

Understanding changes to Alberta's industrial carbon pricing system

System is stronger, but not yet aligned with Canada's climate goals

by Scott MacDougall and Janetta McKenzie | January 2023

Summary

Alberta has updated its industrial carbon pricing system, the Technology Innovation and Emissions Reduction Regulation (TIER), and it has been accepted by Environment and Climate Change Canada as equivalent to the federal industrial carbon pricing system for the 2023-2030 period. In December 2022, the Government of Alberta released full details of the TIER update.

The incentive to reduce emissions is now stronger due to the following improvements.

1. The price of carbon pollution is going to gradually increase, reaching \$170/tonne in 2030.
2. The amount of emissions that facilities may emit without paying the carbon price will be phased out faster for all facilities. For oilsands facilities this phase-out will align with Canada's 2050 net-zero target.
3. The Quest Carbon Capture and Storage project will no longer receive double credits.

However, TIER still needs to be strengthened further to align with Canada's climate goals and provide a more stable carbon market for companies that are pursuing projects to reduce emissions. Future updates should:

1. Phase out free emissions in line with Canada's climate targets for all facilities (not just oilsands).
 2. Not exclude industrial process emissions from pricing.
 3. Fully price electricity emissions.
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Finally, a new class of carbon capture, utilization and storage (CCUS) credits has been introduced with this update. We would point out that these will allow CCUS projects in the province to generate emissions reduction credits in TIER as well as through the federal Clean Fuel Regulation. Nevertheless, these new credits (along with considerable existing federal supports such as the investment tax credit for carbon capture projects, the oil and gas emissions cap, and carbon contracts for difference) mean that **no further measures — such as changes to Alberta’s oil sands royalty system — are needed, and there is sufficient up-front and sustained support for CCUS projects to progress to final investment decision in Alberta.**

Alberta’s industrial carbon pricing system

Alberta’s industrial carbon pricing system, which regulates greenhouse gas emissions from industrial facilities in the province, has evolved significantly over time. The current system, TIER, came into effect in 2020. However, Alberta was the first jurisdiction in North America to implement a carbon pricing policy in 2007 with the Specified Gas Emitters Regulation (SGER). In 2018 a more comprehensive system — the Carbon Competitiveness Incentive Regulation (CCIR) — came into effect. TIER represented a weakening of some important aspects of Alberta’s system, though it continues to evolve.

Provincial governments have two options when it comes to pricing carbon emissions from large industrial emitters. They can either opt to have the federal carbon pricing system (the Output Based Pricing System (OBPS)) apply, or design and implement their own system, which must meet federal requirements — including that they achieve the same overall emissions reductions as the federal OBPS would. In August 2021, the federal government released its updated requirements for the period 2023-2030, which provincial systems would need to meet. Following a period of federal-provincial consultation, in November 2022, the Government of Canada announced that the proposed updates to TIER satisfied federal requirements. In December 2022, the Government of Alberta published details of the TIER updates.

How do industrial carbon pricing systems work?

A key element of industrial carbon pricing systems is that facilities only have to pay a price on a portion of their emissions. To calculate this portion, TIER frequently uses facility ‘benchmarks’ — which take a facility’s historical emissions intensity and require it to improve its emissions profile over time, relative to that benchmark.

For many facilities under TIER, in their first year, 10% of a facility's emissions might be subjected to the carbon price (meaning 90% would be what's known as 'free allocations'); then in the following year that would increase to 11%, with 89% free allocations — thereby incentivizing the facility to reduce its emissions overall by 1% per year. This is known as the 'tightening rate'.

In any given year, facilities whose emissions exceed the benchmark must do some combination of reducing their emissions, purchasing carbon offsets or emissions credits (which can, for example, be generated by other facilities that outperform their benchmark), or pay into Alberta's Climate Change and Emissions Management Fund at the current carbon price.

Facilities with emissions below their benchmark can generate emissions credits that they can save for later use or sell to another facility regulated in the pricing system. This way, all facilities have the same incentive to improve.

Improvements

1. The price of carbon pollution is going up to \$170/tonne in 2030.

The TIER fund price is confirmed for 2023-2030 to increase by \$15/year, from \$65/tonne in 2023 to \$170/tonne in 2030. This aligns TIER's price schedule with the federal government's carbon pricing benchmark, which itself is aligned with Canada's 2030 target of an economy-wide emissions reduction of 40%-45% below 2005 levels. As the price on a tonne of carbon increases, the incentive for industrial emitters to invest in emissions reduction projects also increases. This therefore provides medium-term carbon pricing certainty, which helps de-risk private sector decarbonization investments needed to achieve Canada's 2030 emissions reductions targets.

2. Free emissions will be phased out for oilsands facilities, at a rate that is aligned with Canada's 2050 net-zero target.

The tightening rate for oilsands facilities will be increased from 1% to 2% starting in 2023, and again increased to 4% starting in 2029.

