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COLLECTED ESSAYS

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# Assessing Canada's Energy Sector Competitiveness

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## Executive Summary

The energy sector, in particular the oil and gas industry, is critically important to Canada's economy. It accounts for about 8 percent of Canada's GDP, as well as for a significant share of the tax revenue collected by governments. The oil and gas sector is particularly important to the provincial economies of Alberta and Saskatchewan; it contributes to 30 percent of Alberta's GDP and slightly more than 23 percent of Saskatchewan's GDP.

However, despite its importance, this sector has faced several challenges in recent years largely due to poor government policies at both the provincial and federal levels. Pipeline projects have faced delays or have been cancelled mainly due to political opposition and regulatory and environmental impediments. The lack of adequate pipeline capacity for oil exports has been an ongoing problem for the sector, greatly reducing the price that Canadian oil producers receive for their products. As such, pipeline constraints have been a major factor undermining the competitiveness of energy producers in Western Canada relative to those elsewhere in North America.

In addition to pipeline constraints, increased taxation and regulatory requirements in recent years have exacerbated the issues facing the oil and gas industry. Canada's recent policy and regulatory changes have been particularly damaging given that deregulation and sweeping tax reforms in the United States have significantly improved the business environment in that country, particularly for the oil and gas sector.

This series of short essays looks into the competitiveness concerns for Canada's oil and gas industry in the wake of recent tax reforms and deregulation in the United States.

In the first chapter, Steven Globerman and Joel Emes explain their concerns about the competitiveness of Canada's energy sector by documenting the dramatic deterioration of the investment environment surrounding the oil and gas industry in recent years. They show that the percentage of oil and gas capital investment in Canada as a share of total capital investment has plummeted, from 28 percent in 2014 to 13.9 percent in 2018. In addition, they demonstrate that between 2016 and 2018, the United States has enjoyed a 41 percent increase in investment in its

upstream oil and gas sector (essentially, exploration and production) compared to only a 15 percent increase in Canada.

In the second chapter, Robert Murphy, Ashley Stedman, and Elmira Aliakbari compare the regulatory environment in the US and Canada in which the oil and gas sector operates. They review the recent policy and regulatory changes implemented in both countries. Specifically, they emphasize that Canada's federal government and many key provincial governments have significantly increased regulatory requirements for the sector including extensive reforms included in Bill C-69 and Bill C-48, a provincial cap on greenhouse gas emissions, and new regulations on methane emissions, among others. They explain that in contrast to Canada, the United States has taken a markedly different approach to promoting energy development. It has rescinded or scaled back several regulations including controls on power-plant emissions and it has withdrawn from the Paris climate agreement.

In the third chapter, Philip Bazel and Jack Mintz analyze Canadian oil and gas tax competitiveness in the wake of recent US tax reforms—and Canada's response to those reforms. They find that Saskatchewan has the highest taxes on new oil and gas investment among all major energy-producing jurisdictions in North America, which is hurting the province's competitiveness. They also find that British Columbia fares poorly compared to most US states and provinces on new natural gas investments; British Columbia's effective tax rate is behind only that of Saskatchewan within Canada, and is fifth-highest among 18 jurisdictions in North America.

Finally, in chapter 4, Ashley Stedman and Elmira Aliakbari summarize the results of the latest *Fraser Institute Global Petroleum Survey* to help identify the reasons behind declining investor perceptions of Canada's energy sector. In their responses to the survey, oil and gas investors express great apprehension about Canada's policy environment and regulatory processes. Specifically, they point to the high cost of regulatory compliance, uncertainty concerning environmental regulations, and regulatory enforcement and duplication as major areas of concern in many Canadian jurisdictions particularly when compared to US states. Investors also noted their increasing concern over taxation in Saskatchewan, Alberta, and British Columbia when compared to several US states.

Clearly, Canada's energy sector is reeling from a combination of insufficient pipeline capacity and a barrage of new or expanded regulations and taxes. Building pipelines and easing the burdens of taxes and excessive oil and gas regulations should be a priority for governments at both the federal and provincial levels to help restore the sector's competitiveness.

## CHAPTER 1

# The Competitiveness Crisis in Canada's Oil and Gas Industry

*By Steven Globerman and Joel Emes<sup>1</sup>*

### Introduction

The oil and gas industry is critically important to Canada's economy. It accounts for almost 8 percent of Canada's GDP, as well as for a significant share of the tax revenue collected by governments. The oil and gas sector is particularly important to the provincial economies of Alberta and Saskatchewan. It accounts for almost 30 percent of Alberta's GDP and over 23 percent of Saskatchewan's GDP. As such, the economic health of the oil and gas sector should be of concern to Canadian government officials and policymakers.

Many Canadians may be aware that regulatory restrictions on investments in pipeline capacity have contributed to lower prices for Western Canada Select crude oil and to reduced economic activity in the upstream exploration and production segment of the industry. Indeed, for the month of January 2019, the benchmark price for crude oil produced in the United States (the West Texas Intermediate price) averaged almost US\$46/bbl more than the benchmark price for crude oil produced in Western Canada (the Western Canada Select price).<sup>2</sup> However, fewer Canadians are likely to understand the magnitude of the decrease in upstream

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<sup>1</sup> This essay draws heavily from Steven Globerman and Joel Emes (2019), *Investment in the Canadian and US Oil and Gas Sectors: A Tale of Diverging Fortunes*. The Fraser Institute.

<sup>2</sup> Former Alberta Premier Rachel Notley announced a "temporary" 8.7 percent cut in the allowable production of raw crude oil and bitumen starting January 1, 2019, in response to sharp declines in the price of Western Canada Select crude oil.

investments by Canadian oil and gas companies in recent years, or the movement of investment capital from Canada to the United States.

This chapter documents the dramatic deterioration in the investment environment surrounding Canada's oil and gas industry after 2014. It presents and discusses data on capital expenditures to underscore how much the environment for investing in Canada's upstream oil and gas industry has worsened in the post-2014 period. It also provides some additional data and information identifying the diverging fortunes of the oil and gas industries in Canada and the US.

## **Capital expenditures in Canada: Some background**

By way of background, it is useful to present some data on overall business investment in Canada compared to the US. Specifically, figure 1 reports indices for business gross fixed capital formation for Canada and private nonresidential fixed investment for the US from 2008 to 2018. This category of private sector investment includes non-residential structures, machinery and equipment, and intellectual property products.

The data in figure 1 reinforce findings from numerous other studies that capital investment in Canada decreased markedly in recent years compared to earlier years (Cross, 2017; Globerman and Press, 2018). Specifically, the data series reported in figure 1 for Canada and the US are index values for business investments in non-residential assets in nominal dollars with 2008 as the base year for the series.<sup>3</sup> Therefore, the investment data reported in the figure do not include investments by governments or in residential housing.

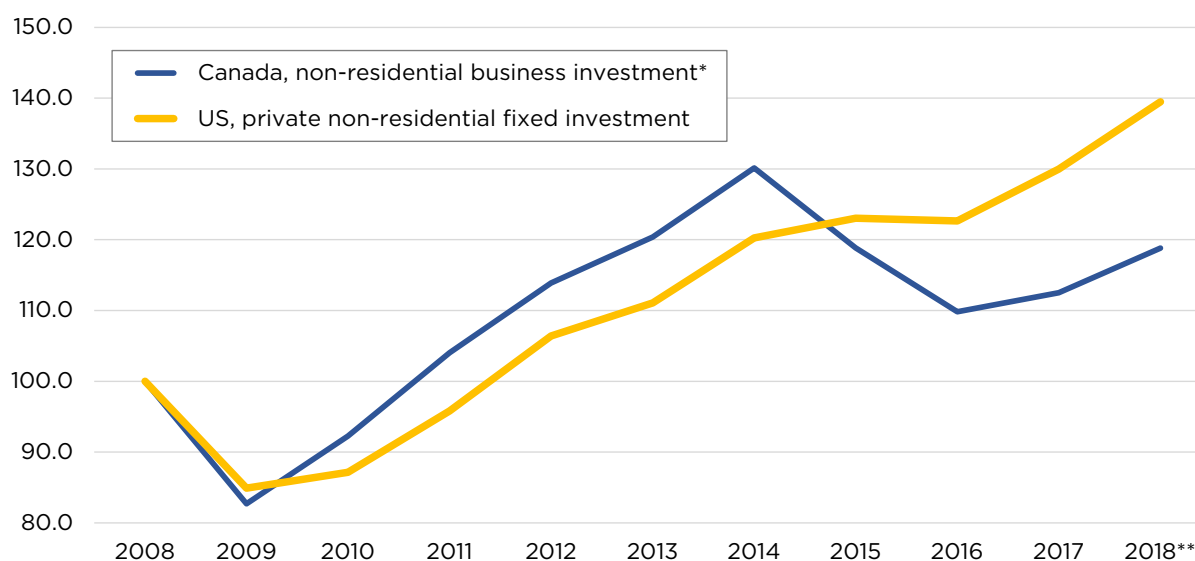
For Canada, capital expenditures relative to the base year reached their peak in 2014. Capital expenditures decreased in 2015 and 2016 and then increased only modestly in 2017. Estimated capital expenditures in 2018 showed stronger growth than in 2017, but they are still below rates seen in 2013 and at the 2014 peak. In contrast, capital expenditures in the US increased consistently from 2008 to 2018 except for the severe 2009 recession and 2016. The net result is that capital expenditures in 2018 for Canada were around 19 percent higher than in 2008, whereas US capital expenditures in 2018 were about 40 percent higher than in 2008.

