

The Petro-Path Not Taken

Comparing Norway with Canada and Alberta's
Management of Petroleum Wealth

Bruce Campbell





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ISBN 978-1-77125-045-0

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CAW 507
OTTAWA

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ACKNOWLEDGEMENTS

In Norway, I would like to thank Else Berit Eikeland, Norway's former Ambassador to Canada for encouraging me to learn more about the Norwegian experience and for funding my trip to Norway; and to First Secretary Kari Marjatta Hoel for organizing my trip.

I would also like to thank: at the Ministry of Petroleum and Energy, William Christiansen and Linn Johnsen; at the Ministry of Finance, Bjørn Geir; at the Ministry of Environment, Vedis Vik and her colleagues; at Gassnova, Bjørn Erik Haugan; and at Statoil, Hans Aasmund Frisak.

Thanks also to Stein Reegård at the Norwegian Confederation of Trade Unions (LO); to Tarjei Skirbekk and Signe Brudeset at the Labour Party; Tone Fløtten and Mark Taylor at the research institute Fafo; Leiv Lunde at the Fritjof Nansen Institute; and to journalist Kjetil Wiedswang.

Finally, I would like to thank Asbjørn Wahl from the Norwegian Union of Municipal and General Employees Union and International Transport Workers' Federation, and Helge Ryggvik from the University of Oslo.

In Canada, I would like to thank the following people for their comments on an earlier version of this paper: Angela Carter at the University of Waterloo; and my colleagues, Ryan Campbell, Trish Hennessy, Andrew Jackson, Seth Klein, Marc Lee, Jim Stanford and Armine Yalnizyan. Finally, thanks to CCPA's editor Ed Finn and graphic designer Tim Scarth.

For the ideas herein expressed and any errors and omissions I take sole responsibility.

5	Summary
12	Introduction
16	A Short History of Petroleum Development
	Norway
	Canada and Alberta
28	Managing the Petro Boom in Norway
	Appropriation and Distribution of Petro Wealth
	Social and Labour Relations Policies
35	Managing the Petro Boom in Canada and Alberta
	Appropriation of Petroleum Wealth
	Distribution of Petroleum Wealth
54	Management of Climate Issues
	Norway
	Canada and Alberta
63	Conclusion
70	Notes

Summary

HOW EFFECTIVELY HAS Canada — and its major petro-province Alberta — managed its petroleum wealth, compared with how Norway has managed its petro wealth? Acknowledging that major differences between the two countries often make comparisons difficult, this paper examines the Canada-Alberta experience using Norway as a benchmark. It asks: what lessons can be learned from the Norwegian experience?

Shortly after the discovery of oil in Norway, a strong consensus emerged among the political parties and across Norwegian society about how to manage oil wealth. This consensus was embodied in its “Ten Oil Commandments.” Based on the view that multinational oil companies needed to be controlled, the Norwegian state took on the central role as both regulator and producer. It brought in active industrial policies to create upstream and downstream industries related to petroleum. There was also consensus that its petroleum wealth should be appropriated by the state and distributed equitably within Norwegian society.

In Norway, the state has always been in the driver’s seat in determining petroleum development, owning 80% of oil and gas production and controlling the transportation infrastructure. In Canada, private interests — foreign and domestic — have dominated Alberta’s petroleum sector.

For the most part, Alberta governments favoured a *laissez faire* approach, with subsidies and tax/royalty breaks to encourage rapid petroleum exploitation, and an open-door policy to the oil multinationals. For a brief period, the government of Peter Lougheed adopted a more active approach: cre-

ation of a mixed petroleum enterprise with government and private sector equity participation, policies to develop upstream and downstream industries, and the creation of the Alberta Heritage Savings Fund to save a portion of its petro-revenues. These policies, however, were abandoned by subsequent Alberta governments.

The federal government, in the wake of the 1970s oil price shocks, adopted a similar approach to that of the Norwegian government. It created Petro-Canada and the National Energy Program (NEP) to increase Canadian ownership and the development of petroleum-related industries, and to appropriate a greater share of the petroleum wealth. The Alberta government, however, backed by the oil companies, strongly opposed this federal intervention into what it saw as its exclusive jurisdiction. There was constant tension about how best to develop the resource, about the relationship between the state and the oil multinationals, and about the sharing of petroleum revenues between the two levels of government and the companies.

The Mulroney Conservative government scrapped the National Energy Program in the mid-1980s, and subsequent federal governments, apart from providing billion of dollars in tax breaks, have played a passive role in shaping the petroleum sector ever since. To this day, they have refused to articulate a national energy policy.

The Norwegian state has maintained policy levers essential to managing its petroleum and other natural resources while Canada surrendered such key resource management levers under NAFTA.

Norway made effective use of active industrial policies to create domestic oil-related industries, from the construction of oil rigs to highly specialized instrument and drilling companies. The Alberta government provided financial and R&D assistance to develop the extraction processes used in the oil sands. Upstream and downstream industries, mainly in Alberta, have grown, but inputs – from heavy equipment to specialized instruments and computer services – are still provided mainly from the United States. Industrial linkages to the rest of Canada have been weak.

Norway, which prior to the discovery of oil had very high taxes, chose not to reduce and replace them as petro revenue grew. Alberta, on the other hand, reduced its taxes to the point where they are the lowest in Canada. This overdependence on fluctuating petro revenue has created fiscal volatility and given the oil companies additional influence within the government. It has also triggered a tax competition dynamic that puts pressure on other provinces to lower their taxes, thereby constraining their ability to provide public goods and services.

In Norway, the state has appropriated the vast majority — approximately 85% — of the net revenues from petroleum. In Canada and Alberta, however, the private sector oil and gas companies (domestic and foreign) have appropriated the bulk of the petro-wealth. The Alberta government has taken a smaller share of petro revenues than most other petro-states. And the government of Canada, since the mid-1980s, has taken a very small share in the form of general corporate income tax revenues, which themselves have been cut by half over the last 12 years.

The Norwegian state has been very effective in distributing the benefits of oil wealth throughout the population. This has occurred through a generous social welfare system and also through a fair and equitable labour relations system. Strong unions, free to negotiate centralized wage settlements, are an effective countervailing force to the power of large corporations. Unionization rates, wage inequality, and the relative shares of national income between labour and capital have remained stable. Coupled with a large progressive tax and transfer system, overall income inequality in Norway throughout the petroleum era, despite some slippage, has remained among the lowest in the world.

Petroleum revenues flowing into Alberta are recycled throughout the Canadian economy through federal-provincial fiscal transfers; through personal earnings in petroleum-related activities and income derived from stock ownership; and through inter-provincial trade. These mechanisms, as currently constructed, are recycling petro-dollars in a highly unequal manner. As such, they are increasing interpersonal (including within Alberta) and interprovincial income inequality and heightening social, economic, and political tensions within the Canadian federation.

Federal policies over the last 20 years have greatly weakened the ability of the interpersonal tax and transfer system to distribute income equitably. Policy changes — tax reductions, loopholes, and shelters favouring the richest income groups and corporations, including petroleum companies; cuts to health, education, and social transfers to provinces, and cuts to programs such as unemployment insurance — have produced the most rapid inequality growth in the industrial world, led by the extraordinary income gains of the richest 1%; it has made Canada amongst the most unequal countries in the OECD.

Alberta's level of inequality — one of the highest in Canada and vastly higher than Norway's — has grown during the petro-boom. Alberta's richest 1% have a much larger share of the provincial income pie than the one-

percenters' share of income nationwide. And there is an increasing concentration of the super-rich in Alberta.

Wage inequality in Canada has grown rapidly as the balance of power between labour and capital shifted steadily in favour of capital. This has produced a self-reinforcing cycle of declining rates of unionization and a declining workers' share of the national income. Policies such as the trade and investment liberalization agreements have contributed to the growth and mobility of the largest corporations. The explosive increase in corporate concentration over the last two decades has mirrored the growing income inequality driven by the income gains of the richest 0.1%, whose members come largely from the corporate elite and related professions.

Economic imbalances and divergences between Alberta and the non-oil-producing provinces have widened in the wake of the petro-boom. Alberta is rapidly distancing itself from other provinces in its revenue-raising capacity and its income per capita level, placing considerable strains on the federation. And the federal government is unwilling to counteract these trends by applying the principles of fiscal federalism embodied in the constitution.

On the contrary, the federal-provincial transfer system, which was damaged by federal cutbacks in the mid-1990s, has been further curtailed by the current government. It recently announced major cuts to health transfers. Its cuts to the equalization transfer program have made it far less able to fulfill its constitutional obligation to ensure that all provinces have sufficient revenues to provide a comparable level of public services at comparable levels of taxation. Alberta's fiscal capacity could reach 180% the national average in the next five years — more if oil sands growth continues at its current pace. The federal government has the responsibility and the power to mitigate this historic fiscal imbalance for the well-being of the federation.

As for interprovincial trade, declining international exports in the non-petroleum provinces have to some extent been offset by increased exports of services — mainly mining, engineering, financial and related services from central Canada — to Alberta. These internal trade shifts, however, have likely increased interpersonal inequality. Manufacturing workers who lost their jobs did not transfer into these high-income services jobs, but rather moved to lower-income and often temporary jobs, if they could find them. Many could not, and remain jobless.

Norway managed to stabilize its domestic economy in the face of fluctuating petroleum prices and revenues, initially through incomes policies made possible by a consensus-oriented collective bargaining system in which unions and companies worked out wage settlements that kept pet-

roleum and public sector wages in check, ensuring that wages in non-oil export industries did not get out of line with their international competitors.

In 1990, the Norwegian government created a petroleum fund into which it began making deposits in 1996. Now called the *Government Pension Fund Global*, it receives all petroleum revenues and invests them abroad. Only the return on these investments is put back into government coffers. The Fund plays a stabilizing role, insulating the domestic economy from overheating during boom times, and protecting against the negative effects of oil busts. The outflow of capital to the Fund stabilizes the exchange rate during booms, thereby mitigating potential “Dutch disease” effects on non-petroleum export sectors.

The Fund, now the largest sovereign wealth fund in the world with over \$664 billion in assets, converts oil wealth to financial wealth, ensuring that pensions and social welfare benefits of an aging population can be sustained into the future when the oil runs out.

In Alberta, the Heritage Savings Fund was created in 1976 with goals similar to those of the Norwegian fund. However, the commitment to put a share of oil wealth into the fund was soon broken, and since the mid-1980s it has received only minimal infusions. Currently, it contains only about \$16 billion, just 2% of the revenue the Norwegian petroleum fund has amassed and a miniscule share of the oil revenues that have flowed into Alberta over the last 35 years.

During the current petro boom, Norway has maintained low inflation, moderate growth, and close to full employment. It has also maintained a stable exchange rate with its most important trading partner, the European Union. Throughout, it has registered huge trade and current account surpluses.

In Canada, growth has been moderate and inflation has remained low, though with considerable variation between the petroleum and non-petroleum-producing provinces. Unemployment rose in the wake of the financial crisis and remains high. In contrast to Norway, the Canadian dollar has risen dramatically against the U.S. dollar and also against the Chinese yuan. This has wreaked havoc with export manufacturing, resulting in a huge loss of output and jobs in a very short time.

Employment gains in petroleum extraction plus direct and indirect employment spinoffs, have been outweighed by employment losses in non-petroleum industries and losses in related spinoff activities. The decline in productivity in the petroleum sector has dragged down Canada’s overall

productivity growth, which during the last decade was amongst the worst in the OECD.

Within a decade, the composition of Canada's exports has undergone an historic shift: from a country with a diversified export base the majority of which were value-added products, to an exporter of predominately unprocessed and semi-processed goods. With shrinking manufactured exports, Canada's traditional merchandise trade surplus has turned into a deficit. Without Alberta's huge trade surplus, it would be much larger. With the exception of the U.S., Canada has trade deficits with its major trading partners. It also has registered large current account deficits (goods, services, and investment income) since 2008.

Oil and gas price fluctuations have caused wide swings in Alberta's GDP, inflation, and revenue base, resulting in fiscal deficits and cuts to its social programs and public infrastructure during bust periods. The current petro boom has raised Alberta's inflation rate well above the Canada average. Economic growth and unemployment, on average, have been significantly lower than the Canadian average, although with wider fluctuations. Its merchandise trade surplus ballooned throughout the boom, falling back only briefly during the recession.

Both countries are trying to cope with the influx of foreign workers. Norway is trying to incorporate these workers into Norwegian society but its unions are having difficulty organizing these workers. There are measures in place to limit downward pressure on wage levels from low-wage competition. The influx is creating an underclass of workers and more low-status jobs, and giving rise to anti-immigrant sentiment in some segments of the population.

There has been a huge influx in temporary foreign workers into Canada, especially Alberta, surpassing the number of permanent resident workers entering through traditional immigration. Canada, as a multi-ethnic country, has not seen the same degree of anti-immigrant reaction as has the more ethnically homogeneous Norwegian society.

There is evidence, however, that the federal Temporary Foreign Worker (TFW) program is part of an effort by the federal and Alberta governments to suppress wages. The TFW program facilitates employers' use of vulnerable and compliant foreign workers, and, along with changes to the employment insurance program, is forcing Canadian workers into competition with them to keep wages low. This is a factor driving inequality and poverty in both Alberta and in Canada as a whole.

Both Norway and Canada are among the world's largest petroleum producers and exporters, and thus major contributors to greenhouse gas emissions on the planet. However, there are huge differences in how the two countries are dealing with this dilemma. Norway is a leader in carbon emissions reduction, both at home and internationally. Under the Copenhagen Accord, Norway's carbon reduction targets are the most ambitious in the industrial world. It has plans to become carbon neutral by 2050, possibly earlier, and is contributing to international efforts to encourage the transition to a low carbon world.

The Canadian government and its counterpart in Alberta are climate skeptics. Their plans to reduce carbon emissions are embarrassingly inadequate and rely heavily on unproven – and as yet not economically viable – carbon capture and storage technology. Despite tepid rhetorical support, their actions reveal that they do not view carbon emissions reduction as a high priority when compared to bitumen development. Canada has broken its Kyoto commitments and will not likely meet its much weaker Copenhagen commitments. It refuses to put a price on carbon and its regulations on the industry are weak, postponed into the future, and easy to avoid. It has gutted the federal environmental review process to facilitate rapid resource and pipeline development.

Canada is a complex nation: vast, decentralized and with powers divided between federal and provincial governments. The scope for applying the lessons from Norway is constrained by the institutional, structural, and cultural differences between the two countries. Nevertheless, Canada's experience in managing its petro wealth, compared to Norway's, is clearly the path not taken, and lessons can be drawn from the Norwegian experience.

For years, foreign and domestic petroleum interests have appropriated a disproportionate share of the petro-wealth in Alberta and blocked effective carbon reduction measures. It is time for Canadian governments to heed the Norwegian experience and gain control of its petroleum industry.

It is time for governments at both levels to recognize that inequality and climate change issues can only be solved through collective action, which is to say, through bold public policy initiatives. Failure to act will only exacerbate tensions within the federation and ultimately could create a national unity crisis. It will also hasten Canada's arrival at the climate cliff.

The paper ends with a set of preliminary measures that could help put Canada on the right path.

Introduction

PETROLEUM IS A resource unlike any other. It is the world's most strategically important and valuable resource. The world is dependent on fossil fuels for 80% of its energy.¹ Petroleum is also threatening life on the planet.

Countries that have petroleum in abundance would, one would think, be fortunate indeed. However, for many countries so endowed, historical experience shows that oil has been at best a mixed blessing. As a young graduate student doing research on the impact of oil wealth in Venezuela, I encountered Juan Pablo Perez Alfonso, who as Venezuela's petroleum minister was the driving force behind the creation of OPEC (the Organization of Oil Exporting Countries). Although I was initially very surprised when he described oil as "the devil's excrement," I eventually came to understand the wisdom of his words.

A large body of research has found that the vast majority of the 30 petro states — those which are highly dependent on petroleum for 50% or more of export revenues, 25% or more of GDP, and 25% or more of government revenues — have experienced worse economic, distributional, and political outcomes than non-resource rich countries.² But this is not a predetermined outcome, as will be seen from Norway's example.

How effectively has Canada and its major petro-province Alberta managed its oil and gas wealth? How does it compare to Norway in avoiding what has been a curse for many oil-rich countries.

Canada, especially since World War II, has built a large and diversified economy on its vast resource base. As a mature democracy, with well-de-

veloped economic and political institutions, Canada is well positioned in this regard. However, Canada, unlike Norway, is a federal state in which primary ownership of resources resides with the provinces.

Conceding that major differences between the two countries often make comparisons difficult, this paper will examine the Canada-Alberta experience using Norway as the benchmark.

Norway, with a population of five million, is a major petroleum producer and exporter. It is currently the 14th largest oil producer in the world (2.2 million barrels per day) and the sixth largest oil exporter (2.0 million barrels per day).³ Domestic consumption is a miniscule 0.22 million barrels per day. Norway is currently the world's sixth-largest gas producer (106 billion cubic metres per year) and the second-largest gas exporter (100 billion cubic metres per year).

Petroleum figures prominently in the Norwegian economy, accounting for almost half of its exports, 25% of government revenues, and 21% of its GDP.

Canada is also a major producer and exporter of oil and gas. It is the world's sixth largest oil producer (3.4 million barrels per day) and the world's ninth largest oil exporter (1.9 million barrels per day). However, Canada is also a major importer of oil (1.1 million barrels per day), making its net export position much smaller.

Canada is the fourth-largest gas producer (152 billion cubic metres per year) and the world's fourth largest exporter (92 billion cubic metres per year).

Oil and gas accounts for about 3.5% of Canada's GDP and 18.5% of its merchandise exports, double its share in 2002. It accounts for almost 30% of Alberta's GDP and 70% of its exports. Canada, uniquely, is also a major importer of oil, with Quebec and the Atlantic provinces dependent on foreign oil for more than 80% of their needs.

Norway's economy is one-quarter the size of Canada's, and roughly two-thirds larger than Alberta's economy.

Both Norway and Canada are part of economic blocs to which most of their oil and gas exports go. Over 90% of Norway's exports go to EU countries, and virtually all of Canada's petroleum exports go to the U.S.

Norway is not a full member of the EU, but has associate status as a member of the European Economic Association. Norway's entry into the EU was defeated in two national referendums — in 1972 and 1994. A major reason for Norway staying out of the EU was that its national regime for managing its offshore resources — notably petroleum and fish, is inconsistent with EU rules on competition.

Canada, as a member of NAFTA, has accepted crucial limitations on its ability to manage its petroleum resources in a deregulated continental market. Under NAFTA, it also gave up policy tools to encourage upstream and downstream development of petroleum-related activities.

Norway is a rare exception, having largely escaped the resource curse that has afflicted so many petro-states. Norway stands on top of the latest United Nations Human Development index, which brings together economic indicators, level of education, and life expectancy. Canada, once ranked number one, now ranks number 6.⁴ When adjusted for inequality, however, Norway remains number one, but Canada slips further to 12th position.

