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ADVISORY SERVICES

Economic Impacts of Western Canada's Oil Industry

FINAL VERSION



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de commerce du Québec

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EXECUTIVE SUMMARY

The *Fédération des Chambres de Commerce du Québec* (FCCQ) has entrusted KPMG-SECOR with a mandate to carry out an assessment of economic impacts of the upstream oil industry in Western Canada. Although there is no doubt as to the importance of this industry and its economic and fiscal impacts for Alberta, several other Canadian provinces have also derived benefits from the soaring oil development in the West. This is the case for both Quebec and Ontario, where some economic sectors have turned toward the West, but these effects are often not widely known.

The truth is that for over a decade, Canada has been an important player in the global oil industry. The increase in exploration activity in the past 10 years, particularly in Alberta, British Columbia and Saskatchewan, has greatly contributed to the increase in Canadian production capacity. In 2012, although Canada consumed only 2.5% of the world's oil production, Canada produced 4.4% of world production. When the oil sands are taken into account, Canada ranks in third place among the countries with the largest reserves, with 10% of world reserves or almost six times the 2012 world's consumption.

In order to measure the direct and indirect economic impacts of the oil industry in each province, we turned to the latest version of Statistics Canada's intersectoral model. This is the reference model for this type of study. Estimated oil production, as well as 2012 investment and operating expenditures, were provided by the *Canadian Energy Research Institute* (CERI).

Study results show that overall investment and operating expenditures in Western Canada's oil sector generated \$44.1 billion in value added in 2012 and helped support almost 420,000 Canadian jobs. Almost 54% of these impacts arose from unconventional oil development. Although the impact of these expenditures is concentrated in the western producing provinces, particularly Alberta and Saskatchewan, the other Canadian provinces also benefited from these economic impacts. For Quebec, oil activities in Western Canada generated value added close to \$1 billion in 2012 and helped support over 10,000 direct and indirect jobs in the Quebec economy. In Ontario, almost \$3.5 billion in value added was generated in 2012, helping to support almost 37,000 jobs.

FIGURE 1 : DIRECT AND INDIRECT ECONOMIC IMPACTS OF WESTERN CANADA'S OIL INDUSTRY 2012; by province; in millions of dollars, except for jobs

| \$M | BC | AB | SK | MB | ON | QC | ATLANTIC | TERRITORIES | TOTAL |
|--------------------------|--------|---------|--------|-------|--------|--------|----------|-------------|---------|
| Value added | 1,451 | 34,033 | 3,652 | 340 | 3,440 | 939 | 193 | 31 | 44,079 |
| Jobs | 15,829 | 308,737 | 39,285 | 4,203 | 36,547 | 10,405 | 2,349 | 266 | 417,621 |
| Federal gov't revenue | 108 | 4,007 | 316 | 23 | 285 | 57 | 12 | 3 | 4,811 |
| Provincial gov't revenue | 225 | 7,652 | 1,559 | 22 | 151 | 68 | 10 | 1 | 9,688 |

Sources : Estimates based on Statistics Canada simulations, KPMG-SECOR analysis

The western oil sector is also an important source of revenue for the different levels of government. For the federal government, it means almost \$5 billion in revenue in the form of taxes, duties and royalties directly or indirectly generated by oil activities, i.e. approximately 2% of total revenue. For provincial governments, almost \$9.7 billion in revenue were generated through oil activity economic impacts, including \$68 million for Quebec and \$151 million for Ontario.

According to the 2012 estimates, close to two-thirds of the economic impacts were generated by the investment activities, whereas operation activities accounted for the other third. If investment activities were to cease and only operation activities were to be maintained, the economic impacts would be reduced to a similar extent in the short term. Given investments fuel operations, the cessation of investment activities would have an increasing negative impact in the medium and long terms.

Over and above calculated value added, oil activities generate more dynamic and structuring impacts on the economy, particularly in terms of trade balance. In the absence of oil from western Canada, the country's trade balance would in fact be heavily impacted, despite reduced imports due to the purchase of specialized equipment or other goods and services required by the oil industry and its suppliers. Firstly, a lack of oil exports to the United States would worsen the negative trade balance by approximately \$70 billion. Secondly, Canadian refineries supplied with oil from Western Canada would have to buy their oil on world markets at a premium of approximately \$27.41 per barrel over the cost of Canadian oil.

Economic impacts also help to fill the order books of suppliers across the country, thus creating value and supporting specialized jobs. From 2002 to 2011, nearly \$550 billion was spent by the oil and gas industry. The increasing magnitude of this spending may indeed have led to the success of certain companies in the oil-producing provinces, but it also brought business to companies in other provinces such as Quebec and Ontario. This report provides concrete examples of such companies to illustrate the impact of oil development in Western Canada on Quebec and Ontario societies. Above and beyond the impact in terms of generated income, the companies encountered were able to leverage their experience to stimulate their growth. For many, the oil sector has proven to be a launching point for the development of their expertise.

1. INTRODUCTION

1.1. MANDATE

The *Fédération des Chambres de Commerce du Québec* (FCCQ) has entrusted KPMG-SECOR with a mandate to carry out an assessment of the economic impacts of the upstream oil industry in Canada's western provinces on provincial economies. Today's economy in Western Canada is indeed closely tied to the exploitation of oil reserves on its territory. While there is no doubt about the importance of this industry and its economic and fiscal impacts for Alberta, several other Canadian provinces, particularly Quebec and Ontario, are called upon to participate and benefit from the soaring development of Western Canada's oil industry.

More specifically, the mandate involved conducting an analysis of the economic impacts generated by the upstream oil sector, that is by the exploration, construction and extraction activities of the western oil companies. The provinces studied for their conventional and unconventional production are British Columbia, Alberta and Saskatchewan. Economic impacts for Quebec, Ontario and the other Canadian provinces will be expressed as value added, jobs and additional tax revenues. Oil industry activities also generate a series of economic benefits of a more structuring nature, including impacts on the trade balance and the success of certain Canadian companies.

1.2. DOCUMENT STRUCTURE

This document is divided into major sections covering the following areas:

- The next section begins by drawing a **portrait of the oil and gas industry**;
- Section three discusses the **methodology** for the analysis of economic impacts;
- Section four analyzes **static economic impacts** from the investment and operating expenditures of Western Canada's oil industry;
- Section five analyzes **dynamic economic impacts**;
- The **conclusion** is presented in section six.

Appendices include a literature review and the results of induced effects.

2. PORTRAIT OF THE INDUSTRY

Energy is of prime importance to the functioning of our society. It is both central to the everyday activities of every citizen and crucial in meeting complex industrial requirements. Its importance has grown significantly over the years as populations have become wealthier and have developed by the same token new needs that in turn require energy. Oil and its derivatives remain a key component of today's energy supply.

Like other countries, Canada has capitalized on the presence of this resource on its territory to develop a domestic oil industry and thus meet its own needs as well as those of the rest of the world. This industry has a considerable impact on the Canadian economy not only in the regions where the resource is extracted, but also indirectly across the country. In order to properly understand the fallout from this industry, it seems appropriate to begin by describing the context and mechanisms of the oil industry.

2.1. OIL IN THE WORLD

Since 1973, world final consumption of energy fuels has practically doubled, rising from 4.7 to 8.7 billion tonnes of oil equivalent (Gtoe).¹ The principal fuels include, in ascending order of consumption, coal (0.9 Gtoe), biofuels and wastes (1.1 Gtoe), natural gas (1.3 Gtoe), miscellaneous fuels (1.8 Gto) and above all petroleum products and crude oil (3.6 Gtoe). Petroleum thus amounts to 41% of total world energy consumption. This magnitude is a result of its use for numerous applications both by individuals and industries.

Indeed, in 2010, 62% of oil product consumption went to transportation, 9% to industrial requirements, 17% to the manufacture of non-energy products² and 12% to other needs.³ The greatest increase in oil use in the past few years has come from the transportation sector; from 1973 to 2010, consumption in this sector rose from 1.0 Gtoe to 2.2 Gtoe.

The rise in energy consumption is directly related to population growth and increasing wealth.⁴ As shown in Figure 2, developing countries consume 0 to 10 barrels of oil per capita each year, whereas industrialized countries consume 5 to 15 barrels per capita. Economic growth therefore has a considerable effect on a country's oil demand. Moreover, some oil-producing countries are also high-consumption countries, as is the case for Canada and numerous members of the Organization of Petroleum Exporting Countries (OPEC).

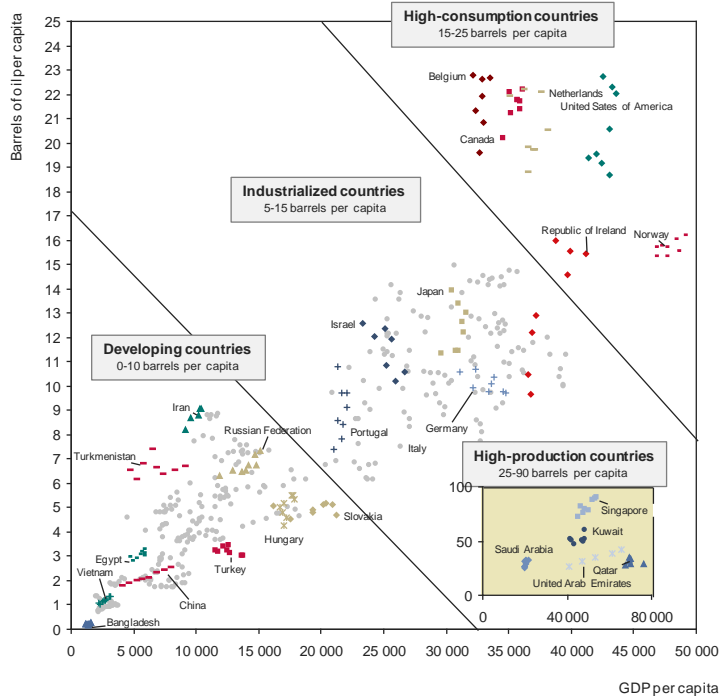
¹ (Key World Energy Statistics, 2012)

² Thinners, waxes, lubricants, bitumen and other products

³ Agricultural, commercial, public service, residential and other unspecified sectors

⁴ From 1973 to 2010, global population rose from 3.9 billion to 6.9 billion inhabitants and world GDP in 2005 \$ increased from approximately \$18,002 billion to \$50,932 billion (United States Department of Agriculture).

FIGURE 2 : OIL CONSUMPTION AND GDP PER CAPITA
2005-2011; in barrels per capita; in 2005 PPP \$ per capita



Sources: (Banque Mondiale), (British Petroleum), KPMG-SECOR analysis

2.1.1. CONSUMPTION AND PRODUCTION

In 2012, the largest oil consumers were the United States and China. Because China has experienced spectacular economic growth and has a large population base, its oil consumption jumped by an average annual rate of 6.6% between 2003 and 2012, reaching 483.7 million metric tons. On the other hand, consumption in the United States fell by approximately 1.0% per year, although it remains almost double the Chinese consumption with its 820 million tonnes and the United States has only about one-quarter the population of China. The same is true of the European countries, whose oil consumption fell as a result of the economic slowdown and endeavours to use substitute forms of energy. Overall, world oil consumption has increased by 411 million tonnes in 10 years, reaching 4.12 billion tonnes in 2012.

FIGURE 3 : WORLD CRUDE OIL CONSUMPTION 2003-2012, billions of metric tons

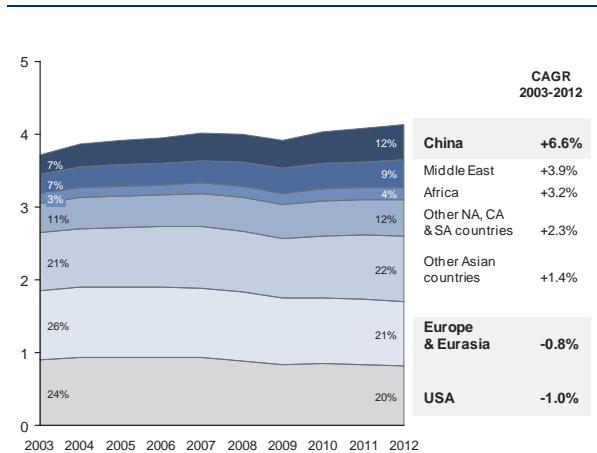
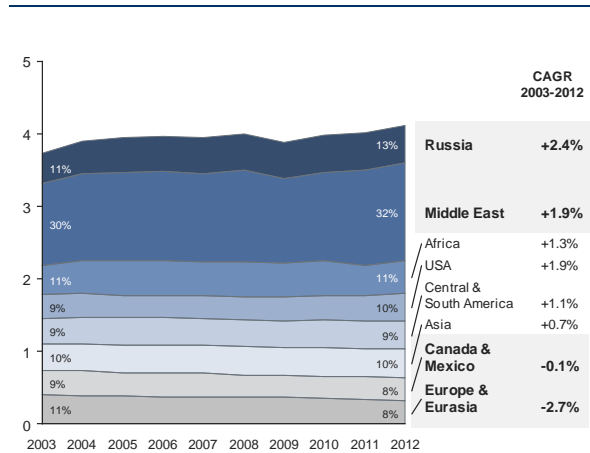


FIGURE 4 : WORLD CRUDE OIL PRODUCTION 2003-2012, billions of metric tons



Sources: (British Petroleum), KPMG-SECOR analysis

Unlike consumption, which depends on the level of development, production requires available oil-bearing geological resources. This means that some regions of the world are better endowed than others. The Middle East alone has one-third of world production and continues to increase its production by 1.9% per year in order to meet world demand. However, Russia has the fastest rate of production increase at 2.4% annually over the past 10 years. In the past decade, despite an abatement of European and North American production⁵, world production has been able to fill the gap, reaching 4.12 billion tonnes in 2012.