Figure 2 reports the ratio for Canada (expressed as a percentage) of capital expenditures for oil and gas extraction relative to total capital expenditures on non-residential tangible assets. This ratio increased consistently from 2009 to 2014 indicating that capital expenditures in Canada's

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<sup>3</sup> Choosing 2008 as the base year provides insight into how capital expenditures in Canada and the US fared during and after the severe recession of 2008–2009.



**Figure 1: Capital Expenditure Index, US and Canada, 2008 – 2018****Notes:**

\* Business gross fixed capital formation: non-residential structures, machinery and equipment, and intellectual property products.

\*\* The 2018 US value is an estimate based on the average of the first three quarters of “Private Nonresidential Fixed Investment,” seasonally adjusted at annual rates. The 2018 Canadian value is an estimate based on the average of the first three quarters of “Non-residential structures, machinery and equipment,” seasonally adjusted at annual rates.

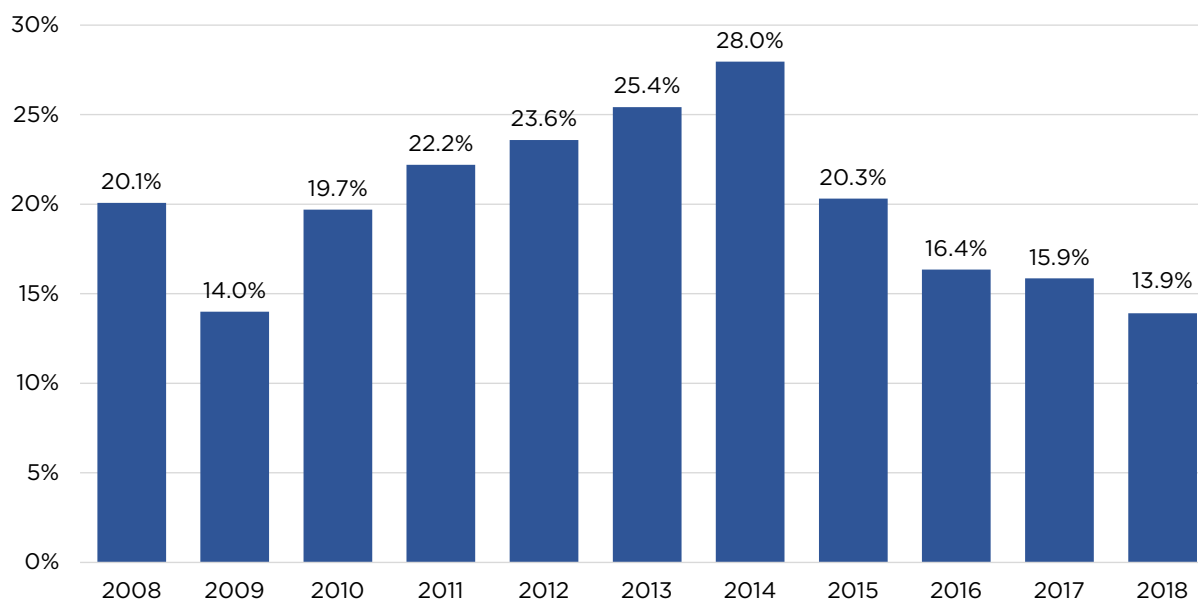
Sources: Globberman and Emes, 2019; Statistics Canada, 2019; and Federal Reserve Bank of St. Louis, 2019.

upstream oil and gas sector increased faster than capital expenditures on non-residential tangible assets for the Canadian economy as a whole over this period. However, by 2018, capital expenditures in the upstream segment of the oil and gas sector relative to total capital expenditures were about half of what they were in 2014. Hence, the slowing growth of capital investment in Canada after 2014 portrayed by the data in figure 1 is especially pronounced for the upstream oil and gas sector.

### Investment in the Canadian and US upstream oil and gas sectors

The data reported in figures 1 and 2 suggest that capital expenditures in the US upstream oil and gas sector increased relative to capital expendi-

**Figure 2: Capital Expenditures for Oil and Gas Extraction Relative to Canadian Total**



Source: See Globberman and Emes, 2019: Appendix Table 3.

tures in the corresponding Canadian sector in recent years given the faster growth of overall capital expenditures in the US combined with a collapse of investment in Canada's upstream sector. Unfortunately, data could not be found for oil and gas investments in the US over the full period from 2008 to 2018 comparable to the Canadian data referenced in figure 2. However, data provided in Xu (2018) allow a comparison of Canadian and US oil and gas investments for 2016 to 2018. Table 1 reports capital expenditures in the Canadian and US oil and gas industry, as well as in the exploration and production and other segments of the industry separately for 2016, 2017, and 2018.

For the oil and gas industry as a whole, capital expenditures in Canada in 2018 were about 21 percent higher than in 2016, while they were also about 21 percent higher than in the US. However, there were substantial differences in the Canadian and US experiences within the industry. Specifically, capital expenditure growth in the upstream segment of the industry in the US substantially outpaced the growth of investment in the upstream segment of Canada's oil and gas industry. Whereas capital expenditures in the upstream segment, i.e., production and exploration, were around 41 percent higher for the US when comparing 2018 to 2016, they

**Table 1: Oil & Gas Industry Capital Spending (CDN \$Billions)**

	2016		2017		2018		2016 -2018 growth, %	
	Canada	US	Canada	US	Canada	US	Canada	US
Exploration/ Production	19.5	121.7	27.3	164.0	28.7	171.9		
Oil Sands*	15.4		13.6		11.4			
Subtotal	34.9	121.7	40.9	164.0	40.1	171.9	15%	41%
Other	7.0	76.3	10.9	51.2	10.6	67.4	51%	-12%
Total	41.9	197.9	51.8	215.2	50.7	239.3	21%	21%

\* = *In situ* mining and upgrading.

Sources: Xu, March 5, 2018; IRS (2019), *Yearly Average Currency Exchange Rates*.

were only about 15 percent higher in Canada when the upstream segment includes the oil sands.

As table 1 indicates, the upstream segment of the industry in both countries accounts for the bulk of capital expenditures in the oil and gas industry, and the output of the upstream sector conditions the profitability of investments in the mid- and downstream sectors.<sup>4</sup> Hence, while investment growth in Canada's mid- and downstream sectors outpaced growth in the comparable US sectors from 2016 to 2018, this might not continue in the future unless the investment environment surrounding Canada's upstream oil and gas sector significantly improves.<sup>5</sup>

In addition to the story told by recent investment data, numerous industry executives have highlighted the unfavourable competitive outlook for oil and gas exploration and production in Canada compared to the US. For example, the Canadian Association of Oilwell Drilling Contractors expects the Canadian drilling rig fleet to decrease by 58 units (almost 25 percent) of the total number operating as of January 25, 2019, as rigs move to the US (OGJ Editors, 2018). Individual Canadian companies reinforce the association's forecast. Ian Dundas, CEO of Enerplus Corp., is quoted as

<sup>4</sup> To be sure, increased pipeline capacity in Canada would improve the profitability of Canada's upstream sector.

<sup>5</sup> Capital expenditures in the mid- and downstream sectors of the US industry can be expected to grow faster than in Canada's mid- and downstream sectors given a more favourable regulatory environment in the US, particularly with respect to pipeline construction.

saying that his company has dramatically transitioned its business into the US and that 90 percent of the company's capital expenditures in 2018 and 2019 will be made in the United States (Morgan, 2018a).

It might be argued that Canadian oil and gas executives have a vested interest in exaggerating problems in Canada's energy sector. However, numerous investment analysts have also noted that they are reducing their investments in Canadian oil and gas companies pending changes in public policies that are hurting those companies. One example is Darren Peers, an analyst and investment manager in Los Angeles. He is one of the largest foreign holders of Canadian energy stocks. In a letter to Prime Minister Trudeau, Peers warned that investors and companies will continue to avoid the Canadian energy sector unless more is done to improve market access for Canadian oil. Susan Johns, a UK-based fund manager also sent a letter to Prime Minister Trudeau saying that it was hard for her to watch a vibrant industry being strangled by regulation, carbon taxes, and the inability of producers to get their products to world markets (Morgan, 2018b).

Finally, a broad survey of international managers and executives in the upstream petroleum industry identified a decrease in the investment attractiveness of Canada's major oil and gas producing provinces in recent years. In particular, the absolute value of Alberta's overall investment attractiveness index declined by almost 21 percent between 2014 and 2018. While Alberta ranked in the 85<sup>th</sup> percentile of attractiveness in 2014, it dropped to the 47<sup>th</sup> percentile in 2018. Saskatchewan also declined substantially in its attractiveness ranking. Whereas it ranked in the 98<sup>th</sup> percentile in 2014, it ranked only in the 78<sup>th</sup> percentile in 2018 (Stedman and Green, 2018). While the investment attractiveness of several jurisdictions in the US also declined, the major growth locations encompassing shale oil exploration, notably Texas and New Mexico, were rated more attractive locations for investment in 2018 than they were in 2014. Indeed, of the 10 most attractive locations in the world for investment in petroleum exploration and development, eight were US states and one was the offshore Gulf of Mexico. The only jurisdiction outside the US making the top ten list was the UK North Sea.

## Conclusion

There has been extensive media coverage of the deteriorating profitability of upstream oil and gas exploration and production in Canada. Arguably less well appreciated by Canadians is how serious the deterioration of the competitiveness of Canada's oil and gas industry has been in recent years, especially relative to the oil and gas sector in the US.

Recent and prospective capital allocation decisions of Canadian oil and gas companies underscore the risk that Canada's upstream oil and gas sector will be increasingly less competitive compared to its counterpart US sector. Without substantive changes to government policies affecting Canada's oil and gas sector, it's difficult to see any abatement in the drift of investment to US oil-producing locations and away from Canadian locations.