The UK *Economist's* Intelligence Unit ranked Norway number one in 2011 on its democracy index, based on a number of criteria: election freedom and fairness, security of voters, influence of foreign powers on government, capability of civil servants to implement policies. Canada was ranked number 8.

Norway ranked 3rd on Yale University's Environmental Performance Index, which ranks countries based on a range of policy areas, from water and air pollution, to biodiversity and climate change. Canada was ranked 37th.

Due to a unique combination of factors, Norway has managed its oil wealth extraordinarily well. The voluminous research on petro-states confirms the overriding importance of government policy and institutions in determining a country's success (or failure) in managing its oil wealth. Good policies and good institutions, as we shall see, are the hallmark of the Norwegian experience.

Alberta resembles Norway in several ways. With a population of 3.7 million, it is by far Canada's largest petroleum province. It accounts for over 70% of Canada's oil and gas production, a share that will grow close to 80% by 2020 as bitumen production ramps up.⁵ Alberta's prominence as a petroleum producer – with its vast bitumen reserves (the third largest in the world after Venezuela and Saudi Arabia) and rapidly expanding production – will only grow in the future.

Alberta currently produces 2.2 million barrels of oil per day. Oil sands production, most of which is exported to the U.S., accounts for more than three-quarters of the total. Production has doubled over the last eight years to 1.6 million barrels per day (bpd) in 2011. It is projected to double again to 3.2 million bpd by 2020, and to reach 5 million bpd by 2030.⁶

While Canada falls well below the standard petro-state threshold, oil and gas accounts for 29% of Alberta's GDP, 70% of its exports, and 28% of government own-source revenues. Thus, Alberta most definitely qualifies as a petro state.⁷

But of course Alberta is not a sovereign state, but rather a province within the Canadian federation. The impact of petroleum does not end at the Alberta border, but affects the whole of Canada and beyond. Thus, how petroleum wealth is managed is a major national issue with potentially huge political, economic, social, and environmental consequences.

The Canadian constitution (with some exceptions) assigns ownership of petroleum and other natural resources to the provinces, giving them substantial control over the nature and pace of oil development. However, the federal government has economic and environmental regulatory powers that affect the nature and pace of oil development. It is also responsible for climate policy due to the extra-provincial – indeed global – impact of carbon emissions, and as such has responsibility for signing and enforcing climate treaties.

Furthermore, the federal government has responsibility under the Constitution to ensure that disparities in fiscal capacity among the provinces are minimized. In fulfilling its redistributive role, it is empowered to tax oil companies under the general corporate tax regime or impose specific oil company taxes.

There is nothing inherently good or bad in having access to petroleum, or any other resource. It is what nations do with it that matters. The challenge for petro-states is to overcome, mitigate, or convert their wealth's potentially distorting social, political, economic, and environmental effects. Their success in this regard will determine whether and to what extent oil is more a blessing than a curse.

A Short History of Petroleum Development

Norway

Key to Norway's success in managing oil wealth were a number of pre-existing conditions: a stable and deeply-rooted democracy with well-developed political institutions, a technically competent and honest bureaucracy, a deeply egalitarian culture, and a highly engaged citizenry. Prior to the discovery of oil, Norway had an advanced and diversified economy based mainly on agriculture, forestry, fishing, shipping, and manufacturing. Unemployment was low. One of the most equitable societies in the world, it had a generous welfare system supported by a large and diversified tax base.

Norwegians have traditionally had high levels of trust in government, combined with an underlying distrust of foreign corporations. Norway has had a long political tradition of dealing with large foreign companies and a legal framework in place dating back to its experience in earlier times with hydropower.

Ownership of Norway's petroleum resources resides with the Norwegian state to manage on behalf of its citizens.

Following the discovery of the giant Ekofisk field in 1969, there was extensive public debate to determine how best to manage its newfound oil wealth. Underlying the debate was a concern with avoiding the negative effects of oil development. Norway had a highly effective system of consensus

The Ten Oil Commandments

1. There should be national governance and control of all petroleum operations.
2. Norway should become self-sufficient in oil.
3. New industrial sectors should be developed based on petroleum.
4. Petroleum development must take existing industries and environmental protection into consideration.
5. Usable gas should not be burnt off.
6. Petroleum from the offshore should as a general rule be landed in Norway.
7. The state should be involved at all levels in the coordination of Norwegian interests, including an integrated oil industry.
8. A state oil company should be established.
9. Production activities in the North should take account of its special conditions.
10. Close attention should be paid to the foreign policy implications of oil discoveries.

building in which labour, business, farmers, fishers, and environmentalists engaged with the government and each other on oil development priorities.

Coming out of this debate, the parliamentary industry committee produced a seminal report in 1971, broadly supported by the public, which laid down the guiding principles for managing its petroleum resources. Adopted unanimously by the Norwegian parliament, they became known as the Ten Oil Commandments, whose overriding purpose was to ensure that oil would be developed for the benefit of the entire Norwegian society.

A 1974 Ministry of Finance white paper concluded that control over the pace of oil development was essential to ensure that impacts didn't outstrip Norway's adjustment capacity. And getting control required the development of Norwegian technological expertise to ensure that elected politicians had an independent information source on which to base management of the industry.

The white paper specified that the state would seek to secure the greatest possible share of the oil rent for the state, which would then be distributed in an egalitarian way across Norwegian society and for future generations. It also stated that control of the oil industry was as important as, and inseparable from, maximizing its share of the oil rent. The newly created

state oil company, Statoil, would become not only an operator, but also involved in all stages of oil production, from upstream exploration, to refining, to petrochemicals, and to retail.

A key component of Norway's success in managing its petroleum has been the clear separation of powers between parliament (legislative), the Ministry of Petroleum and its Petroleum Directorate (regulatory), and Statoil (operational). The Ministry of Petroleum has overall responsibility for managing petroleum resources in accordance with the mandate established by the Parliament.⁸

A highly skilled and honest state bureaucracy was able to bargain effectively with the oil industry.⁹ In the early days, the goal was to get the multinational oil companies to commit themselves to as much exploration as possible. Conditions were made very favourable for the oil multinationals. The legal framework was sufficiently flexible that it could be adapted to changing conditions. After the Ekofisk discovery, the government toughened its bargaining position.

Officials understood that the only way Statoil could stand up to the power of the multinational oil companies was by building an independent technological capacity. They knew that it would not be possible to secure a high share of the economic rent if it did not have a technologically skilled Statoil in reserve, which could take over if the multinationals were to leave.

Statoil was given privileged access to the oil fields in a way that concentrated initial investment and risk with the multinational oil companies while giving a large share of the benefit to Statoil. It was partnered with the oil companies in almost all licence groups, which provided the opportunity to accelerate its technical competence.

Statoil played a key role in developing the Norwegian industry. Its investments in technology accelerated the development of the Norwegian supply industry. It prioritised technology and innovation over short-term profit maximization, which contributed significantly to the development of a high value-added domestic industry in oil services.

When the Ministry of Finance moved to increase taxes in the wake of the OPEC oil price hike, the companies protested. "The [companies] were furious when they heard about the new taxation law. And then they started a media campaign saying that they would leave Norway and that it was impossible to work in a socialist country like this that does not understand the rules of international capitalism."¹⁰ Despite company threats, the Ministry held firm, judging that, as long as they were securing profits at least

as high as other industries, they would not leave. And in case they did, Statoil would be available to take over.

The rapid growth of Statoil in the 1970s and 1980s raised concerns that it was becoming a “state within a state.” Parliament established an independent *Petroleum Directorate*, reporting to the Ministry of Petroleum, as a counterweight to Statoil: to administer the resource, regulate the work environment and safety issues; support the development of a national supply industry; and provide independent technological expertise.¹¹

The most important limitation on Statoil’s dominance was the creation in 1985 of a government entity called the State’s Direct Financial Interest (SDFI), which divided the government stake in petroleum production into two parts. More than half of Statoil’s interests in oil and gas fields, pipelines, and other facilities were transferred to SDFI. Revenues from SDFI shares were channeled to the state (since 1990 to its sovereign wealth fund), thereby limiting Statoil’s cash flow.

SDFI pays a share of all costs in projects where it is involved, and receives a corresponding share of the revenues. The SDFI portfolio is composed of production licenses for exploration, fields under development and in production. It is a major owner of pipelines and onshore facilities. In 2001, Petoro, a state agency funded directly from the state budget, was created to manage SDFI assets, a role which had previously been done by a group within Statoil. At the beginning of 2011, SDFI had an ownership interest in 147 production licenses as well as 14 joint ventures for pipelines and onshore facilities.

Over time, the government granted Statoil increased autonomy, with the ability to operate as a commercial entity, and expand internationally. In 2001, Statoil became a publicly traded company, with the state retaining a 67% ownership share.

In 2009, the government merged the oil interests of another state-owned company, Norse Hydro, into Statoil. The Norwegian state, through Statoil, currently owns 80% of petroleum production in Norway.¹² The multinational corporations have been operating profitably in Norway from the beginning. They are just not in control.

Statoil is active internationally, with interests in 41 countries. Still, international production accounts for only 7% of net operating income.¹³ In North America, Statoil has a significant stake in the Marcellus shale gas project in Pennsylvania, as well as investments in the Alberta oil sands¹⁴ and the Newfoundland and Labrador offshore. Its oil sands investments have raised considerable criticism in the Norwegian Parliament and within Norwegian

society. However, following its policy not to directly interfere in Statoil's commercial choices, the Ministry of Petroleum, with backing from the government, voted down a shareholder resolution that would have instructed Statoil not to invest in Alberta's oil sands. In protest, the Norwegian church sold its shares in Statoil. The Sami indigenous peoples parliament and several political parties have called for Statoil to pull out of the oilsands.

Industrial Policy

Active industrial policy was decisive in achieving the goals of creating a Norwegian supply industry. A 1972 Norwegian content decree required that, where they were economically competitive, Norwegian goods and services were to be preferred. Companies would use Norwegian workers where possible. Clear signals were sent to multinationals that, if they did not raise their share of Norwegian contractors, they would be punished in future rounds of oil concessions.¹⁵

The government also supported enhanced education and training and the creation of research institutions to support the Norwegian companies. The Norwegian educational system quickly adapted to meeting the needs of the new industry.

The Norwegian regulatory regime also favoured Norwegian companies. Foreign firms had to accept the tripartite relationship between the unions, employers, and the state. Contracts had to be written in Norwegian, which also had to be the working language on the platforms. Health and safety regulations mandated joint decision-making between the workers and the companies, giving workers an active role in shaping the technology.

Statoil secured agreements giving engineering tasks to start up Norwegian engineering firms in joint-ventures with American companies.

The Norwegian shipping industry was uniquely placed to benefit from the offshore oil industry. It had the shipyards, the skilled workers and engineers. Its capital and technological base was easily convertible. Companies adapted their production to the construction of oilrigs — a peculiar type of ship. Moreover, the Norwegian fjords were well located for producing the concrete underwater structures.

Government control of oil production provided the leverage which also enabled the development of downstream Norwegian controlled sectors, such as refining and chemical products.

The Norwegian industry providing specialized goods and services to the petroleum industry has become very active worldwide. From 1995 to 2009,

its international sales increased fivefold, mainly in China, Southeast Asia, and Australia. More than half its earnings are derived from international markets.¹⁶

When Norway joined the EU internal market via the European Economic Area (EEA) agreement in 1994, it was forced to repeal its content laws, but by that time the industry was well established.

Canada and Alberta

The Canadian constitution assigns ownership of natural resources to the provinces.¹⁷ The federal government has ownership over the resources in national parks, northern territories, and offshore waters. It holds land in trust on behalf of First Nations, which have powers of review and approval of projects on their lands.

The federal government has jurisdiction over inter-provincial and international trade, as well as international treaties. It has a regulatory responsibility for protection of fish and fish habitat in inland waters, as well as pipeline approvals and regulation. Federal regulatory involvement extends to major projects under provincial jurisdiction that have significant external impacts. However, federal governments have not since the mid-1980s played an active role in determining energy policy.¹⁸ And as we shall see, the Conservative government, with its 2012 budget, has deeply compromised federal regulatory responsibilities.

Alberta governments, with limited exceptions, have taken a selective *laissez-faire* approach to the oil industry. They have rejected the idea of public ownership, opting instead to let the private sector and especially foreign petroleum companies drive development. Their strategy has been to create a favourable investment climate, through large subsidies including low taxes and royalties, a variety of tax breaks, and direct financial assistance. Minimal labour market and environmental regulation has also helped to spur rapid oil exploitation.

The federal government's National Oil Policy (1961) sought to support the development of a Western Canadian oil industry through a variety of tax and regulatory measures. Moreover, it formally decreed a dividing line whereby consumers east of the Ottawa River would be supplied by imported oil whereas those from Ontario west would be required to buy higher-priced Alberta oil. The policy kept Eastern Canada dependent on imported oil, while expanding exports of Western Canadian oil to Ontario and the

United States. The quid pro quo was the continuation of refining capacity and petrochemicals in Ontario. By ending Ontario's ability to import, it increased the price of Alberta's oil.¹⁹

Foreign (mainly U.S.) multinationals dominated the Canadian oil industry. In 1972, at the outset of a tumultuous petroleum decade, they accounted for 79% of Canadian oil and gas revenues, 84% of the profits, and 75% of industry assets.²⁰ In that year, Canadian oil production averaged 1.8 million barrels per day, 50% of which was exported to the U.S. Natural gas production was 180 million cubic metres per day, 40% of which went to the U.S.²¹

The Lougheed Conservative government took a more active approach to the oil industry than its Social Credit predecessor. It created the mixed enterprise *Alberta Energy Company*, with equal ownership between government and private investors. It took fiscal and regulatory measures to develop a domestic petrochemical industry. Until 1976, the government reserved a 50% share of oil discoveries for the Alberta Energy Company.

In response to the 1974 quadrupling of oil prices by the OPEC cartel, the federal government brought in national price controls and export restrictions to shelter domestic producers and consumers, and enhance domestic energy security.

In 1975, it established the state-owned corporation *Petro Canada*. Its purpose — motivated by the same concerns as the Norwegian government of the time — was to give the federal government a “window on the oil industry” that could provide it with an independent source of information and technical expertise with which to engage with the multinational oil companies.

In response to the second OPEC price shock, the federal government brought in the *National Energy Program* (NEP) in October 1980. The NEP represented a major expansion of federal involvement in the petroleum sector. It had a number of objectives: to ensure Canadian energy security/self-sufficiency; to increase Canadian ownership of the petroleum industry to 50% by 1990 (from 25% in 1980) through the expansion of both Petro Canada and privately-owned Canadian companies; and finally, to capture a greater share of the petroleum windfall, at the expense of both the companies' and the province's share. In the wake of the OPEC price hike, the influx of oil revenue had swelled Alberta's revenue-raising capacity to twice the Canadian average.

This objective would be achieved through a system of taxes and incentives. Petro Canada was mandated to take over foreign firms and to become a vertically integrated company controlling a network of pipelines, refineries, and retail outlets, and to develop a domestic petrochemical industry.

By tying Canadian purchasing requirements to licenses on federally owned lands, the NEP also sought to capture more of the oil supply activities — provided mainly from the U.S. — for Canadian companies.

The NEP was similar to the Norwegian approach as reflected in that country's "Ten Oil Commandments." The difference was that in Norway there was a broad consensus on how to manage its oil wealth. In Canada, there was no such consensus. The federal government had a weak political base in Alberta, where opposition to federal intrusion was widespread.

The net effect of the NEP was to increase the federal government's share of petroleum revenue from 10% to 36%, and reduce the provincial and industry shares from 45% each to 36% and 28%, respectively.²²

The program created severe tensions in federal-provincial relations and encountered fierce resistance from the foreign-controlled oil industry, as well as from the U.S. government. At one point, the Alberta government cut oil shipments to other provinces. The Alberta business elite, which had never warmed to the idea of Petro Canada, was intensely hostile to the NEP. Eventually, however, the two levels of government reached a revenue-sharing agreement.

The 1981–82 global recession and worldwide oil surpluses caused prices to tumble, greatly undermining the NEP's strategy. Though virtually all oil-producing nations were experiencing economic hardship, the NEP's opponents in the oil patch and the Alberta government were quick to blame the price collapse and the Alberta recession on the NEP. They proceeded to push hard for its elimination and whip up anti-Ottawa sentiment.

At the time of the NEP's termination in 1985, foreign control of the petroleum industry, though still dominant, had fallen to 58% of revenues, 68% of profits, and 38% of Canadian oil and gas industry assets.²³ While oil and gas production remained at basically the same level compared to 1972, the share of total oil production exported to the U.S. had fallen to 20%, and gas exports to 28%.²⁴

The Mulroney Conservative government moved quickly to deregulate oil and gas prices. By 1985, it had eliminated taxes and other restrictions on exports, special taxes on the petroleum industry, preferential fiscal incentives for Canadian companies, and restrictions on foreign ownership. In 1990, Petro Canada was instructed to have a strictly commercial mandate and eventually was fully privatized. The federal government sold off its last 19% share of PetroCan in 2004. The company was taken over by Suncor four years later.

To ensure that no future government could ever implement another NEP, and that the pattern of continental integration of the petroleum mar-

ket would not be altered, the Mulroney government entrenched in the 1989 Canada-U.S. free trade agreement (replicated in the 1994 NAFTA) provisions eliminating the ability of future governments to levy export taxes or price controls. It inserted a “proportional sharing” requirement which obligated Canada, should it decide to reduce production, to maintain the same ratio of U.S. export volumes to domestic production. If Canada faced an external supply disruption, it could not redirect production to domestic consumers, as it did during the 1973 Arab oil embargo. For a country that, besides being a major oil exporter is also a major oil importer (mainly from insecure or declining sources), this was a major surrender of sovereignty.

Currently, the NAFTA proportionality clause is being used by a U.S. company, Tesoro, to challenge Chevron’s request to the National Energy Board for its refinery in Burnaby, B.C. to be declared a “priority destination” to ensure it has an adequate supply of oil via the Kinder Morgan pipeline. Tesoro argues that, under NAFTA, Canada cannot give priority to a Canadian refinery — that it must be equally available to American companies.

NAFTA also prohibited a number of policy tools such as the ability to favour Canadian-owned companies, and impose performance requirements on U.S. and other foreign companies in areas such as technology transfer, employment, domestic content, etc. However, it left untouched governments’ ability to provide subsidies to the oil and gas industry.

At the provincial level, the Klein government dismantled the government controls put in place by the Lougheed government, fired economic analysts at the energy and environment departments, stopped royalty allocations to the province’s Heritage Fund, and sold off the Alberta Energy company.

