
Annual TIER Compliance Workshop (2023 Compliance Period)

Technology Innovation and Emissions Reduction
Regulation (TIER)

Climate Regulation and Carbon Markets
Alberta Environment and Protected Areas
February 15, 2024



Agenda

Time	Topic
9:30 – 9:40	Introductions and Organization
9:40 – 10:10	Regulatory Overview <ul style="list-style-type: none">• Regulatory background• TIER overview & updates• CCUS treatment• Neutral treatment of indirects
10:10 – 10:25	TIER Compliance Results and Learnings <ul style="list-style-type: none">• Large emitter & opted in• Aggregate
10:25 – 11:05	2023 Compliance Reporting Requirements <ul style="list-style-type: none">• Key dates and reminders• Opt-in process• Quantification methodology requirements• Benchmark standard updates
11:05 – 11:35	Questions / Network Break

Time	Topic
11:35 – 12:05	2023 Compliance Reporting Requirements (continue) <ul style="list-style-type: none">• Compliance reporting overview• Renewable electricity facilities• Verification requirements
12:20 – 1:30	Lunch Break
1:30 – 1:45	Verification Observations and Learnings
1:45 – 1:50	Compliance and Enforcement Actions
1:50 – 2:00	Update on Specified Gas Reporting Regulation
2:00 – 3:00	Alberta Emission Offset System <ul style="list-style-type: none">• Updated offset statistics• Offset system updates• Protocol updates
3:00 – 3:30	<ul style="list-style-type: none">• Closing/Questions/Networking

Introductions and Organization

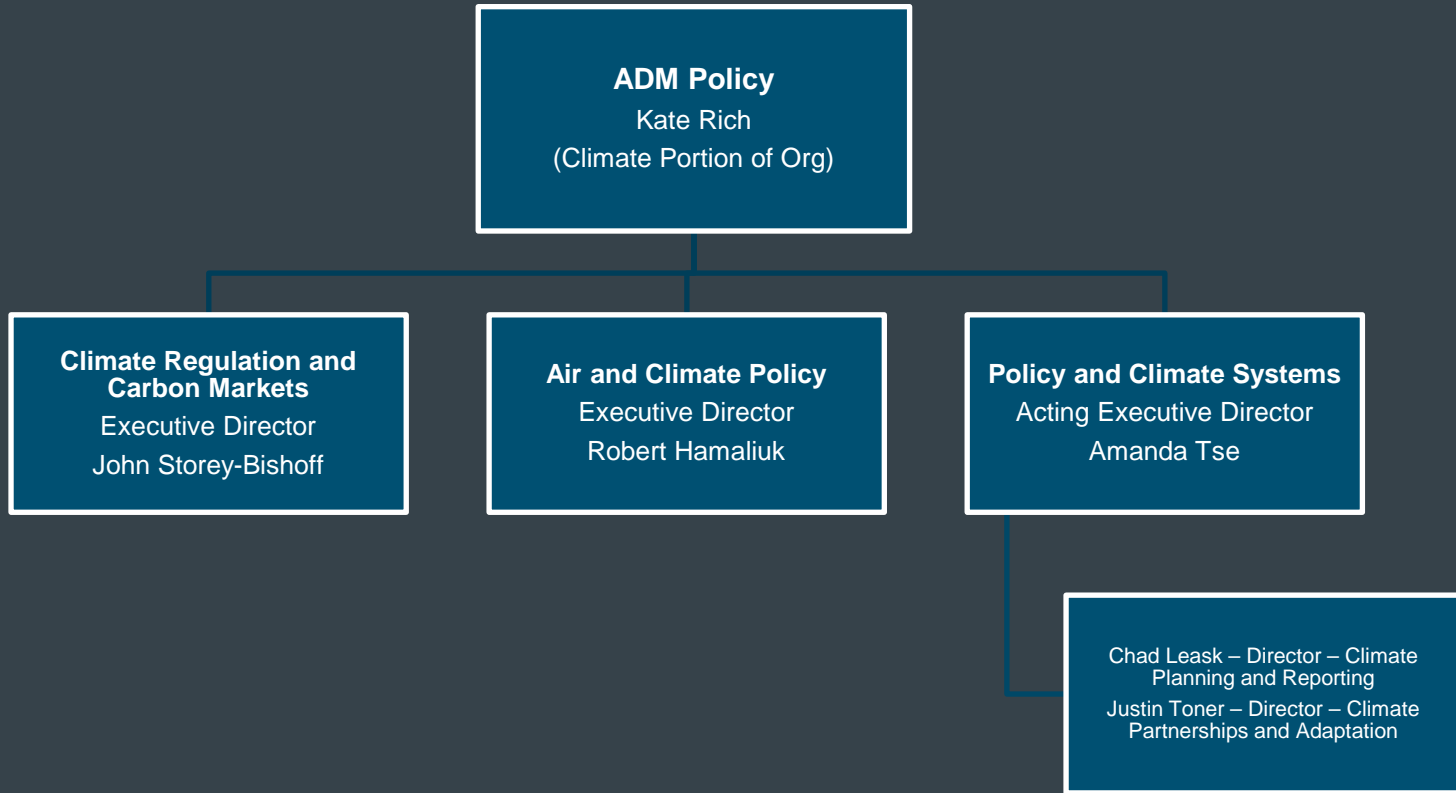
Industrial Climate Policy and Regulation

