

Pembina Institute Input to Government of Alberta's 2022 TIER Review

Comments and recommendations

Submitted to: Alberta Ministry of Environment and Parks | August 7, 2022

Regarding: Alberta Technology Innovation and Emission Reduction (TIER) Regulation Review

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Recommendation summary

- Greater TIER stringency is needed, so as Alberta works toward Canada's net-zero commitment, TIER doesn't undermine companies' low-carbon investments with a predictable flood of credits and a credit price crash.
- Electricity-related emissions should be fully priced within TIER and — similar to the federal rebates Albertans receive for the federal fuel charge — Albertans should receive a government rebate to cover the indirect carbon costs passed to them in their electricity bills.
- TIER should begin aligning the Alberta Emissions Offset System with a net-zero emissions context, and not undermine the integrity of that system with a new class of offsets that double credits CCUS projects.

Context

The Pembina Institute is thankful for the opportunity to participate in this review of the TIER Regulation, Alberta's industrial carbon pricing system.

Alberta has a long history of carbon pricing; in 2007 it was the first province to implement an output-based pricing system, under the Specified Gas Emitters Regulation. In 2018, this was replaced by the Carbon Competitiveness Incentive Regulation, which was in turn replaced by the TIER Regulation in 2020.

Carbon pricing is at a critical juncture in Alberta, as Canada seeks to meet its net-zero commitments, which are shared by industry members including the Pathways Alliance. Meanwhile, emissions from the oil and gas sector continue to increase, while the need to reduce greenhouse gas emissions is increasingly urgent to limit the impacts of climate change.

Industrial carbon pricing systems are meant to concurrently reduce emissions while ensuring that regulated sectors can remain competitive. Effective carbon pricing systems should adhere to the following principles:

- Maintain the incentive to reduce GHG emissions, aiming to achieve net-zero by 2050
- Be targeted by applying protection only to sectors that are truly emissions intensive and trade exposed
- Be transparent, with support for emissions intensive trade exposed (EITE) sectors supported by available data
- Be consistent across sectors and firms
- Be temporary, understanding that support should be phased out as other jurisdictions implement equivalent GHG-reduction policies
- Be simple to implement, administer, and comply with.

TIER is inherently inefficient compared to its predecessor, CCIR, because it sets emissions-intensity thresholds that are based on individual facility performance instead of sector performance. This system rewards companies that haven't taken any action and punishes first-mover firms.

We recommend the following improvements to TIER:

- Strengthen to align with net-zero commitments that Canada has made which are supported by industry, including the Pathways Alliance. This is needed so that Alberta contributes its fair share in achieving Canada's net-zero commitment, while avoiding undermining industry low-carbon investments with an avoidable oversupply of credits.
- Fully price electricity-related emissions to align with the federal CER, as the sector is neither inherently emissions-intensive nor trade-exposed. Like the federal rebates for the federal fuel charge, Albertans should receive a rebate for the indirect carbon costs that are passed on in their electricity bills.
- Start aligning the Alberta Emissions Offset System with a net-zero emissions context, and not undermine the integrity of that system with a new class of offsets that allows double-counting credits for CCUS projects.

Increasing TIER stringency can align TIER with Canada's net-zero commitments, send a clear and credible signal that Alberta is committed to maintaining the marginal price on carbon, and provide investors with confidence in Alberta's future credit prices.

Survey Questions and Responses

Regulatory Stringency

Regulatory stringency is a key factor in achieving the desired outcome of emissions reductions while maintaining competitiveness. Included in regulatory stringency is facility coverage, emissions coverage, and the way we set and adjust regulated facility benchmarks over time.

Regulated Facilities and Opt-In

Current TIER Treatment: TIER applies to facilities that emit equal to or greater than 100,000 tonnes of CO₂e per year. A facility that emits below this threshold may opt-in to TIER if it competes directly against a facility that is covered by the regulation, or if the facility has greater than 10,000 tonnes CO₂e of annual emissions and belongs to an emissions-intensive, trade-exposed (EITE) sector as defined in the TIER Regulation reflecting the TIER fund price.

Seeking feedback on: The TIER regulatory threshold of 100,000 CO₂e per year remains the same. A facility may opt-in to the regulation if it competes directly with a facility covered by the regulation or has greater than 2,000 tonnes CO₂e per year and belongs to an emissions-intensive, trade-exposed (EITE) sector as defined in the TIER Regulation reflecting the annual carbon price as outlined in the federal Greenhouse Gas Pollution Pricing Act.