Continental petroleum integration proceeded rapidly in the years that followed. Aided by the rapid development of the oil sands, Canada had by 2003 become the largest foreign supplier of oil and gas to the U.S. The construction of pipelines to supply to the U.S. market replaced the idea of expanding pipelines to Eastern Canada, still largely dependent on imports. Supplying U.S. energy security needs took precedence over ensuring Canadian energy security.²⁵

Currently, two-thirds of Canada’s rapidly expanding oil production and 60% of its gas production is exported, virtually all to the United States. Oil sands output reached 1.6 million barrels per day in 2011 — more than half of Canadian oil production. It is projected to grow to 3.2 million barrels per day by 2020 and reach 5 million barrels per day by 2030.²⁶

At the same time, Canadians depend on imported oil for more than half of their consumption. Ontario imports more than one-third of its oil.²⁷ East-

TABLE 1 Oil And Gas Extraction and Support Activities, Foreign Control %

	Assets	Operating Revenue (Sales)	Operating Profits
2010	35%	51%	47%
2001	49	51	48
1999	39	54	73
1988	55	58	51
1985	38	58	68
1980	54	73	61
1975	69	77	80
1972	75	79	84
1969	71	74	75

Source Statistics Canada, CALURA reports: Major Financial Characteristics of Corporations in the Petroleum and Natural Gas Industries, 1969-70, 1971-72, 1974-75; Major financial Characteristics of Non-Financial Corporations, by country of control and 33 industries, 1980-84, 1985-86, 1987-88; Corporations Returns Act 2010, Oil and Gas Extraction and Support Activities

ern Canada — i.e., Quebec and the Maritime provinces — import over 80% of their crude oil.²⁸ The rest comes from the Newfoundland and Labrador offshore.²⁹ Imports come mainly from the Middle East, U.K., and Norway. Middle East countries are considered either politically moderate risk or high risk in terms of supply disruption. While the U.K. and Norway are politically low risk, their oil production has peaked and is on the decline, calling into question their ability to continue to supply Eastern Canada in the long term.

Control of the Canadian petroleum industry remains firmly in private hands. Foreign state-owned company investments, which are concentrated in the oil sands, account for 10% of oil sands assets. Chinese company investments are projected to grow rapidly over the next decade.

According to the latest figures from Statistics Canada, foreign firms held 51% of the operating revenues, 47% of the profits, and 35% of the assets of the Canadian oil and gas industry. However, these figures understate the extent of foreign control. A May 2012 report from *Forest Ethics* on foreign control and ownership in the oil sands, using data from Bloomberg Professional, found that, although foreign headquartered companies were foreign-owned, Canadian headquartered companies were also majority foreign-owned; and 71% of all oil sands production was owned by non-Canadian shareholders.³⁰

Over the last decade, \$61.5 billion in investment in the form of takeovers flowed into the oil sands — one-half by foreign companies.³¹ Two-thirds of oil sands foreign investment since 2003 was by American and Chinese companies — each taking a one-third share. The French company Total accounted

for 18% and Norway's Statoil, which acquired North American Oil Sands Corporation for \$1.9 billion in 2007, accounted for another 6%. Foreign investment inflows to the oil sands peaked in 2010 at \$11 billion falling to \$2 billion in 2011.³²

The U.S. share of oil and gas foreign direct investment in Canada fell from 76% in 2005 to 51% in 2011. Asian countries now account for 27.5% of the FDI stock, and Europe's share has grown to 13.5%.³³

The Bush administration made the development of the oil sands a central pillar of its plan for reducing oil imports from the Middle East and South America. Politicians and business leaders on both sides of the border have talked exclusively of continental (not Canadian) energy security. Presidential hopeful Mitt Romney also campaigned on a strategy of "North American" energy independence, which relied heavily on bitumen from Canada.

U.S. governments have been apprehensive about Chinese encroachment in the oil sands. In an interview with author William Marsden, former premier Peter Lougheed recounted a meeting with a U.S. Cabinet Secretary who told him that under NAFTA Canada could not send its oil to China. When Lougheed told him he was wrong, the Secretary became visibly upset and reported back to Washington that China and others could become major competitors for Alberta bitumen.³⁴

After a long delay, the Harper government, amidst widespread public opposition, approved the \$15.4 billion takeover bid of the Canadian-owned Nexen corporation by the Chinese state-owned enterprise (SOE) CNOOC. This purchase is a key part of its plan to ship raw bitumen to China. Up to now, Chinese companies had taken only minority interests in oil sands ventures. The Alberta government supported the deal as did its shareholders and most of the industry. Their embrace of this and other SOE takeovers is ironic given their longstanding hostility to the notion of a Canadian state-owned enterprise

Anticipating that this may be the first of several bids for control of Canadian bitumen companies by Chinese state-owned enterprises, Prime Minister Harper stated that his government was pretty much shutting the door to future SOE takeovers, leaving it open a crack for approval only in (undefined) "exceptional circumstances;" to be determined on a case-by-case basis. At the press conference announcing the government's decision, Harper said that the trend of increasing SOE control of the oilsands had gone far enough, and that further state control would not be of net benefit to Canada. This decision will no doubt be of some comfort to the U.S. government alarmed by growing Chinese intrusion into what it sees as America's energy preserve.

TABLE 2 Comparing Norway and Canada-Alberta: Management of Petroleum

Norway	Canada-Alberta
Strong societal consensus from the outset embodied in its “ten oil commandments.”	No consensus and much conflict between the federal and Alberta governments about how to manage petroleum resources.
National public ownership and control of all aspects of oil production and distribution.	“Open door” to multinational oil companies. Let the private sector take the lead, with government providing subsidies and tax breaks to encourage resource exploitation. Foreign ownership very high. Federal and provincial ownership and control initiatives only in the Lougheed and Trudeau era—1974 to 1984.
Maintained key policy tools to manage its resources.	Surrendered key policy tools under the Canada U.S. free trade agreement and NAFTA.
Active industrial policies to encourage linkages to upstream and downstream petroleum related activities.	Active industrial policy measures, both federally and provincially, until the mid-1980s; since then they have been passive (subsidies, tax breaks, R&D assistance, etc.).
State-owned oil company, Statoil, dominant player in the development of the oil industry.	Provincial and federal initiatives to develop state ownership did not last. Eventually private interests and their political allies defeated these initiatives. Petro Canada was fully privatised.
National oil self-sufficiency was quickly achieved.	Eastern provinces forced to import oil even as exports to the U.S. expanded rapidly. Today they import more than 80% of their oil consumption.

Meanwhile, foreign private corporations are free as always, with minimal government interference, to buy up Canadian controlled companies in this sector and throughout Canadian economy. In fact, accompanying the Nexen announcement the government raised the threshold for reviewing private corporate takeover bids from \$330 million to \$1 billion.

Nothing in the government’s recent changes to the foreign investment review process would have prevented the massive foreign sell-off several years ago of the commanding heights of the Canadian mining and metal fabrication industry, or prevented Canadian high-tech champion Nortel from being carved up and sold off in pieces.³⁵

In conclusion, it bears repeating that Canadian governments, since the mid-1980s, have withdrawn from active policy involvement in the petroleum industry, and to this day have refused to articulate a national energy policy.

Managing the Petro Boom in Norway

BY STANDARD MACRO-ECONOMIC measures, Norway is managing very well through the petro-boom, which began in 2002 and (with a brief break in 2009) continues to this day.

GDP growth has averaged 1.4% – fluctuating between 3.9% and minus 1.4% – during 2002–11. Inflation has been low and relatively steady at an average annual 1.9%, fluctuating between 2.4% and 0.5%. The kroner-euro exchange rate (the EU being its main trading partner) has remained stable, with minimal fluctuations during this period.

Norway's unemployment rate until 2008 averaged 3.5%, and actually fell to 3.3% in the three years following the global economic crisis. Its trade surplus grew from US\$28 billion to US\$82 billion in 2008, then fell back to US\$46 billion in 2009. Throughout this period, Norway has maintained a huge current account surplus, ranging from 12% to 18% of GDP.

Thanks to its sovereign wealth fund – currently over US\$664 billion³⁶ and rising – the Norwegian government has no net debt, but rather a mas-

sive net surplus (assets minus liabilities), which has grown from 81% of GDP in 2002 to 157% of GDP in 2011.³⁷

Norway historically has dealt with oil revenue fluctuations through incomes policies. During the economic instability of the 1980s and 1990s, the *Solidarity Alternative* of wage restraint sought to maintain high employment levels, increase profitability in sectors exposed to foreign competition, and improve the current account balance, while a fixed exchange rate band sought to keep inflation in line with major European trading partners.

In the wake of Norway's experience of instability, the idea of creating a financial buffer separating revenues and expenditures led to the establishment of the *Petroleum Fund* in 1990. It was modelled after the Lougheed government's 1976 *Alberta Heritage Savings Fund*. In 2006, the Petroleum Fund was integrated with the government's pension scheme and renamed *The Government Pension Fund-Global*. The Fund is managed on behalf of the Norwegian people for the benefit of current and future generations. Given the country's aging population, the Fund serves to pre-fund public pension spending.

The government does not have direct access to petroleum revenues. They are all transferred directly to the Fund, which then must be invested abroad. The fiscal rule established for the Fund, adopted in 2001, is that the government has access only to the expected long-run real returns on the capital in the Fund over the business cycle, which is estimated at 4%.

The government's non-oil deficit – which, not coincidentally, cannot exceed 4% of the capital in the Fund over the business cycle – is covered by an annual transfer from the Fund. However, a larger transfer in any given year may occur in response to events such as the 2008–09 global economic crisis.

The fiscal rule ensures that petroleum wealth is not consumed, but converted to financial wealth, which can be used to help finance a generous welfare state into the future.

The Fund acts as a buffer between fluctuating oil revenues and public expenditures. It also serves as a stabilizing mechanism for the exchange rate, since capital outflows increase when petroleum revenues increase. It also mitigates Dutch disease impacts from the booming oil sector, producing a more stable industrial structure. It has not been totally successful however, since the non-oil traded goods sector has been shrinking.³⁸

Norway's central bank also adopted an explicit inflation target of 2.5% in 2001. However, its goal remains to support fiscal policy and stabilize production and employment. Its mandate also stipulates that it should aim for stable exchange rates so as to maintain inflation in line with the rate of its main trading partners.

An elaborate system of checks and balances created for the petroleum fund's operation ensures a high degree of transparency and accountability.³⁹ The Ministry of Finance is responsible for the ownership of the Fund. It establishes the investment strategy. It defines the asset allocation and risk limits. It ensures risk diversification and adequate financial returns over the long term. It also monitors and evaluates the management of the Fund and defines responsible investment practices.⁴⁰

The Fund's investments are divided into three asset classes. Global equities (over 8,000 publicly traded companies in 50 countries) comprise 60% of its investments. It is almost exclusively a minority shareholder or portfolio investor. Global fixed income investments comprise 35%, and global real estate investments make up the remaining 5% of the Fund's investments. The geographic distribution of the Fund's investments is: 40% EU, 35% U.S., 2% Canada, and the remaining 23% mostly in Asia.⁴¹

The Norwegian Parliament, which is the ultimate owner of the Fund, makes the broad policy decisions. The Ministry of Finance reports annually on the Fund activities to the Parliament.

The operational responsibility of the Fund is delegated to the central bank, the Norges Bank. A unit within the Bank — separate from monetary policy deliberations and other activities of the Bank — is devoted to the Fund's management. The Bank reports regularly to the Ministry of Finance. A complete list of Fund investments is published once a year. The Auditor-General, in turn, monitors the activities of the Ministry of Finance.

Asset management is also governed by a set of ethical guidelines that reflect the values of the Norwegian people. They are established by the Ministry of Finance, on advice provided by the *Council on Ethics*, and based on internationally accepted principles developed by the United Nations and the OECD. The *Council on Ethics* makes recommendations to the Ministry on the exclusion of specific companies, though the Ministry makes the actual decisions.⁴² Currently 53 companies are on its excluded list including Canadian companies Potash Corporation, Barrick Gold and (the formerly Canadian) Rio-Tinto Alcan.⁴³

Appropriation and Distribution of Petro Wealth

Norway is among the most highly-taxed countries in the OECD. Total tax revenue is 42.8% of GDP. It has a stable diversified non-oil-related tax base, with a progressive income tax and very high consumption taxes. Adding the

returns from its petroleum fund brings total government revenue to 57% of GDP. This is the foundation for a generous and comprehensive social welfare system.

From the beginning, the government protected non-oil fiscal capacity by not lowering taxes, thereby preventing oil revenues from replacing the pre-existing revenue base. Petroleum revenues, which in other petro-states contributed to a widening of income disparities, in Norway contributed to maintaining already low inequality levels.

Norway does not have a royalty system, but captures petroleum rent through taxes and direct ownership. Norway has maintained a stable tax regime for petroleum producers. Companies are subjected to an ordinary tax of 28%⁴⁴ plus a special tax of 50%. Deductions are allowed for costs associated with exploration research and development operations and a six-year depreciation allowance. A carbon tax was introduced in 1991.

In 2010, the government took in \$41.2 billion in oil revenues through the following sources: 21.3% from the ordinary corporate tax; 35.1% from the special tax; 1% from the carbon tax; 37.7% net cash flow from SDFI; and 4.6% from the Statoil dividend.⁴⁵ Through these channels, the Norwegian state appropriates 82–86% of the net revenues from petroleum production.⁴⁶

Social and Labour Relations Policies

Individualism, accompanied by an aversion to “big government” and “nanny state” social policies, is widely prevalent in the United States and to a significant extent also in Alberta. But in Norway and other Nordic countries, social solidarity manifested in a generous social contract is consistent with the goal of maximizing individual autonomy and social mobility. “Equality in the Nordic context is inseparable from individualism and autonomy.”⁴⁷

Norwegian public spending is the highest in the OECD.⁴⁸ Due to its generous social welfare system and equitable regulation of the labour market, Norway has one of the lowest levels of inequality in the world. By the most comprehensive measure of inequality, the GINI index, Norway was the second most equal country in the OECD, behind Slovenia and tied with Denmark. Its tax and transfer system reduces already very low wage inequality by one-third.⁴⁹ Inequality in market income or earnings is fifth lowest in the OECD.⁵⁰

Although income inequality is low, it has been growing. Since the mid-1980s, the average annual increase in real household incomes of the top 10% has been twice as large (2.7%) as the poorest 10% of households (1.4%).

The main driver of income inequality in Norway is the rapidly growing income from capital as a share of total household income. It has grown at a faster rate than in all other OECD countries, though it is kept in check by a progressive tax system.⁵¹

The Norwegian system of labour relations is an essential element of Norway's success in managing its oil wealth.⁵² The potential inflationary impact of expanding oil revenues has been contained through centralized wage determination and coordination, in which the internationally exposed non-oil manufacturing sector sets the pace of wage settlements. It helps to limit disproportionate wage growth in the petroleum-related and public sectors, helps to moderate overall real wage growth, keep inflation down, and maintain international competitiveness and domestic investment.

The labour relations system is also essential for managing the inequality pressure common in petro-states. Vital to maintaining Norway's egalitarian values, it also helps to maintain sufficient aggregate demand growth to ensure a high level of employment.

Norway's labour relations system is premised on:

- strong unions and a high degree of unionization and collective agreement coverage;
- a strong central labour body (LO) and a strong central employers' organization (NHO) with the capacity to engage in coordinated governance;
- centralized collective bargaining and wage setting anchored in local agreements that provide flexibility and a bottom-up dimension to the process;
- a deeply rooted egalitarian culture, and an ethos of cooperation and consensus building among the major partners;
- an extensive worker representation on company boards;⁵³
- a strong social welfare state providing universal income security and public services, including universal health care and education; and
- a supportive government that regulates the collective bargaining process, and is an active player in shaping labour market outcomes and tripartite cooperation.

Union density in Norway is 55%, and 70% of the work force is covered by a collective agreement. Density is 40% in the private sector (51% in manu-

Norway's Labour Relations System

A *Contract Committee* chaired by the Prime Minister plays a central role in incomes policies, setting income objectives, providing economic forecasts, etc., prior to the commencement of bargaining.

The peak labour and employer organizations (LO and NHO) negotiate a framework for all collective bargaining negotiations, called the *basic agreement*. It defines the rules of the game and is subject to revision every four years. It is designed to create a framework of co-operation between parties at all levels; to regulate conflict and achieve consensus through dialogue and negotiation. It is included in all collective agreements ratified by LO unions and the NHO employers' federation.

The basic agreement regulates the rights and responsibilities of labour-management representatives: issues of co-determination, consultation, and negotiation. It establishes works councils, which are required for companies with more than 100 employees. Works councils are bipartite bodies with an equal number of employee and employer representatives. They deal with matters involving working conditions, changes in production methods, investment and expansion plans, restructuring, etc. These issues are submitted to the councils for discussion and recommendation before any company decisions are made.

Wages and working conditions are covered by collective agreements between national unions and national employers' associations. The LO–NHO wage settlements set the pattern for other sectors. These settlements are of a two-year duration.

Private sector employers are bound by law to apply the terms of the collective agreement to their non-unionized employees as well. In the public sector the terms of collective agreements cover all employees.

The Norwegian model combines centralized and decentralized structures and processes of collective bargaining. Co-ordination and peak organization compromises are complemented by a tradition of negotiated adjustment and compromise at the local level.

facturing) and 80–85% in the public sector. In the private sector, 55–58% of all employees are covered by a collective agreement. In the public sector, coverage is 100%.

In the private sector there is a low-pay guarantee system of automatic wage adjustments to ensure that the average wage in a given company or sector doesn't fall below 85% of the average private sector wage.

Public social security systems create an additional wage floor that companies must exceed if they want to attract and retain workers. These mechanisms have greatly limited the development of a low-wage sector.

The state and public mediation institutions have played an active role in settling disputes and occasionally intervening directly to resolve stalemates and place statutory limits on wage growth.

From the employers' perspective, the economic certainty achieved in aggregate wage determination through coordinated bargaining supercedes any inclination they might have toward a more deregulated labour market.

The Norwegian social and labour market system serves as a social and economic buffer. Negotiated wage settlements also create a wage floor forcing inefficient companies out of business and encouraging the movement of labour to more productive sectors. The Nordic labour market model is conducive to facilitating restructuring and adjustment, and encouraging productivity increases. Contrary to the view that it would not survive in a globalized world, it has in reality been a more effective system than the fragmented and less regulated Canadian – and more broadly, Anglo-American – model for coping with the pressures of global competition.

Despite the success of the Norwegian model, a number of factors threaten its stability.

Low-wage competition and social dumping from foreign workers undermining collective agreements is a growing problem, though structures are in place to counter it.⁵⁴

The rapid influx since 2004 of foreign migrant workers, willing to work for lower wages and standards, is creating a labour underclass confined to low-status jobs such as construction, hospitality, etc. It is a segment of the workforce that is difficult to organize and is undermining union power. These workers are eligible for the same social rights and benefits as Norwegians. This is putting pressure on the social welfare system and escalating anti-immigrant sentiment.⁵⁵ With foreign workers now comprising 10% of the workforce, their integration and accommodation have become controversial issues within the country's main political parties.

