

Daily Oil Bulletin

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Emissions Cap Could Limit Oilsands Growth: Experts



Photo credit: Syncrude Canada Ltd.

BY [JAMES MAHONY \(/AUTHOR/JAMES-MAHONY/\)](#) – FEB. 27, 2017 – [VIEW ISSUE \(/HEADLINES/2017-02-27\)](#)

A government cap on greenhouse gas (GHG) emissions in Alberta's oilsands sector could limit the sector's long-term growth and damage its competitiveness, according to some industry analysts and executives.

Last November, Alberta's Environment Minister **Shannon Phillips** tabled Bill 25, the *Oil Sands Emissions Limit Act*, a key step in the Notley government's Climate Leadership Plan (DOB, Nov. 2, 2016 (<http://www.dailyoilbulletin.com/article/2016/11/2/alberta-government-introduced-legislation-put-annu/>)). The bill was passed swiftly, suggesting it was a high priority for the premier.

While the emissions cap is now law, an outstanding issue is how it will be allocated among Alberta's oilsands producers, something now being negotiated between the industry and the Notley government. Aside from these negotiations, the industry has concerns about just what the cap will mean, longer-term.

These include ensuring that Alberta's oilsands producers stay competitive, since their competitors— especially those in the United States — will not be burdened with similar GHG emissions limits, something considered even less likely under U.S. President **Donald Trump**.

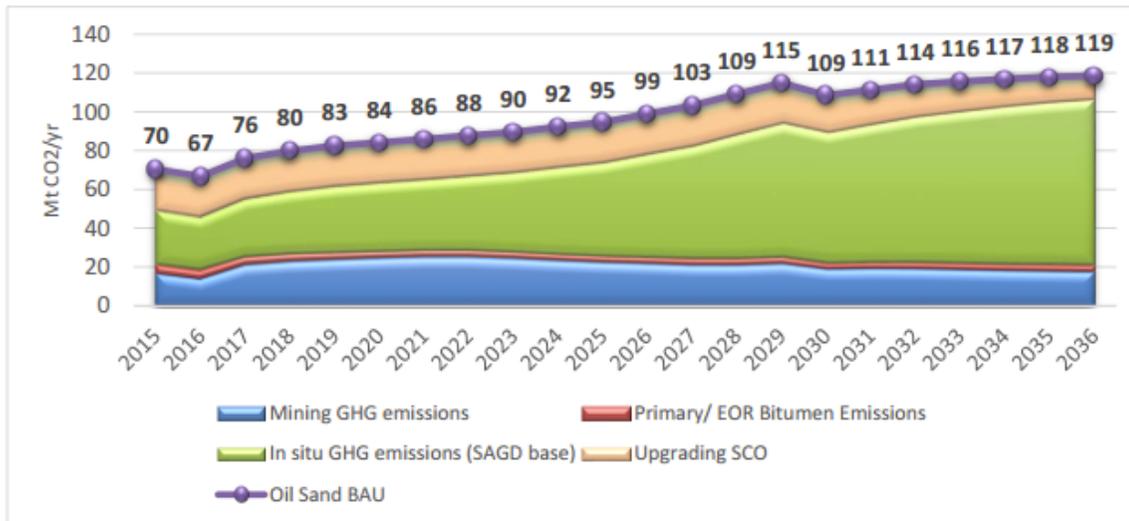
“I’m not aware of any other oil-producing jurisdiction in the world that has said they’re going to impose limits on their productive capacity — indirectly, of course — through carbon emissions limits,” said **Gary Leach**, chief executive of the **Explorers and Producers Association of Canada** (EPAC), acknowledging that few oilsands producers number among EPAC’s members.

Some, especially within government, point out that the new cap limits emissions, not production, but Leach argues the net effect will be much the same. “There’s a limit to what you can do with emissions reduction,” he said.

“Anyone would accept there’s additional improvement that can be achieved in reducing emissions while production could increase, but at some point, you’ve exhausted the technological achievements and you will, in effect, put a cap on future growth of the oilsands.”

While Alberta’s oilsands sector now produces about 70 megatonnes (MT) per year, the Notley government has set the cap at 100 MT, to allow for future growth, but others also consider that limit insufficient running room for the future.

Figure E.8: Oil Sands Emissions by Project Type



Source: CERI

<http://www.dailyoilbulletin.com/media/img/oilsandsemissions.png>

“Unless there’s an increase in the limit, or it’s abolished entirely, there’s not going to be a lot of room for future oilsands projects,” **Jack Mintz**, president’s fellow at the **University of Calgary’s** School of Public Policy, told the *Bulletin*. “There will be some, but not a lot.”