What are your comments/feedback on the TIER regulatory threshold remaining the same and the opt-in threshold lowering to 2,000 tonnes CO₂e per year?

The 100,000 t CO₂e regulatory threshold should be lowered to 50,000 t CO₂e, to align with the federal OBPS, to ensure significant emitters are identified, and their emissions verified and priced.

We do not support this change to 2000 t CO₂e threshold for opt-in, because there is no clear rationale, and it seems to unduly shelter additional small facilities from the federal fuel charge.

More detail is needed on the rationale for this proposal, what sectors, and how many emissions would primarily be impacted by this change, an estimate of how this change would impact emission reductions, and carbon leakage. We are concerned this change would weaken the price signal on emissions, reducing emission reductions in Alberta, and would like to understand more about how it helps prevent carbon leakage in EITE sectors.

What are your comments/feedback on updating the emission-intensive trade-exposed assessment based on the annual carbon price outlined in Canada's Greenhouse Gas Pollution Pricing Act?

Aligning the TIER fund price with the annual carbon price outlined in Canada's GGPPA is critical to providing industry and investors the certainty they need to invest in decarbonizing Alberta's oil and gas production. For example, the Pathways Alliance has committed to net-zero, but has repeatedly signaled that its participating oilsands companies require greater policy certainty to make the necessary decarbonization investments to achieve that pledge. If this is done, then we support aligning the EITE assessment with that price.

If Alberta does not commit TIER to follow the annual federal carbon price trajectory, then Alberta should not use those federal prices in EITE calculations. Doing so would risk using a higher carbon price than Alberta is actually applying, leading to inappropriately high EITE results.

Venting, Flaring, and Fugitive Emissions

Current TIER Treatment: For the conventional oil and gas (COG) sector, emissions from venting, flaring, and fugitives are not included in the total regulated emissions.

Seeking feedback on: Expanding TIER emission coverage in the COG sector to include emissions from venting, flaring, and fugitives in the total regulated emissions and the potential for free allocations provided to aggregate facilities for venting, flaring, and fugitive emissions.

What are your comments/feedback on expanding the TIER emission coverage for the COG sector to include venting, flaring, and fugitive emissions and to provide potential free allocations to these emissions?

We are in favor of including COG venting, flaring, and fugitive emissions in total regulated emissions. Including methane would provide a pathway to near-zero methane given that methane abatement is one of the most cost-effective options for emissions reductions in the oil and gas sector. However, significant improvements are required to quantification methodologies and reporting standards to account for the fact that methane emissions are significantly higher than the current Alberta inventory shows. Alberta's data show that methane emissions in the province in 2020 were 16 Mt CO₂e, whereas the National Inventory Report shows that Alberta methane emissions were 22 Mt CO₂e in 2020. Meanwhile, numerous top-down studies have shown that methane emissions in Alberta and Canada are 1.5 to 2 times higher than the federal inventory, or 2 to 2.7 times higher than Alberta's inventory.^{1,2}

¹ David R. Tyner and Matthew R. Johnson, "A Techno-Economic Analysis of Methane Mitigation Potential from Reported Venting at Oil Production Sites in Alberta," *Environmental Science and Technology* 52, no. 21 (2018). <https://doi.org/10.1021/acs.est.8b01345>

Achieving the federal target for the COG sector will involve getting to near-zero methane emissions. We expect this inclusion would price the majority of Alberta's oil and gas methane emissions in alignment with Canada's annual carbon price in the GGPPA. Based on 2019 Canadian Energy Research Institute analysis, at those prices it would be economic for industry to virtually eliminate Alberta's oil and gas methane emissions. This would align with Canada's current methane emissions target of at least a 75% reduction by 2030 and Canada's target to achieve a 40-45% reduction in oil and gas emissions by 2035. In fact, the Oil and Gas Climate Initiative (OGCI) has already pledged to achieve virtually zero methane emissions from the global oil and gas sector by 2030. The OGCI is a group of twelve major oil companies including Shell, Repsol, ExxonMobil and Saudi Aramco; the OGCI pledge demonstrates that industry itself believes near-zero methane is achievable. In addition, the U.S. is increasing ambition on methane, with the U.S. EPA proposing oil and gas methane regulations that would reduce methane emissions in the U.S. by approximately 74% by 2030 (from 2005 levels). Individual states including New Mexico, Colorado, and California have also implemented strong methane regulations.