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## CHAPTER 2

# Policy and Regulatory Framework Changes in the US and Canadian Oil and Gas Sector

*By Robert P. Murphy, Ashley Stedman, and Elmira Aliakbari*

### Introduction

Canada's oil and gas industry is experiencing competitiveness challenges as the Trump administration has implemented meaningful policy reforms to improve the business environment and ease regulatory burdens, especially for the energy sector. This chapter compares the regulatory environment under which the oil and gas sectors in Canada and US operate by reviewing the recent policy and regulatory changes implemented in both countries. It begins by examining the recent core policy regulatory changes proposed and implemented by the Canadian federal and provincial governments in recent years along with the potential environmental benefits derived from these regulatory changes. It then describes the recent regulatory reforms implemented in the United States under the Trump administration.

### Regulatory changes in the Canadian energy sector

Canada's energy sector is facing several regulatory reforms as Canada's federal and provincial governments consider how Canada will lower greenhouse gas emissions. However, the scope and cumulative impact of Canada's recent regulatory changes remain largely absent from policy debates. This chapter provides an overview of the recent and proposed regulatory changes affecting Canada's energy sector. It describes the core



regulatory elements contained in the federal government's Pan-Canadian Framework on Clean Growth and Climate Change and provincial variations of that plan, and highlights how energy and environmental regulations are continually changing. It also discusses the potential environmental benefits of Canada's recent regulatory changes to examine whether their benefits and costs make them justifiable.

Much attention has been given to the regulatory reforms included in Bill C-69, which will overhaul the approval process for major energy projects. The regulatory changes proposed included in Bill C-69 (2019), which received royal assent in June 2019, replace the federal Canadian Environmental Assessment Act (2012) with a new, much broader Impact Assessment Act; replace the federal Environmental Assessment Agency with a new Impact Assessment Agency, which would have a much broader scope for reviewing major projects; would replace the National Energy Board with an entirely new Canadian Energy Regulator; and amend the Navigation Protection Act. It is a far-reaching piece of regulatory legislation that includes subjective assessment criteria—including the social impact of energy investment and its “gender” implications—which will likely make the regulatory process more complicated and less certain.<sup>6</sup>

Along with the extensive reforms included in Bill C-69, in 2019 the government also passed Bill C-48, or the Oil Tanker Moratorium Act. The Act prohibits oil tankers that are carrying more than 12,500 metric tons of crude oil or persistent oil<sup>7</sup> as cargo from stopping or unloading crude oil or persistent oil at ports or marine installations along British Columbia's north coast (Canada, 2018c). The Act also establishes an administration and enforcement regime that includes requirements to provide information and to follow directions and that provides for penalties of up to a maximum of \$5 million. Penalties will be issued for mooring or anchoring at a port, unloading within a specific area, loading within a specific area, and transporting to a port within a designated area, among others (Canada, 2018c).

In addition to the regulatory reforms passed in Bills C-69 and C-48, the Pan-Canadian Framework on Clean Growth and Climate Change (2016) includes a number of new regulatory measures. The most widely discussed aspects of Ottawa's plan to reduce greenhouse gas emissions is the implementation of carbon pricing, which started at a minimum of \$10 per tonne in 2018 and is scheduled to rise by \$10 every year until it reach-

<sup>6</sup> For more information regarding Bill C-69, see Pardy (2018) and McKittrick (2018).

<sup>7</sup> As per the definition provided in the legislation, persistent oil refers to an oil, or a class of oils, set out in the schedule. The legislation defines oil as petroleum in any form, including crude oil, fuel oil, sludge, oil refuse and refined products (Canada, 2019a).

es \$50 per tonne in 2022. However, the other regulatory measures that are being implemented alongside carbon pricing are less widely understood. One of the main aspects of the plan is to phase out coal-fired electricity by 2030. More specifically, the regulations will require all coal-fired electricity generating units to comply with an emissions performance standard of 420 tonnes of carbon dioxide per gigawatt hour of electricity produced (t of CO<sub>2</sub>/GWh) by 2030, at the latest. This performance standard is designed to phase out conventional coal by 2030 and is a core part of the federal government's plan to reduce greenhouse gas emissions. Ontario is one of the provinces that has already terminated coal-fired generation and Alberta is on track to phase out reliance on coal-burning power plants by 2030.

To complement the accelerated phase out of coal-fired electricity, the government of Canada is also moving forward with proposed greenhouse gas regulations for natural gas-fired electricity to cover new natural gas-fired electricity units and coal-fired units that are converted to run on natural gas (Canada, 2018). For coal units that convert to run on natural gas, the proposed regulations would encourage companies to convert their coal units to natural gas ahead of their end-of-life under the amended coal regulations. In addition, all four provinces that still rely on coal-fired electricity generation (Alberta, Saskatchewan, New Brunswick, and Nova Scotia) are also implementing provincial measures aimed at reducing emissions from coal (Environment and Climate Change Canada, 2018).

The government of Canada has also committed to cutting methane emissions from the oil and gas sector. The directive requires that oil and gas methane emissions be reduced 40 to 45 percent below 2012 levels by 2025. The final regulations to phase down the consumption of hydrofluorocarbons (HFCs)—man-made chemical compounds used in cooling devices such as air conditioners and refrigerants—entered into force in April 2018. Many provinces (British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, and Newfoundland & Labrador) are developing equivalency agreements (Environment and Climate Change Canada, 2018).

The government of Canada is also currently developing a clean fuel standard, which is intended to cut carbon emissions by 30 million tonnes annually by 2030. The Clean Fuel Standard will cover all fossil fuels used in Canada, but will outline separate requirements for liquid, gaseous, and solid fossil fuels. The proposed regulatory design for the liquid fossil fuel regulations, which was released in June 2019, outlines various requirements and credit creation measures that will be included in the final regulations. Regulations for liquid fuels will require those who produce and import fuels to reduce the amount of GHG emissions associated with producing and consuming the fuel (Canada, 2019c). More specifically, fuel suppliers will likely be required to meet a reduction of 10 grams of

carbon equivalent per megajoule in 2030. This is equivalent to a reduction of about 10 to 12 percent in carbon intensity below 2016 levels (Canada, 2019c). Once finalized, the liquid fuel regulations are expected to take effect in 2022, while the gaseous and solid regulations will come into force in 2023 (Canada, 2019d).

The federal government also made changes to ethanol regulations with the aim of reducing the carbon footprint of the transportation sector. A study commissioned by Natural Resources Canada evaluated the opportunities and challenges associated with the use of mid-level ethanol blend transportation fuels, including potential greenhouse gas emission reductions (Natural Resources Canada, 2018). Previously, gasoline in Canada contained up to 10 percent ethanol, but a new standard includes a new type of gasoline that raised the maximum to 15 percent (Canada, 2018b).

At the provincial level, Canada's major energy producing province, Alberta, has adopted a cap on oil sands emissions. The cap consists of a legislated emissions limit on the oil sands of a maximum of 100Mt in any year with provisions for cogeneration and new upgrading capacity. The government of Alberta suggests that the emissions limit "will help drive technological progress... and bend Alberta's overall emissions trajectory downward" (Alberta, 2019). Alberta's legislated emissions limit is an unprecedented step aimed at reducing greenhouse gas emissions, taken as part of the province's Climate Leadership Plan (CLP). The CLP also includes a carbon tax, a methane reduction strategy, and the goal of phasing out coal-fired electricity generation by 2030.

The government of British Columbia attempted to pursue regulatory reforms targeted towards the transportation of heavy crude oil. In January 2018, BC proposed a second phase of regulations that would apply to pipelines transporting any quantity of liquid petroleum products, as well as rail or truck operations transporting more than 10,000 litres of liquid petroleum products. The province put forward restrictions on the increase of diluted bitumen transportation "until the behaviour of spilled bitumen can be better understood and there is certainty regarding the ability to adequately mitigate spills" (British Columbia, 2018, January 18). Studies show that pipelines suffer few occurrences (accidents and incidents) given the amount of oil and gas that is shipped through them (Green and Jackson, 2017). Specifically, between 2004 and 2015, pipelines experienced approximately 0.05 occurrences per million barrels of oil equivalent (Mboe) transported. In addition, petroleum product transport data from 2004 to 2015 showed that pipelines were 2.5 times less likely than rail to result in a release of product when transporting a million barrels of oil. However, the British Columbia government still submitted a reference question to the BC Court of Appeal asking the court to review proposed amendments that

would give the province authority to regulate the impacts of heavy oils, like diluted bitumen (British Columbia, 2018, April 26). In May 2019, the Court of Appeal ruled that BC cannot restrict oil shipments through its borders as its amendments would interfere with the federal government's exclusive jurisdiction over interprovincial pipelines (Canadian Press, 2019, May 24). British Columbia has also committed that it will reduce methane emissions from oil and gas by 45 percent by 2025. In addition, the province's 2018 plan increased the low-carbon fuel standard to 20 percent by 2030.