2.1.2. TRADE AND PRICES

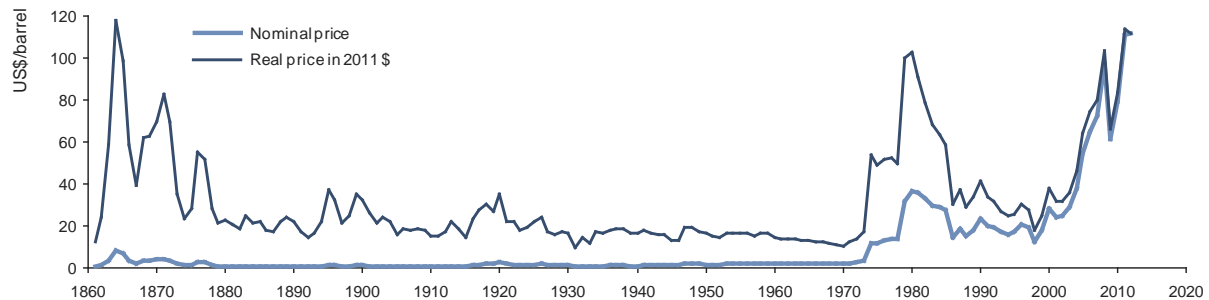
In addition, crude oil needs to be refined before it is consumed. The United States, Europe and China alone represent 50% of the world's refining capacity. This processing activity sustains international oil trade as crude is shipped to the refining countries. Of the 4.12 billion tonnes of crude oil produced in 2012, 47% were traded internationally. As a result, the oil market is integrated worldwide and this is reflected in the principal reference prices, which are highly correlated.

Historically, the price of crude oil in constant dollars has fallen consistently, with two new highs since 1860 – the first in 1980 (following the jump in 1972) and a second in 2011 (at the end of a trend going back to the early 2000's), at which point the price of oil reached US\$113.56 per barrel of Brent.

⁵ US production only returned to growth in 2009.

FIGURE 5 : PRICE OF CRUDE OIL (BRENT)

1860-2012, US\$ per barrel



Sources: (British Petroleum), KPMG-SECOR analysis

2.1.3. INVESTMENT AND DEVELOPMENT

This sharp rise in the price of oil has been the main reason for a large increase in oil industry exploration activity in recent years. From 2000 to 2012, the number of drilling rigs has practically doubled around the world in efforts to discover new oil reserves. During that time, the United States and Canada had 65% of world drilling activity with an average of 1,919 and 365 rigs in operation during the year 2012.⁶

The increased interest in the oil industry can also be seen in dollars spent on exploration and production (E&P). From 2005 to 2013, E&P investment tripled, reaching US\$644 billion.⁷ In 2013, the lion's share was spent in the United States, with almost 22% of total world investment. Canada totalled 7% of investment spending with US\$44.7 billion.⁸

2.2. OIL IN CANADA

Over the past decade, Canada's place in the world oil industry has been significantly growing; although it accounts for only 2.5% of world oil consumption, it produces ever-increasing amounts. In 2012, Canadian production reached 4.4% of the oil produced in the world as a result of numerous exploration projects that have increased extraction capacities.

Between 2002 and 2011, oil and gas exploration spending increased from \$4.1 billion to \$9.6 billion. Most of the exploration activity was located in Alberta (average of 60%), British Columbia (average of 23%), Saskatchewan (average of 9%) and to some extent in Newfoundland & Labrador (average of 2%).

⁶ (Baker-Hugues)

⁷ (Equity Research, 2012)

⁸ (Barclays Capital, 2013)

2.2.1. CONSUMPTION AND PRODUCTION

Consequently, Canadian oil production increased by 255 million barrels from 2002 to 2011, reaching an annual production figure of 1.1 billion barrels. This rise in production occurred primarily in Alberta, as shown by its accelerated growth rate of 4.7% per year. This production increase allowed the country to reduce oil imports by 73.3 million barrels from 2002 to 2011.

Import needs are basically governed by geographic and transportation constraints, since in fact almost all provinces reduced their oil supplies by some 57.8 million barrels of crude oil for a total consumption of 720.9 million barrels in 2011. Over 50% of Canadian oil production is actually intended for export to the United States.

FIGURE 6 : CANADIAN CRUDE OIL PRODUCTION AND IMPORTS 2002-2011; in millions of barrels

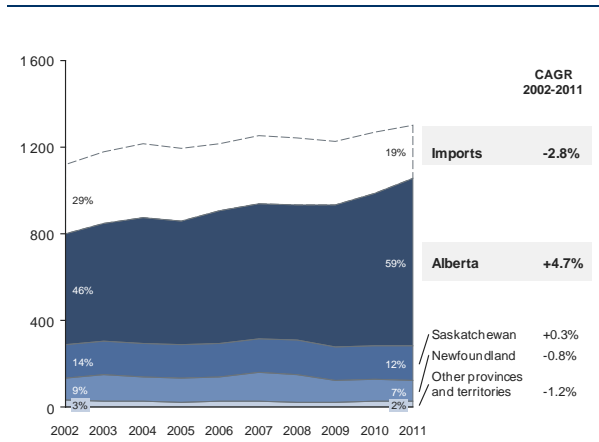
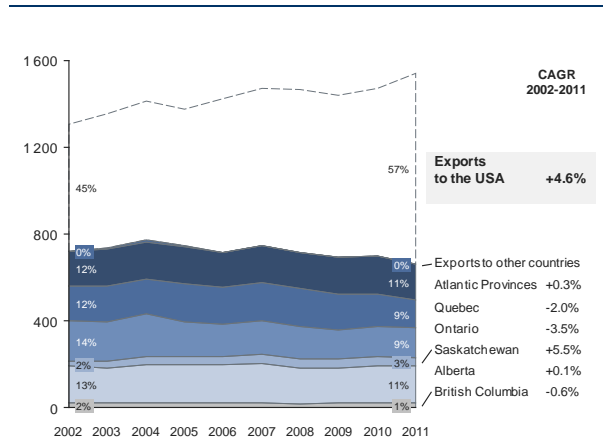


FIGURE 7 : CANADIAN CRUDE OIL USE IN REFINERIES AND FOR EXPORT 2002-2011; in millions of barrels

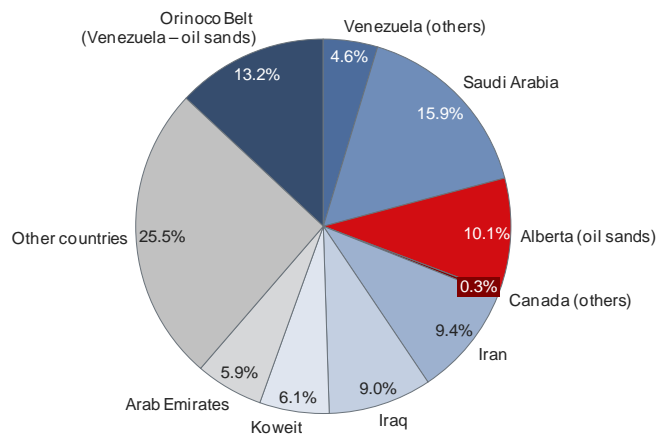


Sources: (Statistique Canada, 2012), KPMG-SECOR analysis

2.2.2. RESERVES

Oil sands are of extreme importance to the development of the Canadian oil industry. In fact, 28% of crude oil production in 2011 came from the Alberta oil sands, representing 98% of currently known reserves in Canada with 169 billion barrels. Conventional oil reserves are assessed at 4.1 billion barrels distributed mainly between Alberta (37%), Newfoundland & Labrador (34%) and Saskatchewan (25%). These reserves place Canada in third place among countries with the greatest oil reserves, with 10% of the world's reserves or approximately six times the 2012 world consumption.

FIGURE 8 : WORLD CRUDE OIL RESERVES
2012; in percentage; total = 1,668.9 billion barrels



Sources: (British Petroleum), KPMG-SECOR analysis

2.2.3. INVESTMENTS

These large reserves have led to the development of many exploration projects and considerable investment spending in Canada. Despite a drop in oil and gas industry investments in 2009 due to the world recession, they have undergone an average yearly growth of 10% since 2002, reaching \$52.3 billion in 2011. Over 75% of these investments were made in Alberta, in both conventional oil (\$18.8 billion) and the oil sands (\$20.8 billion).

The relative share of investments in Alberta has however fallen slightly since 2002 because of the faster growth of investment in Saskatchewan (16.5%) and British Columbia (16.3%). As a result, British Columbia and Saskatchewan today absorb 15% and 17% of total investment in the Canadian oil industry.

Looking at the oil sands sector alone, we can see that an increasing share of investment is directed toward *in situ* sites. These are sites where the oil is extracted by drilling wells and then injecting steam or solvents underground to liquefy the bitumen for extraction. This reflects the fact that the great majority of oil reserves in the oil sands lie at a depth that does not allow open pit mining, a method closer to the techniques used to extract coal. In 2011, more than half of investments went to *in-situ* sites, as opposed to 37% to mining sites, with this change of direction only dating back to 2011. As for upgrading facilities that process the bitumen into synthetic crude oil, these accounted for 11% of total investment in the oil sands.

FIGURE 9 : INVESTMENTS IN THE CANADIAN OIL AND GAS INDUSTRY
2002-2011; in billions of \$

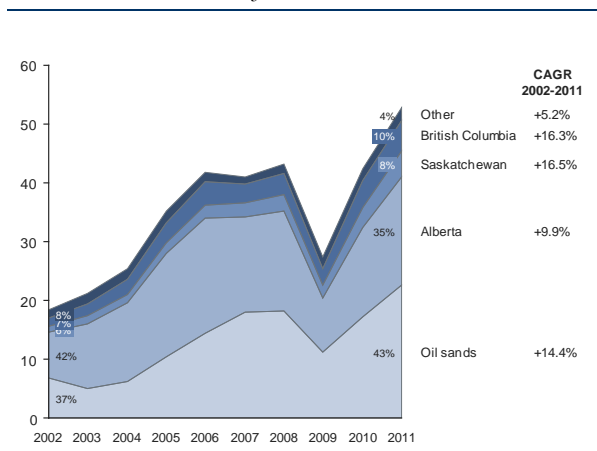
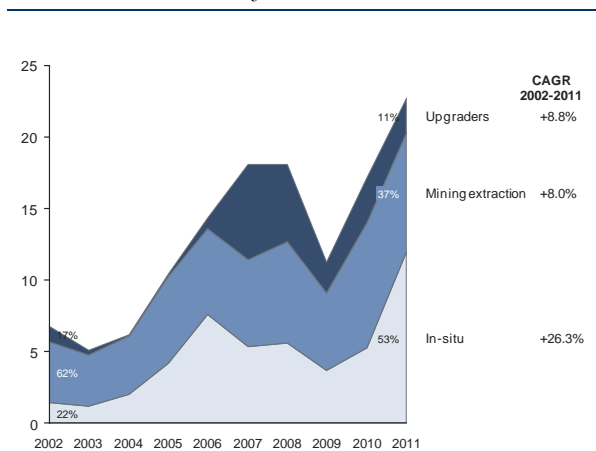


FIGURE 10 : INVESTMENTS IN THE ALBERTA OIL SANDS BY METHOD OF EXTRACTION
2002-2011; in billions of \$



Sources: (Canadian Association of Petroleum Producers), KPMG-SECOR analysis

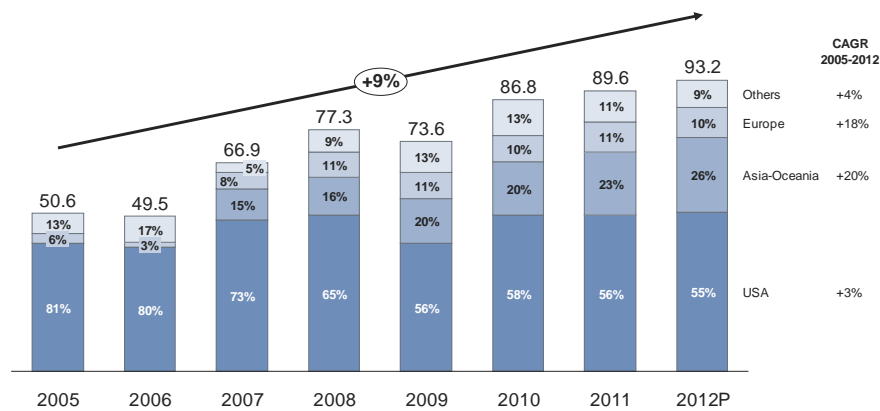
2.2.4. FOREIGN PARTICIPATION

The presence of large amounts of oil in the Canadian ground attracts many foreign investors. Foreign direct investment (FDI), i.e. investments made in Canada in order to acquire assets and manage production activity, reached an estimated high of \$93 billion in 2012 and has been showing an annual growth rate of 9% since 2005.

