In this respect, Canadian refiners are “price takers” and have very little influence on the price they pay for crude oil.

Many Canadians are puzzled by our lack of domestic energy self-sufficiency (we export oil to other countries while much of Atlantic and Eastern Canada rely on oil imports). For many years, shipping oil east across Canada and into the eastern US was not a viable economic option for many western producers. Transportation costs were high, and companies could realize greater profits by shipping south from Western Canada. However, due to price discounts for Canadian oil in the US Midwest, producers may now be able to fetch a higher price for their products in Eastern and Atlantic Canada. In order to facilitate producer interest in shipping more oil to Eastern and Atlantic Canada, Enbridge has proposed to reverse the flow in its Line 9 pipeline, which currently flows east-west, in order to serve Eastern Canadian markets. TransCanada, as well, is currently in the conceptual stages of their East Coast Pipeline Project, which would transport oil to Montreal and possibly even further east, to Saint John, NB.<sup>86</sup>

Oil is differentiated by its density and sulfur content. Heavy crude requires more processing to transform into gasoline, and it yields lower valued byproducts such as heavy fuel oil and asphalt. Light oil is more valuable to refiners than heavy oil, since it requires less processing in order to produce a higher yield of petrol (gasoline). Light oil is also lower in sulfur (sweet) than many heavy, high sulfur (sour) crudes, and thus can more easily meet the low sulfur standards imposed on all refined products.<sup>87</sup> In short, there is a spectrum of petroleum products differentiated based on the cost and time it takes to transform raw products into refined products.

Currently, there are 19 refineries in Canada. Most refineries in Western Canada and Ontario were designed to process the light sweet oil that, for quite some time, was the primary type of oil produced in Western Canada. In these regions, almost 50 percent of the oil processed by refiners is conventional light, sweet oil and another 25 percent is high quality synthetic crude oil, derived from the oil sands. Most of the remaining oil processed by these refineries is heavy, sour crude. Unlike leading refineries in the US, Canadian refineries in these regions have been slower to reconfigure their operations to process lower cost, less desirable oils, instead choosing to rely extensively on abundant, domestically produced, light, sweet oil. The relative decline in supply of light, sweet crude compared with the vast increases in production of bitumen means that refiners may have to increase their capacity to process heavy crude oil and synthetic crudes; however, new investment in refining capacity carries considerable risk, depending on who else is developing this capacity and what markets Canada needs to service.<sup>88</sup>

## Upgrading Bitumen

Some integrated oil companies (Suncor, Shell) have the capacity to upgrade bitumen to synthetic crude oil (SCO). This SCO can then be further refined into fuel, a process that takes place largely in the US Mid-

west. US refiners are also capable of upgrading and refining dilbit, which is bitumen mixed with a diluting substance such as butane (undiluted bitumen is too dense and viscous to be transported in a pipeline).

## Economic Rationale

The economics of upgrading and refining (U&R) boil down to the spread between the costs and the expected revenue. Costs of U&R include those associated with building (materials, labour, technology) and operating a plant (input costs and labour, keeping in mind that wages are relatively higher in Canada than in some other countries where U&R takes place).

Thus, if producers expect a significant positive spread between cost and expected revenue over time, they will build and operate refineries. In Canada, however, this has not happened, largely because there is so much excess capacity in the US, and the spread has not been wide enough to make it profitable for companies to invest in building new refineries (which require an initial capital outlay of more than \$10 billion).<sup>89</sup>

The refining business is also considered to be more risky than upstream oil production, because profitability is directly affected by fluctuations in global prices and demand for refined products such as gasoline.<sup>90</sup>

As long as Canada is able to access other markets (particularly the US) that can upgrade oil sands product, there is little economic incentive to build more upgraders and refineries in Canada. The first priority will be to expand and rationalize distribution in order to clear out the surplus in the US Midwest.

# Appendix 2: Budget 2012 and the Shift Towards “One Project, One Review”

**B**udget 2012, and its ensuing implementation Bill C-38, included sweeping reforms to the regulation of major projects in Canada.

The changes to the regulatory regime came into force in July, following the passage of Bill C-38 in the legislature. These new changes have received positive responses from industry associations,<sup>91</sup> who continue to call for greater coordination between federal and provincial regulators.

Making the review process for major projects more timely and predictable	<ul style="list-style-type: none"> <li>o \$54 million over two years to renew MPMO</li> <li>o Deadlines for reviews (24 months for panel reviews, 18 months for NEB hearings, 12 months for standard environment assessments)</li> </ul>
Reducing duplication and regulatory burdens	<ul style="list-style-type: none"> <li>o Allows provincial environmental assessments to be substituted for federal assessments</li> </ul>
Strengthening environmental protection	<ul style="list-style-type: none"> <li>o Enhancing inspection and safe navigation of oil tankers</li> <li>o Strengthening pipeline safety</li> <li>o Penalties for proponents of major projects who do not comply with conditions set out in the decision statements. The proposed penalties could range from \$100,000 to \$400,000</li> </ul>
Enhancing consultation with Aboriginal peoples	<ul style="list-style-type: none"> <li>o \$13.6 million over two years to provide funding for Aboriginal groups to participate in public hearings, support Aboriginal consultation</li> </ul>

## About the Authors



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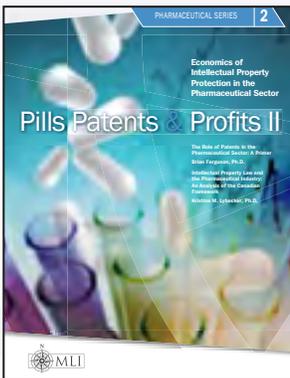
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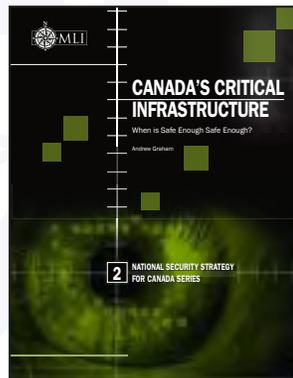
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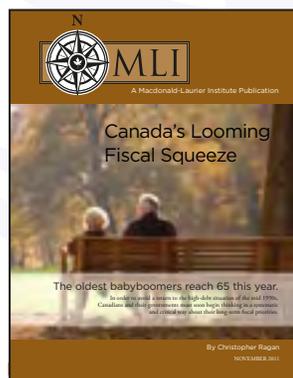
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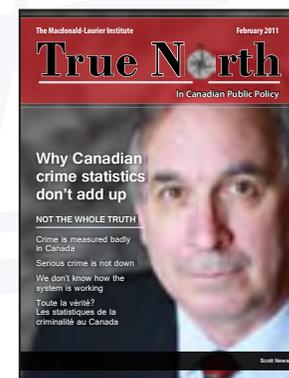
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