As explained, most the recent regulatory changes proposed and implemented in Canada are related to greenhouse gas emissions. The Canadian policy goal, as reported by Environment Canada, is a reduction in annual greenhouse gas (GHG) emissions (in CO<sub>2</sub> equivalents) of 219 million metric tonnes (MMT) by 2030, from a projected baseline of 742 MMT to 523 MMT (Canada, 2016). It is crucial to ask what impact that reduction would have on temperatures and other climate phenomena. After all, achieving such reductions is not costless, so a sensible process of policy formulation would attempt to balance the costs and benefits of GHG policies. Because the effects of reductions in GHG emissions are global, we must contrast the Canadian reduction of 219 MMT with global GHG emissions. The latter was about 51,000 MMT in 2017 (Olivier and Peters, 2018). To keep the analysis conservative, let us assume that the Canadian reduction is achieved immediately and then maintained permanently, and that global emissions remain at 51,000 MMT. Accordingly, global emissions after the Canadian reduction would be lowered by about four tenths of 1 percent. If we apply the climate model used by the US Environmental Protection Agency for analysis of US GHG policies, the temperature effect of the Canadian GHG reduction by 2100 would be less than three one-thousandths of a degree celcius (MAGICC, 2007). Because the standard deviation of the surface temperature record is about 0.11 degrees, the temperature effect of the Canadian GHG reduction would not be measurable, and the same would be true of such ancillary effects as sea levels (Hansen et al., 1999). This means that the climate impact of the Canadian policy will be very close to zero, so that any costs borne to achieve the intended GHG reductions will likely result in minimal environmental benefits.

Overall, recent federal and provincial regulatory reforms for Canada's energy sector are extensive and complex while providing few environmental benefits. Canada's energy sector provides many economic and social benefits for Canadians, but this industry continues to face challenges as regulatory costs mount. As explained in other chapters in this collection, Canada's recent policy and regulatory changes coupled with ongoing pipeline capacity have, and continue to have, an impact on investor

perceptions as the regulatory process is viewed as onerous and difficult to navigate. To reverse this trend and restore Canada's regulatory competitiveness, policymakers in Canada should ease the excessive regulatory burden and provide clarity and certainty about the regulatory process.

## Recent regulatory changes in the US energy sector

In stark contrast to the Canadian experience, the US energy sector has seen significant *deregulation* under the Trump administration, with further movement on the horizon. Especially in contrast to what would likely have occurred under a Hillary Clinton administration, both the tone and substance of the US regulatory treatment of the energy sector since the November 2016 election has been quite remarkable. This section summarizes some of the most important changes.

Before delving into the specifics of energy deregulation, we should first mention the broader political context. For starters, the signature legislative accomplishment of the Republicans during the Trump administration has been the tax reforms passed in late 2017. In addition to modest reductions in personal income tax rates in most brackets, the Tax Cuts and Jobs Act of 2017 significantly reduced the US corporate income tax rate from 35 percent to 21 percent and eliminated the corporate Alternative Minimum Tax (Tax Foundation, 2017). This major change brought the US corporate tax rate closer to that of other OECD countries.

Also part of the broad political context is President Trump's Supreme Court appointments—particularly Justice Kavanaugh—whose rulings tend to limit the ability of regulatory agencies to act in ways beyond the plain meaning of the authorizing legislation. Their rulings have led the justices to be described (somewhat inaccurately) as “business friendly,” and both their friends and foes predict that they will offer opinions that have the practical effect of giving businesses more discretion in their activities.<sup>8</sup>

In a similar vein, the National Labor Relations Board (NLRB) in 2015 under the Obama administration issued a ruling that made it easier for companies to be held liable for labour law violations carried out by contractors and franchisees because the original companies could be construed as “joint employers” who exercised “indirect control” over working conditions. Critics of the ruling argued that it introduced inefficient

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<sup>8</sup> Brett Kavanaugh's approach to federal regulation of business conduct was epitomized in his (in)famous dissent in the case of a killer whale trainer who died at SeaWorld. Fans of Kavanaugh found his reasoning to be straightforward and precise, while critics claimed Kavanaugh was a tool of big business and mocked his legal analogies. (See Quinlan, 2018, July 11).

frictions into labour markets and threatened the franchise business model. In September 2018 the (by then Trump-era) NLRB proposed rescinding the rule. (In December 2018, a US Appeals Court ultimately reversed the Obama-era standard for “indirect control” as too broad (see Wiessner, 2018, December 28).)

Furthermore, as soon as he came into office, Trump began signing a series of executive orders seeking to halt and review the pending Obama-era regulations, and to reduce the burden of pre-existing regulations.<sup>9</sup> One of the most provocative of these was Executive Order 13771, “Reducing Regulation and Controlling Regulatory Costs,” issued on January 30, 2017. This executive order (EO) required that for every new regulation issued by a federal agency, it had to eliminate two prior regulations; this has been referred to as a “one-in, two-out” standard. Although some dismissed this rule as a blunt instrument that was more beneficial as rhetoric than substance,<sup>10</sup> the administration has achieved its goal of reducing regulations at least in terms of their sheer number.

For specifics on the Trump administration’s deregulatory achievements, Crews Jr. (2018) provides the following:

- Elimination of 15 existing rules via the Congressional Review Act;
- Delay or withdrawal of 1,579 rules dating to the Obama administration in the pipeline;
- Multi-pronged streamlining for pipelines, bridges, 5G broadband, rural broadband, and other infrastructure;
- ...
- The *Federal Register* finished 2017 at 61,308 pages, the lowest count since 1993. This represents a 36 percent drop from President Barack Obama’s 95,894 pages in 2016, the highest level ever recorded.
- *Federal Register* pages devoted specifically to final rules in 2017 stood at 18,727, the lowest since 1995.
- ...
- At the end of calendar year, 1,834 proposed rules were in the *Federal Register* pipeline. This was a 24 percent reduction from 2,419 in 2016 (Crews Jr. 2018: 3–4).<sup>11</sup>

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<sup>9</sup> Clyde Wayne Crews, Jr. (2018) reviews the Trump Administration’s deregulatory efforts through early 2018.

<sup>10</sup> See a summary of the criticisms in Lam (2017, January 20). Among other concerns, critics pointed out that what normally would have been two regulations could simply be stacked together in a single regulation, defeating the purpose of the reform.

<sup>11</sup> It is worth mentioning that these statistics on the reduction in sheer number of regulations actually understate the change because some of the surviving regulations



As to energy-specific deregulatory efforts, President Trump issued Executive Order 13783, “Promoting Energy Independence and Economic Growth,” on March 28, 2017. This EO orders that it “is in the national interest to promote clean and safe development of our Nation’s vast energy resources, while at the same time avoiding regulatory burdens that unnecessarily encumber energy production, constrain economic growth, and prevent job creation” (United States, Executive Office of the President, 2017, March 28). The EO goes on to direct that “executive departments and agencies... immediately review existing regulations that potentially burden the development or use of domestically produced energy resources and appropriately suspend, revise, or rescind those that unduly burden the development of domestic energy resources beyond the degree necessary to protect the public interest or otherwise comply with the law” (United States, Executive Office of the President, 2017, March 28).

Under the auspices of this EO, the Environmental Protection Agency (EPA) reviewed the Obama-era Clean Power Plan (CPP), which would have given states targets for reductions in power-sector emissions that they could either meet with their own plans, or be given a federal plan. (It was widely acknowledged that the original CPP would have greatly accelerated the phase-out of conventional coal-fired power plants in the United States.<sup>12</sup>) After its review, the Trump administration’s EPA issued a proposed plan to repeal the CPP (United States, Environmental Protection Agency, 2019a), though the CPP’s actual status is tied up in regulatory procedures and court challenges. In August 2018 the EPA proposed the Affordable Clean Energy (ACE) rule to replace the CPP (United States, Environmental Protection Agency, 2019b). The ACE proposal would still aim to reduce power-sector greenhouse gas emissions 34 percent below

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are ones that repealed pre-Trump era regulations.

<sup>12</sup> See, for example, Campbell (2015), which analyzes the Clean Power Plan’s impact on the US electric power sector and devotes an entire section (starting on p. 9) to “Shifting Power Generation from Coal-Fired EGUs [Electric Generating Units] to Existing NGCC [Natural Gas Combined Cycle] Units.” For another example, Paul Krugman wrote in a 2013 book review, “the Environmental Protection Agency has asserted its right and duty to regulate power plant emissions, and *has already introduced rules that will probably prevent the construction of any new coal-fired plants*. Taking on the existing plants is going to be much tougher and more controversial, but looks for the moment like a more feasible path than carbon pricing” (emphasis added) (Krugman, 2013, November 7). The Energy Information Administration’s own forecasts suggest that the CPP would reduce US electricity derived from coal by about a third through 2040, relative to the no-CPP forecast (see Murphy, 2017, October 16).

2005 levels by the year 2030, but (so its designers claim) it is much more market-friendly and less burdensome than the CPP.<sup>13</sup>

The Trump administration's attempts to revive the Keystone XL pipeline extension is another major reversal from Obama-era energy policy. After initially giving conditional approval to the project, the Obama Administration (via the EPA and State Department), under intense public pressure from environmental and other activist groups, began issuing various delays in the summer of 2010. After a complex series of protests, lawsuits, and continuing bureaucratic sluggishness, President Obama in early 2015 vetoed a bill that would have approved the extension of the pipeline. In January 2017, the newly-elected President Trump signed a memorandum giving Keystone the ability to reopen its application.<sup>14</sup> However, in November 2018 a federal judge in Montana ruled that the project failed to comply with environmental regulations. In response, in March 2019 President Trump signed a permit granting Keystone permission to build in the US (Dennis and Eilperin, 2019, March 29). The ultimate fate of the project is still uncertain pending various legal challenges, but the contrast between the Obama and Trump administrations—in not just rhetoric but also their actions—is nonetheless significant.

