

REGULATION AND ENFORCEMENT OF OIL SANDS GHG EMISSIONS

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A. THE OIL SANDS

Oil sands activity is a major source of Canadian GHG emissions, accounting for 10% of Canadian emissions.¹ These emissions have increased from 15.4 MT in 1990 to 71.7 in 2016,² and will continue to increase.³ Though the oil sands sector is centred in Alberta, it has national significance, comprising 97% of Canadian oil reserves that overall rank third globally.⁴ There is little doubt that hydrocarbons, particularly oil, are a key element of the Canadian national economy.⁵

B. A PROVINCIAL FIELD

Though 2018 federal climate change initiatives reviewed below are significant for oil sands GHG emissions reduction, it is the provinces, particularly Alberta, that will continue to be the key oil sands emissions regulators. This is a consequence of provincial constitutional jurisdiction over property and civil rights⁶, management and sale of public lands⁷ and conservation and management of non-renewable natural resources⁸ within the province. A significant part of the oil sands picture extends beyond Alberta, including sale of oil sands raw and upgraded bitumen in national and international markets.⁹ This is a matter primarily within federal trade and commerce jurisdiction. Pipelines to marine terminals that permit oil sands crude to reach international markets beyond North America are primarily within federal jurisdiction.¹⁰ Impacts of these pipelines on First Nations is also a federal responsibility.¹¹ There is federal jurisdiction over marine tanker traffic under the Sea Coast and Inland Fisheries power.¹² In 2018, several provinces judicially challenged federal jurisdiction to enact a national carbon tax, arguing that federal taxation power is insufficient

¹ Environment and Climate Change Canada 2018 & World Resources Institute at 2: Canada, with 0.5 per cent of the world's population, produces about two per cent of global CO₂ emissions. Oil sands account for 10 per cent of Canada's GHG emissions and about 0.15 per cent of global GHG emissions online: Global Emissions and Canada's Emissions online: <http://ec.gc.ca/indicateurs-indicators/default.asp?lang=En&n=CE5C9427-7379-442D-881B&printfullpage=true>

² Government of Canada, Greenhouse Gas Emissions, online: <https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions.html>

³ Pembina Institute, "the Real GHG Trend", 2017 online: <http://www.pembina.org/blog/real-ghg-trend-oilsands>

⁴ Natural Resources Canada, Oil Sands online: <https://www.nrcan.gc.ca/energy/oil-sands/18089>

⁵ Globe and Mail, August 27, 2018.

⁶ *Constitution Act 1867*, s 92 (13).

⁷ *Ibid* s 92 (5).

⁸ *Ibid* s 92A.

⁹ *Ibid* s 91(2).

¹⁰ *Ibid* s 92 (10) (a).

¹¹ *Ibid* s 91(24).

¹² *Ibid* s 91(10).

support and that this cannot be characterized as a matter of national concern within the Peace, Order and Good Government power.¹³

C. ALBERTA REGULATION AND ENFORCEMENT

Alberta has a full suite of climate change legislation. This began over a decade ago with the Climate Change and Emissions Management Act¹⁴ and the Specified Gas Emitters Regulation.¹⁵ The system was one of intensity-based emissions targets for large industrial emitters. Compliance alternatives were 1) Investment to achieve compliance, 2) Tendering purchased emissions credits, or 3) Paying \$15 per ton into a climate fund. The latter was overwhelmingly the preferred option. Though this was general legislation, the major impact was felt by the oil and gas sector – particularly the oil sands. The lack of a hard emissions cap was heavily criticized, as overall emissions rose fueled by oil sands expansion.¹⁶

1. Carbon Capture and Storage

This led to provincial government review and focus on mitigation, particularly carbon capture and storage. The showcase was an industry-government pilot CCS program, including the Shell led Quest Project designed to sequester approximately 35% of CO₂ emissions from the Scotford upgrader.¹⁷ Provincial grant funding for CCS is authorized under the *Carbon Capture and Storage Funding Act*.¹⁸ There has also been considerable industry-government work to reduce emissions in oil sands mining and processing including management of tailings, an important GHG emission source.¹⁹

Under the Notley government in 2015, a panel review recommended an emissions management approach that centred on carbon pricing.²⁰ Concerning oil sands the panel said:

“As a panel, we developed the following defining principles for the application of our proposed carbon pricing model to oil sands:

¹³ Stuart Thomson and Tyler Dawson, Anti-carbon tax provinces team up to argue for 'the right not to cooperate' with federal climate plan, National Post, 2 August 2018, online: <https://nationalpost.com/news/politics/anti-carbon-tax-provinces-team-up-to-argue-for-the-right-not-to-cooperate-with-federal-climate-plan>

¹⁴ *Climate Change and Emissions Management Act*, SA 2003, c C-16.7

¹⁵ *Specified Gas Emitters Regulation*, Alta Reg 139/2007. Replaced on June 2018 by the Carbon Competitiveness Incentive Regulation, Alta Reg 255/2017.

¹⁶ [Grav E. Taylor](#), “Canada: Alberta’s GHG Emissions Control System: A Model For Others?” Mondaq, October 18 2012.

¹⁷ According to Alberta Energy: “The Alberta Government has committed \$1.24 billion over 15 years to two commercial-scale carbon capture and storage projects. The two projects are moving forward to help reduce the CO₂ emissions from the oil sands and fertilizer sectors. When both projects are completed, they will reduce Alberta’s greenhouse gas emissions by 2.76 million tonnes each year”, online: <https://www.energy.alberta.ca/AU/CCS/Pages/default.aspx>

¹⁸ SA 2009 c C-2.5.

¹⁹ CEC materials.

²⁰ Climate Leadership, Report to the Minister, November, 2015.

1. Greenhouse gas policy for oil sands must enable and reward innovation.
2. Greenhouse gas policy must recognize the trade exposure of the oil sand sector and design must prevent emissions leakage.
3. Greenhouse gas policy for oil sands must consider the current state of the industry and the long-run implications of policy choices today on economic activity within the province.
4. Greenhouse gas policy for oil sands must reward best-in-class emissions-intensity performance, regardless of the underlying factors which contribute to that performance.
5. Complementary policies should promote innovation and new technology development and deployment in Alberta to both lower emissions and lower production costs to maintain a globally carbon competitive oil sector in Alberta.”²¹

The result was a carbon tax; along with a 100 MT cap on overall oil sands GHG emissions, which in 2017 were 70 MT.²²

There has also been an attempt to address oil sands area First Nations concerns, in part through the provincial Aboriginal Consultation Office.²³ Much of the focus here has been not on emissions reduction but on direct environmental and social impacts of oil sands projects. An example is the Fort Mackay First Nation’s challenge to the Dover oil sands project located adjacent to the First Nation’s Moose Lake Reserve. After obtaining Alberta Court of Appeal leave for its appeal of the AER’s approval²⁴, the First Nation reached an agreement with proponent Brion Energy.²⁵ This was a community benefits package that included training and employment opportunities and community services.

2. Regulation of GHG Emissions by the Alberta Energy Regulator (AER) and Alberta Environment and Parks (AEP)

(a) AER Oil Sands Facility Approvals

As noted, most of the oil sands operators complied with the *Climate Change and Emissions Management Act* by paying \$15 per tonne of emissions. The AER and its predecessors the AEUB

²¹ *Ibid* at 60.

²² *Oil Sands Emissions Limit Act*, SA 2016, c O-7.57 at 2(1).

²³ Ministers of Energy and Environment and Sustainable Resource Development, Ministerial Order 105/2014 under the *Sustainable Energy Development Act*, 31 October, 2014.

²⁴ *Fort McKay First Nation v. Alberta Energy Regulator* (2013) ABCA 355 (CanLII).