Despite the industry downturn, lower capital investment and Alberta’s new emissions cap, a recent study projects that growth in Canada’s oilsands sector will continue, with GHG emissions likely growing to 95 MT per year in 2025, reaching the 100 MT cap by 2026, according to the **Canadian Energy Research Institute (CERI)**, [in a recent report](http://resources.ceri.ca/PDF/Pubs/Studies/Study_163_Full_Report.pdf) (http://resources.ceri.ca/PDF/Pubs/Studies/Study_163_Full_Report.pdf).

Yet, like other industry forecasts, CERI's is an educated guess. The cap might not be triggered for years, depending on the pace of industry expansion and the advent of more efficient emissions technologies. These are in many ways wild cards, since it's still not clear how much difference they will make to emissions, or how soon.

At a recent **Society of Petroleum Engineers (SPE) Canada** conference, one speaker suggested Alberta's cap might not "bite" until sometime in the 2030s, while another speaker argued it might *never* take effect, given producers' steadily-improving emissions profiles, perhaps best reflected in the industry's declining steam-to-oil ratios (SOR).

Despite improving emissions profiles, some in the political arena have argued that Canada cannot go it alone on environmental policy, least of all on climate change. The late **Jim Prentice**, former Alberta premier and federal environment minister under **Stephen Harper**, made that point more than once.

Prentice warned against Canada acting unilaterally on climate change without first assessing the U.S. government's response, if any, on the file. His logic was simple: by acting alone, Canada might accomplish little except put Canadian companies at a disadvantage vis a vis their U.S. competitors, who might never face the same regulatory burden. Prentice was not alone in thinking along those lines.

“If there are no [emissions] limits elsewhere in the world, we’re just shooting ourselves in the foot, without accomplishing any international objectives,” said Mintz. In part, that’s because of what he terms the ‘leakage problem,’ namely, that, when conditions for investment are less than ideal, production — and investment dollars — go elsewhere.

A longtime carbon tax supporter, Mintz does not oppose what he considers efficient climate change policies, but he does not put Alberta’s emissions cap in that category, calling it “highly-distortionary and costly.”

“Why not just use the simple way of pricing [carbon] and let the market figure out how best to comply with lower carbon emissions?” he said. “Instead, we get the phasing out of coal and this cap on [oilsands] emissions, [which] are implicit prices on carbon with associated costs of abatement, and are much more expensive than a carbon tax.”

Implementing the 100 MT limit

Implementation of the 100 MT cap may be an issue, especially if the government allocates discrete, GHG emissions quotas to each of Alberta’s oilsands producers. How that will shake out is not yet clear, an executive from the **Fraser Institute** made clear at the recent **SPE Canada** joint conference in Calgary.

Noting the industry is generating 70 MT per year, and the cap is 100 MT, **Ken Green** said the key question is how the government will allocate the 30 MT that's left under the cap. "Are they going to assign it to big, pre-existing companies that already have projects running? Will there be anything left for small firms at a time they're bringing on technologies that could shake up older, existing companies? The government hasn't announced how they will do that."

According to a Fraser study, the cap is not expected to "bite" until beyond 2040, in contrast to CERI's recent forecast. Much depends on the pace of innovation in the oilsands sector, and Fraser's study assumes a "historically average" rate of innovation, Green said.

Already, he sees signs that established oilsands players may get the nod. "It's unclear who will get to use up the remaining emissions under the [100 MT] cap, but my intuition is that larger, existing producers -- the ones on stage with the Premier when she rolled out the carbon tax and Climate Leadership plan — are pre-positioned to develop projects or expand production to use up the remaining emissions," something he said would pose a challenge to smaller companies with "disruptive technologies that we might like to see developed."

“The reality is that the 100 MT cap has no rules at this point,” **Bryan Helfenbaum**, technology manager with **Devon Canada Corporation**, told the same Calgary conference. “It was a great headline and talking point for the government, ... but from within the industry, there’s really no action taking place with respect to the cap now, because we don’t know the rules. Some forecasts say [the cap will take effect] in 2025 or 2030. Some say never.”

Devon’s first commercial SAGD plant, Jackfish, saw first production in 2007, but the company has expanded its in situ operations to include Jackfish 2 and 3. With Alberta’s carbon tax, producers had at least one advantage: they could quantify and model it, Helfenbaum said. With the emissions cap, they don’t have even that advantage.

“The cap has so much uncertainty today that it’s not really a driver,” he said.

At the same time, others in the broader industry are concerned about how the cap will be allocated, especially when it comes to smaller producers and new market entrants.

“We’re concerned about ... how [the government] balances the interests of existing oilsands operators versus [those] in the early stages of development,” said EPAC’s Leach. He is concerned that discussions amongst the industry’s more-established oilsands players

may ultimately have the effect of preventing smaller companies — those with new ideas and technology — from developing their oilsands opportunities.