Another energy-specific Executive Order, EO 13795, "Implementing an America-First Offshore Energy Strategy," was issued on April 28, 2017. This EO establishes that it "shall be the policy of the United States to encourage energy exploration and production, including on the Outer Continental Shelf, in order to maintain the Nation's position as a global energy leader and foster energy security and resilience for the benefit of the American people, while ensuring that any such activity is safe and environmentally responsible" (United States, Executive Office of the President, 2017, April 28). The EO directs the secretary of the interior to "give full consideration to revising the schedule of proposed oil and gas lease sales... so that it includes... annual lease sales, to the maximum extent permitted by law, in each of the following Outer Continental Shelf Planning Areas... : Western Gulf of Mexico, Central Gulf of Mexico, Chukchi Sea, Beaufort Sea, Cook Inlet, Mid-Atlantic, and South Atlantic..." It should be noted, however, that the actual practical impact of the Trump administration on offshore energy production is still unclear, particularly in the case of Florida where even Republican officials oppose changes to the status quo because they are so unpopular with the voters (Colman and Lefebvre, 2019, April 10).

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<sup>13</sup> For the Trump EPA's own comparison of the new ACE proposal to the Obama-era CPP, see United States, Environmental Protection Agency (undated).

<sup>14</sup> Much of the Keystone history is taken from Canadian Press (2017, January 24).



Perhaps the single most prominent (and controversial) energy-specific deregulatory move was Trump's announcement on June 1, 2017, that the US would begin the procedures<sup>15</sup> necessary to formally withdraw from the Paris Climate Agreement, claiming that it was "an agreement that disadvantages the United States to the exclusive benefit of other countries" (Roberts, 2018, June 1). According to the United States' Nationally Determined Contribution (NDC) as submitted during the Obama Administration, the country had committed to "achieve an economy-wide target of reducing its greenhouse gas emissions by 26–28 percent below its 2005 level in 2025 and to make best efforts to reduce its emissions by 28 percent" (UNFCCC Secretariat, undated).

On December 27, 2018, the EPA issued a final ruling regarding its proposed revision to the MATS (Mercury and Air Toxics Standards) rule for power plants<sup>16</sup> that had been established in 2012 under the Obama Administration. The EPA estimated that the cost to coal- and oil-fired power plants from complying with MATS ranged from \$7.4 to \$9.6 billion annually, while the benefits to society (in the form of reduced emissions of so-called hazardous air pollutants or HAP) only ranged from \$4 to \$6 million. Hence, the EPA concluded that it was not "appropriate and necessary" to regulate HAP emissions from power plants.

Similarly, on September 28, 2018, the Interior Department finalized a rule<sup>17</sup> that relaxed Obama-era regulations on "flaring" of natural gas and oil wells. As explained in the Trump administration's summary, the original purpose of the Obama-era regulation was to reduce "waste of natural gas from venting, flaring, and leaks during oil and natural gas production activities on onshore Federal and Indian leases..." However, the Trump Interior Department concluded that the stricter Obama-era rules had regulatory costs exceeding their benefits, and relaxed the standards to give well operators more discretion in conducting their operations and "wasting" (through venting, flaring, and/or leakage) more gas (and methane emissions) than the Obama rules would have allowed (United States, Bureau of Land Management, 2018: 3–4). This particular ruling was decried by environmental groups because methane (depending on the time horizon adopted) is such a potent greenhouse gas (see Lavelle, 2018, September 18),

<sup>15</sup> By design, no signatory to the agreement can technically withdraw until four years after it goes into effect, meaning that the US cannot actually withdraw until after the 2020 presidential election (Roberts, 2018, June 1).

<sup>16</sup> For the final MATS rule, see United States, Environmental Protection Agency, 2018, December 27.

<sup>17</sup> For the relaxed flaring rule, see United States, Bureau of Land Management, 2018.

further underscoring the notion that the Trump administration was giving businesses more flexibility even in the face of concerns over climate change.

Finally, another major energy-related regulatory rollback was the Trump administration's proposed relaxation (in early August 2018) of the increased fuel economy standards schedule implemented during the Obama administration. The original schedule required new passenger vehicles to achieve 54 miles per gallon by 2025, while the Trump administration's freezing of the rules would halt the ratcheting up in 2021 at about 37 miles per gallon (Davenport, 2018, August 2). (Note that several US states, most notably California, are disputing the proposal.<sup>18</sup>) Besides its general goal of easing business regulations in order to promote job creation and economic growth, for this particular proposed rollback the administration argued that higher mandates on fuel economy lead automakers to produce lighter, more expensive vehicles that financially burden poorer drivers and lead to more traffic fatalities.<sup>19</sup>

In summary, although Republican presidential candidates in the United States often boast of their commitment to cutting "red tape" and loosening the regulatory shackles on business, in its first two years the Trump administration has achieved significant reforms, particularly regarding energy-related regulations. Beyond the particular changes highlighted above, there is survey-based evidence that investors in the petroleum sector perceive a favourable change in the regulatory landscape.<sup>20</sup>

In the context of Canada's growing regulatory burdens, we can expect increased difficulties for Canadian energy producers as they fight to maintain regulatory competitiveness with their peers south of the border.

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<sup>18</sup> In particular, California had long been granted a waiver from the federal government through which the state could mandate more stringent corporate average fuel economy standards than the federal minimum. The negotiations between the California Air Resources Board (CARB) and federal government broke off in February 2019 (see Mufson and Dennis, 2019, February 21.)

<sup>19</sup> The proposal issued on August 2, 2018, by the Trump administration's EPA and Department of Transportation (DOT) estimated that the changes to the fuel economy standards would result in a "\$2,340 reduction in overall average vehicle ownership costs for new vehicles" and would lead to more than "12,000 fewer crash fatalities over the lifetimes of all vehicles built through MY [Model Year] 2029" (United States, Department of Transportation and EPA, 2018, August 2).

<sup>20</sup> Specifically, in the Fraser Institute's 2018 *Global Petroleum Survey* investors familiar with US jurisdictions expressed decreased concern in a number of regulatory areas including labour regulations and regulatory duplications between 2017 and 2018. Increased positive perceptions in these regulatory areas contributed to improvements in the international rankings for many US states. Nine US jurisdictions ranked in the top 10 most attractive jurisdictions for investment in 2018, while no Canadian jurisdiction made the top 10.

Further, Canada's energy sector will struggle to attract much needed investment in new and expanded production capacity in part because of the reforms in the US.

## Conclusion

In Canada, the federal and provincial governments are increasing costs for the energy sector by adopting several greenhouse gas emissions policies despite the fact that such policies are likely to generate few environmental benefits. Meanwhile, the US has significantly eased the regulatory burden for the energy sector by scrapping several energy-related regulations.

While each individual policy decision in Canada may seem to have a small effect on the Canadian energy sector's profitability and therefore competitiveness, the combined impact of these decisions is substantial. In particular, Canada's recent policy and regulatory changes coupled with ongoing pipeline constraints and a less favourable tax system in some Canadian provinces than in the US has adversely affected the competitiveness of the Canadian energy sector. As shown in the first chapter of this collected series, investment in upstream oil and gas has moved from Canada to the US in recent years and this shift in investment can be largely attributed to Canada's uncompetitive policy and regulatory environment.

Governments can do nothing about the inherent geology of oil reserves. However, they can improve the competitiveness of the energy sector by implementing clear regulatory processes and competitive policies. Policymakers in Canada need to take steps to reduce the burden of regulations and provide clarity and certainty about the regulatory process to ensure that this country's regulatory environment is comparable to that of the United States. Doing so would deliver economic benefits to Canadian workers and consumers, yet produce little in the way of adverse environmental outcomes.

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## CHAPTER 3

# Effective Tax and Royalty Rates on New Investment in Oil and Gas

*By Philip Bazel and Jack M. Mintz<sup>21</sup>*

### Introduction

In the wake of the January 1, 2018 US tax reform, multinational businesses with US operations are re-evaluating investment, financing, and other operating activities to determine their most profitable strategies. The broad overhaul of the US corporate tax system including a large reduction in the corporate tax rate from 34 to 21 percent, and the introduction of accelerated depreciation for machinery has changed the previous status quo which had favored Canada for over a decade. This change dramatically altered the incentives to invest in US rather than Canadian jurisdictions, diminishing incentives to invest in resource development north of the border. Policymakers in Canada responded by introducing temporary accelerated cost recovery for capital expenditures, stopping short of policy that would restore a significant competitive edge with regard to taxation. With Canada's beleaguered oil and gas industry facing challenges to secure new investment and export to other countries, one might think that our government would have made more significant use of policy levers to support the industry. Rather than making a substantial change to corporate taxation in Canada, policymakers have settled on temporary and targeted incentives for short-term investment in machinery.

Our recent study, *Effective Tax and Royalty Rates on New Investment in Oil and Gas after Canadian and American Tax Reform*, analyzes Canadian oil and gas tax competitiveness in the wake of US tax reform and

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<sup>21</sup> This chapter draws heavily from Philip Bazel and Jack M. Mintz (2019), *Effective Tax and Royalty Rates on New Investment in Oil and Gas after Canadian and American Tax Reform*, The Fraser Institute.

the Canadian response. We compare Alberta, British Columbia, Saskatchewan, Newfoundland & Labrador, and Nova Scotia, representing over 95 percent of Canadian hydrocarbon production, with 15 US states, including the 10 highest producing jurisdictions for both oil and gas, representing over 79 percent of oil and 86 percent of natural gas production in the United States: Alaska, Arkansas, California, Colorado, Kansas, Louisiana, Mississippi, New Mexico, North Dakota, Ohio, Oklahoma, Pennsylvania, Texas, West Virginia, and Wyoming.