²⁵ D. Healing, “Brion Energy reaches oil sands deal with Fort McKay First Nation” *Calgary Herald* 22 February 2014 online:

<http://www.calgaryherald.com/business/Brion+Energy+reaches+oilsands+deal+with+Fort+McKay+First+Nation/9536166/story.html>.

and ERCB resisted arguments by intervenors in facility approval proceedings that GHG limits should be imposed as conditions of regulatory approvals. Its reasons for decision provided no basis for approval conditions and did not address enforcement. In the 2004 TrueNorth Oil Sands Plant and Cogeneration application for example, the applicant submitted simply that it was “committed to using leading technologies to minimize GHG emissions, including a low temperature extraction process, thickened tailings, heat recovery from process water, and cogeneration of electricity”.²⁶ The complete AEUB reasons section on greenhouse gases was:

“The Board endorses TrueNorth’s commitment to using leading technologies to minimize GHG emissions. The Board believes that the issue of GHGs is best dealt with through initiatives and policies at the federal and provincial levels. The Board recommends that Alberta continue to implement measures that would achieve continuous improvement in emissions per unit of product.”²⁷

The Board was even more laconic in its reason for approving a Petro-Canada upgrader application in 2009:

“The Board is satisfied that [the applicant] will design the facility to be carbon capture ready and will implement measures to reduce GHGs and maximize energy efficiency. The Board notes that AENV is the responsible authority for GHG emissions management through the *Climate Change and Emissions Management Act*.”²⁸

The Joint Alberta Energy and Utilities Board/ Canadian Environmental Assessment Agency Panel reviewing the Imperial Oil Kearl oil sands project application addressed GHG emissions by, “support[ing] Alberta developing appropriate *EPEA* approval requirements to address” [various air emissions control and monitoring matters including], “GHG emission intensity targets”.²⁹ In a judicial review of the decision brought by the Pembina Institute, the Federal Court set the decision aside and sent the matter back to the Joint Panel.³⁰ A major reason for the court’s decision was the Panel’s failure to provide any rationale for its conclusion that greenhouse emissions from the project would be insignificant. Subsequently the Panel re-reviewed the GHG issue and reached the same conclusion, stating that it had to give Alberta’s per-barrel intensity target approach “considerable weight”.³¹ It concluded that, “there was very little evidence [that project GHG

²⁶ Alberta Energy and Utilities Board, TrueNorth Energy Corporation Application to Construct and Operate an Oil Sands Mine and Cogeneration Plant in the Fort McMurray Area, Decision 2002-089, October 22, 2002 and Addendum at 46.

²⁷ *Ibid* at 47.

²⁸ Alberta Energy Resources Conservation Board, Petro-Canada Oil Sands Inc. Application to Construct and Operate an Oil Sands Upgrader in Sturgeon County, Decision 2009-002, January 20, 2009 at 41.

²⁹ Canadian Environmental Assessment Agency and Alberta Energy and Utilities Board[now AER], Kearl Oil Sands Project Joint Review Panel, *EUB Decision 2007-013 Imperial Oil Resources Ventures Limited, Application for an Oil Sands Mine and Bitumen Processing Facility(Kearl Oil Sands Project) in the Fort McMurray Area*, 27 February, 2007 at 58. [Kearl Report].

³⁰ *Pembina Institute for Appropriate Development v. Canada (Attorney General)*, 2008 FC 302.

³¹ Kearl Report, *Addendum to EUB Decision 2007-113, Additional rationale for the joint review panel’s conclusions on air emissions*, 2018.

emissions] will result in significant environmental effects”.³² On this basis, the federal government fast tracked re-approval, issuing a new *Fisheries Act* authorization.³³

(b) AER Methane Initiative

When the Government of Alberta announced its [Climate Leadership Plan](#) in 2015, the AER was directed to develop requirements to reduce methane emissions from upstream oil and gas operations by 45 per cent below 2014 levels by 2025. The AER constituted multi-stakeholder groups in collaboration with the Clean Air Strategic Alliance (CASA)³⁴ which included representatives from industry, NGOs and research bodies that provided input in this process. Specific requirements were developed and implemented through amendments to *Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting*³⁵, and *Directive 017: Measurement Requirements for Oil and Gas Operations*.³⁶

Directive 060 was originally based on CASA recommendations developed following AER stakeholder consultations. Subsequently a CASA coordinated study produced a revision of Directive 060 in 2006. The 2018 Directive update that created more stringent standards is based on review, public consultation and extension of these earlier initiatives including adoption of the previously developed methodology.³⁷

(c) AER Oil Sands Tailings Requirements

The AER has established requirements for tailings management that include progressive reclamation, environmental effects assessment, and regular inspections and audits.³⁸ This will limit the extent of liquid tailings ponds that produce greater quantities of GHG emissions than dry tailings.