We do not think these emissions should have free allocations, for several reasons:

- Oil and gas methane emission reductions are technically and economically feasible now, and at future carbon prices, so the most efficient outcome would be for them to be mitigated quickly. For example, our analysis of a 2019 study from the Canadian Energy Research Institute shows that, at current natural gas prices, oil and gas methane emissions can be reduced by 88% for only \$12 /tonne of CO₂e (compared to the current carbon price of \$50 /tonne). Free allocations should not be needed.
- Carbon leakage risk from fully pricing Canada's oil and gas methane is mitigated by the fact that the world's largest oil and gas producers (OGCI) have committed to mitigate methane emissions to near zero by 2025, and the U.S. EPA, as well as some U.S. states, have proposed or already implemented regulations that will achieve ambitious oil and gas methane emission reductions.
- Any free allocation for these emissions risks being misaligned with Canada's oil and gas methane reduction targets, unless it ramped down very quickly to align with Canada's methane target of at least a 75% reduction from 2012 levels by 2030.

² Elton Chan et al., "Eight-Year Estimates of Methane Emissions from Oil and Gas Operations in Western Canada Are Nearly Twice Those Reported in Inventories," *Environmental Science and Technology* 54, no. 23 (2020). <https://doi.org/10.1021/acs.est.0c04117>

- We are concerned that benchmarks for methane emissions would be based on low-quality reported data that has not been verified, so will be incorrect and likely to change, creating significant administrative challenges for AEP and regulated parties.

Stringency and Tightening Rate

Current TIER Treatment: Under the current TIER system, facility-specific benchmarks (FSBs) are reduced using a linear rate of 1% per year, with the exception of industrial process emissions and emissions associated to electricity used. A tightening rate is not applied to sector-specific, high-performance benchmarks (HPBs).

Seeking feedback on: Starting in 2023, reduce FSBs and HPBs at a rate of 2% per year. For both FSB and HPBs, tightening rates would not apply to the non-tightening portion of the calculations, which includes industrial process emissions. Consideration on the Government of Alberta implementing a mechanism that would reduce and/or provide an endpoint to tightening on HPBs.

What are your comments/feedback on reducing all FSBs and HPBs using a linear rate of 2% per year?

We are in favour of applying a tightening rate to high performance benchmarks (HPBs), and to all emissions in TIER.

The substantial push for reducing emissions from oil and gas will include CCUS deployment for industrial process emissions, which are some of the more cost-effective applications of CCUS in the sector. This justifies application of the tightening rate to industrial process emissions. Historically, those emissions received special treatment because they were seen as inherent to certain chemical processes, and infeasible to reduce, but this argument is no longer valid with the viability of CCUS technology and federal CCUS investment incentives.

Alberta must apply a tightening rate of at least 4% per year to align TIER stringency with Canada's, and many companies', commitment to net-zero greenhouse gas emissions by 2050. This would ensure that as ambitious action is taken on those commitments (which in many cases will rapidly reduce facilities' direct emissions in TIER) the credit market will not be flooded with emission performance credits. The result of that credit flood would be credit prices that are much lower than expected by investors, and lower than required by GGPPA benchmark criteria that the marginal carbon price aligns with the federal carbon price in GGPPA.

Organizations need certainty that the TIER credit market will not be oversupplied, and their investments will not be undermined by low credit values, so this higher tightening

rate is needed. Not doing so would send a message that Alberta is not committed to supporting commitments and investments, including those of the Pathways Alliance. It would also undermine Alberta's message of ESG leadership, and historic support for market-based climate policy. Exceptions should be made for electricity, and for oil and gas methane, which should receive no free allocations.

Also, a tightening rate of at least 4% per year will ensure the pricing system applies even pressure and incentives across sectors, old and new facilities, and helps align their emissions reductions with net-zero commitments, and key federal policies such as the emerging Oil and Gas Emissions Cap.

To summarize, increasing TIER stringency with a tightening rate of at least 4% per year would send a clear and credible signal that Alberta is committed to maintaining the marginal price on carbon. This is a GGPPA benchmark criteria, and is sorely needed to provide investors with confidence in Alberta's future credit prices. Investments will not be made if investors do not see predictable credit prices in the future.

To further increase carbon price certainty, transparency, investability, and to better enable complementary policies like carbon contracts for difference, AEP should require that TIER credit and offset prices be reported when transacted, and should publish those prices frequently. This would equip investors with critical market data, and in turn create business planning rationale for decarbonization investments. It also provides information to government and the public that would be important if they are to ensure the carbon price signal through mechanisms like carbon contracts for difference. EU ETS and California ARB credit price reporting are good examples of this.