This will provide increased certainty to investors in industrial decarbonization projects in Alberta that credit prices will not crash and they will see reliable returns on their investments. It will also provide further incentive for decarbonization work in the oilsands sector in alignment with Canada's 2050 net-zero target. This is crucial because this sector's emissions have grown by almost 20% since 2004, indicating that further incentives and de-risking are needed to drive necessary decarbonization.

3. Early cancellation of double crediting for the Quest Carbon Capture and Storage (CCS) project.

Previously, the landmark Quest CCS project was able to receive bonus offset credits for reducing emissions by capturing and storing carbon. The cancellation of this unnecessary double crediting is a welcome change that improves the integrity of Alberta's TIER system and reduces risk of oversupply in the TIER credit market; this increases pricing and decarbonization investment certainty.

Areas for further strengthening

While the above improvements are welcome, the Pembina Institute recommends the following measures that would further strengthen Alberta's industrial carbon pricing system to align with Canada's climate goals. These measures would also create incentives for decarbonization in the province, and ensure the longer-term stability of the TIER carbon credit market.

1. Phase out free emissions for all facilities in line with Canada's climate targets.

Increasing the tightening rate for all facilities from 1% to 2% in 2023 (and then, for oilsands facilities, to 4% in 2029) is a welcome improvement, but falls short of what is needed to set TIER on the right trajectory to ultimately achieve Canada's 2050 net-zero goal. A tightening rate of at least 4% across all industrial emitters and emissions sources, starting 2023, is needed to increase demand for TIER credits quickly enough to mitigate the risk of oversupplying the TIER carbon credit market. Such oversupply would ultimately devalue credits, adding uncertainty to the investment environment for decarbonization projects.

2. Industrial process emissions should not be excluded from pricing.

TIER should begin treating industrial process (IP) emissions, such as those generated by chemical processes in the chemical and cement sectors, in the same way as all other emissions. The conventional rationale for excluding IP emissions was that they are too hard to abate, but this argument no longer stands. The number of announced CCUS projects in growth sectors with substantial IP emissions like cement and petrochemicals — projects such as the Lehigh Edmonton Cement Complex and Nautical Energy's blue methanol plant — suggest it is now reasonable to expect that those emissions can and will be abated in the coming years. TIER should therefore include IP emissions in benchmarks and tightening requirements, or else it risks over-crediting CCUS projects that abate IP emissions. As those projects are built and begin crediting, there is a risk of insufficient demand for TIER credits to support credit price certainty.

3. Electricity emissions should be fully priced.

Typically, TIER affords free allocations to industries that are emissions intensive and trade exposed, and would therefore in theory suffer an international competitive disadvantage from being exposed to the full carbon price in Canada. This helps support Canadian industry and avoids carbon leakage (where companies move their operations to a jurisdiction with fewer regulations, and their carbon emissions then fall outside of Canada's control).

However, the electricity sector does not need to be emissions intensive. Low or non-emitting generation options such as wind and solar exist and are now cost competitive with (if not cheaper than) fossil alternatives. Electricity generation is also not trade exposed, particularly in Alberta where the electricity system and market is mostly isolated. As such, we recommend that TIER should be strengthened further to fully price electricity emissions.

This would incentivize the adoption of low or non-emitting electricity generation options, in alignment with Canada's commitment to reaching a net-zero electricity grid by 2035. Revenues from the carbon pricing scheme can also be used to address affordability issues.

What does this mean for CCUS and other emissions reductions projects in Alberta?

This TIER update has also introduced new classes of credits specifically for CCUS, in an effort to incentivize investment in these projects. However, we would point out that these credits can be concurrently generated with credits from Canada's Clean Fuel Regulation. The ability to generate credits under both systems means that a project can receive extra credits for the same emissions reduction.

Nevertheless, these amendments add to the suite of federal and provincial measures and policies that already exist or are under consultation (such as the investment tax credit for CCUS, the oil and gas emissions cap, and carbon contracts for difference). **Together, this package of policy incentives provides sufficient up-front and sustained support for CCUS projects to progress to final investment decision in Alberta. No further supports, such as from the provincial oil sands royalty system, are needed.**

A wide range of research institutions and the oil industry itself project that demand for oil is likely to enter a long-term decline this decade (see our December 2022 report, *The future of oil in the energy transition*). In this context, oil and gas producers in Alberta are likely to face a tightened global market in the next few years, and especially between 2030 and 2050. Government policy and financial supports for CCUS should therefore be targeted at CCUS

projects associated with facilities that are likely to remain viable for many years to come, and governments should be cautious of providing public financing to projects at high risk of becoming stranded assets.

As new decarbonization projects come online (both CCUS and other technologies), many will generate carbon credits that they expect to sell to large emitters in the TIER system. This will generate a flow of carbon credits into the TIER credit market. This flow of credits needs to be met with a sufficiently stringent system to prevent an over-supplied market with lower-than-anticipated credit prices, which could undermine business cases for future decarbonization projects. This is why it is crucial to price as many emissions as possible (including electricity and IP emissions), reduce the amount of emissions that facilities can emit for free each year ('free allocations') through an appropriate tightening rate of 4%, and reduce the expiry period for credits to align with other emissions credit systems.