3. The Alberta Climate Leadership Plan and Implementing Legislation: Alberta Environment and Parks

Alberta’s 2015 Climate Leadership Plan³⁹ was the blueprint for a new system of GHG emission regulation that emphasizes carbon pricing. In part, it builds on the original *Climate Change and*

³² *Ibid.*

³³ Sean Nixon and Melissa Gorrie, “Nothing (Significant) to see Here: The Kearl Cases and the Growing Mess in the Alberta Oil Sands”, in William Tilleman and Alastair Lucas, *Litigating Canada’s Environment: Leading Canadian Environmental Cases by the Lawyers Involved* (Toronto: Thomson Reuters, 2017) 283 at 302.

³⁴ Alberta Energy Regulator, *Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting*, March 12, 2018, Appendix Background to *Directive 060* at 66-67.4.

³⁵ *Ibid* at 10-13.

³⁶ Alberta Energy Regulator, March 31, 2016, under review in August 2018.

³⁷ Alberta Energy Regulator: Directive 060, online: <https://www.aer.ca/documents/directives/Directive060.pdf>.

³⁸ Alberta Energy Regulator, *Directive 085: Fluid Tailings Management for Oil Sands Mining Projects*, October 12, 2017.

³⁹ Government of Alberta, “Climate Leadership Plan”, 2016 online: <https://www.alberta.ca/climate-leadership-plan.aspx>.

Emissions Management Act/Specified Gas Emitters Regulation regime. However, it moves beyond the emissions intensity approach by establishing a carbon price for GHG emissions,⁴⁰ specifying an overall oil sands GHG emissions cap, and reducing methane emissions by 45% by 2025. Broader objectives include phasing out coal generated by 2030 and developing more renewable energy.⁴¹

Implementation is through replacement of the *Specified Gas Emitters Regulation*, which created emission intensity limits for particular facilities, including oil sands facilities, and a compliance system involving emission credits, offsets and fund payments. The *Carbon Competiveness Incentive Regulation*⁴² is described as an output-based allocation. According to the Alberta Government, the new approach included:

“An oil sands specific output-based allocation approach will replace the current approach. A \$30/tonne carbon price will be applied to oil sands facilities based on results already achieved by high performing facilities — to drive towards reduced emissions and carbon competitiveness, rather than rewarding past intensity levels.

A legislated emissions limit on the oil sands of a maximum of 100 MT in any year with provisions for cogeneration and new upgrading capacity. This limit will help drive technological progress and ensures Alberta’s operators have the necessary time to develop and implement new technology...”⁴³

As noted in the 2016-2017 Climate Leadership Progress Report,⁴⁴ the oil sands sector accounts for approximately one-quarter of Alberta’s annual emissions, emitting 68.6 MT in 2015. To put this into perspective, the amount of emissions from oil sands activities is higher than the total amount of emissions produced by British Columbia.⁴⁵

Oil sands emissions under the 100 MT cap will be monitored. The methodology and formula for allocation of this cap space will be developed and presumably promulgated as regulations under the *Oil Sands Emissions Limit Act*. Meanwhile, as shown in Figure 1, GHG emissions from oil sands has been increasing at a consistent rate to 2015.

⁴⁰ Ministerial Order 58/2017 under the *Climate Change and Emissions Management Act*, RSA 203 c C-16.7, establishing a \$30 per tonne price for 2018.

⁴¹ Government of Alberta, Climate Leadership Plan, online: <https://www.alberta.ca/climate-leadership-plan.aspx>