The United States have long been the largest source of foreign direct investment in the Canadian oil and gas extraction sector. In 2012, the value of their investments was estimated at more than \$50 billion and had been growing at a rate of 3% since 2005.

As a result of major increases in investment from Europe and particularly from Asia-Oceania, the relative share of FDI from the United States has fallen from 81% in 2005 to 55% in 2012. At the same time, investments from Europe rose by 18% per year from 2005 to 2012, reaching a figure of \$9.6 billion in 2012 or 10% of total FDI. As for FDI from Asia-Oceania, it has grown by 20% annually since 2005 to reach a figure of \$24 billion in 2012, which amounts to 26% of total FDI.

FIGURE 11 : FOREIGN DIRECT INVESTMENTS IN CANADA – OIL AND GAS EXTRACTION
2005-2012P; in billions of \$



Sources: Statistics Canada, SECOR-KPMG analysis

Based on a compilation of merger/acquisition transactions in the oil sands sector, it is estimated that, since 2003, 33% of foreign investment has come from the United States, 18% from France and to a lesser extent from Thailand (7%), Norway (6%), the United Kingdom (2%) and Korea (1%).⁹ The remaining 33% would originate from China. The increasing importance of China in foreign investments recently made headlines, particularly at the time of the acquisition in late 2012 of Nexen Inc. by Chinese state-owned corporation CNOOC Ltd for \$15.1 billion.

2.2.5. INDUSTRY OPERATIONS AND PLAYERS

Along with investments in exploration, many operations were started up, generating additional industry expenditures. From 2002 to 2011, oil and gas operating expenses rose from \$10.6 billion to \$32.9 billion, an increase largely attributed to the oil sands, which experienced 24.4% growth over the same period. The top 10 companies operating in the Canadian oil industry totalled 65% of the country's daily production. The scene is dominated by the Canadian enterprise Suncor Energy Inc., which represented 14.2% of production in 2011, followed by Canadian Natural Resources Limited (11.6%), Imperial Oil Limited (8.8%) and Husky Energy Inc. (7.0%). Foreign companies or subsidiaries included Shell Canada Ltd (Europe), Conoco Phillips Canada Limited (United States) and Devon Canada Corporation (United States).

⁹ (Canadian Energy Research Institute, 2012)

FIGURE 12: OIL AND GAS OPERATING EXPENSES IN CANADA BY PROVINCE 2000-2011; in billions of \$

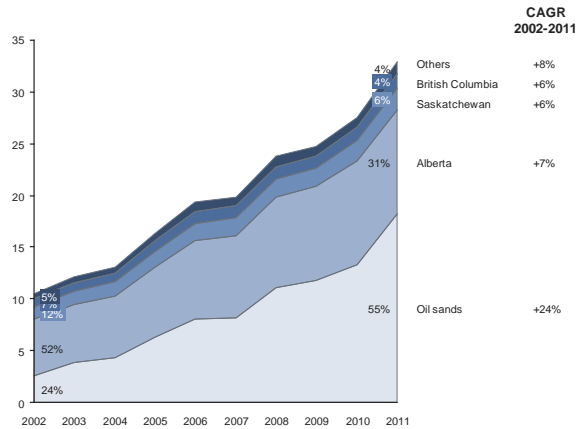
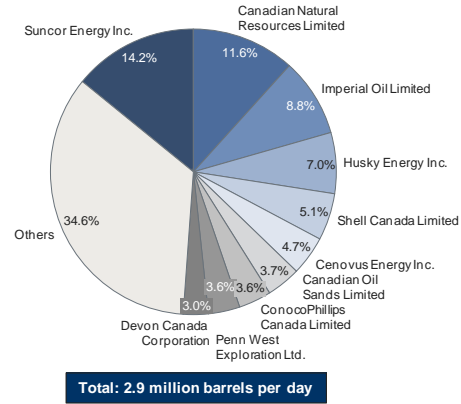


FIGURE 13: TEN LARGEST OIL PRODUCERS IN CANADA 2011; in percentage



Sources: (Canadian Association of Petroleum Producers), KPMG-SECOR analysis

2.2.6. ECONOMIC ACTIVITY

The increase in oil activity is not unrelated to the strong economic growth of Western Canada in recent years. Alberta was one of the principal direct beneficiaries because it accounted for over 70% of Canada's oil and gas GDP in 2012. Alberta's oil and gas GDP rose by 6.5% annually from 2002 to 2012 and it accounted for 23.9% of its overall GDP in 2012.

FIGURE 14 : EMPLOYMENT IN THE OIL AND GAS INDUSTRY 2000-2012; in thousands of jobs

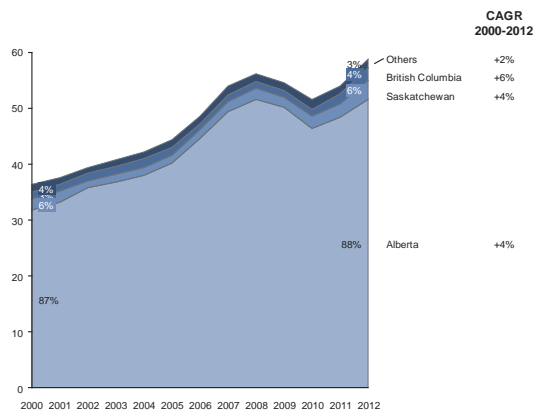
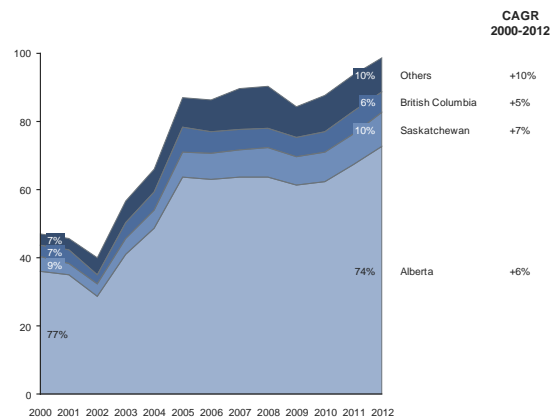


FIGURE 15 : OIL AND GAS INDUSTRY GDP BY PROVINCE 2000-2012; in billions of \$

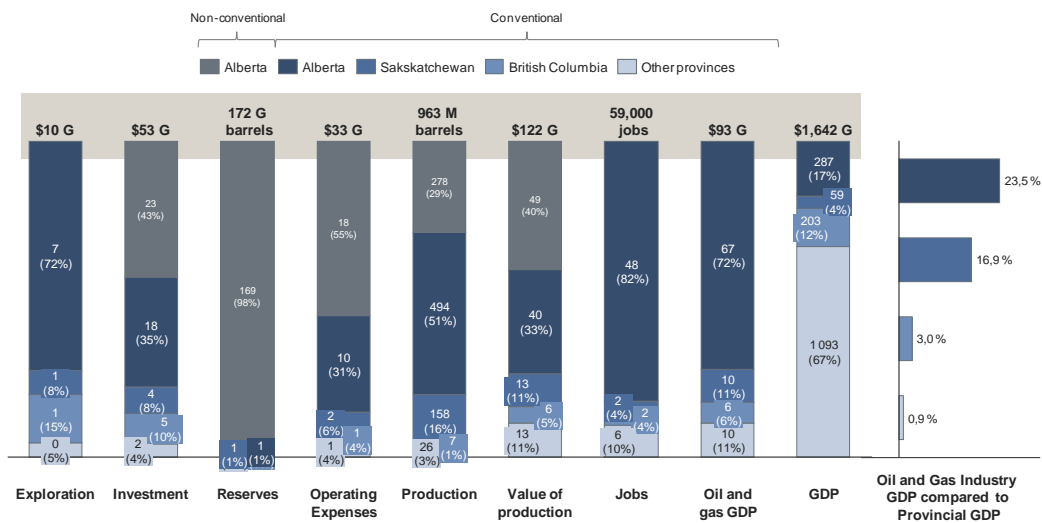


Sources: (Canadian Association of Petroleum Producers), KPMG-SECOR analysis

By the same token, employment in the Canadian oil sector also greatly increased, reaching 58,851 jobs in 2011, again mainly located in Alberta (average of 90%). Although they are lesser producers, Saskatchewan and British Columbia benefited from direct investments while their economic activity grew by 8.9% and 2.6% respectively and employment grew by 10.4% and 5.9%.

Although the direct economic impact of oil development are concentrated in Alberta, the benefits are felt throughout Canada, including in Quebec and Ontario. The following chapters will look at this aspect.

FIGURE 16: STATE OF THE OIL AND GAS INDUSTRY IN CANADA BY PROVINCE
 2011; in billions of \$ (\$G), in billions (G) of barrels; in millions (M) of barrels, in thousands of jobs, in percentage



Sources: Statistics Canada, SECOR-KPMG analysis

3. METHODOLOGY

The Canadian upstream oil and gas industry is very important to the Canadian economy. Other sectors of the industry, such as transportation, refining and distribution, also create wealth and jobs. However, the scope of this study will remain entirely within the limits of exploration, construction and extraction activities. Hence the term “oil industry” will apply only to the upstream oil industry.

Oil extraction breaks down into two subsectors, conventional and unconventional extraction. Conventional oil has a lighter viscosity and is associated with light to heavy crude oil. Historically, reserves have in the great majority been conventional oil. It is generally easier and less expensive to extract than unconventional oil, but new conventional oil discoveries are increasingly rare. Unconventional oil, on the other hand, has a higher viscosity and is associated primarily with oil sands and extra-heavy oil. The cost of extraction is high, but the discovery of new deposits is more and more common and these deposits tend to replace the world’s crude oil reserves.

In reporting the magnitude of oil industry economic impacts, the study uses investment expenditures that will lead to future oil extraction activities as well as operating expenditures arising from current oil extraction activities. Investment expenditures include those arising from oil deposit exploration and development such as land purchases for exploration or extraction, prospective drilling, geological or geophysical analyses, land development for extraction, building construction, equipment purchases and all expenditures for purposes of starting or improving future extraction. Operating expenditures include those leading to extraction from an oil deposit, such as well use, consumables and maintenance for extraction facilities or administration, wages and all expenditures involved in ongoing extraction from an oil deposit.

3.1. DATA PRESENTATION

In order to determine the economic impacts of Western Canada’s oil industry for each province, we called upon a number of data sources. With the help of the *Canadian Association of Petroleum Producers* (CAPP), we were able to obtain historical data on investments and operating expenditures as well as other information relating to the oil and gas industry up to 2011. This data was used to produce the industry portrait found in Section 2 and to conduct our dynamic economic impact analysis.

The *Canadian Energy Research Institute* (CERI) also collaborated by providing us with their production estimates and estimated investment and operating expenditures from province to province for the year 2012, while distinguishing between the oil and gas industries. This data allowed us to assess the economic impact of the oil industry in Western Canada itself.

3.2. METHODOLOGICAL FRAMEWORK

The first section of the study describes static economic impacts, which represent the multiplier effect produced of the initial spending by the oil industry in the western provinces. In short, these impacts measure the cascade effect arising from the injection of a sum of money into a given territory, in this case Canada. The more the economy is integrated, or the more the initial expenditure solicits business sectors that are present within the territory, the greater the economic impacts. The impacts were assessed on a province-by-province basis to account for the economic impact that the western oil industry can have elsewhere in Canada, including Quebec and Ontario.

“Classic” or “static” economic impacts are divided into two large groups¹⁰ – the direct effects and indirect effects of estimated expenditures.

