MARKET SURVEILLANCE ADMINISTRATOR

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August 5, 2022

Rob Hamaliuk
Executive Director, Air and Climate Policy
Alberta Environment and Parks
12th Floor, Baker Centre
10025 - 106 Street NW
Edmonton, AB T5J 1G4

Re: *Technology Innovation and Emissions Reduction* (TIER) *Regulation* Review

Dear Mr. Hamaliuk,

On July 24, 2022, Alberta Environment and Parks (AEP) provided notice to stakeholders that it was conducting engagement regarding the TIER Regulation, to inform decisions in fall 2022. AEP stated that the TIER Regulation specifies that a review is required by December 31, 2022, and provided a TIER Discussion Document to guide written feedback in the engagement process. The TIER Discussion Document states that the review is guided by the following objectives:

- Alberta intends to meet the federal benchmark requirements and maintain the TIER system in the province through 2030;
- Maximize private sector investment attraction and job growth in Alberta;
- Fairness across sectors, and considerations for competitiveness; and
- Improve regulatory efficiency and minimize administrative burden for regulated parties, where possible.[1]

The Market Surveillance Administrator (MSA) is a public agency of Alberta with the mandate to protect and promote the fair, efficient, and openly competitive operation of Alberta's electricity market. This mandate requires the MSA to conduct surveillance and assessment related to the structure and performance of Alberta's electricity market.

Carbon emissions and carbon credits associated with electricity generation have become more important in recent years and are now essential to consider in any assessment of the structure and performance of Alberta's electricity market. This includes incentives that affect how generation operates and is offered into Alberta's competitive hourly wholesale market and incentives that directly affect investment in non-emitting generation capacity and indirectly affect

[1] Review of Alberta's TIER Regulation – Discussion Document

investment in generation capacity, storage, and demand-side response that do not receive credits. Accordingly, the MSA is providing comments on the TIER Discussion Document that relate to promoting the fair, efficient, and openly competitive operation of Alberta's electricity market.

Sincerely,

/s/ Mark Zanewick

Senior Economist

Cc: Derek Olmstead, Chief Executive Officer

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Organization (if applicable)	Market Surveillance Administrator
Facility (if applicable)	N/A

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 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? 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?

N/A

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?

N/A

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 emission 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?

The MSA is only commenting with respect to the electricity HPB and makes no comment on the stringency rate of any other FSBs or HPBs. The MSA's comments regarding the electricity HPB, including stringency considerations, are submitted in the following question that is specific to the electricity HPB.

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?

With the respect to the electricity HPB, the MSA has two distinct comments. The first is related to the impact of the HPB on Alberta's electricity market and the second is related to the consistency of the HPB with other policy objectives.

First, there are no impediments in the electricity market that would prevent the electricity HPB from declining by 2%, or more than 2%, annually. In the electricity market carbon costs can efficiently be passed through to consumers without adversely affecting the structure or performance of the market. Opportunities to support vulnerable consumers from increases in electricity prices can be implemented through other targeted mechanisms.

If one objective of the proposed 2% annual reduction is to reduce the number of credits issued in aggregate, then a larger reduction in the electricity sector would allow for smaller reductions in other sectors. There is no reason in principle why all sectors must face the same percentage reductions.

Second, for consistency with other applicable environmental policy objectives such as the federal objective of a net-zero electricity system by 2035, the electricity HPB should decline by more than 2% annually. It is important that a credible path forward to an eventual electricity HPB of 0.00 tonnes CO2e per MWh is laid out, for carbon costs to be predictable and for market participants to make efficient decisions throughout that period. It is the MSA's view that the most credible path is to reduce the HPB in equal increments between now and 2035.

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?

N/A

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?

N/A

Negative Emissions Allocations

Current TIER Treatment: Allowable emissions are calculated as the production multiplied by the benchmarks adjusted for imported heat, hydrogen, or electricity. Under the current regulation, allowable emissions cannot be less than zero.

Seeking feedback on: *Removing the restriction on allowable emissions and allow for negative emissions allocations to be provided to regulated facilities. This is likely to be required in a variety of future circumstances to ensure that the appropriate carbon accounting occurs. This includes electricity generation using a substantial fraction of imported hydrogen fuel, operation of a sequestration facility as a large emitter where total regulated emissions are negative due to carbon dioxide import or for a facility that wishes to opt-in as a waste heat to electricity site with another regulated facility supplying and receiving credit for the waste heat.*

What are your comments/feedback on allowing negative allowable emissions to be provided to regulate facilities?

N/A

Global Best in Class Benchmarks for New Facilities

Current TIER Treatment: A new facility, as defined under the regulation, is provided a facility-specific benchmark for its third year of commercial operation using a 5% reduction target, with the reduction target increasing by 5% per year until the regulated reduction target for the calendar year is reached (e.g. 14% reduction target in 2023, 16% reduction target in 2024, etc.).