AEP should establish an arm's-length body to periodically review credit market performance, considering emissions reductions, stringency, TIER interactions with key policies such as the federal Oil and Gas Emissions Cap, Clean Electricity Standard, Clean Fuel Regulations, CCUS Investment Tax Credit, and methane rules, and publish their recommendations to government. This should occur more frequently than scheduled regulatory reviews, with the aim to advise government on steps it should take to ensure the TIER credit system maintains the marginal price on carbon, remains investable, and is reducing Alberta's emissions in alignment with Canada's goals, as well as with forecasted emissions and production.

Electricity High Performance Benchmark

Current TIER Treatment: Under the current regulation, electricity generators are subject to a "good-as-best-gas" benchmark (electricity HPB), set at 0.37 tonnes CO₂e per MWh, which is equal to the performance of the best combined-cycle natural gas powered electricity generator in Alberta. Within

facility-specific benchmark calculations, the electricity HPB is further used to appropriately account for the net import or export of indirect emissions associated with regulated facility electricity generation and use.

Seeking feedback on: Reducing the electricity HPB. If applicable, on the new percentage of free allocations, interactions with the offset system, and recommendations on how TIER can be used to ensure affordable and reliable electricity given the federal net zero electricity commitment.

What are your comments/feedback on reducing the electricity HPB?

It is important to align TIER with the forthcoming federal Clean Electricity Regulations (CER, to be implemented in 2023) by removing the electricity sector from TIER, or dropping their HPB to zero, so the sector is fully exposed to the carbon price. The electricity sector does not need to be “emissions intensive”, as low or non-emitting generation options exist and are now cost competitive with (if not cheaper than) fossil alternatives. Electricity generation is also not “trade exposed” in the same way as oil and gas production is, particularly in Alberta where the electricity system and market is mostly isolated.

Compared with the current TIER approach to electricity, removing the sector from TIER would be more effective at preserving the carbon price signal for generators and consumers. To mitigate additional carbon costs passed through to consumers, costs should be rebated back to Alberta consumers. If electricity is removed from TIER, higher Climate Action Incentive payments from the federal government would be one possibility, or to create another federal rebate mechanism for electricity sector fuel charges. If Alberta keeps electricity in TIER but gives producers an HPB equal to zero, the Alberta government should develop that rebate for consumers. Doing so would relieve cost impacts to Albertans, while the carbon price would still incent them to reduce emissions. Carbon cost pass-through from electricity generators is based on the marginal generator’s costs. So, rebate amounts should be dependent on annual analysis of marginal generation data and will decline as the carbon intensity of Alberta’s electricity declines.

Compared to the above options, keeping electricity generators in TIER with an HPB greater than zero would dilute the price signal for generators and consumers, and would not be as effective as rebates at returning carbon costs to consumers.

To promote affordability and emission reductions in Alberta’s electricity system, predictable Alberta carbon pricing and climate policy is needed that is aligned with federal net-zero commitments and does not provide inefficient subsidies to fossil fuel

generation. This will enable better long-term corporate and electricity system planning, which will promote cost-efficient outcomes.

Industrial Heat High Performance Benchmark

Current TIER Treatment: Under the current regulation, the HPB value for industrial heat at 0.06299 tonnes CO₂e per gigajoule, which is based on an 80% efficient natural gas boiler. The calculation of facility-specific benchmarks is dependent on indirect HPBs including industrial heat, and for calculating compliance obligations as an allocation rate for electricity, industrial heat and hydrogen exported as a product.

Seeking feedback on: If the industrial heat HPB needs to track any potential adjustments to the electricity HPB and/or if it should be updated based on a higher efficient natural gas boiler. Also seeking feedback on the impact of reductions to the heat HPB value on fairness and competitiveness issues, particularly in regards to cogeneration unit operators.

What are your comments/feedback on adjusting the heat HPB to track any potential changes to the electricity HPB?

A tightening rate of at least 4% should be applied to all benchmarks, so they reach zero free allocations by 2050, except the electricity benchmark, which should be set to zero.