- **Direct effects** are income effects that can be directly ascribed to expenditures made by a project. This is income generated among the first-line agents of the project (i.e. the oil industry and its direct contractors). They take the form of salaries and wages paid to these first-line agents as well as other income generated among these agents (profits, amortizations). Operating surpluses are also direct effects, but were not included in the assessment because of the confidential nature of that information.
- **Indirect effects** are income effects resulting from a demand for goods and services that the project activities generate in other industrial sectors. These are impacts felt by the suppliers of the first-line agents. They represent, for example, demand for intermediate goods among the various suppliers to the project (e.g. professional and engineering services, specialized technical services [surveying, drilling, etc.], and structural, mechanical, power, machinery services, etc.). These effects also take the form of wages paid to the employees of various suppliers as well as other income generated among such suppliers (profits, amortizations).

Direct and indirect economic impacts were calculated using Statistics Canada’s intersectoral model based on the average structure of the industries in the 2009 model, the latest model available. Also, government revenue from taxes on wages and processing were calculated manually since the Statistics Canada intersectoral model does not take this into account.

It is important to note that this assessment may be considered conservative. On the one hand, this measurement of economic impacts was performed based on a structure of average expenditures on goods and services for the industry and does not include induced effects. On the other hand, it does not integrate the dynamic or structuring effects of investment projects. As a result, this first measurement presents a minimal scenario. The dynamic economic impacts will be examined in depth in Section 5.

¹⁰ A third group, i.e. **induced effects**, was analyzed but results can be found only as an **appendix**. **Induced effects** are income effects resulting from spending on goods and services by the workers who benefit from direct and indirect effects. They involve consumption that can be attributed to increased income among the project workers per se. In other words, working income generated by the oil industry and its agents or suppliers will give rise to various personal consumer spending. Such consumer spending will in turn stimulate employment in retail businesses, service providers, leisure activities, etc. These effects may however be subject to criticism because they assume individuals who gain employment in the project would not have had alternate sources of income and would therefore not have been engaged in consumer spending. Considering the income support systems and labor shortages in some areas, it is understandable that some of this spending would take place with or without the project. However, induced effects become much more relevant in areas where unemployment rates are relatively high and where employment income is more limited.

3.3. BASIC HYPOTHESES FOR THE ASSESSMENT PERFORMED

The assessment of static economic impacts is based on a certain number of basic assumptions, the main ones being the following:

- The analysis is based on an assessment of investment and operating expenditures of the oil industry in Western Canada, i.e. British Columbia, Alberta and Saskatchewan, carried out by CERI in September 2013. This is an estimate of expenditures for the year 2012. The actual impacts could be lower or higher depending on whether the estimates are above or below the real expenditures.
- Manitoba is also an oil-producing province in Western Canada, but it was not taken into account in the assessment of economic impacts. Its production is marginal, i.e. 1.5 million barrels in 2012 or 1.7% of the production in the oil-producing western provinces. This nevertheless represents a higher production level than that of British Columbia (0.6 million barrels in 2012), but its planned oil industry investments are not as significant: investment spending by British Columbia's oil and gas industry from 2002 to 2011 totalled 13% of Western Canada's total, while that Manitoba's totalled less than 1%. Finally, information on investment and operating spending activity is unavailable for Manitoba alone. Total economic impacts from the oil-producing provinces of Western Canada are therefore underestimated due to the omission of Manitoba's oil activities, but only slightly as those activities are marginal in size.
- The analysis is carried out based on the structure of oil industry average expenditures as evaluated by Statistics Canada according to the 2009 interprovincial input-output model. This distribution is available by goods and services. The impacts could vary if the average structure were to change.
- Expenditure estimates are in 2012 Canadian dollars.
- Calculated impacts are gross figures; they do not take any government support into account.
- The analysis of government revenues is carried out based on the 2012 tax structure in three stages:
 1. Income taxes are estimated using federal government tax rates and the respective provincial rates based on average salaries and wages¹¹ determined according to the Statistics Canada model;
 2. Taxes are estimated according to the Statistics Canada model. For the Federal Government, they include tax on commercial business profits, gasoline tax, excise tax, green tax, air transportation tax, GST and HST, as well as customs duties on imported goods. For the provincial governments, taxes include green tax, gallon tax, tax on commercial business profits, gasoline tax, amusement tax, other consumption taxes, provincial sales tax and harmonized sales tax;
 3. Oil extraction royalties are based on estimates by CERI for each producing province.

¹¹ That is the sum of salaries and wages divided by the number of full-time equivalents.

4. STATIC ECONOMIC IMPACTS OF OIL ACTIVITIES IN WESTERN CANADA

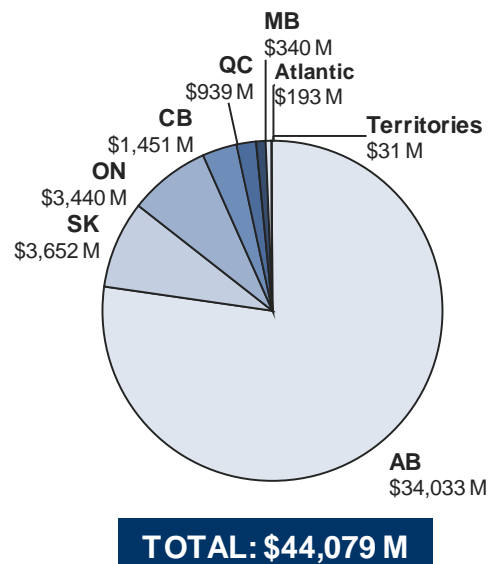
This section presents the economic impact estimates, that is the creation of wealth associated with the investment and operating expenditures of the oil sector in Western Canada. Total economic impacts are presented first, and then presented separately for investments and operations.

The economic impacts are also presented separately for conventional and unconventional oil because of the differences between methods of extraction, which in turn affect the structure of the expenditures. Indeed, while conventional oil is in liquid form and can be extracted without any treatment or dilution, unconventional oil requires energy-intensive extraction techniques because of its unusual composition and difficulty of access. Unconventional oil includes the oil extracted from oil sands as well as heavy and extra-heavy oil.

4.1. TOTAL ECONOMIC IMPACTS

In 2012, total investment and operating expenditures in Western Canada's oil sector, that is a total of \$61 billion, generated value added amounting to \$44.1 billion and helped support nearly 420,000 jobs in Canada. Although the impact of these expenditures is concentrated in the oil-producing western provinces, particularly in Alberta and Saskatchewan, the other Canadian provinces have also benefited from these economic impacts (see Figure 17).

FIGURE 17: DIRECT AND INDIRECT ECONOMIC IMPACTS OF WESTERN CANADA'S OIL INDUSTRY 2012; by province; in millions de \$



Sources : Estimates from Statistics Canada simulations, KPMG-SECOR analysis

For Quebec, oil activities in Western Canada have generated value added amounting to almost \$1 billion in 2012, helping to support over 10,000 direct and indirect jobs. In Ontario, value added of almost \$3.5 billion was generated, helping to support nearly 37,000 jobs in the same year. These economic impacts are partially underestimated because of the mobility of certain workers working in producing provinces, but residing in Quebec or Ontario.

With the exception of Alberta and Saskatchewan, where direct and indirect impacts represent respectively 11.2% and 4.7% of their GDP, the other Canadian provinces benefit from economic impacts ranging from 0.2% of GDP in the Atlantic provinces to 0.6% of GDP in British Columbia.

FIGURE 18: DIRECT AND INDIRECT ECONOMIC IMPACTS OF WESTERN CANADA'S OIL INDUSTRY IN TERMS OF GDP

2012; by province; in billions of \$; as percentage of GDP

| \$M | BC | AB | SK | MB | ON | QC | ATLANTIC | TERRITORIES | TOTAL |
|-------------------------------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Value added | 1,451 | 34,033 | 3,652 | 340 | 3,440 | 939 | 193 | 31 | 44,079 |
| Gross domestic product ^E | 224.5 | 304.4 | 77.1 | 57.6 | 674.9 | 356.6 | 111.5 | 9.7 | 1,817.1 |
| Value added as % of GDP | 0.6% | 11.2% | 4.7% | 0.6% | 0.5% | 0.3% | 0.2% | 0.3% | 2.4% |

^E: Estimated

Sources: Estimates from Statistics Canada simulations, KPMG-SECOR analysis

In 2012, nearly 54 % of the total economic impacts for Canada came from unconventional oil development. This proportion could rise in the coming years, to reflect the growth of investment and production in the Alberta oil sands.

The western oil sector also represents an important source of revenue for the different levels of government. For the federal government, fiscal revenue amounting to almost \$5 billion in taxes, duties and royalties was directly or indirectly generated by upstream oil activities in 2012, for approximately 2% of total revenue.¹² For the provincial governments, nearly \$9.7 billion in fiscal revenue was generated by the oil activities, including \$68 million for Quebec and \$151 million for Ontario.

In 2012, close to two-thirds of the economic impacts were generated by the investment activities in conventional and non-conventional oil projects, whereas operation activities accounted for the other third. If investments activities were to cease and only operation activities were to be maintained, the economic impacts would be reduced to a similar extent in the short term. Given investments fuel operation activities in the medium and long terms, the cessation of investment activities would have an increasing negative impact on the economic spillovers of the oil industry. That said, looking at the 2020 horizon, the CERI predicts that total expenditures from the western oil sector will have increased by approximately 20% over 2012 to reach

¹² Sources: Department of Finance Canada, KPMG-SECOR analysis

\$77 million. All else being equal, the economic impacts for all Canadian provinces could also increase by 20% by 2020, up from \$44.1 billion in 2012 to \$52.6 billion in 2020.

It should be noted that induced effects are not included in the analyses carried out, but are provided for information in appendix.

4.2. INVESTMENT EXPENDITURES

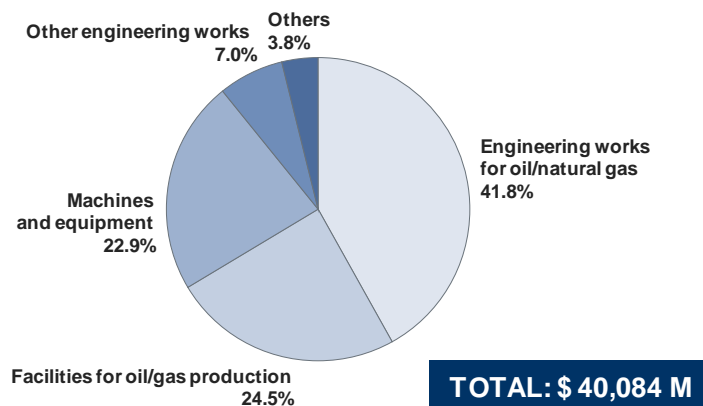
In the oil sector, investment expenditures represent the expenditures generated to ensure future oil production. These expenditures therefore include spending related to exploration activities and facility construction and development activities, where applicable.

In 2012, investment expenditures in the western Canadian oil industry amounted to \$40.1 million, shared almost equally between conventional and unconventional oil extraction. Illustrating the exclusive presence of oil sands in Alberta, all investments in unconventional oil were made in that province. In terms of investment expenditures in conventional oil, 72% of this spending took place in Alberta, the remainder being in Saskatchewan (27%) and in British Columbia (less than 1%).

As illustrated in Figure 19, facilities, machines and equipment as well as engineering works constitute the main components of these expenditures.

FIGURE 19: PRINCIPAL COMPONENTS OF INVESTMENT EXPENDITURES

2012; in percentage



Sources: CERI, Statistics Canada, KPMG-SECOR analysis

It is important to stress that the economic impacts from investment expenditures represent the impact of such expenditures made at the 2012 point in time. CERI investment forecasts point however to increasing investment spending in the next few years, with a reversal beginning in 2020, with the estimated expenditures that year totalling \$48.6 billion.

4.2.1. DIRECT ECONOMIC IMPACTS FROM INVESTMENT EXPENDITURES

The direct economic impacts from investment expenditures amount to a total of \$13.8 billion in value added in Canada in 2012 (see Figure 20), including \$43 million for Quebec (0.3%) and \$285 million for Ontario (2.1%). The great majority of these direct effects benefited the oil-producing provinces and Alberta in particular, where value added totalled \$11.9 billion (86.3%) in almost equal proportions for conventional and unconventional oil extraction. The other oil-producing provinces also felt the benefits of these impacts, i.e. \$1.4 billion in Saskatchewan (10%) and \$126 million in British Columbia (0.9%).

Direct economic impacts from investment spending supported 147,296 jobs in Canada in 2012, including close to 500 in Quebec and 2,776 in Ontario, among a variety of contractors, equipment distributors, etc.

4.2.2. INDIRECT ECONOMIC IMPACTS FROM INVESTMENT EXPENDITURES

Investment spending in 2012 generated \$13.6 billion in indirect value added in Canada, of which almost two thirds arose from unconventional oil extraction.