The increased incentive for Norwegian companies to relocate low cost countries in the integrated EU market and beyond, is putting pressure on the Norwegian model, as are new conditions of employment in the high-tech internationalized industry, and a shrinking working class – the traditional backbone of the labour relations system.

Although trust in government is high in Norway compared to most other countries, membership in political parties has declined significantly and turnout at local and national elections is dropping. There is increasing dissatisfaction with how the government is managing Norway's oil wealth, specifically its policy of investing all petroleum revenues abroad.

Managing the Petro Boom in Canada and Alberta

HOW HAS THE petroleum-led commodities boom of the last decade affected Canada and Alberta? This section will examine the rapidly shifting economic landscape and government policies in place for managing the boom, including for appropriating and distributing this latest influx of oil wealth.

Crude oil prices rose steadily from US\$20 per barrel in January 2002 to US\$92 per barrel in December 2007.⁵⁶ It then entered an even steeper climb, peaking at US\$134 per barrel in June 2008. The price plummeted in the wake of the economic crisis, bottoming out at US\$41 per barrel by the end of 2008. However, it was soon climbing again, reaching US\$74 per barrel by December 2009, and US\$99 per barrel by the end of 2011. It has fallen slightly since then, averaging US\$85–\$90 per barrel by late 2012.

The Canadian dollar began its climb from \$0.62 against the U.S. dollar in January 2002. Five-and-a-half years later, it had reached parity — a 60% increase. It briefly dipped back down to \$0.75 during the recession, but ever since has been at, or near, parity. At this level, it is 25% above its purchasing power parity, or fair market value of \$0.81 as calculated by the OECD.

The pressure on the dollar from the influx of petroleum revenue has been compounded by inflows of revenues in the form of takeovers. More than \$117 billion of investment has taken place in oil sands development

from 2000 to 2010.⁵⁷ Roughly half was in the form of takeovers, and one-half of these were by foreign companies.⁵⁸ Speculative activities of currency traders, who view the Canadian dollar as a petro-currency, have added to the upward pressure.⁵⁹

By extension, this also applies to the Canada-Chinese currency exchange rate, which is more or less pegged to the U.S. dollar, though recently it has appreciated somewhat against the Canadian dollar.⁶⁰

Exports of oil and gas more than doubled from \$50 billion in 2002 to \$115 billion in 2011.⁶¹ And since Canada is also a major oil importer, imports tripled – from \$17 billion to \$53 billion. Quebec and the Maritime provinces depend on imports for over 80% of their consumption needs.

During this period, manufacturing exports declined from \$305 billion in 2002 to \$280 billion in 2011. Canada's manufacturing trade deficit ballooned from \$8 billion to \$92 billion. Motor vehicle exports, Ontario's largest export, plummeted from \$86 billion to \$52 billion during 2002–11.⁶² Its trade surplus declined steadily from \$18 billion, turning into a deficit which averaged \$10.5 billion annually during 2008–11.

Although oil and gas exports as a percentage of total goods and services increased from 8% to 16% during this period (18.5% of goods exports), the petro boom has clearly not been able to make up for the losses in manufacturing exports. Canada's overall surplus in goods and services trade dropped in half, from \$51 billion in 2002 to \$24 billion in 2008, and thereafter fell into a deficit averaging \$26 billion per year over the subsequent three years.⁶³

With the exception of the U.S., Canada has merchandise trade deficits with its major trading partners. Taking the U.S. out of the equation, Canada had an overall \$108 billion trade deficit in 2011. Canada's current account balance (goods, services, and investment income) has been in deficit in the last three years, averaging \$48 billion per year.

Over the last 10 years, China has become Canada's second largest trading partner. While Canada's exports to China (mainly resources) increased from \$4 billion to \$17 billion in during 2002–11, imports (mainly manufactures) rose from \$16 billion to \$48 billion. Consequently, Canada's trade deficit with China jumped from \$12 billion in 2002 to \$31 billion in 2011. Alberta's trade with China has stayed pretty close to balance throughout this period.

What is striking is how quickly manufacturing's share of the economy contracted since 2002. In January 2002, manufacturing was 17.2% of total GDP; at the start of the recession it had slid to 14.2% of the total, and by August 2012 it was just 12.9% of total GDP.⁶⁴

From 2002 to 2011, 531,000 Canadian manufacturing jobs were lost.⁶⁵ Employment in manufacturing fell from 15.3% of the workforce to just 10.3% in 2011. Although the bulk of these losses were in Ontario and Quebec, virtually every province has experienced significant losses in manufacturing employment. While employment in oil and gas extraction jumped by 15,000 to 54,000 during this period, the vast majority in Alberta, this is still only 0.36% of Canada's overall work force, which grew by 1.8 million during this period. The direct employment multiplier effect of petroleum extraction is very low compared to the manufacturing or services sector. Moreover, the indirect and spinoff employment benefit from petroleum is significantly less than the indirect employment destruction caused by manufacturing job losses.⁶⁶

Data from the U.S. Bureau of Labour Statistics (BLS) confirm the critical role played by the appreciating Canadian dollar in the loss of competitiveness and jobs. They show that Canadian unit labour costs rose by 67.6% in U.S. dollar terms between 2002 and 2010, while U.S. unit labour costs actually fell by 10.8%. However, measured in Canadian dollar terms, Canadian unit labour costs increased by just 9.9%. Average real hourly wages in Canadian manufacturing rose just 1.5% between 2002–10, compared to 10.2% in the U.S.⁶⁷

Canada has also experienced poor productivity performance. Efforts by Canadian companies to become more productive, for example by importing machinery and equipment, have been woefully inadequate compared to the extent of adjustment required by the currency appreciation.

Between 2002 and 2010, output per hour in U.S. manufacturing rose by 47% compared to just 10% in Canada,⁶⁸ a record which is due, at least in part, to the fact that investments have been diverted from the high productivity growth manufacturing sector to the declining productivity mining and petroleum sectors. Another factor may be that the Canadian manufacturing sector is majority foreign-controlled and these productivity enhancing investment decisions are made outside Canada. In any case, the result has been a massive relocation of production and jobs outside the country.

Despite reducing corporate income tax rates to among the lowest in the OECD on the expectation of a surge in productivity-enhancing, job-creating investment, many corporations are simply adding to and sitting on their cash balances. Despite exhortations by the Bank of Canada Governor and the Finance Minister to invest this “dead money” in plant and equipment, corporations continue to hoard their huge cash reserves, currently at \$568 billion.⁶⁹

Canadian petroleum production, and the wealth derived from it, is concentrated in Alberta, yet negative economic side-effects are experienced in

other regions. Economists refer to these as “Dutch disease” impacts. They occur when a resource boom causes a country’s exchange rate to rise to the point where other traded products, notably manufactures, become too expensive to export, leading to the decline of those sectors. In the Netherlands, where Dutch disease was first identified, the effects emerged only after the boom ended. In Canada’s diverse and decentralized federation, the effects in the manufacturing regions are felt immediately

The authors of a study originally done for Industry Canada refer to Dutch disease as the “economic dark side” of the oil sands boom, and warn of the potential for “...regional frictions and fragmentation in a country that is highly decentralized.”⁷⁰

They find strong evidence that our manufacturing sector has been adversely affected by the rise of the dollar, a significant part of which has been due to the resources boom.

On the other hand, Bank of Canada Governor Mark Carney contends the main problem is not Dutch disease, but rather how Canada’s non-commodity exports can adapt to fundamental changes in the global economy. Carney argues that demand from China and other emerging market countries means that high prices (albeit with fluctuations) and a high dollar will be sustained for the long term – what he calls a “commodity super cycle.”⁷¹ Currently, Canada’s non-commodity goods and services exports are over exposed to the slow growth U.S. and underexposed to the fast growth Asian markets. The challenge is “to diversify our markets toward the fast-growing emerging markets.”⁷²

However, in the asymmetric Canadian version of Dutch disease, the rapid currency appreciation to a new plateau has given non-petroleum exporting regions little time to adjust, and could lead to a permanent decline of these export sectors, as well as the regions where they are produced. Because the benefits of the petro-wealth influx are concentrated in Alberta and the adverse effects are concentrated in the non-oil producing provinces, the role of federal policy is critical – to ensure that the Dutch disease effects are overcome and the benefits of oil wealth are equitably distributed across the country.

Acknowledging the pressures caused by the dollar appreciation, Carney claims that intervention by the Bank to lower the exchange rate to a range closer to its true purchasing power value would be self-defeating; that it would only raise wages and inflation and force the Bank to raise interest rates and slow the economy. Thus, in his view, exporters have to get used to the new reality. The Norwegian central bank, on the other hand, has been able

TABLE 3 Comparing Norway and Canada-Alberta During Latest Petro-Boom

Norway	Canada-Alberta
Has maintained full employment even during the global recession.	Canada's unemployment rate has remained high since 2008. Alberta's unemployment rate has been much lower on average, bumping up only during the recession.
Has maintained low and stable inflation.	Canada has maintained low and stable inflation. Alberta's inflation has been significantly higher than the Canadian average.
Has maintained a stable exchange rate due largely to its centralized wage settlement policies and to its petroleum fund. The huge oil revenue inflow has been offset by the outflow to the petroleum fund.	Has experienced a huge increase in its exchange rate, with major adverse impacts on non-petroleum regions. Neither level of government has a petroleum savings fund to offset the inflow of oil revenue and bitumen investment. The federal government has chosen not to take measures to offset the upward pressures on the exchange rate.
Has a huge trade and current account surplus.	Canada's traditional merchandise trade surplus turned into a deficit after 2008. Its non-resource deficit is huge. It also has a very large current account deficit. Alberta maintains a large trade surplus due to its oil and gas exports to the United States.
Economic and employment benefits have been widely distributed. Any regional disparities have been offset by a very effective income transfer system.	GDP and employment benefits are concentrated in Alberta. Petroleum related employment gains are outweighed by employment losses in non-petroleum related industries concentrated in the rest of Canada. Relatively small benefit going to the rest of Canada due to weak linkage effects and weak federal government income transfer mechanisms.

to maintain a stable kroner-euro exchange rate and low inflation throughout the petro-boom, thanks in large part to its centralized wage setting system and the stabilizing effect of its Sovereign Wealth Fund.

Regardless of the different diagnoses of the problems facing manufacturing and other export sectors, the massive shift in Canada's economic landscape is indisputable. In the wake of the petro-led commodities boom, Canada is rapidly regressing from a diversified value-added economy — albeit with a large resource base — to its historic role as resource exporter in the global economy. Unprocessed and semi-processed resource exports now account for almost two-thirds of Canada's total merchandise exports. High value-added finished products account for just one-third of exports. By comparison, high-value added finished products made up almost 60% of our exports back in 1999.⁷³

Economic imbalances and divergences between Alberta and the other non-oil producing provinces, especially the manufacturing heartland of Ontario and Quebec, have widened in the wake of the petro-boom.

The OECD's 2008 Economic Survey of Canada, released just months before the global financial crisis hit, noted that the unparalleled magnitude

of the oil shock was having a profound effect on the fiscal capacities of different provinces, and “the very unequal economic development between Alberta and the rest of the country is straining the federation.”⁷⁴ It said: “Canada confronts the challenge of a natural-resource shock having highly asymmetric impacts across the federation, in particular the large concentration of oil and gas in Alberta and the shifting of collateral costs to other regions via a knock-on exchange-rate effect.”⁷⁵

The report also criticized federal tax subsidies to the energy sector — notably those allowing companies to deduct revenues from the federal corporate tax base — for exacerbating these regional divergences, and warned that fiscal competition due to highly unequal fiscal capacities, mainly through “the attraction of low taxes and high public spending, could amplify the main symptom of Dutch disease, i.e. excessive movement of resources from exposed traditional sectors toward the non-renewable resource sector...”⁷⁶

The OECD’s 2012 draft report on Canada proposed that the federal government “Create a sovereign wealth fund for natural resource revenues and invest in foreign assets to limit the effects of Dutch disease, while saving for future generations.” However, the Conservative government, which is in denial about the existence of Dutch Disease, demanded its removal from the final report.⁷⁷

In 2002, Alberta’s per capita GDP was 10% above the Canadian average and about the same as Ontario’s per capita GDP. By 2010, Alberta’s per capita GDP had risen to 49% above the Canadian average and 53% above Ontario’s per capita GDP.⁷⁸ The OECD observed that Alberta’s per capita disposable income is pulling away from the other provinces in the wake of the oil boom — from 110% above the Canadian average in 2000 to 120% above in 2010. No other province is above the average, and six provinces are below.⁷⁹

While Canada’s merchandise trade surplus fell into deficit in the last three years, Alberta’s trade surplus grew steadily from \$23 billion in 2002, peaking at US\$83 billion, falling during the recession, then climbing again to \$70 billion in 2011.

Going forward, the planned expansion of bitumen production in the coming decades, reinforced by the expansion-friendly policies of the Harper government, will only exacerbate the imbalances between Alberta and the other provinces.

The federal government has been using a recent Conference Board report commissioned by the federal and Alberta governments, and an earlier report from the Calgary-based Canadian Energy Research Institute (CERI,) to tout the substantial economic spinoff benefits of bitumen development to the rest of Canada. Both the government and the industry have been try-

ing to make this case through a massive advertising campaign. Interestingly, both studies actually show that, outside Alberta, the benefits to the rest of Canada are relatively small once one gets past the big absolute numbers and the 25-year time frames.⁸⁰

The CERI study, based on the combined Canada-U.S. analysis, finds that the vast majority of oil sands economic benefits in the coming decades will flow to Alberta, with those going to the rest of Canada very small by comparison, and those accruing to the United States far greater than the combined benefits to the other provinces.⁸¹ It estimates that 76% of the total North American GDP benefit occurs in Alberta, 20% in the United States, and only 4% in the other provinces and territories.⁸²

Of the total jobs expected to be created or preserved in 2035 in both Canada and the U.S. as a result of bitumen projects, 66.2% will be in Canada and 33.8% in the United States; 57% of the total jobs in both countries will be created in Alberta and 9.2% in the rest of Canada.

The projected GDP benefits to the United States are five times greater than the benefits to the rest of Canada, and the employment benefits to the U.S. are almost four times greater than to the rest of Canada. The state of Illinois gets a bigger jobs benefit than Ontario. Three states — California, Texas, and Wisconsin — get a bigger jobs benefit than the combined benefit to all Canadian provinces excluding Alberta.

The study illustrates a key feature of the petroleum economy. The economic linkages outside Alberta to Eastern Canada are relatively weak. As with the trade patterns, these economic linkages flow predominantly north-south.⁸³

The Conference Board report does not do a combined Canada-U.S. analysis, and therefore presents only a partial picture of the distribution of benefits, although it does acknowledge that oilsands purchases outside the country are substantially greater than those from the rest of Canada. Like the CERI study, the projected jobs created in the rest of Canada from bitumen investment over 25 years are relatively small as well.

Like other petro-states, Alberta has experienced boom-and-bust cycles, which have created the highest GDP, inflation, and fiscal spending volatility of all provinces.⁸⁴ Capital and social spending cuts in the 1990s compromised the government's ability to provide the infrastructure to absorb the population influx during this boom. And new efforts to re-invest in infrastructure have added to the already overheated economy.⁸⁵

Alberta has experienced fiscal deficits over the last four years. It should be noted that its deficits were due to more than cyclical factors, notably a structural decline in fiscal revenue from 17.6% of GDP in 2001 to 13.7% in 2012.

From 2002 to 2011, Canada's GDP growth averaged 2%, fluctuating between 3.1% and minus 2.5%. Its inflation rate averaged 2%, fluctuating between 2.7% and 0.3%. Canada's unemployment rate averaged 7.1% during this period — 7.9% from 2009 to 2011.

Alberta's economic growth averaged 2.8% per year from 2002 to 2011, well above the Canadian average, and almost double the 1.7% Ontario growth rate. Alberta had the widest economic swings, with four years of growth greater than 4.5% as well as the deepest retrenchment in 2009 at minus 4.5%. By 2010, Alberta was growing again: 5.2% in 2011, and expected to reach 3.8% in 2012. This compares with Canada's projected growth of 2.4% and 2.1%, respectively, and Ontario's growth of 1.9% and 2.2% during this period.⁸⁶

Alberta's unemployment rate averaged 4.8% over the period. It shot up to 6.6% in 2009, then fell back to 5.5% in 2011. So far in 2012 it is under 5%. Its inflation rate, driven by escalating labour and material costs, has exceeded that of other provinces. The cumulative rise in consumer prices from 2002 to 2011 was 30% higher than in the rest of Canada. The influx of workers from other provinces and from abroad has caused a serious housing shortage, which is reflected in shelter costs that have risen 100% more than in the rest of Canada.

Non-petroleum-related sectors in Alberta have been hurt by the inflation and the high wages in the petroleum sector. The province's farm, food processing, forestry, and chemical industries have also suffered the Dutch disease-type effects of the high dollar. According to a former Alberta government minister and one of the architects of the Alberta Heritage Fund, Alan Warrack, "We actually have a process now in Alberta, and have had for at least a decade, of hollowing out businesses other than those in the resource sector, and at the end of this period it will leave us pretty naked for employment and investment opportunity..."⁸⁷

Appropriation of Petroleum Wealth

Canada over the last 15 years has become a low-tax country, in the bottom third of OECD member countries. Total tax revenue, at 31% of GDP (2010), has slipped from the middle OECD rank of 36% of GDP in the mid-1990s. This slippage in fiscal capacity is mirrored in the erosion of Canada's social programs.

The federal government's only direct access to petroleum revenues is through the 15% general corporate income tax (which has been lowered in

stages from 28% in 2000). With available tax breaks, the oil and gas sector's effective tax rate is just 7%.⁸⁸

Alberta relies heavily on oil royalty revenues to fund programs like health care and education.⁸⁹ Oil and gas revenues made up 28% of its own-source revenues in 2008, but oil revenue fluctuations, as noted, have created considerable uncertainty in the province's finances.

Successive provincial governments have used abundant royalty revenues to cut non-oil taxes, making Alberta one of the lowest tax jurisdictions in North America, and indeed in the industrialized world. Alberta has the lowest income taxes, the lowest consumption taxes, and the lowest corporate taxes – the lowest overall taxes of any jurisdiction in Canada.⁹⁰ Alberta's total taxes constitute just over 6% of provincial GDP, compared to a range of 8% to over 14% for other provinces. Personal income tax was 2.9% of GDP, and corporate income tax was a mere 1.6% of GDP.⁹¹

In 2001, Alberta moved from a progressive income tax regime to a single 10% income tax – a flat tax. It is the only Canadian jurisdiction with such a tax. Other provinces have from three to five tax brackets, ranging from a low of 4% to a high of 24%. As a result, low- and middle-income Albertans pay a higher income tax rate than they would in most other provinces while Albertans in the highest income bracket pay by far the lowest provincial income tax rate in the country.

Shrinking non-petroleum taxes have rendered the Alberta government very dependent on oil revenues – and hence on a rapid pace of exploitation – to fund its activities, with the result that it tends to be more responsive to the demands of the oil companies than to those of its citizens.