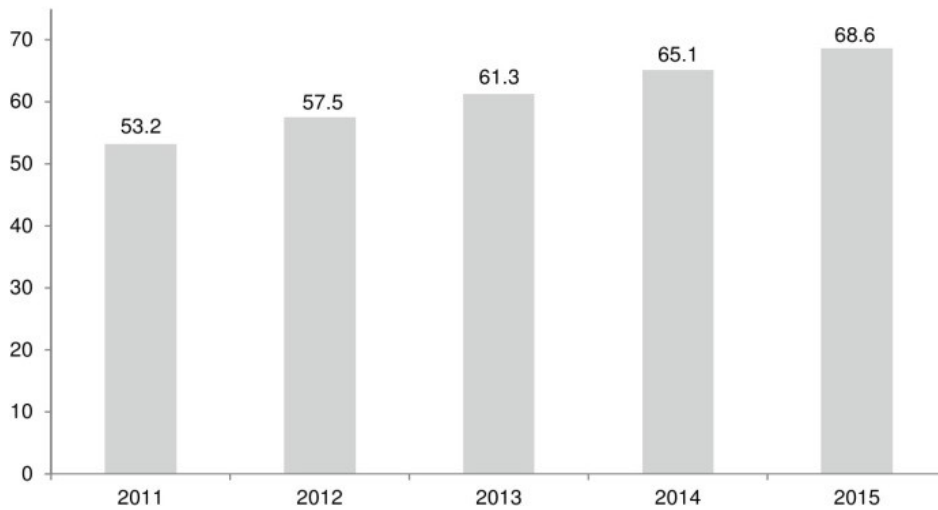
⁴² Alta Reg 255/2017.

⁴³ Government of Alberta, Capping Oil Sands Emissions, online: <https://www.alberta.ca/climate-oilsands-emissions.aspx>.

⁴⁴ Alberta Government, Climate Leadership Progress Report 2016-2017.

⁴⁵ Government of Canada, Greenhouse Gas Emissions, online: <https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions.html>.

Figure PL 1: Oil Sands Emissions (Megatonnes of CO₂ equivalent)⁴⁶



Data source: Environment and Climate Change Canada - National Inventory Report 1990-2015: Greenhouse Gas Sources and Sinks in Canada

4. Oil Sands Emissions Limit Act

The *Oil Sands Emission Limit Act*⁴⁷ caps oil sands GHG emissions at a combined 100 MT in any year. 2017 combined emissions were approximately 70 MT. The Act excludes emissions from a number of sources, namely:

“(a) cogeneration emissions attributable to the electric energy portion of the total energy generated or produced by cogeneration, as determined in accordance with the regulations;

(b) upgrading emissions

(i) attributable to upgraders that complete their first year of commercial operation after December 31, 2015, or

(ii) attributable to the increased capacity resulting from the expansion, after December 31, 2015, of upgraders that completed their first year of commercial operation on or before December 31, 2015, as determined in accordance with the regulations, to a combined maximum of 10 megatonnes in any year;

⁴⁶ Government of Canada, *Supra* note 45 at 24.

⁴⁷ SA 2016 c O-7.5.

- (c) greenhouse gas emissions from any prescribed experimental scheme or any experimental scheme within a prescribed class of experimental scheme;
- (d) greenhouse gas emissions from any prescribed primary production or any primary production within a prescribed class of primary production;
- (e) greenhouse gas emissions from any prescribed enhanced recovery or any enhanced recovery within a prescribed class of enhanced recovery”.⁴⁸

Questions remain about the specific implications of the cap.⁴⁹ These include: how will emitters share the cap? Will these shares be assignable? How will the cap share of new emitters be determined? Will the 100 MT limit be adjusted over time?

5. Alberta Enforcement and Compliance

Enforcement of oil sands GHG emission requirements and limits is carried out by the Alberta Energy Regulator and Alberta Environment and Parks⁵⁰ under their generic enforcement and compliance approaches. Both agencies rely on reporting requirements and on administrative monetary penalties under the *Administrative Penalty Regulation*⁵¹.

The AER has an *Integrated Compliance Assurance Framework*⁵² that outlines a principled approach with operational focus on investigation, verifying compliance, and enforcement. A list of relevant factors includes complaints, emergencies, operational history potential adverse effects and unique circumstances. Tools include notice of noncompliance, warning, administrative order, fee, administrative penalty and prosecution. A Compliance Dashboard provides updated information on enforcement activities.

On the industry side, Canada’s Oil Sands Innovation Alliance (COSIA)⁵³ includes greenhouse gas programs to improve measurement, monitoring and verification, and development and improvement of various technologies to reduce GHG emissions.

D. FEDERAL ROLE

⁴⁸ *Ibid* s 2 (2).