Since indirect impacts represent roughly the impacts falling among suppliers to first-line agents working on the project, they penetrate further into other Canadian provinces. Indeed, over \$2 billion or approximately 15% of all indirect impacts were felt in non-producing provinces. Quebec thus received indirect economic impacts amounting to \$420 million (3.1%) while Ontario received \$1.4 billion (10.6%). This investment spending supported 135,523 indirect jobs across Canada, including 4,649 in Quebec and 15,607 in Ontario.

Finally, investment expenditures enabled the generation of large contributions to government coffers. For the federal government these revenues amounted to \$2,833 million in 2012, while the provincial governments collected \$1,615 million, including \$32 million for the Quebec government and \$76 million for the Ontario government.

FIGURE 20: ECONOMIC IMPACTS FROM INVESTMENT EXPENDITURES BY THE WESTERN OIL INDUSTRY IN 2012

In \$millions except for jobs

| | Western Producing Provinces | | | | Non-producing Provinces | | | | Canada |
|---|-----------------------------|----------------|---------------|--------------|-------------------------|--------------|--------------|-------------|----------------|
| | BC | AB | SK | MB | ON | QC | Atlantic | Territories | Total |
| In \$millions | | | | | | | | | |
| Value Added | | | | | | | | | |
| Western Oil Industry | 688 | 21,336 | 2,845 | 202 | 1,725 | 463 | 104 | 14 | 27,378 |
| <u>Direct</u> | 126 | 11,879 | 1,370 | 39 | 285 | 43 | 16 | 0 | 13,757 |
| Conventional extraction | 15 | 5,787 | 1,272 | 2 | 8 | 2 | 0 | 0 | 7,085 |
| Unconventional extraction | 111 | 6,092 | 98 | 37 | 277 | 41 | 15 | 0 | 6,672 |
| <u>Indirect</u> | 562 | 9,457 | 1,476 | 164 | 1,440 | 420 | 88 | 14 | 13,621 |
| Conventional extraction | 297 | 6,058 | 1,319 | 98 | 783 | 221 | 50 | 8 | 8,835 |
| Unconventional extraction | 265 | 3,399 | 157 | 65 | 657 | 199 | 38 | 6 | 4,785 |
| Employment | | | | | | | | | |
| Western Oil Industry | 8,037 | 215,273 | 32,081 | 2,533 | 18,383 | 5,148 | 1,245 | 119 | 282,819 |
| <u>Direct</u> | 1,509 | 127,069 | 14,691 | 521 | 2,776 | 499 | 227 | 3 | 147,296 |
| Conventional extraction | 199 | 62,998 | 14,058 | 27 | 78 | 19 | 6 | 0 | 77,385 |
| Unconventional extraction | 1,310 | 64,071 | 633 | 493 | 2,698 | 481 | 222 | 3 | 69,911 |
| <u>Indirect</u> | 6,528 | 88,204 | 17,389 | 2,013 | 15,607 | 4,649 | 1,018 | 115 | 135,523 |
| Conventional extraction | 3,489 | 57,065 | 16,126 | 1,217 | 8,470 | 2,438 | 573 | 67 | 89,446 |
| Unconventional extraction | 3,039 | 31,139 | 1,264 | 795 | 7,137 | 2,210 | 445 | 48 | 46,076 |
| Federal Government Revenue | | | | | | | | | |
| Western Oil Industry | 51 | 2,357 | 238 | 13 | 139 | 26 | 7 | 1 | 2,833 |
| <u>Taxes on wages and salaries</u> | 47 | 2,236 | 218 | 12 | 129 | 23 | 6 | 1 | 2,672 |
| Conventional extraction | 21 | 1,254 | 205 | 6 | 58 | 11 | 3 | 1 | 1,558 |
| Unconventional extraction | 27 | 981 | 13 | 6 | 71 | 12 | 3 | 0 | 1,113 |
| <u>Sales tax, excise tax & duties</u> | 4 | 122 | 20 | 1 | 11 | 3 | 0 | 0 | 161 |
| Conventional extraction | 2 | 66 | 20 | 1 | 5 | 1 | 0 | 0 | 95 |
| Unconventional extraction | 2 | 56 | 1 | 1 | 5 | 1 | 0 | 0 | 66 |
| Provincial Government Revenues | | | | | | | | | |
| Western Oil Industry | 31 | 1,171 | 286 | 13 | 76 | 32 | 5 | 0 | 1,615 |
| <u>Taxes on wages and salaries</u> | 17 | 1,096 | 137 | 10 | 51 | 28 | 4 | 0 | 1,343 |
| Conventional extraction | 7 | 615 | 128 | 5 | 23 | 13 | 2 | 0 | 794 |
| Unconventional extraction | 10 | 482 | 8 | 5 | 28 | 14 | 2 | 0 | 549 |
| <u>Sales tax, excise tax & duties</u> | 14 | 74 | 150 | 4 | 25 | 5 | 1 | 0 | 272 |
| Conventional extraction | 6 | 44 | 146 | 2 | 12 | 2 | 0 | 0 | 213 |
| Unconventional extraction | 7 | 30 | 4 | 2 | 13 | 2 | 0 | 0 | 59 |

Sources: Estimates based on Statistics Canada simulations, KPMG-SECOR analysis

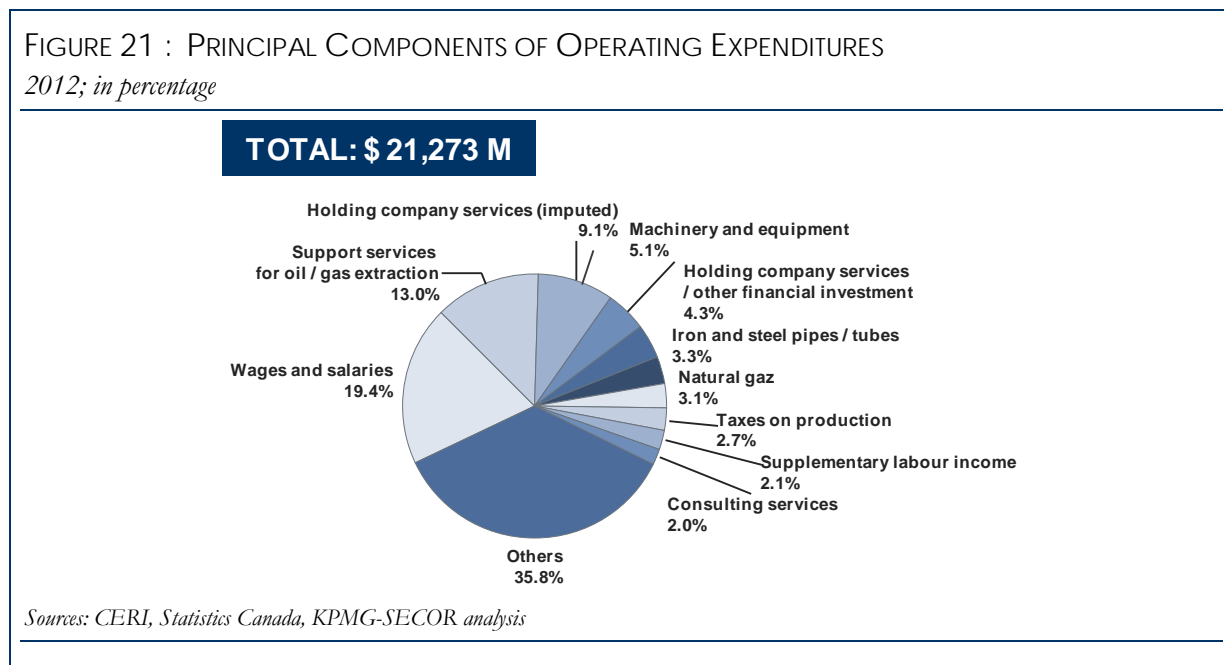
4.3. OPERATING EXPENDITURES

Operating expenditures represent the inherent costs of western Canadian oil extraction activities. In 2012, these expenditures amounted to \$21.3 billion. For the most part, they were disbursed in Alberta (93%), in a proportion of 80% for unconventional oil extraction and 20% for conventional oil extraction. The remainder of the operating expenditures were carried out in Saskatchewan (5%) and British Columbia (1%).

This spending went primarily to wages and salaries (19.4%), oil and gas extraction support services (13%) and holding company services and other investment services (9.1%) as shown in Figure 21.

The impacts from operating expenditures are likely to recur each year as a result of extraction activities. Since such activities depend on investments made in the past, they may vary to some extent over time. According to CERI estimates, operating expenditures will be increasing in the next few years, reaching \$30.5 billion in 2020 and exceeding \$40 billion in 2031.

FIGURE 21 : PRINCIPAL COMPONENTS OF OPERATING EXPENDITURES
2012; in percentage



4.3.1. DIRECT ECONOMIC IMPACTS FROM OPERATING EXPENDITURES

Economic impacts from direct operating expenditures are estimated at \$5.2 billion in 2012. Since they arise from oil extraction activities, the direct effects occurred entirely in the oil-producing provinces in shares of 93.5% for Alberta (of which three-quarters come from unconventional oil extraction), 5.0% for Saskatchewan and 1.5% for British Columbia. Operating expenditures in the western oil sector also supported 25,846 jobs in the oil-producing provinces in 2012.

4.3.2. INDIRECT ECONOMIC IMPACTS FROM OPERATING EXPENDITURES

Operating expenditures generated \$11.5 billion in indirect value added across Canada, of which a proportion of approximately three-quarters arose from unconventional oil extraction.

Like the indirect effects from investment spending discussed earlier, over 20% of the indirect economic impacts from operating expenditures went to non oil-producing provinces. In 2012, Quebec thus received \$476 million (4.1%) in indirect economic impacts from operating expenditures and Ontario received \$1.7 billion (14.9%). Operating expenditures also supported 108,955 indirect jobs in 2012, including 5,257 in Quebec and 18,164 in Ontario.

These operating expenditures generated almost \$2.0 billion in revenues for the federal government in 2012 and nearly \$8.1 billion for provincial governments, including \$36 million for the government of Quebec and \$75 million for the government of Ontario.

FIGURE 22: ECONOMIC IMPACTS FROM OPERATING EXPENDITURES BY THE WESTERN OIL INDUSTRY IN 2012

In \$millions except for jobs

| | Western Producing Provinces | | | | Non-producing Provinces | | | Territories | Canada Total |
|---|-----------------------------|---------------|--------------|--------------|-------------------------|--------------|--------------|-------------|-----------------|
| | BC | AB | SK | MB | ON | QC | Atlantic | | |
| Value added | | | | | | | | | |
| Western Oil Industry | 763 | 12,697 | 807 | 138 | 1,715 | 476 | 89 | 17 | 16,701 |
| <u>Direct</u> | 77 | 4,828 | 259 | 0 | 0 | 0 | 0 | 0 | 5,163 |
| Conventional extraction | 77 | 1,273 | 259 | 0 | 0 | 0 | 0 | 0 | 1,608 |
| Unconventional extraction | 0 | 3,555 | 0 | 0 | 0 | 0 | 0 | 0 | 3,555 |
| <u>Indirect</u> | 686 | 7,870 | 548 | 138 | 1,715 | 476 | 89 | 17 | 11,538 |
| Conventional extraction | 195 | 1,646 | 362 | 41 | 398 | 115 | 22 | 4 | 2,783 |
| Unconventional extraction | 491 | 6,223 | 186 | 98 | 1,316 | 361 | 67 | 13 | 8,755 |
| Employment | | | | | | | | | |
| Western Oil Industry | 7,792 | 93,464 | 7,204 | 1,669 | 18,164 | 5,257 | 1,104 | 147 | 134,802 |
| <u>Direct</u> | 691 | 23,284 | 1,872 | 0 | 0 | 0 | 0 | 0 | 25,846 |
| Conventional extraction | 691 | 6,126 | 1,872 | 0 | 0 | 0 | 0 | 0 | 8,689 |
| Unconventional extraction | 0 | 17,158 | 0 | 0 | 0 | 0 | 0 | 0 | 17,158 |
| <u>Indirect</u> | 7,101 | 70,181 | 5,333 | 1,669 | 18,164 | 5,257 | 1,104 | 147 | 108,955 |
| Conventional extraction | 2,131 | 14,229 | 3,827 | 490 | 4,261 | 1,274 | 280 | 31 | 26,523 |
| Unconventional extraction | 4,971 | 55,952 | 1,506 | 1,179 | 13,903 | 3,983 | 824 | 116 | 82,433 |
| Federal Government Revenues | | | | | | | | | |
| Western Oil Industry | 57 | 1,649 | 78 | 10 | 146 | 31 | 6 | 1 | 1,978 |
| <u>Taxes on wages and salaries</u> | 53 | 1,545 | 71 | 8 | 133 | 28 | 5 | 1 | 1,844 |
| Conventional extraction | 24 | 377 | 61 | 2 | 31 | 7 | 1 | 0 | 504 |
| Unconventional extraction | 29 | 1,167 | 10 | 6 | 102 | 21 | 4 | 1 | 1,340 |
| <u>Sales tax, excise tax & duties</u> | 4 | 105 | 7 | 1 | 13 | 3 | 0 | 0 | 134 |
| Conventional extraction | 2 | 19 | 6 | 0 | 3 | 1 | 0 | 0 | 31 |
| Unconventional extraction | 2 | 86 | 1 | 1 | 10 | 2 | 0 | 0 | 102 |
| Provincial Government Revenues | | | | | | | | | |
| Western Oil Industry | 194 | 6 481 | 1 273 | 9 | 75 | 36 | 5 | 1 | 8 073 |
| <u>Taxes on wages and salaries</u> | 19 | 721 | 44 | 7 | 52 | 32 | 4 | 0 | 880 |
| Conventional extraction | 9 | 173 | 38 | 2 | 12 | 8 | 1 | 0 | 242 |
| Unconventional extraction | 10 | 549 | 6 | 5 | 40 | 25 | 3 | 0 | 638 |
| <u>Sales tax, excise tax & duties</u> | 16 | 63 | 29 | 2 | 23 | 3 | 1 | 0 | 137 |
| Conventional extraction | 7 | 10 | 26 | 1 | 5 | 1 | 0 | 0 | 49 |
| Unconventional extraction | 9 | 53 | 3 | 2 | 18 | 3 | 1 | 0 | 88 |
| <u>Royalties*</u> | 160 | 5 697 | 1 200 | 0 | 0 | 0 | 0 | 0 | 7 057 |
| Conventional extraction | 160 | 1 426 | 1 200 | 0 | 0 | 0 | 0 | 0 | 2 785 |
| Unconventional extraction | 0 | 4 271 | 0 | 0 | 0 | 0 | 0 | 0 | 4 271 |