Furthermore, Alberta's tax cuts have put fiscal pressure on other governments, which have felt obliged to lower their taxes to stem the shift of capital and other resources to Alberta.⁹² This tax competition dynamic has strained the capacity of all provinces to fund social programs.

Petroleum Subsidies, Taxes and Royalties⁹³

The Canadian constitution gives the provinces control over the resource revenue levers. The uneven distribution of petroleum revenue causes significant regional disparities, which in turn create greater challenges for the federal government in addressing these disparities through fiscal transfers. The federal government is not precluded under the 1982 Constitution from taxing resource activities in order to bolster its ability to increase fiscal transfers, though federal governments have so far chosen not to exercise this power.⁹⁴

Subsidies to the petroleum industry by both levels of government totaled over \$2.8 billion in 2008, with Alberta receiving \$2.1 billion, or 73% of all subsidies.⁹⁵ Roughly half came from the federal government and half from the provincial government. Most seek to increase exploration and development activities through a mix of tax breaks and royalty reductions.

Sawyer and Stiebert, in a study for the International Institute for Sustainable Development (IISD), projected the impact of these subsidies out to 2020. They found only a slight positive impact on GDP; a modest impact on the production of marginal producers and on exports; a negligible impact on employment; and a net negative impact on both federal and provincial fiscal balances.⁹⁶

The oil and gas sector paid (net of subsidies) \$2.7 billion in federal corporate income tax in 2009–10 — a very small transfer given the redistribution challenges facing the federal government and unpredictable fluctuations in oil prices.⁹⁷ Alberta's general corporate income tax rate, which applies to oil companies as well, is just 10% — down from 15.5% a decade ago.

The Alberta Heritage Savings Fund was established in 1976 by the Lougheed government as a savings vehicle for petroleum revenues.⁹⁸ Its purpose was to protect the economy from overheating, to diversify the Alberta industrial base, and provide a “rainy day” fund in times of recession, as well as a nest egg for future generations.

The plan was to invest 30% of annual petroleum revenues in this fund. In 1987, however, the provincial government stopped all royalty payments into the Fund. It was moribund for more than 20 years, steadily decreasing in relative value due to population growth and inflation. There has been a modest renewal of contributions in recent years, but by 2012 there was only \$16 billion in the Fund, equivalent to just over a year of petroleum revenue flowing into government coffers.

The OECD's 2008 Economic Survey of Canada urged the Alberta government to set strict allocation and withdrawal rules for the Fund and put its petroleum revenues into foreign assets, as Norway does, drawing only on the yearly return on investments.

Over the last decade, the Alberta government has used petroleum revenues to pay down debt.⁹⁹ In 2003, it created a budget stabilization fund called the *Sustainability Fund*, used to finance budget deficits. Draw-downs from the Sustainability Fund to finance deficits since 2008 are expected to almost completely drain this fund by 2014.

The Lougheed government also pledged to appropriate for the government 35% of the revenues from oil and gas extraction. Unfortunately, that

target was only reached during 1977–81. Thereafter, it fell to 20% in the mid-1980s, hovering in this range until 2006, when it began another slide to 11% in 2009.¹⁰⁰

The 1997 oil sands royalty framework (written largely by the industry under Premier Ralph Klein’s leadership), with only minor changes since, is still in place. In a 2006 interview with *Policy Options*, former Alberta Premier Peter Lougheed deplored the fact that the people of Alberta were not getting a fair royalty return under the existing oil sands formula.

A 2007 government-appointed panel to review Alberta’s royalty system reported that there was a lack of accountability, that the province had failed to accurately measure production data, failed to collect royalties efficiently, failed to conduct open reviews, and had one of the lowest public revenue shares among the petroleum states.¹⁰¹ It said that Alberta’s rules were overly accommodative, and that the administration of the regime was underfunded. It concluded that the royalty and tax regime, one of the lowest in the world, failed to constitute a fair share between the government and the petroleum companies. It concluded: “Albertans do not receive their fair share from energy development and they have not, in fact, been receiving their fair share for quite some time.”¹⁰²

The panel recommended an immediate 20% royalty increase, rising to 37% by 2016, and that responsibility for managing the royalty regime be taken out of the hands of the Energy Department because its mandate of maximizing energy sector activity conflicted with ensuring a fair public share from royalties.

The petroleum companies reacted furiously to the report, saying that if the government accepted its recommendations it would destroy jobs, projects would be cancelled, and companies would move to other jurisdictions. Company representatives blitzed cabinet ministers’ offices. They launched an aggressive campaign to discredit the report even though its proposed increase would only, as one analyst observed, move Alberta from the bottom ranks to the middle ranks in terms of royalty rates.¹⁰³ University of Alberta economics professor Andre Plourde calculated that the royalty proposal, taking into account federal and provincial corporate income tax cuts, would have only brought the government’s share of divisible petroleum income back to 1997 levels.¹⁰⁴

In the face of company attacks and withdrawal of party financing, and opposition from the newly-created Wild Rose Party — which backed the companies’ position and benefited from a huge inflow of oil money into its coffers — the Stelmach government backed down. It issued a deeply com-

promised royalty plan, under which a former senior analyst with *Alberta Energy* estimated that Alberta will be making less money than it did prior to the review.¹⁰⁵

After the 2008 Alberta election, Stelmach announced a five-year royalty break for industry worth \$237 million per year. He also reneged on a commitment to ensure that at least 72% of bitumen extracted would be refined in the province by 2016, and approved two new pipelines to ship unrefined product elsewhere for upgrading.

Plourde, in a more recent analysis, calculates that, depending on oil prices, the Canadian dollar and capital expenditures, the petroleum companies take as much as 65% of total revenue from the oil sands, with the provincial government receiving a maximum of 55% and the federal government a maximum 10.6%.¹⁰⁶

A 2012 Parkland Institute report paints an even more negative picture. It calculates that in 2010 the Alberta government collected just 11% of the economic rent, or excess profit, from the oil sands.¹⁰⁷ According to the report, the government has never received more than 20% of the rent, or excess profits, from the oil sands and, since 1997, it has averaged just 9%.¹⁰⁸

Distribution of Petroleum Wealth

Petroleum revenues flowing into Alberta are recycled throughout the Canadian economy via the following mechanisms: fiscal redistribution (federal-provincial tax and transfers); personal wealth increases through income and stock ownership; and inter-provincial trade.¹⁰⁹ However, these mechanisms, as they are currently constructed, are recycling petro-dollars in a highly unequal manner. As such, they have increased interpersonal and interprovincial income inequality and will continue to heighten social, economic, and political tensions within the Canadian federation.

Interprovincial Inequality

As noted, the petro-boom has created very uneven development trends, with Alberta distancing itself from other provinces in its revenue-raising capacity, and its income per capita.

Financial transfers from the federal government to the provinces and territories, especially the equalization program, are important vehicles for reducing disparities within the Canadian federation, principles which are

entrenched in the Canadian Constitution. They seek to ensure that all provinces can provide comparable levels of essential services under their jurisdictions to Canadians, regardless of where they live.

As the petro-boom was gaining momentum, Robin Boadway, one of Canada's leading authorities on fiscal federalism, expressed concern in a 2006 paper that the federal system was not well suited to dealing with a resources boom of such unprecedented magnitude, concentrated largely in one province.¹¹⁰ Petroleum revenues were greatly increasing Alberta's ability to raise revenues compared to other provinces.

He worried that the equalization system, whose ability to mitigate fiscal disparities between the provinces was already strained, would become even more so as a result of the Alberta petro-boom. And he was concerned that the federal government had chosen not to fully use its taxing power to appropriate oil revenues to mitigate inter-provincial inequalities.

Concerned about the degree of national consensus needed to fully implement the equity provisions of the Constitution at a time of growing fiscal disparity, Boadway posed the question: "How far does national social citizenship as opposed to provincial social citizenship extend? Do we define our sharing community primarily at the national level or at the provincial level?"¹¹¹

There are three major federal transfer programs to the provinces, which currently total some \$60 billion, or 25% of all federal program spending. The Canada Health Transfer accounts for 47.5% of the transfer budget; the Canada Social Transfer (CST) — targeted at social assistance and post-secondary education, early childhood development and child care — accounts for 20%; and the \$15.5 billion equalization program accounts for one quarter of federal transfers.¹¹²

In December 2011, the federal government announced major reductions in the rate of growth of transfers which will add to the fiscal pressures facing most provinces, and have major consequences for inter-provincial equity. It changed the formula for increasing health transfers from 6% per year to nominal GDP growth (estimated to be about 4% annually). This will reduce what the provinces would have received based on the previous funding formula by an estimated \$36 billion for the ten-year renewal period starting in 2017–18, compared to what the government had committed to four years earlier. It also formally changed the formula to a per capita cash transfer. This will disadvantage provinces with a higher proportion of older citizens, since health spending for people over 65 is six times higher than that of the general population.

The Canada Social Transfer will grow at 3% annually, at least until 2018–19, a slower rate than the Canada Health Transfer, which means that its share of overall transfers will continue to shrink.

The federal equalization program, in operation since 1957, supplements provincial expenditures for all social services, on the clear recognition that Canadian citizens rightfully expect a certain level of service and support, irrespective of where they live. When the program was set up, Alberta was a net beneficiary of the program, though swelling oil wealth soon moved it out of that category.

The Canadian Constitution (section 36-2) enshrines equalization, committing the federal government “to the principle of making equalization payments to ensure that provincial governments have sufficient revenues to provide reasonably comparable levels of public services at reasonably comparable levels of taxation.”

The goal of the program is to mitigate the fiscal disparities among provinces by bringing the revenue-raising capacities of the “have-not” provinces up to a national average standard. Critical in the calculation of fiscal disparities is the treatment of provincial revenues from natural resources, which has varied from 100% inclusion to 0% inclusion in the equalization formula over time. Currently, 50% of oil and gas revenues are included in the calculation.

Since only one half of Alberta’s oil revenues are included in the equalization formula, the gap between its fiscal capacity and that of the other provinces is further skewed. In 2012, Alberta’s fiscal capacity was 166% of the national average, double Quebec’s (83%), and almost double Ontario’s (93%) fiscal capacity.¹¹³

The equalization system was changed in 2009, with total payments being set as a percentage of a GDP ceiling (3-year moving average) instead of a national standard, thus making a pool of funds available to eligible provinces. Relative fiscal capacity determines eligible provinces’ share of the pool.¹¹⁴ This has altered the original purpose of equalization from needing to bring all provinces up to a standard to getting a share of available funds, and as such is inconsistent with the equity provisions of the Constitution.

The December 2011 announcement extended these changes to at least 2018/19. This is estimated to reduce equalization transfers by over \$3 billion per year compared to the previous formula.

With the ability of the program to bring all provinces up to an average standard no longer possible, growing inequality of fiscal capacity among the provinces will increasingly reflect the uneven distribution of petroleum riches within Canada. Former Bank of Canada governor David Dodge

estimates Alberta's fiscal capacity could reach 180% of the national average by 2020, and by an even greater amount if oil sands growth continues at its current pace.¹¹⁵

The Council of the Federation working group estimates that the total loss of revenue from the combined cuts to all major transfers to the provinces and territories over the five years from 2014/15 to 2018/19 will be \$23.3 billion. The funding formulae ensure that reduced rates of growth will continue beyond 2019.¹¹⁶

Interprovincial trade restructuring in the wake of the petro-boom is also affecting both inter-provincial and inter-personal distribution of oil wealth. The Bank of Canada data demonstrates that goods exports from central Canada to Alberta during 2002–08 declined in absolute terms despite the rapid rise in Alberta's demand. This shortfall was offset by increased exports of services — mainly transportation, mining, financial, and related legal and engineering services from central Canada to Alberta.¹¹⁷ Nevertheless, the increase in total exports to Alberta did not make up for the reduction in Central Canada's international exports during this period.

Morover, the benefits of these internal trade shifts are being unevenly distributed among the other provinces. Manufacturing workers who lost their jobs did not move into these high-income services jobs, but rather moved to low-income, often temporary services jobs, or simply were not able find new jobs. In all likelihood, this adjustment has worsened inter-personal income inequality.

Interpersonal Inequality

Taxes are an important mechanism for redistributing income (including petro-wealth) in Canada. Tax rates on personal incomes and investments of the richest Canadians have declined dramatically over the last 20 years, reducing their redistributive capacity.¹¹⁸

Policy changes — from trade and investment liberalization agreements to tax reductions; to loopholes and shelters favouring the richest income groups and large corporations; to cuts to health care, education, and social transfers to provinces and federal programs such as unemployment insurance — have resulted in inequality growth in Canada which has been among the fastest in the OECD. Growing inequality is being led by the extraordinary income gains of the richest 1%, who took home almost one-third of all gains from growth in national income from 1997 to 2007.¹¹⁹ Its share of the national income pie was the third highest in the OECD, behind the U.S. and the U.K. It's growth has been mirrored by the rapid growth of corporate concentration.¹²⁰

Earnings inequality is high in Canada. According to the OECD, the top 10% of full-time workers earn 3.7 times as much as the bottom 10%. The incidence of low-wage workers in Canada (defined as those earning less than two-thirds the median wage) stands at 22%, which is among the highest in the OECD.¹²¹ Real median incomes of the richest 10% of households have been growing almost twice as fast (1.6% per year) as those of the poorest 10% (0.9% per year) since the mid-1980s.¹²²

In Alberta, the median household income, the highest in Canada, rose by 16% from 2002 to 2009, while Canada's median income remained flat — at the same level it was in 1976.¹²³ Most income groups appear to be benefiting to some extent from the petro-boom, but inequality in Alberta, among the highest in Canada, has risen during the boom. Its GINI coefficient index, the standard international measure of inequality, rose from 0.30 to 0.34 between 2002 and 2009 suggesting that the gains are going disproportionately to upper income groups.¹²⁴ The Canadian GINI index stands at 0.32 and Norway's is substantially lower at 0.22.¹²⁵ (The lower the index level, the lower the level of a country's inequality.)

Due to the combination of the petro-boom and the low flat tax on personal income and other tax breaks, the very wealthiest Albertans are reaping the biggest income gains. The richest 1% had a much higher share of the provincial income pie than the average top Canadian 1%'s share in 2009 — 14.4% compared to 10.9%.¹²⁶ The average income of Alberta's richest 1% in 2009 was \$672,100, compared to an average of \$422,400 for the richest 1% Canada-wide.¹²⁷ Alberta's share of super-rich Canadians (income greater than \$500,000) grew from 20% to 25% from 2002 to 2008, despite Alberta's having only 10% of the population.¹²⁸

Unions have historically played a major role in lowering inequality in Canada. But decades of deregulating capital and eroding workers' statutory rights, combined with rapid globalization and technological change, have steadily shifted the balance of power towards employers. As a result, median wages and incomes of those working full-time full-year are today no further ahead than they were in the late 1970s, taking inflation into account.

A recent OECD study calculates that there has been a major shift of national income from labour to profits over the last 20 years in many OECD countries. In Canada, labour's share fell from 65.3% to 60.3% during 1990–2011. The drop was even more pronounced after excluding the top 1%. Part of this shift can be attributed to the declining bargaining power of unions.¹²⁹

In Canada, 30% of the workforce is unionized, down from almost 36% in 1989.¹³⁰ Union density in the private sector has fallen to 16% from almost

TABLE 4 Appropriation and Distribution of Oil Wealth

Norway	Canada-Alberta
The state captures the vast majority of net revenues, or economic rent, from petroleum.	Rent captured by the Alberta government is among the lowest of all petro states. The federal government captures a very small portion of oil rent through the general corporate tax rate.
Maintained its level of non-petroleum taxes despite rising oil revenues. Its overall tax-to-GDP ratio is among the highest in the OECD.	Alberta lowered its non-petroleum taxes as petroleum revenue rose and now has by far the lowest taxes in Canada. Both governments lowered corporate income taxes including on petroleum companies by half over the last decade.
Its diversified revenue base is not dependent on fluctuating petroleum revenues but rather on the more stable international financial returns to government coffers from its petroleum fund.	Alberta's fiscal capacity is highly dependent on petroleum revenues, which go up and down as prices fluctuate, and often finds itself in deficit. Its savings funds to stabilize revenues are small and ineffective.
Strong unions are in a balanced power relationship with business. High union density, centralized collective bargaining and wage settlements, consensus building approaches.	Declining unionization especially in the private sector. Only the public sector has high unionization rates. Collective bargaining systems are fragmented and adversarial. Alberta has the lowest unionization rate in Canada. Both governments have been working aggressively to undermine unions.
Petroleum wealth, due to equitable labour relations, progressive taxes, and a generous social welfare system, is equitably distributed amongst the population and regions of the country. Has among the lowest income inequality in the world.	Since the mid-1990s there has been a rapid growth of income inequality driven by the 1% in Canada—now amongst the highest in the OECD. This has been accompanied by the reduction in social program spending. There has been growing interprovincial disparity in income and fiscal capacity with Alberta pulling away from the rest. Government redistribution mechanisms have been greatly weakened, exacerbating these trends. Inequality in Alberta has grown during the boom, and it is home to a rapidly growing share of Canada's super-rich.

one-third in the mid-1980s. In the public sector, 71% of the workforce is unionized. Unionization is 30% in the construction sector and 25% in the manufacturing sector, though down from 42% in 1989.

Alberta is the least unionized province in Canada, with union density in 2011 of just 22%, down from 30% in 1989. In the primary sectors — forestry, fishing, mining, oil and gas — the rate is just 11.2%.

The Canadian system of collective bargaining is for the most part adversarial, decentralized, and fragmented. Single employer bargaining has prevailed since World War II. Sectoral or pattern bargaining is rare, the notable exception being the auto sector. Most unionized workers in Canada belong to a small number of large unions, which represent workers across different sectors of the economy.

The Influx of Temporary Foreign Workers

As with Norway, the current boom has seen a huge influx of temporary foreign workers into Alberta. Its fivefold increase since 2002 is proportional-

ly much larger than in other provinces, and this does not include a growing number of illegal migrants who have stayed on after their work permits have expired.¹³¹ In 2011, Alberta accounted for one-third of temporary foreign workers in Canada, more than any other province.¹³² Both the Alberta government and employers expect a major expansion of the temporary foreign workers program over the next five years.

Unlike past oil booms, the foreign worker influx has eclipsed in-migration from provinces experiencing high unemployment. It has now surpassed the influx of permanent resident workers through traditional immigration channels. Furthermore, this wave of temporary foreign workers, unlike its predecessors, is largely unskilled.