## **Marginal effective tax and royalty rate (METRR) analysis**

We estimate the impact of all taxes and resource levies on investment returns by estimating the marginal effective tax and royalty rate (METRR) on capital (costs related to other inputs such as labour and energy are not included). This is a summary measure that accounts for corporate income taxes, sales taxes on capital purchases, capital taxes, transfer taxes, stamp duties, profit-based resource levies, and royalties as a share of the pre-tax rate of return on investments.

In theory, businesses invest in capital until the return on capital is just sufficient to cover economic costs of investment (the marginal investment, sometimes called the hurdle rate). Economic rents, which are defined as profits earned in excess of the opportunity costs of using capital, labour, and other inputs in production, are equal to zero for marginal projects that earn a rate of return on capital just sufficient to cover capital costs, including taxation.

The marginal effective tax and royalty rate (METRR) results provide an indication as to how tax and resource levies affect the decision to invest in oil and gas marginal projects in each jurisdiction. With marginal analysis, there is no need to specify project revenues and costs since companies will invest in capital until the rate of return on capital is equal to the cost of capital. This being the case, we simply measure the cost of capital with adjustments made for taxes and resource levies.

To the extent that the METRR is higher, there is less incentive to invest in a particular jurisdiction, all else being equal. Of course, various non-tax factors such as production, exploration and development costs, distance to markets, the quality of the resource, skilled labour supply, regulations, infrastructure, political risk, and perhaps most important, market price, also affect a firm's investment decisions. All else being equal,

tax will have some impact on investment, but it is only one among several criteria that affects investment.

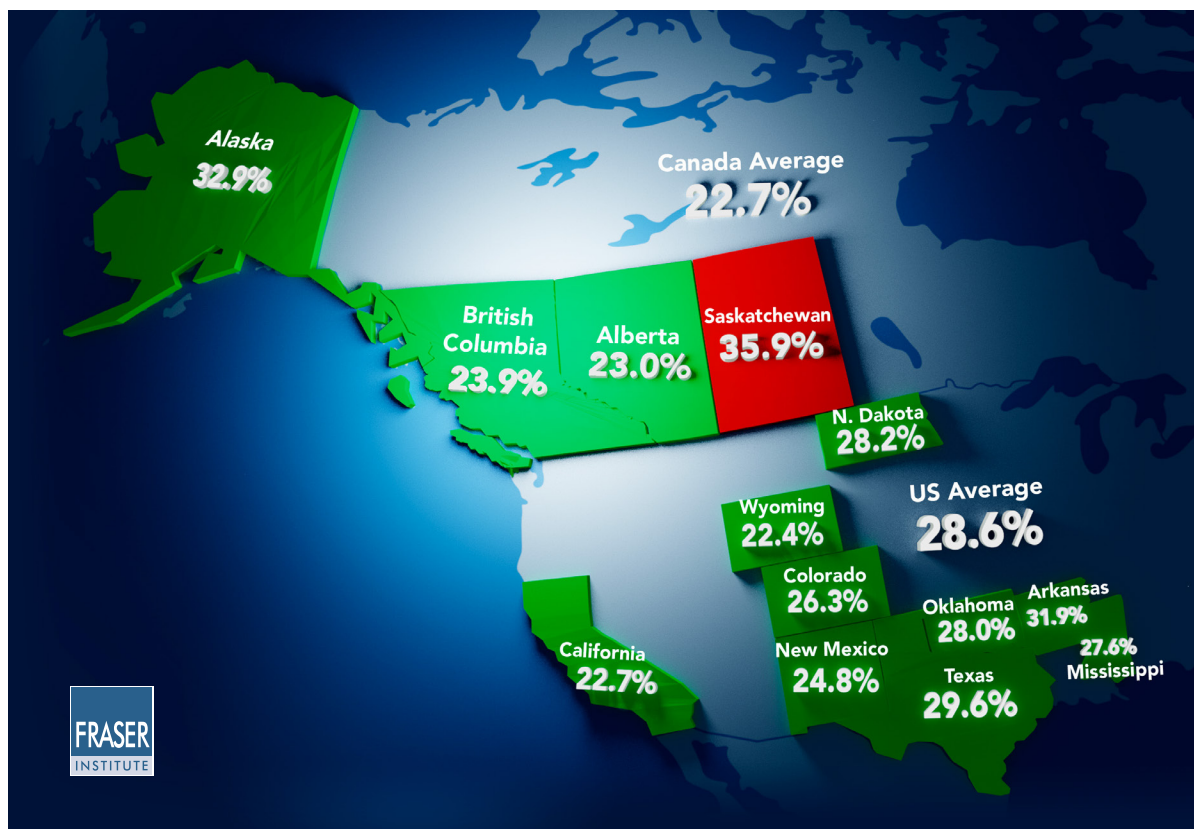
## Canada and US METRR on oil

For oil, we find that Canada's weighted average METRR has moved below that of the 2018 post tax-reform United States as a result of the accelerated depreciation announced by the Canadian federal government on November 21, 2018. This follows a period after US, but prior to Canadian, tax reform, in which the two were neck and neck (on average, 28.5 percent for Canada and 28.6 percent for the United States, based on provincial/state jurisdictions included here), and a prolonged period prior to US tax reform when the US METRR was much higher at an average of 33.9 percent. Both Canada's package of accelerated depreciation, and US expensing provisions for short-lived capital (primarily machinery) in the recent tax reform, are legislated to be phased out after 2027. It is worth noting that Congress has extended bonus depreciation for machinery several times since 2001, depending on the state of the economy.

Marginal Effective Tax and Royalty Rates (METRRs) for oil are provided by jurisdiction in figure 1. We assume the average well produced 50 barrels per day at a market price of US\$50 per barrel. Canada's weighted average METRR is 22.7 percent, which is 5.9 percent below that of the United States at 28.6 percent in 2018—and well below the 2017 US METRR of 33.9 percent, prior to the US tax reform. The US average represents conventional production only, whereas Canada's METRR includes conventional, unconventional (Alberta oil sands), and off-shore production (for both Newfoundland & Labrador and Nova Scotia). US offshore, which is federally owned, is not included in US state measures and is not analyzed here.

In Canada, Saskatchewan has the highest METRR on conventional oil and gas investments as a result of its retail sales tax on capital inputs—though exemptions exist for oil and gas “down-hole work” and for the purchase of oil and gas drilling and service rigs—and its resource royalty. We note that Saskatchewan's royalty rate includes a resource surcharge of 1.7 percent on the value of sales, though only for corporations with paid-up capital of over \$20 million, which we assume to be the case. The lowest METRR is applied to investments in off-shore oil and gas in Nova Scotia. In Nova Scotia, resource taxation is a two-tiered mix of revenue and rent-based levy. A gross revenue payment is paid at rates varying from 1 to 5 percent on revenues according to the return and tier. Under the basic generic system, the net revenue royalties are paid once costs are recovered

**Figure 1: METRRs (percent) on Oil for Selected Jurisdictions in Canada and the United States, 2018**



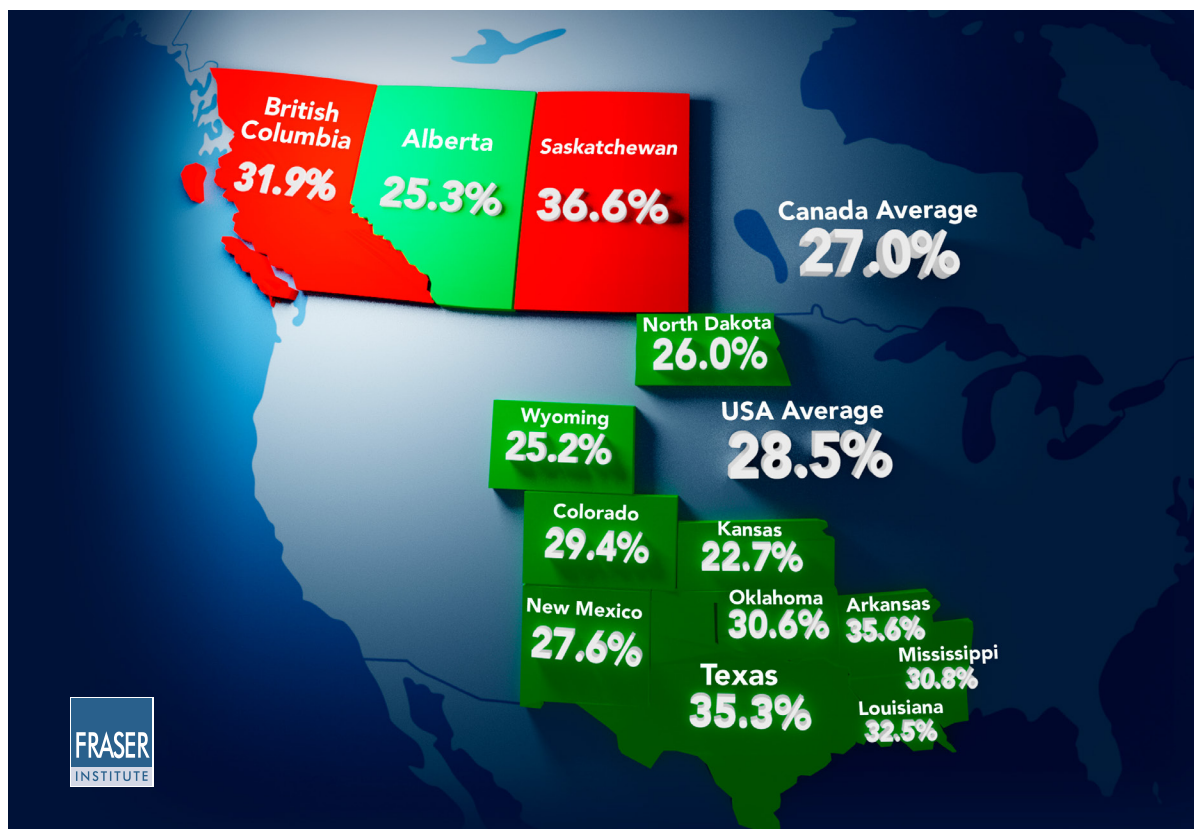
at rates rising from 20 to 35 percent of net revenues (costs are deducted from revenues and uplifted each by a factor including the bond rate plus a factor equal to 5, 20, and 25 percentage points, depending on the tier). Thus, Nova Scotia's generic royalty regime provides an extremely generous return allowance at which costs in excess of accumulated revenues are carried forward, leading to negative METRR calculations.