Hydrogen High Performance Benchmark

Current TIER Treatment: Under the current regulation, the HPB value for hydrogen is 9.068 tonnes CO₂e per tonne of hydrogen. The calculation of facility specific benchmarks is dependent on indirect HPBs including hydrogen, and for calculating compliance obligations as an allocation rate for electricity, industrial heat and hydrogen exported as a product or generated and used on-site at refineries and upgraders.

Seeking feedback on: Reducing the current hydrogen HPB to a value that could lend support to the provincial hydrogen roadmap initiatives, while maintaining the marginal price signal, and addressing supply and demand considerations in the compliance market.

What are your comments/feedback on adjusting the hydrogen HPB?

A tightening rate of at least 4% should be applied to all benchmarks, so they reach zero free allocations by 2050, except the electricity benchmark, which should be set to zero.

Compliance Flexibility and Carbon Markets

An important component of the TIER Regulation is the provision for compliance flexibility and the associated emission offset and emission performance credit market. Compliance flexibility is

provided recognizing that regulated facilities are not always able to reduce emissions on-site in the near term. These options establish compliance certainty for regulated facilities while ensuring emission reductions are achieved.

Compliance Options

Current TIER Treatment: Regulated facilities can comply with the TIER reduction requirements by:

- *reducing emissions on-site;*
- *submitting emission offsets;*
- *submitting emission performance credits; and/or*
- *paying into the TIER fund at \$50 per tonne.*

Seeking feedback on: The compliance options remain the same. Starting January 1, 2023, the TIER fund price would follow the annual carbon price as outlined in Canada's Greenhouse Gas Pollution Pricing Act.

What are your comments/feedback on compliance options and the TIER fund price?

We are in favor of explicitly aligning the TIER fund price with Canada's GGPPA annual carbon price. Aligning the TIER fund price with the annual carbon price outlined in Canada's GGPPA is critical to providing industry and investors the certainty they need to invest in decarbonizing Alberta's oil and gas production. For example, the Pathways Alliance has committed to net-zero and would benefit from greater policy certainty.

Alberta should adjust the offsets compliance option in TIER, to take into account the Oxford Principles for Net Zero Aligned Carbon Offsetting. A practical step to do so is to require that in 2025 at least 10% of offsets used for facility compliance must come from carbon dioxide removal (CDR) projects, and set a goal to ratchet this up by 10% per year, so that by 2035, emission reduction offsets will be fully phased out, and the system will focus on high-quality CO₂ removals that are aligned with net-zero. Achieving this goal requires proactive focus on developing CDR offset protocols and projects, which should be a focus for Alberta.

For reference the Oxford Principles for Net Zero Aligned Carbon Offsetting are:³

Principle 1: Cut emissions, use high-quality offsets, and regularly revise offsetting strategy as best practice evolves

Principle 2: Shift to carbon removal offsetting

Principle 3: Shift to long-lived storage

³ University of Oxford, *The Oxford Principles for Net Zero Aligned Carbon Offsetting* (2020), 1.
<https://www.smithschool.ox.ac.uk/sites/default/files/2022-01/Oxford-Offsetting-Principles-2020.pdf>

Principle 4: Support the development of net-zero-aligned offsetting

Crediting Period

Current TIER Treatment: Under the current TIER system, offset projects, with the exception of carbon capture, utilization and storage (CCUS) projects and some vent gas reduction projects, are able to generate emission offset credits using an approved quantification protocol, for eight consecutive years following the start date of the offset project, unless otherwise specified in the applicable quantification protocol. Offset project developers can make a request to the director for five year extension(s) or an initial 10 year crediting period with no possibility of extensions.

Seeking feedback on: Starting in 2023, removing the ability for offset project developers to make a request to the director for five year extension(s) or an initial 10 year crediting period for projects. The established crediting period for offset projects generating emission offset credits prior to January 1, 2023 would remain unchanged.

What are your comments/feedback on removing the ability for offset project developers to request five year extension(s) or to request an initial ten year credit period for projects?

We support this change, because it reduces the likelihood that projects which are no longer additional will continue generating credits. Related to this, it is important to recognize that generally, project business cases cannot include in baseline economics any revenues and costs that are not certain. This means they would not reflect credits generated during extensions, so would likely have been built regardless of the project extension. Some may shut down when their crediting period ends, but many will continue operating. On balance, this change fixes an important additionality loophole.

Credit Expiry

Current TIER Treatment: Emission offsets (EOs) may only be used to meet compliance obligations within the nine-year period beginning with the year in which the offset was generated; unused emission offsets expire after this period and cannot be used to meet compliance obligations outside of the nine-year period post generation. Emission Performance Credits (EPCs) may only be used to meet compliance obligations within an eight-year period after the year in which the credit is issued; unused emission performance credits expire after this period and cannot be used to meet compliance obligations outside of the eight-year period post generation.