Although temporary foreign workers legally possess the same rights as all Alberta workers, in practice enforcement of Alberta's laws is complaints-driven. And temporary foreign workers don't complain since they are beholden to employers for their wages as well as their right to remain in the country. There is widespread evidence of violations of the Alberta labour code against temporary foreign workers.¹³³

Sidestepping the issue of the hectic pace of oil sands development, the business community and the Alberta government have framed this issue as a solution to labour shortages and one that poses no threat to Canadian jobs. The government projections show a cumulative potential shortfall of 114,000 workers by 2021. However, their unconventional methodology is based on estimates of *changes* in labour supply and demand rather than the government's own projections of *actual* supply and demand, which show a *surplus* every year up to 2021.¹³⁴

During the recession, employers were allowed to retain temporary foreign workers while laying off domestic workers.¹³⁵ According to Athabaska University researchers Beretson and Foster, it appears that employers are using temporary foreign workers, not as a temporary solution to labour shortages in a booming economy, but as a means of long-term wage suppression. This "solution" is creating a growing underclass of vulnerable, compliant workers that serves to reduce the bargaining power of unions and constrain the wages of workers more broadly. The Temporary Foreign Worker program (TFW) thus continues a long tradition of employer-friendly labour market policies by Alberta governments, reflective of "the power and influence of energy corporations."¹³⁶

It should be noted that the TFW program is a federal program that is being used extensively across the country. The program is now bringing more workers into Canada than enter as permanent residents under the tradition-

al immigration process. Almost 30% of net new jobs created between 2007 and 2011 were filled by temporary foreign workers.¹³⁷

Federal government policies have been reinforcing those of Alberta, extending their wage suppression effects across the Canada economy. The 2012 federal budget announced several changes to the program. They include increasing employer control, fast-tracking employer access to the program, and allowing them to pay workers 15% below the prevailing wage. Employers can now rapidly access cheap labour from a pool of compliant foreign workers.

Changes to the TFW program are reinforced by changes to the unemployment insurance system — where only 39% of officially unemployed workers have access to unemployment insurance benefits. They include more onerous job search requirements and restrictions on what is considered a “suitable” job offer, which is now to be defined by the government instead of the courts. Seasonal workers have six weeks of benefits within which to find a comparable job, which is defined as within an hour’s commute and up to 70% of the previous pay.¹³⁸ The Immigration Minister has suggested that unemployed workers who refuse to take low-wage jobs are in danger of having their employment insurance benefits cut off.

The federal government is also pursuing an aggressive anti-union policy. It has recently intervened five times in the collective bargaining process, in both the private and public sectors, by issuing back-to-work orders; and, in the case of Canada Post, imposed a lower wage increase than the employer’s offer. It has very pointedly not intervened in several high-profile private sector negotiations, notably when Caterpillar Corporation, a major supplier of heavy equipment to the oil sands, demanded its Canadian employees take a 50% wage and benefit cut. When the workers refused, Caterpillar closed down its London Ontario plant and shifted production to Indiana, a right-to-work state, where wages are \$12.50 to \$14.50 an hour — less than half the \$35 an hour a skilled worker in Canada earns.¹³⁹

There is growing corporate and political pressure at both the federal and provincial levels to further weaken union bargaining power by adopting U.S.-style right-to-work laws, which allow workers in unionized plants and offices to opt out of paying union dues.¹⁴⁰ Governments responded to the corporate complaint of “too-high” business taxes by cutting them in half. This did not produce the expected job creation effect, but it did fill corporate coffers with piles of cash. Now their complaint of “too-high” labour costs is being met with anti-union wage suppression policies.

Management of Climate Issues

BOTH NORWAY AND Canada, and more specifically Canada's main petro-province Alberta, derive a large part of their wealth from a product that is threatening life on the planet. On the other hand, in a world that will be deeply dependent on fossil fuels for years to come, they remain secure sources of supply.

Efforts to reduce carbon emissions on the path to a carbon-free world place both countries in conflicting positions. Norway exports 99% of its oil production. Canada exports two-thirds of its oil production, but also imports half of its consumption. A Conference Board carbon emissions ranking of 17 developed nations placed Norway 9th at 11.5 tons per capita. Canada placed 15th — double Norway's at 22.1 tons per capita.¹⁴¹ If Alberta were a country, it would have, along with Qatar, the highest per capita GHG emissions in the world. Furthermore, the carbon footprint embodied in both countries' exports is much larger than their domestic footprint.

The challenge for both is to resolve this contradiction by using their petro wealth to encourage the transition away from fossil fuels: to develop non-carbon emitting sources of sustainable wealth generation. Barring a major discovery, Norway's oil and gas reserves are declining — oil at a relatively rapid rate, gas more slowly. Alberta's bitumen reserves, though costly to extract, are by contrast vast, and will last far into the future, or until supplanted by alternative energy sources. There are huge differences in how

the government of Norway and the governments of Canada and Alberta approach climate issues.

Norway

Norway — especially since the landmark 1990 United Nations Environment Commission report chaired by former Norwegian Prime Minister Brundtland — has been a leader on global climate issues.

Norway is sensitive to its international reputation as a leading proponent of emissions reductions. Aware that its external carbon footprint is much greater than its domestic footprint, the government is taking serious measures to reduce carbon emissions, both at home and abroad.

Norway pioneered a \$30 per ton carbon tax on offshore petroleum production in 1991, and in 2007 introduced a combined tax and carbon allowance scheme, adapted to the EU emissions trading system. At the end of 2011, Norway's carbon emissions were less than 2% above 1990 levels — consistent with its Kyoto commitment to be 1% above 1990 levels.

Under the Copenhagen Accord, Norway's carbon reduction targets are the most ambitious of any developed country. It has committed to reduce its net carbon emissions by 30-to-40% from 1990 levels by 2020. The higher target would be activated only if the international community concludes a post-Kyoto agreement.¹⁴²

Norway has less room than many countries to reduce its emissions from the production of energy because electricity is produced from (renewable) hydropower. The potential for reducing carbon emissions comes mainly from the offshore petroleum sector (27%), manufacturing (26%), and transport (32%).

The 2012 government White Paper on Climate Policy announced an ambitious package of carbon reduction measures to implement its Copenhagen commitments, pledging to be carbon neutral by 2050 — by 2030 if a post-Kyoto agreement is reached.

They include, notably, a doubling of the carbon tax on emissions from petroleum production from US\$33 to US\$66 per ton of CO₂ to encourage (among other things) the conversion from gas to onshore electrical power supply for offshore rigs.

Another way Norway seeks to resolve its petro contradictions is through international initiatives to reduce carbon emissions. One-third of its Copenhagen commitments will be achieved through the purchase of international

climate allowances, including investments in the rain forests, and the other two-thirds through domestic measures.

The environment is a major part of Norway's international aid program — one of the most generous in the world. Much effort is put into integrating environmental concerns with its overall aid program. Norway's *Oil for Development* is a program to assist developing countries to transform their oil resources into broad-based political and economic development, and also to help countries reduce gas flaring and pipeline leakages. Norway also allocates funds to help improve environmental and climate problems in the EU's new member states, such as Bulgaria and Romania.

One purpose of using emissions allowances and its green development initiatives is that investments in cutting emissions in these countries have a bigger emission reduction return than in Norway itself, which is a relatively low carbon country. The Norwegian government's position is that carbon emissions will have to be reduced in the places where it is cheaper to reduce them. Critics charge that this is a convenient rationale that allows Norway to continue rapidly exploiting its oil and gas reserves, abandoning its earlier commitments to a slower pace of development.

Norway lags behind other Nordic countries when it comes to renewables like wind energy. Like Canada, it is putting major resources into carbon capture and storage (CCS). The government sees CCS technology as a way to make fossil fuel use less carbon intensive and therefore more environmentally tolerable.

Norway is host to two of the five largest CCS projects in the world and recently opened a carbon capture and storage test centre at Mongstad. The centre, financed mainly by the public corporation Gassnova, is testing two different capture technologies. After testing is complete, the plan is to build a full-scale facility at a cost of \$3.5 billion by 2020 at the heat and power plant at the Mongstad refinery.

Norwegian officials see CCS as a long-term venture, and significantly, unlike Canada, it is not factored into Norway's near-term Copenhagen commitments. They are nevertheless banking on the ultimate success of this technology in reducing Norway's carbon footprint, a technology that can then be exported. Critics charge that CCS is a status quo solution and that government subsidies would be better spent on alternative energy development.

There is much controversy within Norwegian society around Norway's climate policies: criticism of government plans to explore in environmentally sensitive areas in the High North; of Statoil's investments in the Alberta

tar sands; and the Government Pension Fund Global's unwillingness to prioritize investments in renewable energy and other low-carbon enterprises.

Environmentalists argue that Norway should be slowing the pace of its oil production, but government and industry argue that the Norwegian oil production involves lower greenhouse gas emissions than other countries and therefore that shifting to other sources would be harmful to global climate initiatives. Touting the Norwegian oil industry's safety record and higher environmental standards, politicians and the oil industry contend that extended oil exploration and production in Norway is cleaner than in other countries.¹⁴³

There is also debate about how much should be invested in non-fossil-fuel energy solutions. Environmentalists who want to accelerate the transition away from petroleum are frustrated with the lack of progress by the government in making the required changes. Critics have characterized the relationship between politicians and the industry as a "petroleum industrial complex."¹⁴⁴

Canada and Alberta

The Canadian Constitution gives provincial governments the power to determine the pace and scale of resource exploitation, and hence to exert a strong influence over carbon emissions. Federal power over the pace of resource development and climate policy is based on the regulation of trade and commerce powers. Federal responsibility also stems from the extra-provincial, inter-provincial, transcontinental, and international nature of the climate challenge.¹⁴⁵

The federal government ratified Kyoto in 2002, committing Canada to reduce its emissions to 6% below 1990 levels by 2012. By 2008, Canada's carbon emissions were 24% *higher* than 1990 levels.

In December, 2011, the Canadian government formally announced that it would withdraw from the Kyoto protocol on the grounds that all major carbon-emitting countries were not included, and that the economic costs of compliance would be excessive. It also abandoned earlier plans for a carbon trading system for large emitters, changing its focus to harmonizing standards and regulations with those in the United States.

As a signatory to the 2009 non-binding Copenhagen Accord, Canada announced a new target of 17% reduction from 2005 levels by 2020, in line with the U.S. target. With eight years left, according to the Federal Environment

Commissioner's May 2012 report, "it is unlikely that enough time is left...to meet the 2020 (Copenhagen) target."

The federal government, on the other hand, insists that its updated *Canada Emissions Trends 2012* report shows that Canada is halfway to meeting its Copenhagen targets. However, the modeling in the Canada Emissions Trends actually projects just a 2.7% decrease from 2005, according to CCPA economist Marc Lee. Lee says that the estimate is itself based on questionable assumptions, and that the more likely result is a 3% increase from 2005.¹⁴⁶

The Conservative government has gutted Environment Canada's staff and regulatory capacity. Its 2012 budget and omnibus legislation — Bills C-38 and C-45 — implemented sweeping measures to accelerate the pace of resources exploitation in the oil sands by dramatically weakening Canada's environmental laws. It cancelled almost 3,000 environmental reviews, including 678 involving fossil fuels and 248 dealing with pipelines. It limited the length of reviews and who is eligible to participate, and gave Cabinet the power to approve projects, overturning decisions of third-party tribunals. Finally, it offloaded responsibility for fisheries and inland waters protection — a clear federal jurisdiction — to the provinces. It has done so without consulting First Nations, and in breach of its constitutional obligations to protect First Nations' fishing and hunting rights.

Its current climate plan calls for performance standards for each of Canada's industrial sectors. Its recently announced regulations to cut emissions from coal-fired power plants will allow them to run for up to 50 years without any limit on their greenhouse gas emissions.¹⁴⁷ Regulations for oil and gas operations continue to be delayed.

Government politicians downplay, or at best pay lip service to, the international scientific consensus on the gravity of the climate threat, muzzle government scientists, exaggerate the effectiveness of their own measures, and pit economic priorities against the environment. Their approach to climate may be summed up as: delay, defer, obfuscate, and attack climate critics as anti-Canadian.

The Pembina Institute sums up the current federal government's unresolvable contradictions thus: "It is unlikely, if not impossible, that Canada can both deliver on its international commitments and realize its aspirations for rapid growth in the oil sands sector. Perhaps it should then be of little surprise that the federal government continues to delay its promised regulations to reduce greenhouse gas pollution from the oil and gas sector."¹⁴⁸

Alberta has more than one-third of Canada's carbon emissions — larger than any other province. The oil sands are the fastest growing source of in-

dustrial carbon emissions in Canada. Alberta's GHG emissions swelled by 37% from 1990 (the Kyoto benchmark year) to 2007. They are projected to triple by 2020 from 2005 levels.¹⁴⁹

Average greenhouse gas emissions for bitumen extraction and upgrading are estimated to be 3.2 to 4.5 times as intensive per barrel as for conventional crude oil produced in Canada or the United States.¹⁵⁰ And on a well-to-wheels basis — adding in refining, transportation, and combustion — bitumen emission intensities are between 8% and 37% higher than conventional crude.¹⁵¹

Alberta's climate plan, introduced in 2008, seeks to reduce carbon emissions by half of what it calculates to be “business as usual,” that is, in lieu of government action. However, this translates into just a 14% absolute reduction in emissions below what they were in 2005. Recall that Canada has agreed to an 80% reduction in annual emissions by 2050.

A major part of its plan is a partial carbon tax, called the *Specified Gas Emitters Regulation*, which applies only to large emitters. Emitters that don't meet government emissions intensity targets are required to pay a \$15 per ton levy, either to Alberta's *Climate Change Management and Emissions Fund*, or purchase offsets. The tax has major flaws. Coverage is only 50% of the economy; emitters are only responsible for the last 12% of their emissions; and the option of purchasing offset credits is of dubious quality as an incentive for GHG reductions.¹⁵² Finally, the tax is far too low to be an effective incentive for carbon emission reductions, and the government shows no sign of wanting to raise it. For example, carbon capture costs in the oil sands start at \$75 per ton.¹⁵³

Like Norway, the Alberta and federal government are putting major resources into carbon capture and storage (CCS) as a solution to carbon emissions from large power sources. Unlike Norway, however, Canada and Alberta have factored in reductions from as yet unproven CCS technology as a major part of their 2020 Copenhagen commitments. Under current conditions, CCS is of questionable economic viability, has potentially significant safety and environmental side-effects, and any benefits that could materialize are years away, certainly not before 2020.

The Alberta government created a \$2 billion fund for CCS projects, and the federal government committed another \$526 million. They selected four large-scale CCS projects. One of these, Transalta Corporation's project at its Keephills-3 coal-fired power plant, was shut down in April 2012. Both governments had committed almost 60% of the funds for this project. The reason the company gave for closing it was that the price of carbon was too low to make the project viable.¹⁵⁴ Moreover, because the federal government

abandoned its plan to set up a cap-and-trade system, the company had no way to sell emissions credits. In October 2012, Shell announced that it was proceeding with its Quest CCS project at one of its oil sands facilities, almost two-thirds of which is funded by the Alberta and federal governments.

Carbon capture and storage by 2020 is expected to account for 60% of the carbon reduction commitments outlined in the Alberta climate plan. At best, these four projects would reach only one-sixth of their CCS target.¹⁵⁵

This massive infusion of public funds into helping hugely profitable petroleum companies develop CCS technology is not even remotely matched by support for conservation, renewable energy, or energy efficiency. Moreover, it is highly unlikely that existing CCS projects will even come close to meeting Alberta's climate targets for 2020 and beyond.

According to Professor Angela Carter of the University of Waterloo — who has studied the environmental policies of Alberta as well as other oil producing provinces and U.S. states — Alberta's environmental regulation processes and institutions favour rapid oil development and do not meaningfully restrain the resulting environmental impacts.¹⁵⁶ Her research suggests that the Alberta environment ministry has inadequate resources and staff to monitor and enforce regulations. Public consultation is ineffectual, and, even where adequate, is unheeded on oil sands projects. Overall, the interests of *Alberta Energy* and those of the lead oil sands regulator, the *Energy Resources Conservation Board (ERCB)* — both closely aligned with the oil and gas industry — have consistently overridden any concerns raised by the Alberta environment ministry on oil sands decisions.¹⁵⁷

University of Alberta Professor Ian Urquhart describes the ERCB, which is funded in part by the oil industry, as a “captured agency,” especially with regard to what it considers relevant values, ignoring all but economic development, and restricting who can participate in its hearings.¹⁵⁸

Carter concludes: “Taken together, these trends — consideration of environmental impacts that is poorly timed and weakly integrated into the decision-making process on tar sands projects, alongside important regulatory and analytical gaps — constitute a fragile system of environmental regulation that has served the interest of short-term profit maximization for the energy corporations.”¹⁵⁹

The government's revenue needs and the profit imperatives of the companies make a formidable combination. The government encourages rapid oil sands development through favourable tax and royalty regimes. The companies reinforce this approach by lobbying the government for more

TABLE 5 Comparing Norway and Canada-Alberta: Climate Change

Norway	Canada-Alberta
Norway's carbon emissions per capita are half of what they are in Canada.	If Alberta were a country it would have the highest per capita emissions in the world along with Qatar.
A leader on climate change issues.	A climate laggard.
Met its Kyoto commitments. Its Copenhagen carbon reduction commitments are the most ambitious in the industrial world. Plans to be carbon neutral by 2050 or sooner.	Compared to commitments of 6% below 1990 levels, was 24% above 1990 carbon levels in 2008. Withdrew from Kyoto and its Copenhagen commitments are much weaker and almost certainly will not be met. Rapid development of the oil sands takes precedence over climate concerns. Alberta's plan aims to reduce emissions by just 14% below 2005 levels by 2050.
Recently doubled its carbon tax to \$66 per ton, and participates in the European carbon trading emissions regime.	Federal government refuses to implement a carbon tax or a cap and trade system for carbon emissions. Alberta's \$15 partial carbon tax is extremely low and ineffective.
Tough environmental regulations govern the exploitation and transportation of oil and gas.	Alberta's environmental regulations don't meaningfully restrain the environmental impacts of rapid oil sands development. The environment department lack sufficient resources to effectively enforce regulations. The federal environment department has been gutted as has the federal environment regulation and review system.

subsidies and weaker regulations to maximize their returns. Both promote the benefits of the industry and defend against criticism.¹⁶⁰

Andrew Nikiforuk, in his 2008 book *Tar Sands: Dirty Oil and the Future of a Continent*, exposes the revolving door between politicians and the oil industry and shows how government agencies at both the federal and provincial levels have been transformed into cheerleaders for the industry.

Both the federal and Alberta governments, as well as the oil industry, have spent millions on campaigns at home and abroad to moderate Alberta's "dirty oil" image and Canada's status as a climate rogue state. Alberta has an office at the Canadian embassy in Washington whose main purpose is to promote and defend oil sands development. The Canadian and Alberta governments have lobbied hard against the EU's fuel quality directive in an effort to prevent it from becoming a precedent for other countries. The Canadian Association of Petroleum Producers (CAPP) has also undertaken a massive media advertising campaign extolling the economic benefits to Canada of oil sands development and the companies' alleged good environmental record.