Yet, oilsands producers who will face the 100 MT cap are pressing ahead, each with their own way of cutting emissions. “It’s important to remember [the cap] is not a production limit, [but] a limit on emissions,” said **Brett Harris**, spokesperson for **Cenovus Energy Inc.** (</company/cenovus-energy-inc/>), an active in situ oilsands producer. Given the limit, the company is focusing on “applying technology and innovation” to cut carbon emissions, he added.

In practice, that means using such methods as the solvent-aided process (SAP), which management calls the “next generation of in-situ recovery.” Based on a Christina Lake pilot, Cenovus expects that applying SAP will yield 30 per cent more production and up to a 30 per cent drop in its steam-oil ratio. The company also plans to use the process commercially at its Narrows Lake in situ project.

At **Suncor Energy Inc.**, a spokesperson also noted the 100 MT cap limits emissions, not production, but framed it as a “driver for smart growth and an incentive to invest in technology that will put [Canada’s] oilsands production among global leaders in low-carbon

crude and petroleum production.” Suncor also called the cap an important step “in addressing climate change and creating conditions to support market access.”

By 2030, the company’s target is to cut emissions intensity 30 per cent, and it is pursuing energy efficiency by switching to such low-carbon fuels as gas, and developing pilot technology to change how the company extracts bitumen and optimizes processing. Applying energy management practices, including at its oilsands base plant, led to a two-to-three per cent improvement in “energy intensity,” shortly after implementation, the company said.

Like most other oilsands operators, Suncor is active in the **Canada’s Oil Sands Innovation Alliance** (COSIA), advancing research on carbon capture and conversion.

Shell Canada Limited stands for ensuring the competitiveness of Canadian oil, economically and environmentally. “We’re optimistic the [Alberta] emissions cap provides the certainty needed to help producers responsibly develop and grow the oilsands while offering incentives for, and allowing time to implement, technologies that reduce greenhouse gas emissions,” a spokesperson said.

Shell’s oilsands business has had improved performance since inception, the company said. “Our GHG intensity has improved one-to-two per cent per year for the past five years, for a 10 per cent

decline,” he added. The company said it has a world-class — in terms of emissions intensity — refinery and upgrader. As well, Shell’s Quest CCS project is cutting CO₂ intensity by capturing and storing more than one million tonnes of CO₂ per year.

Many details of Shell’s climate change policy have not been finalized, the spokesperson added, noting the company will continue to offer the Alberta government recommendations through the multi-stakeholder **Oil Sands Advisory Group**.

For its part, **Canadian Natural Resources Limited** (**/company/canadian-natural-resources-limited/**) is tackling GHG emissions by improving energy conservation and efficiency, cutting emissions intensity, supporting R&D, and adopting new technologies, actions that yielded a 16 per cent drop in GHG intensity in the last four years in North America operations — including non-oilsands assets —and a 19 per cent emissions intensity drop at the Horizon oilsands mine, a spokesperson said in an e-mail.

“We have been adding CO₂ to tailings since 2009 to enhance solids settling, reducing the size of the tailing pond by about half while sequestering CO₂. In 2015, Horizon began non-segregating tailings production that uses cyclones and thickeners, and adds CO₂.”

This year, the company will have a new CO₂ capture/recovery plant, able to recover 438,000 tonnes of CO₂ annually. At Hays, Alberta, CNRL is capturing and sequestering CO₂ for enhanced oil recovery, and is a partner in a refinery that will also feature carbon capture and storage.

At its operation, **Syncrude Canada Ltd.** uses cogeneration to recover and reuse waste heat. As a result, its plant produces and exports excess electricity to the Alberta grid. As an efficient way of producing electricity from natural gas, cogeneration has helped reduce Alberta's overall grid intensity, management said in a sustainability report. “We aim to minimize GHGs through improvements in energy efficiency, process reliability, and reduced flaring and venting,” the company said.

As well, Syncrude has adapted **Exxon Mobil Corporation** management systems to improve safety, reliability and environmental performance. Current plans focus on improving steam and fuel management, naphtha and bitumen recovery, heat transfer and energy real-time optimization, according to the report. Like other senior producers canvassed by the *Bulletin*, Syncrude did not make any executives available to discuss the strategies the company will employ to meet Alberta's 100 MT cap.

Growing share of Canada's GHG emissions

In its recent report on Alberta's oilsands, CERI estimated the sector's share of Canada's GHG emissions would rise in years to come, to about 12.8 per cent of total emissions by 2025. That compares with the roughly 9.3 per cent of Canadian GHG emissions the sector currently accounts for, according to data from the **Canadian Association of Petroleum Producers** (CAPP).

When it comes to Alberta's new 100 MT cap, CAPP executives would not be interviewed for this article. "We are in the early days of setting out some of our preliminary conclusions ... and won't be ready to discuss our position until the end of February, at the earliest," a spokesperson said in an email. "We can confirm we are involved in developing an outcome-based, allocation policy that will apply to oilsands projects when implemented."

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