Seeking feedback on: Reducing the credit expiry period for both EPCs and emission offsets, starting with credits generated after December 31, 2022. The expiry period for EPCs and emission offsets generated prior to January 1, 2023 would remain unchanged.

What are your comments/feedback on reducing the credit expiry period for both EPCs and emission offsets?

Credits and offsets should expire within 5 years, which aligns with federal OBPS compliance units, and norms for publicly traded compliance credits.⁴ A shorter expiry period means credits are more likely to be used while still additional to existing policy and practices.

Credit Usage Limit

Current TIER Treatment: Under the current regulation, facilities may use offsets and emissions performance credits to meet up to 60% of their compliance obligations (the credit-use limit). The remaining compliance obligation must be met through the purchase of TIER fund credits.

Seeking feedback on: If the credit-use limit should be increased from 60% to enable regulated facilities to meet a greater proportion of their compliance obligations through the use of emission offsets and emission performance credits. If applicable, seeking feedback on how going forward the mechanism used to set the annual credit usage limit can be flexible to adjust to market dynamics.

What are your comments/feedback on increasing the 60% credit-use limit that regulated facility can use to meet their compliance obligation through the use of emission offsets or emission performance credits?

The credit use limit should be increased or decreased at a sector or product level, depending on whether that sector's emissions are on track to achieve sectoral or economy-wide emissions targets. The assessment should consider if recent UNFCC NIR emissions or biennial report forecasts indicate a sector's emissions are on a trajectory that would achieve Canada's emissions targets. Each year where this trend is off-track, the credit use limit should decrease by 20%. Each year where the trend is on track, the limit should increase by 20%. This is one way to add incentives for successful emission reductions and ratchet up penalties when emission reductions do not occur.

Are there any other comments/feedback you have on compliance flexibility and carbon markets within TIER?

To further increase carbon price certainty, transparency, investability, and to better enable complementary policies like carbon contracts for difference, AEP should require that TIER credit and offset prices be reported when transacted, and should publish those prices frequently. This would equip investors with critical market data, and in turn create business planning rationale for decarbonization investments. It also provides information to government and the public that would be important if they are to insure the carbon

⁴ Veridium, "Carbon Credit Markets 101: How they work to reduce climate change," <https://medium.com/veridium-labs/carbon-credit-markets-101-bc986eedabfa>

price signal through mechanisms like carbon contracts for difference. EU ETS and California ARB credit price reporting are good examples of this.

AEP should also establish an arm's-length body to periodically review credit market performance, emissions reductions, stringency, and publish their recommendations to government. This should occur more frequently than scheduled regulatory reviews. The aim of this group should be to advise government on steps it should take to make the TIER credit market more investable, while improving its effectiveness at reducing Alberta's emissions.

Other System Design Features

Other important TIER design elements and considerations are presented for feedback. Alberta has implemented the emissions offset system for over 15 years. Design and implementation details of the emission offset system will be considered to ensure the policy framework continues to provide the signals and support needed to achieve emission reductions outside of regulated facilities.

Further, it is important to maintain the competitiveness of Alberta industry while achieving significant greenhouse gas emissions reductions under TIER. The cost containment program has been established to ensure impacts to competitiveness are identified and mitigated.

Electricity Grid Displacement Factor

Current TIER Treatment: The Electricity Grid Displacement Factor (grid factor) reflects the greenhouse gas emission intensity of the marginal megawatt-hour (MWh) in Alberta's electricity generation, and is used in the calculation for generating emission offsets under the TIER system. The current grid factor is 0.53 t CO_{2e} per MWh.

Seeking feedback on: The grid displacement factor transition to align with the high performance benchmark (HPB) for electricity including any future adjustments to the HPB as they occur.

Seeking feedback on the alignment of the grid factor and electricity HPB and if alignment should begin in 2024 or utilize a phased approach.

What are your comments/feedback on aligning the grid factor to the electricity HPB and the details of this approach?

The offsets grid displacement factor should be set to 0.37 tonnes CO_{2e} per MWh in 2024, and tighten annually to zero in 2035. Doing this will reduce investor uncertainty about potential misalignments between Alberta and federal emissions policy, and provide a long-term view of important electricity sector carbon cost and credit market fundamentals.