Sources: Estimates based on Statistics Canada simulations, KPMG-SECOR analysis

5. DYNAMIC ECONOMIC IMPACTS

5.1. CANADIAN TRADE BALANCE

Canada trades regularly with many countries; our enterprises export to foreign markets and many goods and services are purchased from abroad for our own consumption. In 2012, overall exports from Canada reached \$547 billion and imports came to \$582 billion, respectively representing 30% and 32% of GDP.¹³ As a result, Canada recorded a trade deficit of \$36 billion in 2012.

Canadian oil accounts for a significant part of our international trade. On the one hand, Canadian refineries are supplied in part with oil from Western Canada, but also with imported oil, to the extent of \$29.5 billion in 2012 (amounting to 5% of Canada's imports¹⁴). On the other hand, western oil is shipped exclusively to the US market, amounting to \$70.4 billion in 2012, or 14% of Canada's exports.

Consequently, without oil from Western Canada and all else being equal, the country's trade balance would show a severe deficit. First of all, the absence of oil exports to the United States would heighten our negative trade balance by \$70.4 billion. Secondly, Canadian refineries that are supplied with oil extracted in Western Canada would have to replace that supply with oil imports purchased on world markets. The value of the oil purchased by Canadian refineries from the West was \$26.0 billion in 2012. Western Canadian oil was priced at approximately \$85.04/barrel in that year whereas the price of Canadian crude oil imports was \$112.51/barrel. Without oil from the Western Canada, Canadian refineries would have had to pay an additional \$8.4 billion to obtain supplies on world markets, for a total of \$34.4 billion in imports.

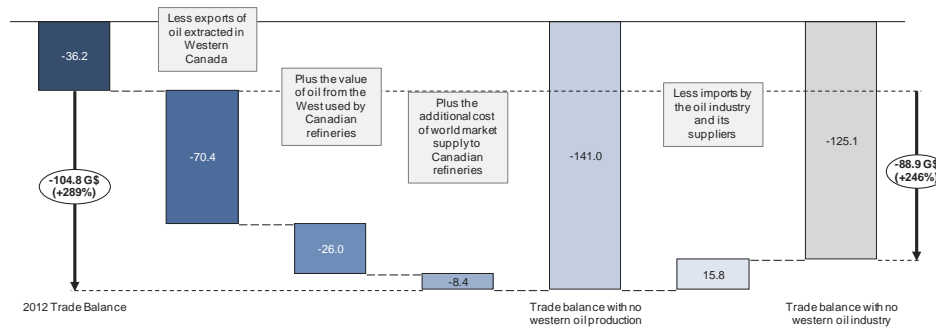
Overall, without western Canadian oil, the country's negative trade balance would include an additional \$104.8 billion, an increase of 289%. The oil in Western Canada therefore causes a reduction of Canada's negative trade balance and this is in spite of imports due to the purchase of specialized equipment and other goods and services needed by the oil industry and its suppliers. Even if Canada were to avoid the imports generated by the western oil industry by producing no oil, the trade deficit would nevertheless have been higher by \$88.9 billion than it was in 2012.¹⁵

¹³ (Statistics Canada, 2013)

¹⁴ (Industry Canada, 2013)

¹⁵ This analysis does not include the impact of Canadian oil exports on the Canadian dollar exchange rate. While the literature is more or less unanimous on the upward impact of oil exports on the value of the dollar, there is less consensus on their effect on manufacturing exports and a "Dutch disease". As a result, the trade balance impact is evaluated on a *ceteris paribus* basis.

FIGURE 23: IMPACT OF NO WESTERN CANADIAN OIL INDUSTRY ON THE CANADIAN TRADE BALANCE
2012, in billions of \$



Sources: Statistics Canada, Industry Canada, KPMG-SECOR analysis

5.2. FILLING SUPPLIERS' ORDER BOOKS

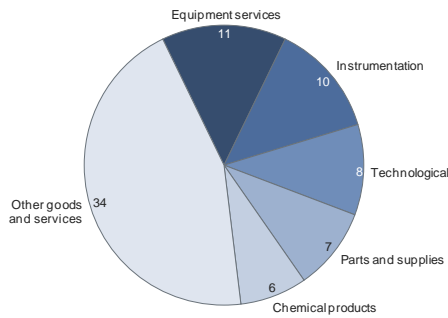
The importance of the western oil industry to the Canadian economy also includes the large purchases oil companies make among Canadian suppliers, thus creating value and supporting specialized jobs. Estimated volume of orders from Canadian suppliers in 2012 amounted to approximately \$55.3 billion.¹⁶ Companies in the producing provinces definitely benefit more from purchases made by oil companies because they are located nearby and because industries grow based on local needs.

Nevertheless, outside the western oil-producing provinces, approximately \$1.2 billion in orders were placed with suppliers elsewhere in Canada. Ontario, Manitoba and Quebec are the three provinces in the rest of Canada that benefited the most from such purchases, respectively with \$520 million, \$96 million and \$76 million in 2012 alone.

¹⁶ Estimates based on Statistics Canada simulations, KPMG-SECOR analysis

FIGURE 24: QUEBEC SUPPLIERS IDENTIFIED BY OIL SANDS PRODUCERS BY TYPES OF GOODS & SERVICES

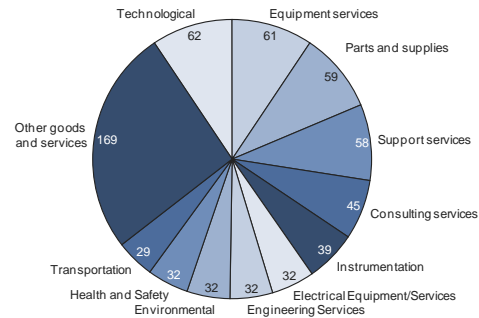
CAPP Member Suppliers



Total: 76 suppliers in Quebec

FIGURE 25: ONTARIO SUPPLIERS IDENTIFIED BY OIL SANDS PRODUCERS BY TYPES OF GOODS & SERVICES

CAPP Member Suppliers



Total: 650 suppliers in Ontario

Sources: (Canadian Association of Petroleum Producers), KPMG-SECOR analysis

In 2012, CAPP member oil sands producers identified their suppliers outside Alberta. The largest numbers of suppliers are in Ontario and British Columbia with 650 and 373 suppliers, respectively. In Ontario, the suppliers identified are active in a variety of sectors, the main ones being: technological (62 suppliers), equipment services (61 suppliers), parts and supplies (59 suppliers), support services (58 suppliers) and consulting services (45 suppliers). In terms of total value added, combining both conventional and non-conventional oil extraction, \$3.4 billion have been generated in Ontario in 2012. The finance and insurance sector benefited from 29% of these economic impacts, whereas the manufacturing and the wholesale trade each benefitted from about 15% of these impacts.

Quebec was nevertheless in third place with 76 suppliers having obtained large contracts to supply the industry. Among the Quebec suppliers, several value-added sectors were called upon. For example, 11 equipment services suppliers, 10 instrumentation suppliers, 8 technology suppliers, 7 parts and accessories suppliers and 6 chemical product suppliers benefited from purchases of oil companies. If purchases in the conventional oil extraction sector were to be included, more Quebec suppliers could be identified as benefitting from the oil industry. In 2012, economic impacts totalled \$939 million in value added in Quebec, including 30.1% in the finance and insurance sector, 22.0% in the manufacturing sector and 10.6% in professional, scientific and technical services sector, which were generated by Canadian oil industry purchases for investment and operating activities.

FIGURE 26 : DISTRIBUTION OF ECONOMIC IMPACTS IN QUEBEC GENERATED BY WESTERN CANADA'S OIL INDUSTRY BY SECTOR 2012; in percentage (%)

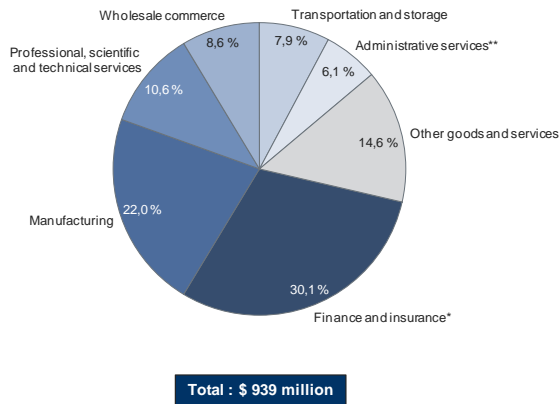
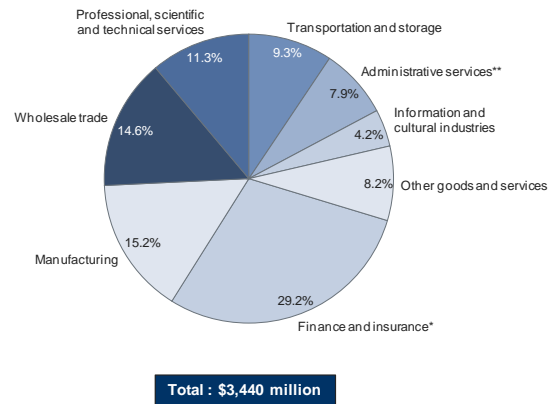


FIGURE 27 : DISTRIBUTION OF ECONOMIC IMPACTS IN ONTARIO GENERATED BY WESTERN CANADA'S OIL INDUSTRY BY SECTOR 2012; in percentage (%)



* Finance, insurance, real property services and rental and leasing services and holding companies

** Administrative services, support services, waste management services and sanitation services

Sources: Estimates based on Statistics Canada simulations, KPMG-SECOR analysis

5.2.1. A FEW BUSINESS CASES FROM QUEBEC AND ONTARIO

The volume of orders clearly shows the importance of the oil industry for Canadian companies in 2012. Both the investment and operating expenditures of the oil industry have been sustained and on the rise for over 10 years, as shown by the earlier portrait of the western Canadian oil and gas industry. From 2002 to 2011, almost \$550 billion was spent by the oil and gas industry. As a result, the growth of this spending has stimulated the success of certain enterprises in the producing provinces as well as in other provinces such as Quebec and Ontario.

In order to provide a concrete illustration of the impact that oil development in Western Canada has had on Quebec and Ontario societies, we met with some companies that are active in the sector. A summary presentation of each of these companies is included in the following pages. Despite the need to invest time and energy in building lasting business relationships in the West in order to break into the market, the enterprises we encountered demonstrated the major potential of this market in terms of both its size and its strong growth.

Over and above the impact in terms of generated income, these enterprises were able to take advantage of their activities in the West by using that experience to leverage the development of their companies. Whether to enter international markets, attract investors, diversify their activities in other sectors, or just sustain rapid growth, the oil sector proved to be a launching point for the development of these companies expertise.