The oil industry has maintained its influence on Alberta politics since the beginning of the oil era. Its power rests on the government's dependence on petroleum revenues for its stability. As non-oil taxes have shrunk,

the government has become more accountable to the companies than to the electorate, and can more easily brush aside popular concerns over the social and environmental effects of oil sands development, calls for a greater public share of oil revenues, and demands for more transparency and public accountability. It is not a coincidence that voter turnout in the most recent elections have been the lowest in Canada.

The corporations' power also resides in their ability to finance — or withdraw election campaign financing from — the governing party, depending on the degree to which it supports business-friendly policies. Alberta's lax election spending laws — no spending limits and generous allowances for corporate donations — have given the industry huge leverage to influence elections and the direction of provincial oil policies.

With the arrival of the Harper Conservatives, oil company influence in the federal domain has been greatly enhanced.

A report from the Polaris Institute found that during the year ending September 2012 at a time when the government was formulating and implementing its plans to gut environmental regulations, representatives of petroleum industry — led by the Canadian Association of Petroleum Producers (CAPP) — held 791 meetings with members of parliament and senior bureaucrats. Of these, 52 meetings were with Cabinet ministers, including with the natural resources, environment and finance and foreign ministers. During the same period ministers met with an environmental lobbyist just once.¹⁶¹

This degree of access to the highest levels of government translates into enormous influence over public policy. By this measure Canada has taken on traits of a classic petro-state wherein private interests trump the public good.

Conclusion

CANADA IS A complex nation: vast, decentralized, and with powers divided between federal and provincial governments. The scope for applying the lessons from Norway is constrained by the institutional, structural, and cultural differences between the two countries. Canada's management of its petroleum wealth compared to Norway's is clearly the petro-path not taken. Nevertheless, lessons can be drawn from the Norwegian experience.

Through its actions and inactions, federal policies are fostering unbalanced development, with the petroleum benefits concentrated in Alberta and the costs concentrated in the manufacturing regions. Petrodollar recycling mechanisms are not mitigating these imbalances, but instead are reinforcing inequality among persons (including in Alberta) and provinces. Through its actions and inactions, Canada's federal government is shirking its climate responsibilities.

For years, foreign and domestic petroleum interests have appropriated a disproportionate share of the petro-wealth and blocked effective carbon reduction measures. It is time for Canadian governments to heed the Norwegian example and reclaim control of the petroleum industry.

It is also time for governments at both levels in Canada to recognize that inequality and climate change issues can only be solved through collective action — through bold public policy initiatives. Failure to act will only exacerbate tensions within the federation and could ultimately create a national unity crisis. Inaction will also hasten Canada's arrival at the brink of the climate cliff.

Finally, it is worth noting that the North American petroleum landscape is changing rapidly. The International Energy Agency is projecting that the U.S. oil production will almost triple by 2035. This could lower the price of crude oil, reduce U.S. demand for Alberta bitumen and thus affect oilsands expansion plans. In addition, there is uncertainty regarding transportation by pipeline of bitumen to Asian markets, either via the Pacific (Enbridge) or the Gulf of Mexico (Keystone). Moreover, a cross-Canada pipeline to the Atlantic would have to gain approval from the Quebec government.

This is all the more reason for federal and provincial governments not to leave things to the whims of the market, but rather to collaborate on a long-term plan to manage the bitumen development and its economic effects in a balanced way: one that achieves responsible carbon reduction targets and mitigates interprovincial income disparities.

Many specific policy measures are available to the Canadian and Alberta governments to improve their management of petro-wealth. What follows is not a comprehensive blueprint, but rather a series of preliminary measures that could help put Canada on the right path.

National Energy Security

- The federal government should be preparing for the transition to a low carbon economy over the long term. In the interim, it should be leading efforts to achieve oil security for eastern provinces which are heavily dependent on insecure or declining sources of imported oil. It is unacceptable that in a major exporting country, an entire region continues to be burdened by oil insecurity.
- To ensure that production and distribution of bitumen to eastern provinces is part of a clearly defined and timed transition strategy from oil dependency to a renewable energy future, a surtax should be applied (e.g. based on the difference between the lower cost of Alberta bitumen and the higher cost of current oil imports) with the revenue generated by the surtax earmarked exclusively for public investments in renewable energy development in the eastern provinces. Such a plan would have clear phase-in and phase-out period.¹⁶²

Fiscal and Monetary Policy

- Moderating the pace of bitumen development would reduce upward pressure on the dollar and therewith the inflow of foreign direct investment. It would also ease labour and materials shortages which have pushed up inflation in Alberta.
- A financial activities tax on financial sector profits and small levy on equity transactions through the TSX would strengthen federal fiscal capacity and help limit speculative pressure on the dollar.
- The Bank of Canada should take steps to target the dollar in a range closer to its true purchasing power value.
- The federal government should create a resources saving fund into which would be placed part of the proceeds from an excess profits tax on the windfall gains from petroleum and other non renewable resource price rises. Part of its capital would be invested outside the country in accordance with prudential considerations and as a currency stabilization mechanism to mitigate Dutch Disease effects.¹⁶³ As the Fund grows, the return on these assets could be used for domestic investment in public infrastructure and social programs.
- The federal government should begin to rebuild its fiscal capacity, which has deteriorated over the last 12 years, through a variety of tax measures, phased in as the economy strengthens.
- Alberta should also strengthen its tax base, bringing its income and sales taxes into line with other jurisdictions. This will help cushion provincial finances from fluctuations in oil and gas revenues and also dampen inter-provincial tax competition which has put pressure other provinces to lower their taxes.¹⁶⁴
- The provincial government should greatly increase the share of petroleum revenues allocated to the Alberta Heritage Fund, and use the return on Fund investments to finance infrastructure and social programs.

Sector Development

- The federal government should establish a system of sector development councils across a wide range of goods and services sectors.¹⁶⁵

Comprised of major business, labour, government and academic stakeholders, they would develop comprehensive strategies in key tradeable sectors, as well as immediate measures to address current challenges and opportunities. This approach would be consistent with the more collaborative Norwegian model.

- Both provincial and federal governments should encourage the development of domestic value-added activities related to resources. Far too much of our petroleum and other resources are shipped out of Canada in unprocessed or minimally processed form. The case of bitumen illustrates a general problem, i.e., that disproportionately large value-added and job benefits are being captured south of the border compared to the rest of Canada.
- Both governments should implement tax and industrial policy measures to enhance Canadian value-added activities related to petroleum, and indeed to all resource sectors. This could include government business innovation and R&D initiatives that enhance the sustainability of resource activities, and encourage linkages to upstream and downstream activities. They should better coordinate skills training with industry needs.

Trade and Investment

- The current debate over the takeover of Nexen by Chinese state-owned oil company CNOOC has highlighted the need to strengthen the foreign investment review process, not just for state-owned enterprises, but for foreign private takeovers as well. It requires a much clearer definition of the net benefit test and the performance measures used to evaluate net benefit to Canada. Strategic sectors where foreign control is limited should also be identified. Energy should be one of these.
- Regarding exports, the priority should be on upgraded and refined products. National energy security should take precedence. Thus, exports to the U.S. should be stabilized and production growth should be redirected to Eastern Canada.

Appropriation of Petroleum Wealth

- The federal government should appropriate a larger share of petroleum wealth by imposing a Norwegian-style excess profits tax — over and above the general tax — on petroleum companies. (This could also be extended where appropriate to mining companies.) It should also cut the generous petroleum development tax breaks that further drain the federal treasury and accentuate regional fiscal imbalances.
- The Alberta government should boost its share of the petro wealth by increasing royalties and reversing its corporate tax cuts. It should also commit, as the OECD recommended, to establishing strict rules for allocation and withdrawal of petro-revenues into the Alberta Heritage Fund to prevent backsliding. Contributions to the fund could be deducted from the equalization calculations of Alberta's fiscal capacity.

Interpersonal Income Inequality

- The federal government should improve the equity of interpersonal petrodollar recycling mechanisms by making the personal income tax system more progressive, especially at the very top end. It should also reverse the tax cuts, notably on capital gains; eliminate tax breaks on stock options and dividends; and remove a variety of tax shelters that disproportionately benefit the very richest members of Canadian society.
- Temporary foreign workers should have access to the same effective labour rights and protections as Canadian workers generally, and should be allowed to apply for permanent residency. The bulk of labour shortages should be met through the regular immigration channels, through in-migration of skilled and unskilled workers from other provinces, and through training and other support measures for the 1.4 million unemployed workers in Canada, with emphasis on First Nations communities. The federal government should wind down the Temporary Foreign Workers program. Stronger wage floors are required to prevent wage suppression-type competition.

Inter-Provincial Inequality

- The federal government has a constitutional obligation to reduce fiscal disparities among the provinces through its equalization program. These disparities are at unprecedented levels and rising rapidly. Successive government changes have made the program less able to fulfill its mandate. The federal government has the responsibility and the power to deal with the consequences of this development for the well-being of the federation.
- The federal government should use its increased fiscal capacity, including a greater federal share of petroleum wealth, to strengthen federal-provincial health and social transfers, and especially the equalization program. The current GDP ceiling needs to be lifted and the equalization formula needs to revert to a national standard and changed to include all resource revenues, with the exception of those revenues that are put into a savings fund. This will help mitigate the asymmetries caused by the concentration of oil wealth in Alberta and ensure that the petro-boom benefits all Canadians.

Climate

As a major petroleum producer and exporter, Canada has a special obligation to take serious steps to establish its credentials as a leader in the worldwide effort to lower greenhouse gas emissions. To that end, both governments should:

- Slow the pace of bitumen development to limit the environmental and social damage;
- toughen environmental regulations and enforce existing regulations covering oil and gas extraction and transportation;
- put a meaningful price on carbon, as Norway does, through a carbon tax and/or a cap-and-trade system;
- eliminate generous tax subsidies to the bitumen industry; and with these revenues, Canada and Alberta should collaborate on a fund to encourage and promote carbon reduction activities, research and development on renewable energy, public transit, and other activities to hasten the transition to a low carbon economy;

- make carbon reduction and adaptation activities an integral part of Canada’s international assistance program; live up to its Copenhagen commitments, along with other leading industrialized nations, to fund developing country climate change initiatives;
- taking a cue from Norway’s ambitious plan to become carbon neutral, federal and provincial governments should develop their own plans for the transition to a low carbon society, with realistic measures to achieve these goals;¹⁶⁶
- as renewables gradually replace fossil fuels, our governments should be putting in place “just transition” training and other strategies to enable affected workers to move into green energy and other sectors of the economy.

Building a National Consensus

The federal government, in conjunction with the provinces, territories and First Nations governments, should convene a pan-Canadian consultation on energy policy and its impacts on national economic prosperity, inequality, and climate issues. Norway has been successful in building a public consensus around petroleum policy. Canada’s federal government needs to take a leadership role in building public consensus around a long-term national energy plan that would break the cycle of interminable federal-provincial bickering. “Letting the market decide” will only make inequality worse and bring the looming climate crisis closer. Doing nothing, on the grounds that Canada is too decentralized and fragmented a federation for such a policy to succeed, is also a cop-out.

The federal government should do its best to avoid an NEP-type heavy-handed approach that would breach provincial jurisdiction. Collaboration is always preferable to confrontation. At the same time, it should not refrain from exercising its own jurisdictional responsibilities. Albertans, as Peter Lougheed once said, are Canadians first. It is the role of the federal government to uphold the national interest, which transcends regional interests.

Canadians, John Ralston Saul writes, are united by a concept of citizenship rooted deep in our nation’s history that embraces fairness and inclusion, (and I would add, respect for the environment.)¹⁶⁷ If this concept is to apply to Canada as a whole and not just on province-by-province basis, then these very difficult challenges must be addressed head-on.

Notes

1 The term petroleum includes oil and gas. The term fossil fuels includes coal as well as petroleum. According to the International Energy Agency (IEA), oil accounts for 34% of the world's energy needs, and natural gas accounts for 21%. The IEA's projections to 2035 see the natural gas share of world energy needs rising to 25%, and the share of oil falling to 30%.

2 See for example: Karl, T. *The Paradox of Plenty: Oil booms and Petro-states*, University of California Press, 1997; Sachs, J. and A. Warner, *The Big Push: Natural Resource Booms and Growth*, Jr. of Development Economics, 1999, 59, 1; Ross, M. *Does Oil Hinder Democracy?* World Politics, 2001, 53.

3 Oil and gas production and export statistics for Canada and Norway are from CIA-World Factbook. They are accessed at: <http://www.indexmundi.com/g/r.aspx?t=0&v=138&l=en>

4 When the UN Human Development Index was created in 1990, Canada was number one and remained so until the mid-1990s.

5 Canadian Association of Petroleum Producers (CAPP) <http://www.capp.ca/aboutUs/mediaCentre/NewsReleases/Pages/2012-Oil-Forecast.aspx>. Although this study is focused on Alberta and its relationship with the federal government, Saskatchewan and Newfoundland are also significant oil producers, accounting for roughly 15% and 12% of Canada's crude oil production respectively. British Columbia is a significant producer of natural gas.

6 Canadian Association of Petroleum Producers (CAPP).

7 Newfoundland and Labrador is even more dependent with 44% of its own-source revenues coming from petroleum. Saskatchewan is less dependent at 17%. See A. Plourde: "Oil and Gas in the Canadian Federation," in *Oil and Gas in Federal Systems*, G. Anderson (ed.), Oxford University Press, 2012, 114.

8 Leiv Lunde, Hendrik Thune, et.al. *The National Interest: Foreign Policy for a Globalized World, The Case of Norway*, 2008, 146.

9 Helge Ryggvik, *The Norwegian Oil Experience: A Toolbox for Managing Resources?* Centre for Technology Innovation and Culture, University of Oslo, 2010, 23.

- 10** Interview with professor Einar Lie by Mitchell Anderson, *Canada doesn't obey Norway's Ten Commandments*, The Tyee, August 8, 2012.
- 11** In recent years critics charge that the Petroleum Directorate has become too closely tied to the interests of the industry. An oil-industrial complex has emerged which puts its own interests in front of those of society as a whole. See Helge Ryggvik, *The Norwegian Oil Experience: A Toolbox for Managing Resources?* Centre for Technology Innovation and Culture, University of Oslo, 2010.
- 12** Interview Ministry of Petroleum.
- 13** Op.cit. Lunde et al.
- 14** In 2007, Statoil acquired North American oil Sands Corp for \$1.9 billion.
- 15** Op.cit. Ryggvik, 59.
- 16** Op. cit. Leiv Lunde et al., 143.
- 17** In Alberta, over 80% of the mineral rights including petroleum, are owned through the Alberta government by the people of Alberta. The federal government owns 10.5% either through national parks or held in trust on behalf of first Nations. The rest are privately owned; cited in D. Sawyer and S. Stiebert: *Fossil Fuels – At What Cost? Government support for upstream oil activities in three Canadian provinces: Alberta, atchewan, and Newfoundland and Labrador*, November 2010, Global Subsidies Initiative (GSI) of the International Institute for Sustainable Development (IISD), 21.
- 18** See A. Plourde, “Oil and Gas in the Canadian Federation,” in *Oil and Gas in Federal Systems*, G. Anderson (ed.), Oxford University Press, 2012.
- 19** Ibid, 91.
- 20** Statistics Canada, CALURA reports various years. See Table 1.
- 21** Op. cit. Plourde, 92.
- 22** D. Sawyer and S. Stiebert: *Fossil Fuels – At What Cost? Government support for upstream oil activities in three Canadian provinces: Alberta, Saskatchewan, and Newfoundland and Labrador*, November 2010, Global Subsidies Initiative (GSI) of the International Institute for Sustainable Development (IISD), 41.
- 23** Statistics Canada, CALURA reports: Major Financial Characteristics of Corporations in the Petroleum and Natural Gas Industries, 1969–70, 1971–72, 1974–75; Major financial Characteristics of Non-Financial Corporations, by country of control and 33 industries, 1980–84, 1985–86, 1987–88; Corporations Returns Act 2010, Oil and Gas Extraction and Support Activities.
- 24** Op.cit. Plourde, 93.
- 25** See H. McCullum, *Fuelling Fortress North America: Report on the Athabaska Tar Sands and U.S. Demands for Energy Security*, CCPA, Parkland, Polaris, March 2006.
- 26** Canadian Association of Petroleum Producers (CAPP) <http://www.capp.ca/aboutUs/mediaCentre/NewsReleases/Pages/2012-Oil-Forecast.aspx>
- 27** G. Laxer, *Obstacles to Powering Down to a Post-Carbon Canada*, Paper presented to “Energy and New Markets as a Solution” Canadian Political Science Association meetings, May 18, 2011.
- 28** L. Hughes, *Energy Security in Quebec and Atlantic Canada*, CCPA forthcoming, 2013. In 2010 The three biggest foreign suppliers of crude oil to Quebec were; Algeria, the UK, Angola, Mexico, and Norway (5.9 MMbbl). The largest foreign suppliers of crude to Atlantic Canada were: Saudi Arabia, Nigeria, Norway (19 MMbbl), and Iraq ,Hughes 2012, 17–19). In 2010, about 45% of New-

foundland's crude oil production went to Atlantic Canada, Quebec, and Ontario, while over half went to the United States, Hughes, 2012, 21.

29 Ibid.

30 *Who Benefits? An investigation of foreign investment in the tar sands*, Forest Ethics, 2012.

31 J. Rozon, Foreign Investment in the Oil Sands and British Columbia Shale Gas, Canadian Energy Research Institute, March 2012, 1.

32 Ibid.

33 Cited in *Fuel for Thought: The Economic Benefits of Oil Sands Investment for Canada's Regions*, Conference Board of Canada, October 2012, 44–45.

34 William Marsden, *Stupid to the Last Drop: How Alberta is Bringing Environmental Armageddon to Canada (and doesn't seem to care.)* Vintage Canada, 2008, 73.

35 Leading the list of foreign takeovers of Canadian resource giants were Rio Tinto's takeover of Alcan and Vale's takeover of Inco. X-Strata's takeover of Falconbridge, U.S. Steel's takeover of Stelco and Arcelor Mittal's takeover of Dofasco. The federal government, under pressure from the Saskatchewan government, blocked the sale of Potash Corp.

36 Sovereign Wealth Fund Institute: <http://www.swfinstitute.org/fund-rankings/>

37 International Monetary Fund, *International Financial Statistics*.

38 OECD Economic Survey of Norway, 2012, 15.

39 For good description of how governments can insulate natural resource funds from partisan spending and perverse incentives, see Humphreys, MaCartan, and Sandbu's "The Political Economy of Natural Resource Funds," in Humphreys, MaCartan, Sachs, and Stiglitz. 2007. *Escaping the Resource Curse*. Columbia University Press.