### Canada and US METRR on natural gas

For natural gas, the results differ slightly. Canada's METRR is, on average, 27.0 percent, roughly 1.5 percent less than the United States (28.5 percent) (see figure 2). This result is largely driven by the lower METRR in Alberta and the high METRR in Texas—both of which account for a large portion of the weighted average based on the size of their natural gas industries.



**Figure 2: METRRs on Natural Gas for Selected Jurisdictions in Canada and the United States, 2018**



We assume that the average natural gas well produces 600,000 cubic meters ( $m^3$ ) at Canadian price of \$3 per gigajoule (GJ), the five-year average. However, price-cost margins (costs measured as non-capital operating expenditures) vary. The price-cost margin for conventional oil is 0.77 and for conventional natural gas is 0.69. The lower the price-cost margin, the greater the impact of a royalty on the METRR. Natural gas investment faces a higher METRR largely as a result of revenue-based resource levies on natural gas, which has a lower price-cost margin compared to oil.

Again, we find in Canada that Saskatchewan has the highest METRR on natural gas investments. Similarly, this is a result of its retail sales tax on capital inputs and its resource royalty. Here we note with regards to Saskatchewan's royalty rate on natural gas that: a) it includes the resource surcharge of 1.7 percent, and b) that the royalty value is sensitive to both well production volume and market price. Our base case assumption of 600,000  $m^3$  holds across all jurisdictions but represents only a handful of



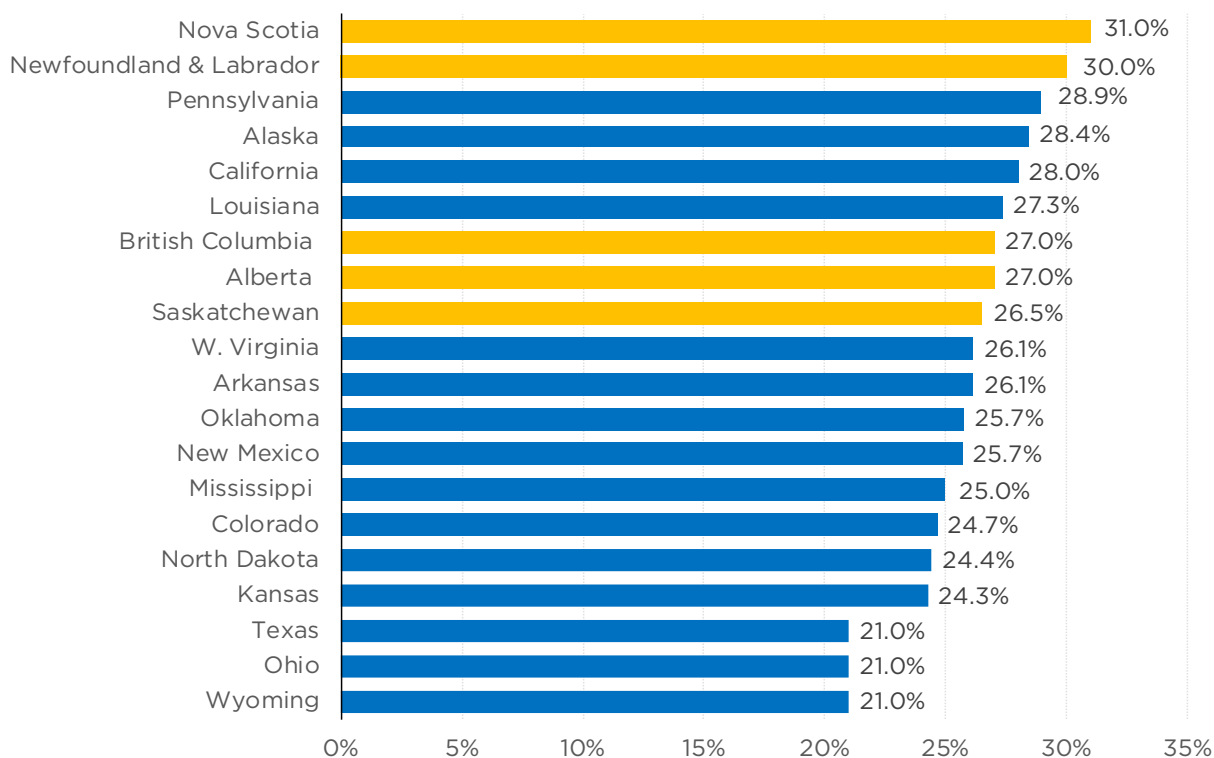
wells in Saskatchewan as production wells in the province tend to yield lower volumes than this. To get a sense of how this assumption affects the royalty rate we have used, please see the government of Saskatchewan's production royalty matrix.

Following Saskatchewan (36.6 percent), we find Arkansas (35.6 percent) and Texas (35.3 percent) have the highest METRR on investments. Nova Scotia and Newfoundland & Labrador are lowest at -10.0 percent and 7.4 percent, respectively, followed by Pennsylvania at 21.3%. The lowest METRR is applied to investments in off-shore oil and gas in Nova Scotia.

A significant factor underlying the differences in METRRs across jurisdictions is the rate and types of resource levies on investments. US jurisdictions tend to apply levies on revenues such as royalties and severance taxes. (Pennsylvania is an exception by not applying any severance tax, while royalty lease rates are among the lowest across the included jurisdictions). Comparatively, Australia, Canada, Norway, and the United Kingdom levy profit-based resource levies that in principle only tax the economic rents earned from developing and extracting the resource. With US corporate tax reform, the United States has greatly increased its competitive standing, and offset the disadvantage of royalties that do not provide a deduction of costs against taxable revenues and therefore discourage marginal investments that do not earn rents. In response to US tax reform, Canada has introduced temporary incentives to invest in capital and, in so doing so, has effectively reduced its overall tax burden on the resource-producing sector. Though Canada's 2018/19 tax reform has a smaller impact on the resource sector overall than on the manufacturing sector, the result is enough to restore a competitive tax advantage over the United States in aggregate and across most jurisdictions surveyed in our study. However, given the former competitive standing of Canadian jurisdictions to those in the US prior to its 2017 *Tax Cuts and Jobs Act* reform, Canada's tax advantage has been greatly diminished.

We should emphasize that the METRR calculations do not fully account for all aspects of tax competitiveness. Projects with high rates of return on capital are also influenced by differences in corporate income tax rates, as shown in figure 3. Generally, the combined federal-provincial corporate income tax rates in Canada are higher than those in most US states, especially Texas, which accounts for a large share of oil and gas production.

**Figure 3: Combined Corporate Income Tax Rate (percent) for Selected Jurisdictions in Canada and the United States, 2018**



Source: Canada Revenue Agency; Tax Foundation, Washington, D.C.; authors' calculations.

### Combined corporate income tax rates in select jurisdictions of Canada and the United States, 2018

Differences in corporate income tax rates create incentives to push financing and general administrative costs into Canada, leading to corporate tax-base erosion. A higher corporate income tax rate in Canada compared to the United States encourages companies to shift profits to the United States by, for example, reallocating debt to Canadian entities from the United States, or by choosing to transfer prices to increase costs in Canadian-related companies. Further, a low tax rate on intangible income—intellectual property, marketing, services, and mining—creates an incentive to draw intangible activities to the United States.

This is notable as US jurisdictions occupy the 11 lowest positions among the group of 20 jurisdictions. Among the US results, the bottom three, Wyoming, Ohio, and Texas, levy no state-level corporate income tax at all, though technically Texas does apply a state-level franchise tax which raises the combined rate above that of the base federal rate of 21 percent.

## Conclusions

With US tax reform adopted in 2018, the Canadian tax advantage for investment in both oil and natural gas was significantly diminished. For oil, we find that Canada's weighted average METRR has moved significantly below that of the 2018 post-tax-reform United States as a result of accelerated depreciation announced by the Canadian federal government on November 21, 2018. This follows a period after US, but prior to Canadian, tax reform, in which the two were neck and neck (on average, 28.5 percent for Canada and 28.6 percent for the United States, based on provincial/state jurisdictions included here), and a prolonged period prior to US tax reform when the US METRR was much higher, at an average of 33.9 percent. For natural gas, Canada currently enjoys only a very small advantage over the United States following the move to accelerated depreciation. With Canada adopting US-style temporary accelerated depreciation in late 2018, the effective tax and royalty rates on oil and gas investments in Canada will remain below those of the United States from 2019 until the temporary measures in both countries expire (2026 in the United States and 2027 in Canada). Barring any change in resource levies, Canada will maintain a relative competitive advantage in oil and gas METRRs, though one that is relatively small. The Canadian tax reform of November 21 only addresses the tax treatment of depreciation costs. The US corporate income tax rate, including state corporate rates, is significantly below Canada's in major oil and gas jurisdictions. The low tax rate on "intangible income" of 13.25 percent in the United States applies to marketing, service, and intellectual property activities and is a significant advantage—one that is not captured in the calculation of METRRs. Other factors that affect the competitiveness of oil and gas industries, including Canada-US differences in energy (carbon and fuel taxes) and labour taxation, infrastructure, and regulation, will determine whether Canada is sufficiently competitive to attract international investment in oil and gas in the future.