Opsens develops and manufactures fiber optic sensors for measuring pressure and temperature

Sales: \$8.5M in 2012, of which 75 % were for the oil industry

Nbr of employees: 55

Head office: Quebec City (QC)

Other offices: Edmonton and Calgary (AB)

REASON FOR OIL INDUSTRY PRESENCE

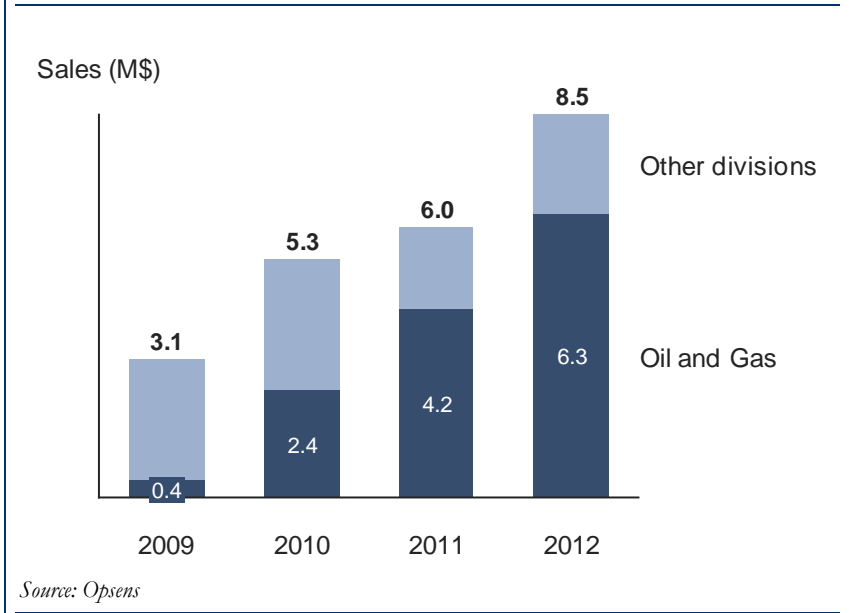
Using fiber optic sensors, pressure and temperature measurements can be obtained on a continuous basis in in-situ installations to optimize production and reduce costs.

THE COMPANY AND WESTERN CANADA’S OIL INDUSTRY


The initial years after the founding of Opsens in 2004 were devoted to the research and development on fiber optic sensors, a superior technology that is today marketed in the two sectors that sustain the company: the medical sector and oil and gas sector.

In order to gain access to the western oil market, Opsens made a point of demonstrating the value added of their product in Alberta. Opsens’ capabilities in carrying out the installation of their product were a definite facilitating factor in their sales efforts. This was made possible by the acquisition at the end of 2007 of a service company located in Edmonton, thus offering its customers an integrated solution comprising development, manufacturing and installation of its products. From a sales volume below the million-dollar threshold in 2009, Opsens today generates revenues of approximately \$8.5 million, of which 75% comes from the oil sector.

FIGURE 28: OPSSENS INCOME GROWTH
2009-2012; in \$millions



Apart from a rapid increase in sales volume, Opsens’ oil sands activity has had two important consequences. First, it caught the interest of investors and this in itself generated liquidities for the company that have been reinvested at the Quebec head office in research and development and facilities and infrastructure. Then, since January 2013, these activities have also become a showcase for marketing its products internationally. Although international markets are still marginal at this point, they represent a potentially valuable growth vector for the coming years.

| | |
|--|--|
|  <p>West Penetone is a manufacturer of specialty chemical products, particularly for cleaning purposes</p> | <p>Sales: \$18-20 M, including almost 50% from the oil industry</p> |
| | <p>Nbr of employees: 50</p> |
| | <p>Head office: Montreal (QC)¹⁷</p> |
| | <p>Other offices: Edmonton (AB)</p> |

REASON FOR OIL INDUSTRY PRESENCE

West Penetone sells specialty products for purposes such as bitumen degreasing, treatment and neutralization of hydrogen sulphide as well as cleaning tanks and heavy trucks.


THE COMPANY AND WESTERN CANADA'S OIL INDUSTRY

West Penetone's strong ties with the oil industry began primarily in 2006 with the acquisition of a chemical manufacturing plant based in Edmonton. At that time, their oil industry business generated a little less than \$2 million and had only developed a few specialty products. The acquisition allowed them to develop a sales force and an increased presence in the western oil industry. Opportunities presented themselves, particularly in the area of cleaning products. In this way, West Penetone developed a cleaner for tanks and heavy trucks that has contributed to the success of their company.

Today's sales figure at West Penetone has increased four-fold from the business they had in 2006. Although the oil market is in Western Canada, most of their product manufacturing takes place in Quebec, where they employ 35 persons, including 15 in their plant. Their growing expertise and their plants in two provinces today allows them to think in terms of developing their business throughout Canada, both in oil sector and in other sectors.

Beyond this, West Penetone cleaners are gaining export potential through the relationships built with certain oil industry players. The success of a manufacturer of oil-industry cleaning machinery carries forth to Europe and beyond and requires a chemical product developed by West Penetone. In less than two years, such exports have generated just under \$1 million, but the company expects to grow its business internationally as a result of this product. Generally speaking, the company is expecting strong income and profit growth as a result of their activities with Western Canada's oil industry. They are looking forward to new promising opportunities elsewhere in the value chain as a result of the expertise they have developed in the past few years.

¹⁷ West Penetone belongs to a consortium that includes Penetone Corporation, with its head office in New Jersey (USA), and Petron Corporation in Wisconsin (USA).

| | |
|---|--|
|  <p>GCM Consultants is an engineering and consulting firm specializing in the implementation of cutting-edge technology in industrial sectors</p> | <p>Sales: \$38 M, INCLUDING 40 % FROM THE WESTERN OIL INDUSTRY</p> |
| | <p>Nbr of employees: 330</p> |
| | <p>Head office: Montreal (QC)</p> |
| | <p>Other offices: LÉVIS, BOUCHERVILLE AND VAL D'OR (QC); LLOYDMINSTER, FORT MACKAY AND CALGARY (AB); REGINA (SK) AND TRAIL (BC)</p> |
| <p>REASON FOR OIL INDUSTRY PRESENCE</p> | |
| <p>GCM Consultants offers engineering services required to carry out oil projects (process, mechanical, instrumentation, electrical, civil and structural works, construction, etc..) and a specialized expertise in the development of these projects (assessment of the integrity of stationary equipment, process safety management, infrastructure, sustainable development, etc.)</p> | |
| <p>THE COMPANY AND WESTERN CANADA'S OIL INDUSTRY</p> | |
| <p>Founded in 1994, GCM Consultants is active in the oil industry since its beginnings. The company has first started its activities in the Quebec petrochemical industry, whose importance has however diminished in recent years. GCM Consultants has then taken advantage of its expertise to export it to Western Canada, where projects were numerous. The company invested heavily to develop its presence in the Western oil sector and to leave its mark as a high-quality engineering firm. Although customer relationship requires a local presence, all the engineering work is nevertheless performed in Quebec. The availability and stability of the Quebec labor force, the quality of the resources as well as their experience allow GCM Consultants to offer competitive and high-quality services.</p> | |
| <p>Thanks to strong organic growth, GCM Consultants now generates sales amounting to about \$38 million, of which 40% is generated by Western Canada's oil industry. Over time, the company was able to establish lasting business relationships with over a dozen customers in the oil industry. These past few years, GCM Consultants has hired about 60 persons annually and invested approximately 2-4% of its income to modernize its operations in Quebec, including personnel training. The company is in full expansion and has also acquired land recently in the Varennes area for new office space.</p> | |
| <p>Although Western Canada's oil industry remains prominent in the strategy of GCM Consultants in the medium and long term, the expertise developed earned the company several international contracts. GCM Consultants also began diversifying its activities in recent years by transferring its expertise to other sectors, particularly in the manufacturing, pharmaceutical and mining and metals, offering the company even more business opportunities.</p> | |



Aberfoyle Metal Treaters Ltd. is a metal parts heat treating firm catering to heavy industry. It also provides finishing services.

Revenue: \$5 M, OF WHICH 20 TO 30% ARE DERIVED FROM THE OIL INDUSTRY

Number of employees: 28

Head office: PUSLINCH (ON)

ITS ROLE IN THE OIL INDUSTRY


From its facilities, Aberfoyle Metal Treaters services the oil industry and is able to heat treat parts of varying sizes, namely for tanks, pressure tanks, engines, pumps, etc.

THE COMPANY AND WESTERN CANADA'S OIL INDUSTRY

Since its creation in 1989, Aberfoyle Metal Treaters has been providing heat treating services to steel mills, foundries and a range of other industries such as nuclear power, hydro-electric, construction and heavy machinery. To take advantage of the many business opportunities offered by Western Canada's oil industry, Aberfoyle Metal Treaters has been participating for many years in the National Buyer-Seller Forum in Alberta. According to Harry Hall, President of Aberfoyle, the National Buyer-Seller Forum is a gathering place where Ontario companies can promote the capacity of the Ontario industrial fabric to support the development of Western Canada's oil industry.

A showcase for the partners in the Alberta oil sands supply chain, this forum provides many networking opportunities to both the oil companies and the leading Ontario suppliers to the industry. So, even though Aberfoyle Metal Treaters occasionally gets contracts as a preferred supplier because of its niche expertise, it is for the most part a subcontractor to other Ontario companies that are also players in Western Canada's oil industry. Year after year, Western Canada's oil industry generates 20 to 30% of the firm's revenue. The industry's high demand also creates other interesting opportunities. For example, as part of a project for the oil industry, the company has invested in construction of a 40 000 gallon tank in which to quench extremely large parts after heat treating. According to Aberfoyle Metal Treaters, this tank is one of the largest in the country and the company also uses to fulfill other contracts.

The development of the oil industry in Western Canada over the next few years will provide Aberfoyle Metal Treaters with a quite a lucrative market. Still, Mr. Hall is convinced that the company's expertise could also be leveraged at other steps within industry supply chain, namely when it comes to the transportation of petroleum products.

| | |
|---|---|
|  <p>Maxxam Analytics is a supplier of laboratory services.</p> | Revenue: Several millions of dollars |
| | Number of employees: 2500 |
| | Head office: Mississauga (ON) |
| | Other offices: Some 30 offices throughout Canada |

ITS ROLE IN THE OIL INDUSTRY

Maxxam Analytics offers specialized testing services, such as sample testing, mobile laboratories, laboratory equipment procurement and other services specific to the needs of the oil industry.

THE COMPANY AND WESTERN CANADA’S OIL INDUSTRY

Founded in Ontario in the 1970s, Maxxam Analytics has been doing business with the oil industry from the very beginning. Thanks to the growth of Western Canada’s oil industry and the strong relationships the company has enjoyed with the sector, Maxxam has grown to become a market leader. Today, with some thirty locations in Canada, the company is one of the country’s largest networks of laboratories. Maxxam Analytics has a client base of over 500 clients in the oil and gas industry alone, which accounts for approximately 50% of its revenue; 25% of that revenue comes from services provided exclusively to that sector. The company employs close to 2500 employees throughout the country, and over one third are located in Alberta in order to meet the high demand of the oil industry.

Since 2005, the oil industry has been key to the development of Maxxam Analytics which has grown at the rate of almost 10% annually through the acquisition of one or two businesses each year. The company has also invested between \$5M and \$10M every year in order to expand and upgrade its facilities. Given the future development of the oil industry, Maxxam Analytics expects to continue to grow steadily. However, since it has diversified its offerings, servicing the pharmaceutical, environmental, food and other sectors, today the company is able to withstand market fluctuations.

6. CONCLUSION

The growth of population and wealth in the world lead to increasing energy needs. These energy needs invariably generate an increased need for petroleum products: in 2010, 41% of the world's energy consumption was oil-dependent. In order to meet this increasing demand, oil production has increased in many countries, particularly in Russia and the Middle East. Canada has also increased its production. From 2002 to 2011, it raised its production by 225 million barrels, reaching an annual production of 1.1 billion barrels. As a result, Canada has become an important player, since it represents 4.4% of global production while accounting for only 2.5% of world consumption.

One of the things that make Canada an important player is the amount of its known oil reserves. Including the Alberta oil sands, Canada had the third largest oil reserves in 2012 with 173 billion barrels, or 10% of the world's reserves. The discovery of numerous oil deposits resulted from the magnitude of exploration endeavours and the capital that has been invested. From 2002 to 2011, almost \$550 billion have been spent on exploration, investments and operating expenditures for the extraction of oil and gas in Western Canada. However, these endeavours are not over and numerous investment and exploration projects are now in progress in Western Canada. According to estimates by CERI, oil industry expenditures in 2012 alone came to \$61 billion and should increase by 20% by 2020 to total over \$73 billion.

This spending has considerable spillover in terms of wealth and job creation in the producing provinces, as in the case of Alberta, whose oil industry amounted to 23.5% of its GDP in 2011. Nevertheless, these activities generate economic impacts beyond the oil-producing provinces. The purpose of this study was to establish the economic impacts generated by the oil industry in Western Canada for the other Canadian provinces, with particular regard to Quebec and Ontario. The CERI spending estimates for 2012 were used to illustrate these effects and the economic impact was assessed based on Statistic Canada's intersectoral model.