40 Interview with Norwegian Ministry of Finance official.

41 Material provided by the Norwegian Ministry of Finance.

42 For elaboration of the Council on Ethics' activities, go to: http://www.regjeringen.no/en/sub/styrer-rad-utvalg/ethics_council.html?id=434879

43 Barrick Gold Corporation was excluded in 2009 because of its disposal of riverine tailings in its New Guinea mine was causing severe environmental and health damage. The mercury tailings are causing severe long-term environmental damage and have had a negative impact on the health of the population living in the area. The company, it noted, was unwilling to take appropriate measures to prevent or reduce the damage. It also judged that the company would continue these practices into the future. The Ministry of Finance excluded Potash Corporation of Saskatchewan in December 2011 on the grounds that its conduct represented a particularly "serious violations of fundamental ethical norms." Potash Corp purchases phosphate from a Moroccan company that extracts it in Western Sahara, a territory which is not self-governed and which has no recognized administrator. This is following a United Nations legal opinion that mineral resources extraction in territories that are not self-governed is only acceptable if it benefits the local population of the territory. The Council determined that the interests of the local population were not well served and that this situation constituted a core breach of ethical standards. Finally, the Anglo-Australian company Rio-Tinto, which took over Alcan in 2007, was also excluded in February 2008 for practices causing severe environmental damage. The Council determined that Rio Tinto, through its participation in the Grasberg mine in Indonesia, through its provision of capital for the expansion of the mine and exploration activities, through its influence on mine

management and operations, and through its present and future share of production, it was directly involved in the environmental damage caused by the mining operations.

44 The ordinary tax went from 17% to 28% between 1993 and 1998. It was 17% from 1991 to 1993. Prior to 1991 it was 29.8% for years. <http://www.oecd.org/tax/taxpolicyanalysis/oecdtaxdatabase.htm>
<http://www.oecd.org/tax/taxpolicyanalysis/oecdtaxdatabase.htm>

45 Derived from Ministry of Petroleum, Petroleum Facts 2012, p. 134.

46 Interview with Norwegian Ministry of Finance official.

47 H. Bergren and L. Tragardth, *Social trust and radical individualism: The paradox at the heart of Nordic capitalism*, The Nordic Way, World Economic Forum, 2010, 21.

48 The difference between spending and the tax/GDP ratio is made up by returns to the government from Norway's sovereign wealth fund.

49 OECD, Economic Survey of Norway February 2012, 11.

50 OECD, Growing Inequality in OECD Countries: What drives it and how can policy tackle it, May 2011, 11 <http://www.oecd.org/social/ministerial/policyforumtacklinginequality.htm>.

51 Ibid.

52 This section draws heavily on: E.Loken and T Aarvaag Stokke, *Labour Relations in Norway*, FAFO, 2009; Jon Erik Dolvik: *The Nordic Regimes of Labour Market Governance: From Crisis to Success Story*, FAFO, 2008; and an interview with Stein Reegard, chief economist for the Norwegian labour union central, the LO.

53 Unions have the right to one-third of board seats in companies with more than 100 employees.

54 For example, a tariff board can decide whether provisions of nationwide collective agreements should apply in part or in full to foreign as well as Norwegian employees.

55 An OECD index of "tolerance of minorities placed Canada at the top, while Norway ranked in 15th place.

56 WTI Cushing, Oklahoma, U.S. Energy Information Administration.

57 Canadian Association of Petroleum Producers, *Statistical Handbook*.

58 Op. cit. CERI, 2012.

59 It is also important to note that financial investors have come to dominate oil markets and price movements over the last decade. Financial investors now represent more than 85% of all commodity market participants. As a result exchange-traded derivatives on commodity markets are now 20 to 30 times greater than physical production. Their investment decisions are not based on specific oil supply and demand conditions, but rather on factors such as the state of the world economy, Eurozone debt renegotiation etc. Thus there is a high correlation between oil price and stock market fluctuations in stock markets rather than supply shocks in the oil sector. (See UNCTAD Policy Brief 25, September 2012: *Don't blame the physical markets.*)

60 A 2012 report by the Calgary based Canadian Energy Research Institute (CERI) found a 92% correlation between real oil prices and the real Canada-U.S. exchange rate, and a from May 1999 to May 2011. (27)

61 Statistics Canada, product classification HS 27.

62 Statistics Canada, product classification HS 87.

63 It's deficit in services trade increased from \$6 billion in 2002 to \$23 billion in 2011.

- 64** Statistics Canada, GDP at basic process, monthly.
- 65** Statistics Canada, Labour Force survey.
- 66** T. Clarke et.al., *Bitumen Cliff: Lessons and Challenges of Bitumen Mega-developments for Canada's Economy in an Age of Climate Change*, Canadian Centre for Policy Alternatives and Polaris Institute, forthcoming 2013.
- 67** The BLS data cited in Andrew Jackson: <http://www.behindthenumbers.ca/2012/08/16/canadas-economic-problem-is-not-high-wages/>
- 68** Ibid.
- 69** Statistics Canada, Table 378-0121, National Balance Sheet Accounts, 2012, Q2.
- 70** M. Beine, C.S. Bos, and S. Coulombe: *Does the Canadian Economy Suffer from Dutch Disease? Resource and Energy Economics* (forthcoming 2012) The authors estimate that the commodities boom explains about 42% of the appreciation of the Canada-U.S. exchange rate over the 2002–08 period. The sharp depreciation of the U.S. dollar due to the weakness of the U.S. economy explains the rest (58%). They calculate that that Dutch disease accounted for 200,000, or 31% of the manufacturing job losses in the 2002–08 period; the depreciation of the U.S. dollar unrelated to the commodities boom accounted for 350,000 or 55% of the manufacturing job losses; and remaining 90,000 manufacturing job losses were due to structural factors, notably competition from China whose currency has informally been partially pegged to the U.S. dollar.
- 71** Mark Carney, Dutch Disease, Remarks at Spruce Meadows Roundtable Calgary, September 7, 2012, 11.
- 72** Ibid Carney, 14.
- 73** J. Stanford, Curing Dutch Disease, Alternative Federal Budget Technical Paper, CCPA, April 2012.
- 74** OECD, Economic Survey of Canada, June 2008, 31.
- 75** Ibid, 87.
- 76** Ibid.
- 77** Cited in Madelaine Drohan, "Spending Like There's No Tomorrow," *Literary Review of Canada*, Jan-Feb 2013, 5. This article is based Drohan's report, "The 9 Habits of Highly Effective Resource Economies: Lessons for Canada." Canadian International Council, 2012.
- 78** Statistics Canada, CANSIM tables: 384-0001 and 051-0001. Only the petro-provinces of Alberta, Saskatchewan and Newfoundland and Labrador are above the national average.
- 79** OECD Economic Survey of Canada, 2012, 14
- 80** *Fuel for Thought: The Economic Benefits of Oil Sands Investment for Canada's Regions*, Conference Board of Canada, October 2012; *Economic Impacts of New Oil Sands Projects in Alberta*, (2010–35), Canadian Energy Research Institute, (CERI) Study No. 124. There are a number of differences between the Conference Board report and the CERI study. Both studies use the Statistics Canada input-output model. CERI uses a 2006 version and the Conference Board uses a more updated 2009 version. Especially the former therefore underestimates the structural changes in the economy notably the decline of manufacturing. CERI's analysis, combines it with a U.S. input-output model. CERI takes into account the totality of GDP and employment effects whereas the Conference Board study focuses on the effects of oil sand *investment* only. To the extent that they are comparable, in the Conference Board report, of the total Canadian employment effects from investment in the oil sands (direct, indirect, and induced), 74.2% occur in Alberta and 25.8% occur in the rest of Canada. In the CERI study, of the total employment effects from investment in the oil sands, 84.8% occur in Alberta and 15.2% in the rest of Canada (Table 2.8). In the Con-

ference Board report, which places major emphasis on indirect or supply chain employment effects, 70% occurs in Alberta and 30% in the rest of Canada (Chart 1). Looking at just the indirect employment impact of oil sands investment estimated by CERI, 79.3% of occurs in Alberta and 21.7% occurs in the rest of Canada (Table 2.7).

81 Neither the CERI nor the Conference Board study consider the potential negative (for example, currency) effects from the petro-boom.

82 Ibid xi.

83 It should be noted that the induced effects from Europe and Asia, which are not estimated in the CERI study are likely to be significant as well given the substantial amount of oil and gas FDI from these countries.

84 See for example, S.Landon and C.Smith, 'Energy Prices and Alberta Government Revenue Volatility, Commentary313 (C.D. Howe Institute, 2010), 20.

85 OECD Economic Survey of Canada 2008, 107.

86 RBC Economics, Provincial Outlook, September 12, 2012.

87 Cited in Mitchell Anderson, "Alberta's Oil Wealth and the Big Question for Harper," *The Tyee.ca* April 13, 2011.

88 S. Clark and P. Devries, *A government on auto-pilot*, I-Politics, September 28, 2012.

89 Royalties are a levy on the wealth produced by oil and gas fields. Norway no longer levies royalties on its petroleum resource but rather impose taxes on net revenues or economic rent from oil.

90 Alberta has no provincial sales tax.

91 Ibid Greg Flanagan, *Fixing What's Broken: Fair and sustainable solutions to Alberta's revenue problems*, Parkland Institute, June 2011.

92 Hugh Mackenzie, *The Art of the Impossible: Fiscal federalism and Fiscal Balance in Canada*, Canadian Centre for Policy Alternatives, July, 2006.

93 Royalty revenues in Alberta are considered as separate from tax revenue although they are a form of tax on production.

94 R.Boadway, S. Coulombe and J. Tremblay, *The Dutch Disease and the Canadian Economy: Challenges for Policymakers*, paper presented October 26–27, Queen's University, at a conference in honour of Tom Courchesne, 26.

95 D. Sawyer and S. Stiebert: *Fossil Fuels — At What Cost? Government support for upstream oil activities in three Canadian provinces: Alberta, Saskatchewan, and Newfoundland and Labrador*, November 2010, Global Subsidies Initiative (GSI) of the International Institute for Sustainable Development (IISD), 16.

96 Ibid (16–17).

97 IISD, cited Pembina 52.

98 The federal government has a sovereign wealth fund, the Canada Pension Plan Fund. It is comprised entirely of worker pension contributions with no access to petroleum revenues. Roughly 60% of its assets are invested abroad.

99 Alberta currently has no net government debt, but rather a net surplus of about \$50 billion.

100 *Misplaced Generosity: Update 2012*, Parkland Institute, March 2012, 10.

101 Alberta Royalty Review Panel (2007), *Our Fair Share*, (Edmonton: Ministry of Finance).

- 102** Ibid, 4.
- 103** Cited Nikiforuk, *Tar Sands, Dirty Oil and the Future of a Continent*, Greystone, 2008, 147.
- 104** Cited in I. Urquhart, *Petrostate?*, Alberta Views. Oct. 4, 2011.
- 105** Andre Plourde, “Oil sands royalties and taxes in Alberta: An assessment of key developments since the mid-1990s,” *Energy Journal*, 2009, 30(1), p.127, 130., cited in *Misplaced Generosity*, op. cit., 13.
- 106** A. Plourde, (2010) *On Properties of Royalty and Tax Regimes in Alberta’s Oil Sands*. *Energy Policy*, 38: figure a and b, 4660; cited in A. Carter, *Environmental Policy in a Petro-state: The Resource Curse and Political Ecology in Canada’s Oil Frontier*, Ph.D Dissertation, Cornell University, 2011, 75.
- 107** Op. cit. Parkland Institute , 8. Rent is revenue remaining after costs and a normal rate of profit have been deducted.
- 108** Ibid, 9.
- 109** Carney 2012, op.cit.
- 110** Robin Boadway, *Natural Resource Shocks and the Federal System: Boon and Curse?* Paper presented to the Conference *Fiscal Federalism and the Future of Canada*– September 28–29, 2006, Queen’s University.
- 111** Ibid, 10.
- 112** Report of the Council of the Federation Working group on Fiscal Arrangements, July, 2012.
- 113** Cited in R.Boadway, S. Coulombe and J. Tremblay, *The Dutch Disease and the Canadian Economy: Challenges for Policymakers*, paper presented October 26–27, 2012, Queen’s University, at a conference in honour of Tom Courchesne. The equalization program ensures that no province falls below 95% of the national average but it does not reduce Alberta’s fiscal capacity.
- 114** Op. cit. Plourde, 108–09.
- 115** Cited in G Anderson, *Fossil Policies*, *Literary Review of Canada*, May 2012, <http://reviewcanada.ca/reviews/2012/05/01/fossil-policies/>
- 116** Ibid, 18.
- 117** Carney, 2012, 12.
- 118** See for example, M. Lee, *Eroding Tax Fairness: Tax Incidence in Canada, 1990 to 2005*, CCPA, November 2007, Lee calculates that in 2005 the richest 1% paid a lower overall tax rate than the poorest 10% of families.
- 119** A. Yalnizyan, *Rise of the Richest 1%*, CCPA, 2010.
- 120** In a study for the CCPA, Jordan Brennan provides compelling evidence linking the rapid growth in income concentration in the hands of the 1%, and especially the richest 0.1% of the population, to the explosive growth in the concentration amongst the 60 largest Canadian firms over the last 25 years Brennan explains that monopoly power of large corporations: their ability to control market processes and prices including the distribution of income, was kept in check by the countervailing power of unions. Under neoliberal globalization however, the weakening bargaining power of labour reflected in declining unionization and in labour’s share of profits, closely mirrors the rise in corporate concentration. See J. Brennan, *A Shrinking Universe: How Concentrated Corporate Power is Shaping Income Inequality in Canada*, CCPA, November 2012. In 1990, the average firm in the top 60 of the TSX was 5 times the size of the average firm. By 2010,

that had grown to 23 times. From the mid-1990s to 2008, the top 60 firms' share of total equity capitalization on the TSX grew from 25% to 67% and accounted for 60% of all corporate profits.

- 121** OECD, Database on earnings distribution.
- 122** OECD Employment Outlook 2012.
- 123** Statistics Canada, SLID data, custom run.
- 124** D. Gibson, *A Social Policy Framework for Alberta: Fairness and Justice for All*, Parkland Institute/Alberta College of Social Workers, October 2012, fig., 19.
- 125** OECD, Economic Survey, Norway, 2012, 11.
- 126** Statistics Canada data cited in Gibson, 2012, 21.
- 127** Ibid, 22.
- 128** Tony Clark, Social Policy Simulation Database, Statistics Canada custom tabulations for the Alberta Federation of Labour, cited in Alberta's Revenue Crisis, Alberta Federation of Labour.
- 129** OECD Employment Outlook, 2012; cited in A. Jackson, <http://behindthenumbers.ca/2012/07/19/labour-losing-to-capital/>
- 130** Statistics Canada, R. Morrisette, G Schellenberg, and A. Johnson, *Diverging Trends in Unionization*, Perspectives on Labour and Income, V6 No.4, April 2005; S. Uppal, *Unionization 201*, Perspectives on Labour and Income, October 2011.
- 131** *Foreign migrant workers in Alberta*, Bob Barnetson and Jason Foster, Athabasca University, paper presented at Canadian Political Science Association June 13, 2012, p.3.
- 132** http://www.hrsdc.gc.ca/eng/workplaceskills/foreign_workers/stats/annual/table1aa.shtml
- 133** Government documents show that 74% of businesses inspected in 2010 were in violation of the the Alberta Labour Code: <http://www.ndpopposition.ab.ca/node/2706>
- 134** Alberta Federation of Labour, Backgrounder, 2012.
- 135** Op. cit. Bernetson and Foster.
- 136** Ibid, 9.
- 137** <http://www.progressive-economics.ca/2012/05/07/temporary-foreign-workers-and-the-labour-market/>
- 138** <http://www.hrsdc.gc.ca/eng/employment/ei/BIA/defining.shtml>
- 139** There is evidence that its wage suppression policy is being carried out at the request of Canada's largest CEOs. See documents obtained by the Globe and Mail reporter Bill Curry, August 17, 2012. Ibid. The CEO's meeting with the Minister of Finance suggested that the government consider U.S. style right-to-work legislation, which allows workers to opt out of paying union dues, as a strategy to depress wages. They also called for cuts in public sector wages (excluding senior executives) and shrinking the size of the public service overall.
- 140** C. Schenk, *Unions in A Democratic Society*, CCPA, September 2012.
- 141** Conference Board of Canada: *How Canada Performs*: <http://www.conferenceboard.ca/hcp/details/environment/greenhouse-gas-emissions.aspx>
- 142** The Norwegian government specified that domestic emission reductions will amount to 2/3 of total reductions with the other one-third purchased on international carbon markets.
- 143** Correspondence with Norwegian journalist Simen Saetre.

- 144** See Helge Ryggvit op. cit.
- 145** Council on Environment and Economy: *Reality Check: the state of climate progress in Canada*, 2012 p.31
- 146** Marc Lee, <http://www.behindthenumbers.ca/2012/08/08/canadas-emissions-deception/>
- 147** Claire Demerse, *Too much rhetoric, not enough facts in the carbon tax debate*, I-Politics, September 21, 2012.
- 148** Pembina Institute, 2012, 60.
- 149** Canada's Emission Trends 2012.
- 150** Pembina institute, Oil Sands Watch, accessed at: <http://www.pembina.org/oil-sands/os101/climate>
- 151** Ibid.
- 152** M. Bramley et al., *Responsible Action? An assessment of Alberta's greenhouse gas policies*, Pembina Institute, December 2011. The report found that 82% of the credits used for compliance came from projects that started before the tax was implemented, 12.
- 153** Ibid, 42.
- 154** G Dembicki, The Tyee, June 12, 2012.
- 155** Op cit Bramley et al, 5, 17.
- 156** A. Carter, "The Petro-Politics of Environmental Regulation in the Tar Sands," in Adkin, L., B. Miller, N. Krogman, and R. Haluza-Delay, eds. (forthcoming 2012) *Political Ecology and Governance of Alberta*, University of Toronto Press.)
- 157** Op.cit., 9.
- 158** I. Urquhart, Petrostate?, Alberta Views, Oct. 4, 2011.
- 159** Op. cit Carter, 2012.
- 160** A. Carter, *Environmental Policy in a Petro-state: The Resource Curse and Political Ecology in Canada's Oil Frontier*, Ph.D Dissertation, Cornell University, 2011, 101.
- 161** Daniel Cayley-Daoust and Richard Girard, *Big Oil's Oily Grasp: The making of Canada as a petro-state and how oil money is corrupting Canadian politics*, Polaris Institute, December 2012.
- 162** This was proposed by Tony Clarke in conversation with the author.
- 163** The OECD 2008 *Economic Survey of Canada* recommended such a fund, 16.
- 164** A growing number of Alberta voices including ex-Finance minister Ron Liepert and tax experts, are urging the Redford government to reconsider its no tax hike pledge.
- 165** For elaboration of these and related policies, see J. Stanford, *A Cure for Dutch Disease: Active Sector Strategies for Canada's Economy*, Alternative Federal Budget, technical paper, CCPA, April 2012.
- 166** See for example, M. Lee and A. Card, *A Green Industrial Revolution: Climate Justice, Green Jobs and Sustainable Production*, CCPA, June, 2012.
- 167** J.R. Saul, *A Fair Country: Telling Truths About Canada*, Viking Canada, 2008.



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