⁴⁹ Nigel Bankes, “Oil Sands Limit Legislation: A Real Commitment or Kicking It Down The Road?”, ABLawg, posted November 3, 2016 online: <https://ablawg.ca/2016/11/03/oil-sands-emission-limit-legislation-a-real-commitment-or-kicking-it-down-the-road/> Brenda Heelan Powell, “Climate Change Legal Roadmap: Oil Sands Emission limit Under the Climate Change Leadership Plan”, (Edmonton: Environmental Law Centre (Alberta), 2017).

⁵⁰ Alberta Environment and Parks, Climate Change Guidelines on line: <http://aep.alberta.ca/climate-change/guidelines-legislation/specified-gas-emitters-regulation/default.aspx>.

⁵¹ *Alta Reg* 140/2007.

⁵² Alberta Energy Regulator, February 2016.

⁵³ COSIA, online: <https://www.cosia.ca/initiatives/greenhouse-gases>.

The federal *Greenhouse Gas Pollution Pricing Act*⁵⁴ sets base line carbon prices and provides that it will apply in default to provinces that fail to enact equivalent carbon pricing legislation. Saskatchewan and Ontario have refused to comply and are advocating for other provinces to refuse the application of this carbon tax.⁵⁵ On August 2018, Alberta also announced that it was “pulling out of the federal scheme”, citing alleged federal failure to take environmental and First Nations consultation action sufficient to support federal approval of the Trans Mountain oil sands pipeline expansion project from Alberta to the British Columbia coast.⁵⁶ Another federal regulatory measure to limit emissions is the new methane reduction regulations under the *Canadian Environmental Protection Act*.⁵⁷

On another front, the North American Commission for Environmental Cooperation (CEC) has accepted a citizen complaint concerning oil sands tailings ponds, under the *North American Agreement on Environmental Cooperation*.⁵⁸ The allegation is that Canada “failed to effectively enforce”⁵⁹ provisions of the federal *Fisheries Act*⁶⁰ concerning hydrocarbon leaching into fish habitat from oil sands tailings ponds.⁶¹ An investigation will be carried out and a Factual Record prepared by the CEC Secretariat.⁶²

E. CONCLUSION

Oil sands activity remains a significant and increasing source of Canadian and global GHG emissions. Though these emissions are subject to both federal and provincial regulation, Alberta continues to be the dominant regulator. Alberta requirements include a \$30 per tonne carbon price and an overall oil sands emissions cap administered by Alberta Environment and Parks. These measures raise questions and uncertainties as implementation continues. There have also been initiatives by the Alberta Energy Regulator to tighten oil sands methane release requirements and shift toward dry tailings deposit. Though the AER considers the impacts of GHG emissions in assessing new oil sands project applications, it has essentially relied on emission limits under the general Alberta GHG emissions legislation that is now centred on the *Carbon Competitiveness Regulation* and the oil sands emission cap.

Federal authority is exercised in oil sands project assessment through the *Fisheries Act*. More recently, the *Greenhouse Gas Pollution Pricing Act* aims at driving down GHG emissions by large

⁵⁴ *Greenhouse Gas Pollution Pricing Act*, S.C. 2018, c. 12, s. 186.

⁵⁵ Janyce McGregor, “Alberta joins Saskatchewan in opposing federal carbon tax plan” CBC News, July 20, 2018.)

⁵⁶ CBC News, Premier Rachel Notley pulls Alberta out of federal climate plan over Trans Mountain ruling (2018)

⁵⁷ Canadian Environmental Protection Act 1999, SC 1999 c 33; Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector) SOR/2018-66.

⁵⁸ Agreement between the United States, Canada and Mexico, 14-15 September 1993, Can TS No 3, 32 ILM 1480 (NAAEC).

⁵⁹ *Ibid* Art 14.

⁶⁰ RSC 1985, c F-14, s 36 (3).

⁶¹ NAAEC s 15 (2).

⁶² Commission for Environmental Cooperation, Alberta Tailings Ponds II Submission, SEM-17-001 online: <http://www.cec.org/sem-submissions/alberta-tailings-ponds-ii>.

emitters. This Act was conceived as backstop carbon pricing with provinces acting as primary regulators under equivalent legislation. However, 2018 defections by three provinces, including Alberta, cast doubt on the viability of this federal approach.