The results speak for themselves. Although the impacts are highly concentrated in the producing provinces, the other provinces also benefit indirectly from the industry's creation of wealth and jobs. For 2012, the wealth created in Canada came to \$44.1 billion, including \$39.2 billion in the producing provinces, but Quebec nonetheless benefited to the extent of \$939 million and Ontario accounted for \$3.4 billion. Western oil activities also provided support for 282,000 direct and indirect jobs across Canada, of which 255,000 were in the producing provinces – 5,000 in Quebec, 18,000 in Ontario and 4,000 in the other provinces.

Above and beyond the value added that was generated and the jobs supported by the oil industry, the industry has other important impacts on the economy of Canada and the provinces.

Firstly, trade in oil is highly important to Canada's trade balance, which stood at a deficit of \$36 billion in 2012. Imported oil represented 5% of Canada's total imports and exported oil represented 14% of the country's total exports. Without this production in the western Canadian provinces, Canada's trade balance deficit would be greater by \$100 billion due to the drop in exports, the need to import to supply Canadian refineries and the higher cost of oil supplied to Canadian refineries from world markets.

In addition, the oil industry is an important growth stimulant for companies across Canada. With the magnitude of its spending, it helps fill the order books of numerous companies located outside the producing provinces. In 2012, it is estimated that \$76 million was spent among Quebec suppliers and \$520 million among Ontario suppliers. A total of \$550 billion was spent by the western Canadian oil and gas industry between 2002 and 2011, and this means that a number of Quebec and Ontario companies have been able to develop their businesses as a result. Many successes among Quebec and Ontario companies that were able to penetrate the oil market in Western Canada are there to illustrate the creation of wealth in their respective provinces.

The extent of the economic impact generated by the western Canadian oil industry is considerable. Some provinces, such as Quebec and Ontario, are beginning to capture some of the spillover effects. The future development of oil industry activity therefore represents an interesting opportunity for Quebec and Ontario companies to reap larger benefits from the economic impacts and create more wealth.

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APPENDICES

APPENDIX – LITERATURE REVIEW

Three main studies about regional impacts of oil activities in Western Canada have been found in recent years, two of which were published by the Canadian Energy Research Institute (CERI).

In May 2011, the CERI published a study dealing specifically with the oil sands sector. Entitled *Economic Impacts of New Oil Sands Projects in Alberta (2010-2035)*, this study is an analysis of the direct, indirect and induced impacts of operating and investment expenditures (including operating surplus) for new oil sands projects in Alberta from 2010 to 2035. Economic impacts were assessed based on the CERI input-output model, which is based on Statistic Canada's model but enables economic impact estimates for the United States.

According to the CERI estimates, projections for investment and operating expenditures between 2010 and 2035 will total \$2,077 billion – \$253 billion in investment spending and \$1,824 billion in operating, maintenance and capital asset support expenditures. Total economic impacts from these expenditures is estimated at \$2,106 billion for Canada and \$521 billion for the United States. These expenditures would support 75,000 jobs annually in 2010 and 905,000 jobs on the 2035 horizon, including new jobs and sustained jobs, both full time and part time. CERI estimates that 94% of the impacts on Canadian soil would be concentrated in Alberta (\$1,990 billion), while Ontario would receive 3% (\$63 billion), British Columbia would receive 1% (\$28 billion) and Quebec, 1% (\$14 billion).

The Government of Canada would collect approximately \$311 billion in fiscal revenue in the 2010-2035 time frame, while the Alberta government would collect \$455 billion, including taxes, duties and royalties.

Also in 2011, CERI published *Economic Impacts of Drilling, Completing and Operating Conventional Oil Wells in Western Canada (2010-2035)*, this time examining present and future operating and investment expenditures (including operating surplus) on “conventional” oil projects. According to CERI, these expenditures would total \$1,059 million over the 2010-2035 period. Economic impacts in terms of value added are estimated at \$1,056 billion (including direct, indirect and induced effects) over the same period, with 53% generated in Alberta, 40% in Saskatchewan, 3.0% in Ontario, 2.5% in British Columbia and under 1% in Quebec. The number of jobs supported would come to 152,000 in 2010 and would increase to a high of 227,000 in 2035.

The third study found, entitled *Fuel for Thought: The Economic Benefits of Oil Sands Investment for Canada's Regions* was published in October 2012 by The Conference Board of Canada. Unlike the CERI study, the Conference Board study looks exclusively at the economic benefits of investment spending in the Albertan oil sands, including both existing and new projects.

According to the Conference Board estimate, total investment expenditures for the 2012-2035 period would total \$364 billion. This includes new project investment expenditures, capital asset support expenditures and pipeline investments. The Conference Board considers that the economic benefits from these expenditures (combined direct and indirect effects) would be \$172 billion over the 2010-2035 period, thus supporting 2.3 million jobs annually. The vast majority of these benefits would be felt in Alberta.

For provinces outside Alberta, the greatest impacts would be felt through the supply chain (indirect benefits), i.e. companies supplying products and services to the oil industry. The Conference Board considers that 30% of the indirect effects would be felt outside Alberta, including 14.8% in Ontario, 6.7% in British Columbia, 3.9% in Quebec and 3.7% in the Prairie Provinces. It would primarily be the sectors involving professional services, oil-related services, manufacturing, wholesale trade, financial services and transportation that would benefit from these indirect impacts.

For the provincial governments, investments in the oil sector could give rise to fiscal revenues amounting to \$34.1 billion (77% in Alberta), while these investments could bring \$45.3 billion to the federal government, still within the 2010-2035 time frame.

COMPARATIVE NOTE

Although the three studies discussed above differ in several aspects, the results are reconcilable with our own results if the spectrum of the studies and methodological alternatives are taken into consideration.

By spectrum, we mean the scope and definition of the oil activity being assessed. Firstly, there are differences regarding the provinces targeted: the Conference Board only examines Alberta while CERI, like KPMG-SECOR, looks at British Columbia, Alberta and Saskatchewan. Also, the KPMG-SECOR study covers conventional and unconventional oil extraction simultaneously, whereas CERI examines these two types of extraction in separate studies and the Conference Board looks only at unconventional extraction. Thirdly, like CERI, our approach considers investment and operating expenditures together while the Conference Board considers investments only. Finally, KPMG-SECOR examines the oil industry for the year 2012, whereas CERI and the Conference Board assessed economic impacts over given periods, i.e. 2010-2035 and 2012-2035 respectively.

In addition, variances in the results can be explained by certain methodological differences. First of all, KPMG-SECOR presents induced effects in an appendix but, unlike CERI, does not include them in the overall results. Secondly, KPMG-SECOR used the latest intersectoral model available from Statistics Canada whereas the Conference Board used an earlier model and CERI used a version of the Statistics Canada model that was modified to take other aspects into account, such as exchanges with the United States. Finally, KPMG-SECOR and the Conference Board used oil industry expenditures while CERI also included operating surpluses.

In short:

- The Conference Board study is therefore an analysis of oil industry investments in unconventional extraction in Alberta for 2012 to 2035; and uses a previous version of Statistics Canada's intersectoral model.
- The CERI study is an analysis of oil industry investment and operating activities for conventional and unconventional extraction in the form of two separate studies for the provinces of British Columbia, Alberta and Saskatchewan from 2010 to 2035; it includes induced effects as well as operating surpluses and uses a customized version of the Statistics Canada intersectoral model.

- As for the KPMG-SECOR study, it targets oil industry investment and operating activities for conventional and unconventional extraction jointly for British Columbia, Alberta and Saskatchewan for 2012; it excludes induced effects and uses the latest Statistics Canada intersectoral model.

Despite certain differences in the results, the studies are consistent with each other with respect to the magnitude and distribution of the impacts where analysis components are considered comparable.

APPENDIX –INDUCED ECONOMIC IMPACTS

FIGURE 29: DIRECT, INDIRECT AND INDUCED ECONOMIC IMPACTS FROM WESTERN OIL INDUSTRY SPENDING IN 2012

In \$millions excluding jobs

| | Western producing provinces | | | | Non-producing provinces | | | | Canada |
|--|-----------------------------|----------------|---------------|--------------|-------------------------|---------------|--------------|-------------|----------------|
| | BC | AB | SK | MB | ON | QC | Atlantic | Territories | Total |
| Value added | | | | | | | | | |
| Western oil industry | 2,631 | 43,892 | 4,641 | 594 | 6,146 | 1,853 | 350 | 49 | 60,156 |
| <u>Direct and indirect</u> | 1,451 | 34,033 | 3,652 | 340 | 3,440 | 939 | 193 | 31 | 44,079 |
| <i>Conventional extraction</i> | 584 | 14,764 | 3,211 | 141 | 1,190 | 338 | 73 | 12 | 20,312 |
| <i>Unconventional extraction</i> | 867 | 19,269 | 441 | 199 | 2,250 | 601 | 120 | 19 | 23,767 |
| <u>Induced</u> | 1,180 | 9,859 | 990 | 254 | 2,706 | 914 | 157 | 18 | 16,077 |
| <i>Conventional extraction</i> | 534 | 4,377 | 814 | 122 | 1,170 | 403 | 69 | 8 | 7,497 |
| <i>Unconventional extraction</i> | 646 | 5,482 | 176 | 132 | 1,536 | 511 | 88 | 10 | 8,580 |
| Employment | | | | | | | | | |
| Western oil industry | 29,621 | 385,893 | 48,186 | 7,291 | 63,899 | 20,347 | 4,198 | 429 | 559,864 |
| <u>Direct and indirect</u> | 15,829 | 308,737 | 39,285 | 4,203 | 36,547 | 10,405 | 2,349 | 266 | 417,621 |
| <i>Conventional extraction</i> | 6,510 | 140,418 | 35,883 | 1,735 | 12,809 | 3,731 | 859 | 99 | 202,043 |
| <i>Unconventional extraction</i> | 9,320 | 168,320 | 3,402 | 2,468 | 23,738 | 6,674 | 1,490 | 167 | 215,578 |
| <u>Induced</u> | 13,791 | 77,155 | 8,901 | 3,088 | 27,352 | 9,942 | 1,849 | 164 | 142,243 |
| <i>Conventional extraction</i> | 6,284 | 34,311 | 7,209 | 1,514 | 11,869 | 4,368 | 818 | 74 | 66,447 |
| <i>Unconventional extraction</i> | 7,507 | 42,844 | 1,693 | 1,574 | 15,484 | 5,574 | 1,030 | 90 | 75,796 |
| Federal government revenue | | | | | | | | | |
| Western oil industry | 203 | 5,160 | 419 | 43 | 524 | 119 | 25 | 4 | 6,497 |
| <u>Direct and indirect (taxes and duties)</u> | 108 | 4,007 | 316 | 23 | 285 | 57 | 12 | 3 | 4,811 |
| <i>Conventional extraction</i> | 48 | 1,717 | 292 | 9 | 97 | 20 | 5 | 1 | 2,189 |
| <i>Unconventional extraction</i> | 60 | 2,290 | 24 | 14 | 188 | 37 | 8 | 2 | 2,622 |
| <u>Induced (taxes and duties)</u> | 94 | 1,153 | 103 | 20 | 239 | 62 | 13 | 2 | 1,687 |
| <i>Conventional extraction</i> | 42 | 509 | 90 | 10 | 101 | 26 | 5 | 1 | 785 |
| <i>Unconventional extraction</i> | 52 | 644 | 13 | 11 | 138 | 35 | 7 | 1 | 901 |
| Provincial government revenues | | | | | | | | | |
| Western oil industry | 310 | 8,461 | 1,680 | 47 | 346 | 154 | 25 | 2 | 11,027 |
| <u>Direct and indirect (taxes, duties and royalties)</u> | 225 | 7,652 | 1,559 | 22 | 151 | 68 | 10 | 1 | 9,688 |
| <i>Conventional extraction</i> | 189 | 2,267 | 1,537 | 9 | 52 | 24 | 4 | 0 | 4,082 |
| <i>Unconventional extraction</i> | 36 | 5,385 | 22 | 13 | 99 | 44 | 6 | 1 | 5,605 |
| <u>Induced (taxes and duties)</u> | 85 | 810 | 122 | 25 | 195 | 87 | 15 | 1 | 1,339 |
| <i>Conventional extraction</i> | 38 | 357 | 107 | 11 | 80 | 36 | 6 | 0 | 636 |
| <i>Unconventional extraction</i> | 47 | 453 | 15 | 13 | 116 | 50 | 9 | 0 | 703 |

Sources: Estimates based on Statistics Canada simulations, KPMG-SECOR analysis

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