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He chaired the federal government's Technical Committee on Business Taxation in 1996 and 1997 that led to corporate tax reform in Canada since 2000. He also served on numerous panels and boards at the federal and provincial levels including vice-president and chair of the Social Sciences and Humanities Research Council 2012-2018.

## CHAPTER 4

# Examining Investment Attractiveness in the Canadian and US Oil and Gas Sectors

*By Ashley Stedman and Elmira Aliakbari<sup>22</sup>*

### Introduction

Canada has imposed a number of regulatory challenges on the energy industry including policy changes that have resulted in a less competitive regulatory environment when compared to many competing US jurisdictions. The Fraser Institute's annual *Global Petroleum Survey* offers a unique perspective on both the state of the investment climate in Canada's petroleum industry and how investor perceptions vary by region. This chapter summarizes the results of the latest *Global Petroleum Survey* to help identify the reasons behind the declining perception of Canada's energy sector in the eyes of oil and gas investors.

### Summary of the 2018 *Global Petroleum Survey* results

The US advantage over Canada is reflected in the *Fraser Institute Global Petroleum Survey*, which tracks the perceptions of oil and gas investors by spotlighting policies that affect investment attractiveness, including royalties, taxes, and regulations. A total of 256 respondents participated in the 2018 survey, providing sufficient data to evaluate 80 jurisdictions that hold

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<sup>22</sup> This chapter draws heavily on Ashley Stedman and Ken Green (2018), *Global Petroleum Survey*, The Fraser Institute.

53 percent of proven global oil and gas reserves and account for 68 percent of global oil and gas production.

In the 2017 survey, six US states and two Canadian provinces (Newfoundland & Labrador and Saskatchewan) made the global top 10 most attractive jurisdictions for oil and gas investors. However, in 2018 the majority of Canadian jurisdictions dropped in the rankings, including Alberta and Saskatchewan. According to the survey's participants, many Canadian jurisdictions (including Alberta, Saskatchewan, and British Columbia) are becoming increasingly less attractive for oil and gas investment. In particular, Alberta ranked 43<sup>rd</sup> in the 2018 survey—a significant drop from its 2014 ranking of 14<sup>th</sup> worldwide—and the province also saw its rank deteriorate since 2017 when it ranked 33<sup>rd</sup>. Similarly, Saskatchewan dropped from 4<sup>th</sup> in 2014 to 18<sup>th</sup> in 2018. British Columbia has also experienced a significant decline in the rankings in recent years, dropping from 39<sup>th</sup> in 2016 and to 58<sup>th</sup> in 2018.

In contrast, most US jurisdictions have risen in the rankings. Nine of the world's top 10 jurisdictions are located in the United States while none of the Canadian jurisdictions made the global top 10 in 2018. These US jurisdictions are Texas (ranked 1<sup>st</sup>), Oklahoma, Kansas, Wyoming, North Dakota, Alabama, Montana, US Offshore – Gulf of Mexico, and Louisiana. Three of the jurisdictions—Texas, Oklahoma, and North Dakota—consistently rank in the top 10, having been there in the last seven iterations of the survey.

In the eyes of investors, the areas where many Canadian jurisdictions perform poorly are mainly regulatory. In particular, respondents pointed to the high cost of regulatory compliance and uncertainty concerning environmental regulations as areas of concern in Canada compared to the United States. An Alberta/Texas comparison underscores how investors view the regulatory environment in each of the country's major oil producing regions.<sup>23</sup> Specifically, 73 percent of respondents identified the cost of regulatory compliance as a deterrent to investment in Alberta compared to only 10 percent for Texas. Note that in 2014, about 45 percent of respondents in Alberta registered the cost of regulatory compliance as a deterrent to investment, whereas this number increased to 73 percent in 2018. Moreover, a comparison between Saskatchewan and other small reserve holders in the US shows similar results; 45 percent of respondents identified the cost of regulatory compliance as a deterrent to investment in Saskatchewan compared to 7 percent in Kansas and 27 percent in Montana. In addition, the cost of regulatory compliance is also an area of increasing concern to investors in Saskatchewan. From 2014 to

<sup>23</sup> Comparisons between Canadian and US jurisdictions are based on reserve size.

2018, the percentage of respondents deterred by this factor increased from 16 to 45 percent.

Concerns over environmental regulations are also higher in many Canadian jurisdictions than in competing US states. The percentage of respondents deterred by uncertainty concerning environmental regulations in Alberta was 71 percent in 2018—an increase from 38 percent in 2014—compared to only 4 percent for both Texas and Oklahoma. The proportion of respondents deterred by this factor was 78 percent for British Columbia and 43 percent for Saskatchewan, compared to 37 percent for Louisiana and 13 percent for Kansas.

Another question about regulatory enforcement, which asks respondents about the uncertainty regarding the administration, interpretation, stability, or enforcement of existing regulations, shows similar trends. In 2018, only 2 and 4 percent of respondents indicated that regulatory enforcement in Texas and Oklahoma was a deterrent to investment; whereas the proportion who indicated it was an issue in British Columbia and Alberta was 63 and 56 percent, respectively. The percent of respondents deterred by this factor for Saskatchewan was 31 percent, compared to 7 percent for Kansas.

Survey respondents are also asked about how regulatory duplication and inconsistencies affect investment attractiveness. The percentage of respondents deterred by regulatory duplications in Alberta was 56 percent in 2018, compared to 2 percent for Texas. The percent of respondents deterred by this factor was 66 percent for British Columbia and 38 percent for Saskatchewan, compared to 20 percent for Wyoming, 13 percent for Pennsylvania, and 9 percent for Montana.

In addition, survey respondents are asked about how taxation in general affects investment attractiveness. The percentage of respondents deterred by taxation in Alberta was 59 percent in 2018, compared to 4 percent for Texas. The percent of respondents deterred by this factor was 63 percent for British Columbia and 40 percent for Saskatchewan, compared to none of the respondents for Oklahoma, 8 percent for North Dakota, and 13 percent for Montana.

According to oil and gas investors responding to the survey in 2018, the United States has the most attractive policy environment worldwide. In particular, more than half of the jurisdictions in the US significantly improved their labour regulations and addressed regulatory duplication between 2017 and 2018. In terms of labour regulations, 13 out of 18 US jurisdictions (72 percent) experienced more than a 10 percentage point improvement between 2017 and 2018. In only one Canadian jurisdiction (Nova Scotia) did investors' perceptions of this factor improve between 2017 and 2018. The results for regulatory duplication and inconsistencies



show that 13 out of 18 US jurisdictions (72 percent) experienced at least a 10 percentage point improvement between 2017 and 2018. Meanwhile, all Canadian jurisdictions saw their scores worsen on this factor during the same time period.

There are many potential reasons for investors to perceive Alberta's investment attractiveness as declining. Care must be taken in attributing declines in the rankings to any specific action. That said, since 2014 there have been a steady stream of announcements (both provincially and federally) that have shaken the confidence of investors.

At the national level, the federal government also plans to make the regulatory approval process even more uncertain and complex with Bill C-69, which recently became law. This bill includes subjective assessment criteria—including the social impact of energy investment and its “gender” implications—which will likely increase uncertainty, further politicize the regulatory process, and lengthen approval times. Meanwhile, the Trump administration has rescinded or scaled back several Obama-era regulations, including regulations on hydraulic fracturing on federal lands and controls on power-plant emissions. At the provincial level, on the other hand, the former Alberta government broadened and raised the carbon tax without revenue neutrality, imposed a 100Mt cap on greenhouse gas emissions from oil sands, committed to further regulate methane emissions from the oil and gas sector, and enacted a Climate Leadership Plan that reaches into virtually every sector of Alberta's economy.

In addition, the cancellation of several proposed pipeline projects including the Northern Gateway Pipeline and the Energy East pipeline is another potential reason behind declining investor confidence in Canada's energy sector. Those pipelines were intended to transport Alberta's bitumen and upgraded oil to tidewaters, and from there to markets abroad where the oil would receive higher prices. To date, several pipeline projects were expected to enter service and increase export capacity but have yet to come online. Clearly, Canada's energy sector is reeling from a combination of insufficient pipeline capacity and a barrage of new or expanded regulations.<sup>24</sup>

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<sup>24</sup> The federal government recently approved the long-stalled Trans Mountain pipeline expansion, which will bring an additional 890,000 barrels per day of oil from Edmonton to Burnaby. However, this pipeline likely will not be operational until at least 2022.

## Conclusion

Overall, investors perceive Canada's tax and regulatory environments as onerous compared to many competing US jurisdictions. Investors pointed to the high cost of regulatory compliance and uncertainty concerning environmental regulations as major areas of concern in many Canadian jurisdictions compared to US states, as is demonstrated by the Alberta/Texas comparison, among others. Investors are also indicating heightened concerns about regulatory enforcement and regulatory duplication for Alberta, British Columbia, and Saskatchewan, particularly when these provinces are compared with US jurisdictions with similar reserves. Further, investors expressed increasing concern over taxation in Alberta, British Columbia, and Saskatchewan when compared to states like Texas, Oklahoma, and North Dakota. Clearly, easing the burdens of taxes and excessive oil and gas regulations should be a top priority for governments as they seek to restore competitiveness.

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