If the electricity sector remains in TIER, its HPB should be set to zero, and consumers should be rebated the incremental carbon costs passed through to them by electricity generators. The HPB does not need to align with the grid displacement factor: it never has in the past.

Emission Offset Protocol Development and Revision

Current TIER Treatment: Under the current TIER protocol development and revision process, protocol developers are welcome to submit a proposals to develop or revise a protocol by the end of each calendar year.

Seeking feedback on: Starting in 2023, implementing a ‘call for proposal’ process where the department puts out a call for protocol proposals, moving away from an annual intake. The frequency on the call for proposals would be dependent on a number of factors including but not limited to government priorities, available resources, and ongoing protocol work.

What are your comments/feedback on implementing a new call for proposal process to develop or revise an offset protocol?

We support AEP to develop efficient processes to manage the offsets system. If AEP uses a new call for proposal process, we think calls should prioritize carbon dioxide removal protocols, protocols offering the largest emission reductions, and emission reduction opportunities demonstrating the greatest financial need.

Emission Offset Reporting Period

Current TIER Treatment: Under the current TIER system, offset project developers are able to choose reporting frequency and length of reporting period.

Seeking feedback on: Starting in 2023, requiring offset project developers to submit a project report to the Alberta Emission Offset Registry at least every 3 years.

What are your comments/feedback on requiring offset project developers to submit a project report to the Alberta Emission Offset Registry at least every three years?

We support this change.

Emission Offset Generation for Geological Carbon Sequestration

Current TIER Treatment: Under the current regulation, carbon capture and storage operations are able to generate one emission offset for capturing carbon and one emission offset for sequestering the same tonne of CO₂e. When the price of the TIER fund is between \$40 and \$80 per tonne of CO₂e the additional credit is scaled from one at \$40 to zero at \$80.

Seeking feedback on: Starting in the year 2023, and onwards, it is proposed to only allow only one emission offset to be generated for each sequestered tonne of CO₂e emissions, regardless of the TIER fund price.

What are your comments/feedback on allowing only one emission offset to be generated for each sequestered tonne of CO₂e emissions, regardless of the TIER fund price?

We support only allowing one emission offset for each captured and sequestered tonne. Double crediting any environmental action undermines the first two principles of Alberta's offsets system, as discussed in the next section.

Creation of Unique Carbon Capture, Utilization and Storage (CCUS) Credits

Current TIER Treatment: Under the current TIER system, CCUS projects that follows an approved quantification protocol are able to generate emission offsets at the point where the CO₂e is geologically sequestered or utilized for enhanced oil recovery. The benefits to the regulated facility, where the CO₂ is captured, may be realized through an agreement between the regulated facility and the offset project proponents.

Seeking feedback on: Creating a new class of credits specific to CCUS activities to better enable the flowing of credits and value back to the sites of carbon capture. Once created CCUS emission offsets (saline aquifer sequestration and enhanced oil recovery) could be converted to the new class in the year of creation and would be directly deducted from total regulated emissions of the capturing facility. The credit usage limit would not apply and any excess reductions would be issued as emission performance credits of the same vintage.

What are your comments/feedback on creating a new class of CCUS credits?

Alberta should not create a unique class of TIER credit for CCUS. The approach proposed would allow the same environmental attribute to be credited in the Alberta offset system, and also in the federal Clean Fuel Standard. This approach seems misaligned with two of Alberta's offset system principles, and means the credits would not be additional. Those principles are:

“Building and Linking: Alberta will continue to build on offset work undertaken in other jurisdictions to adapt emission reduction opportunities to suit Alberta's unique circumstances and will seek alignment between systems as deemed appropriate.”

“Reduce Provincial Emissions: offset projects must result in real, quantifiable, and verifiable reduction or sequestration of greenhouse gas emissions in Alberta.”

First, given the federal OBPS does not allow offsets to stack with CFR credits, and most offset systems require that offsets credit unique and additional emission reductions, these new TIER CCUS credits would run counter to Alberta's offsets principle on Building and Linking, since they would likely not be allowed in any other credit system.

Second, it is not clear if the CFR or the TIER credit is causing the emission reduction activity to occur. So, the proposal seems to run counter to the Alberta offset principle to Reduce Provincial Emissions, since it cannot be proven whether the offset created an additional emission reduction.