- Seeking feedback on: *Maintaining existing definition and treatment for new facilities, but allow for new facilities demonstrating best-in-class emissions intensity performance to apply for a high-performance benchmark (HPB) under the following criteria with mitigations for unverified emissions data or data inconsistent with Alberta quantification protocols applied:*
    - *no equivalent product currently exists under TIER.*
    - *the proposed facility is likely to trigger the TIER threshold and/or have emission intensive trade exposed products; and*
    - *more than one similar facility exists internationally and there are quantified emissions and production available.*

What are your comments/feedback on providing a global best in class benchmark for new facilities?

N/A

Are there any other comments/feedback you have on regulatory stringency within TIER?

Alberta Environment and Parks should consider requiring the production, collection and publication of emission data comparable to that collected and made public by the United States Environmental Protection Agency (EPA) (https://www.epa.gov/airmarkets/power-sector-emissions-data). This is the standard that most electricity generators in North America face and, as a result, there is no particular reason why this would be an undue burden on Alberta-situated generators. Further, with respect to electricity generation in Alberta, the MSA notes that the Alberta Electric System Operator currently publishes high-frequency (i.e., sub-hourly) generation data for each generating unit with a capacity of 5 MW or greater that is connected to the electricity grid. As a result, there is no plausible argument that the publication of high frequency emissions data from each generating unit in Alberta could be commercially harmful to electricity market participants.

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?

Setting the TIER fund price to follow the annual carbon price as outlined in Canada's *Greenhouse Gas Pollution Pricing Act* would provide increased policy certainty to market participants regarding the carbon costs they will face in future years. Providing this certainty supports an efficient electricity market and efficient decision-making by electricity market participants.

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?

N/A

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?

N/A

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?

N/A

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

Alberta Environment and Parks should consider whether there would be value in greater price transparency associated with emissions credit trading in Alberta. This could enhance market efficiency in both the carbon credit market and the electricity market. This may include consideration of whether Alberta emissions attributes could be commoditized and traded on financial exchanges as occurs in other jurisdictions. Trading prices are not limited on the upside by the carbon price at a given point in time because credits can be saved for use in the future. Among the potential benefits of commoditizing carbon credits in an open and transparent market is that competitive markets produce new information that cannot otherwise be created. Higher quality information about the future value of carbon credits would reduce investment risk associated with projects that are able to produce such credits because these prices determine the value of that production.

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 tCO2e 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 EGDF and electricity HPB should be aligned on a go-forward basis.

The simultaneous existence of two methods of generating emissions credits at different magnitudes creates different sets of incentives for the same potential generators of credits. Specifically, the current framework creates an incentive for new non-emitting projects to build as soon as possible to maximize the value they can lock in through the higher EGDF that is applicable throughout their crediting term. This is not consistent with the investment outcomes that would have occurred in an environment where efficient investment in generation of electricity is guided by competitive forces operating in a fair, and openly competitive market, as is the legislated intent of the electricity market (e.g., as contemplated in section 5 of the *Electric Utilities Act* and in the *Fair, Efficient, and Open Competition Regulation*).

Setting the EGDF at the same level as the electricity HPB, or requiring TIER-eligible generators to opt into TIER instead, would improve the consistency of carbon pricing signals provided to all generators. This TIER review is also a good opportunity to evaluate whether the EGDF-based offsets programs should still be applicable for generation projects in the presence of the TIER framework and, if so, provide additional clarity on the specific separate intents of having two credit-generating methods under their respective frameworks.

The MSA submitted detailed comments in the AEP's recent EGDF engagement, which can be accessed on the MSA's website: https://www.albertamsa.ca/assets/Documents/aep-comments-table-electricity-displacement-factor-MSA-Comments-2022-04-01.pdf. These comments provide commentary specific to the EGDF, as well as the inter-relationship between the EGDF and TIER framework.

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?

N/A

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?

N/A

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?

N/A

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 CO2 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?

N/A

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?

N/A

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?

N/A

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

N/A

Other Items

Do you have any other comments/feedback on any other aspects of the TIER Regulation?

The Renewable Electricity Program procurement process that was held in Alberta in 2017 and 2018 was able to procure wind generation for a cost of $37/MWh to $40/MWh. Based on these prices, it may be that at least for wind generation assets, in future years based on expected increases in the carbon price, revenues solely from either the electricity market or separately from the sale of environmental attributes may be sufficient to cover generation costs.

When evaluating electricity pool prices since 2021, the following can be observed:

Average annual pool prices:

- 2021: $101.93
- 2022 YTD: $106.32

Distribution of hourly pool prices over the 18-month period from January 1, 2021 to June 30, 2022:

- 99% of hours were above $27.35/MWh
- 95% of hours were above $34.16/MWh
- 75% of hours were above $46.80/MWh
- 50% of hours were above $63.85/MWh

While there is some downside risk to renewable generators of lower pool prices, this distribution of hourly average prices demonstrates that in the large majority of hours there is a significant amount of revenue being earned by generators in the electricity market. While offset credits provide a revenue stream that is perhaps easier to rely on when seeking financing, the importance of offset credit revenue to the economic viability of renewable projects has reduced compared to prior years.

Further, if the electricity HPB were lowered, pool prices would be higher because natural gas generators would raise offer prices to flow through this increase to their variable cost. This would provide renewable generators with additional revenues directly from the electricity market.