Bioenergy with Carbon Capture and Storage (BECCS)

Current TIER Treatment: Under the current regulation, CO₂ emissions including biomass CO₂ that are captured and sent off-site to be geologically sequestered are included in a facility's exported CO₂, which increase the total regulated emissions. This approach does not result in a net benefit to a facility for capturing and sequestering biomass CO₂ emissions (BECCS) because CO₂ emissions generated from the combustion, decomposition, or fermentation of biomass from plant materials and animal waste that are sent off-site to be geologically sequestered are currently excluded from the direct emissions and benchmarking calculation.

Seeking feedback on: To recognize the emission reductions from BECCS, it is proposed that CO₂ emissions generated from the combustion, decomposition, or fermentation of biomass from plant materials and animal waste, which are sent off-site to be geologically sequestered, are reported, but not included in the exported CO₂.

What are your comments/feedback on incentivizing bioenergy with carbon capture and storage?

BECCS is an important decarbonization technology, so giving it fair treatment in TIER is important. The proposed approach is a good near-term step, but Alberta should work toward a more conservative and science-based approach that includes the portion of biomass emissions that are non-renewable in direct emissions, benchmarks, and exported CO₂. Research has noted that some CO₂ from biogenic sources is not climate neutral.⁵ Alberta should work toward adopting science-based GWP_{bio} values for common biofuels and bio-based feedstocks' CO₂ emissions, and commit to reviewing and updating these as new research and data becomes available. Based on the paper referenced, forest biomass should likely be the first focus of this work.

⁵ Weiguang Liu et al., "Analysis of the Global Warming Potential of Biogenic CO₂ Emission in Life Cycle Assessments," *Scientific Reports* 7 (2017). <https://www.nature.com/articles/srep39857>

Compliance Cost Containment Program

Current TIER Treatment: Under the current TIER system, the Compliance Cost Containment Program is intended to provide relief to facilities experiencing economic hardship as a result of compliance costs. If the TIER Regulation compliance costs of an individual facility exceed 3% of sales or 10% of profit, that facility may be eligible to receive relief under the Compliance Cost Containment Program. Relief provided can include:

- removing the credit use limit, which is currently set at 60% of a facility true-up obligation.*
- assigning additional emission allocations using a compliance cost containment allocation benchmark (BCCA).*

Note that BCCA allocation cannot cause the facility's compliance to gross sales or profit ratios to go below 3% or 10%, respectively.

Seeking feedback on: Updates to the cost containment program design and relief mechanisms, keeping with the TIER principles of increased competitiveness, encouraging innovation, and continuous improvement, as well as the need to maintain the marginal carbon price signal for Alberta. Possible updates to the cost containment program could include:

- eligible facility is assigned a BCCA for a 3 to 5 year period based on economic hardship at the time of application in addition to credit use limit being removed;*
- BCCAs are tapered over the 3 to 5 year period, incrementally returning to emission allocations that would have been assigned to the facility in absence of the cost containment program. Removal of the credit use limit would still apply; and facilities that enter the regulation after January 1, 2023 are ineligible for the cost containment program.*

What are your comments/feedback on changes to the cost containment program design to keep the TIER principles as well as maintaining the marginal carbon price signal?

We believe the compliance cost containment program should be phased out, in keeping with the TIER principles of increased competitiveness, encouraging innovation, and continuous improvement.

We agree that no facilities entering TIER after January 1, 2023 should be eligible for cost containment.

For facilities that qualify for cost containment before that date, BCCAs and the credit use limit should taper within 3 years to the same level they would otherwise have been, had the cost containment program not existed. These facilities have had years to reduce their emissions while under cost containment, so we think they should be phased to the same treatment as other Alberta facilities.

Are there any other comments/feedback you have on other system design within TIER?

The TIER review should ensure the Minister has sufficient power to set sector- or product-specific stringency, compliance flexibility, penalty, and EITE-related rules, so TIER can better integrate with a broader set of policies, and potentially achieve equivalency with them. For example, in the context of the upcoming federal Oil and Gas Emissions Cap, having greater flexibility could allow TIER rules for the oil and gas sector to function similarly to an emissions cap, and potentially allow for TIER to be used as an option for equivalency if existing carbon pricing instruments are strengthened under the cap. Similarly, given Carbon Border Adjustments are likely to apply at a product level, and would replace free allocations as a means of preventing carbon leakage, similar powers as noted above will be helpful to harmonize TIER with CBAs. If it is found the minister does not have sufficient power, recommendations should be made on how to grant those powers in the Emissions Management and Climate Resilience Act.