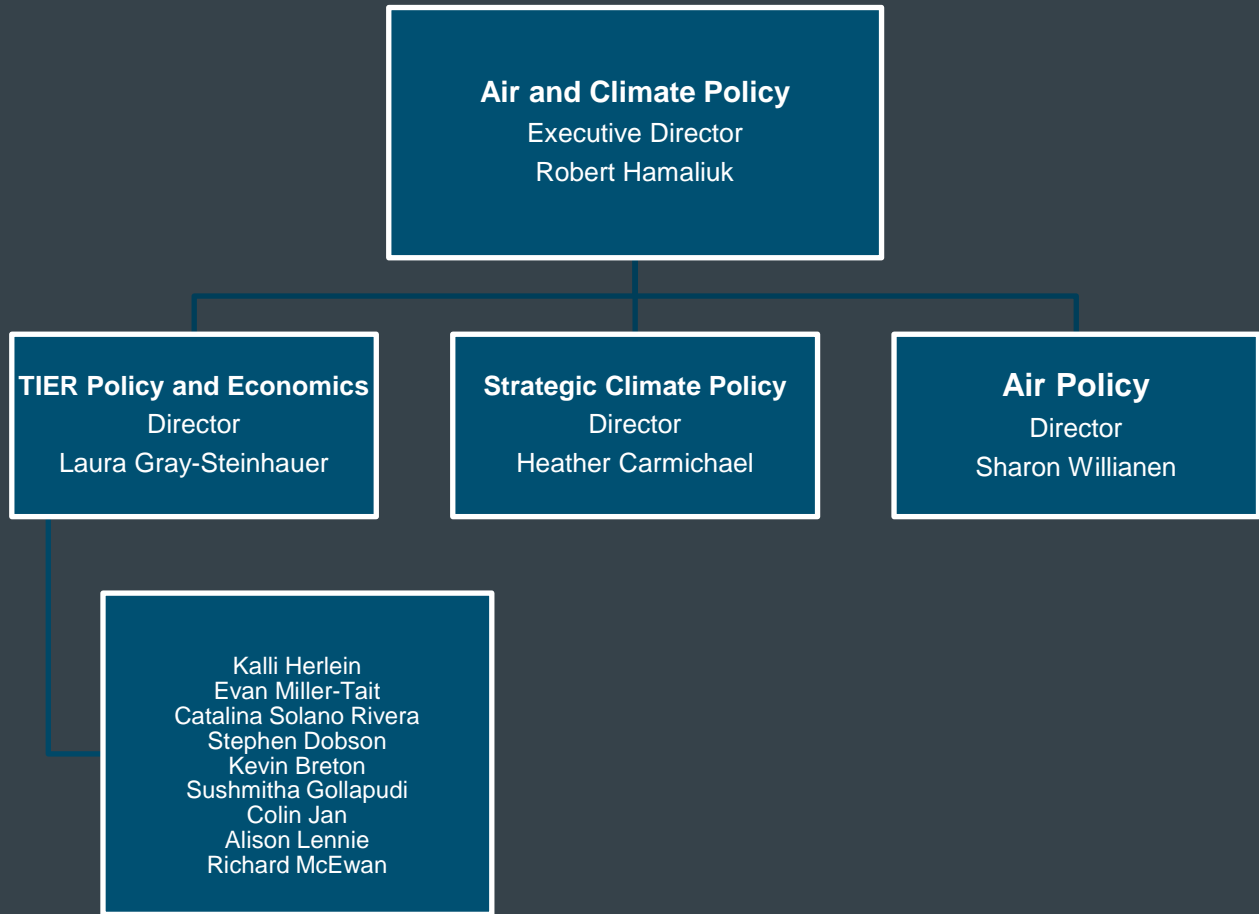
Presenters

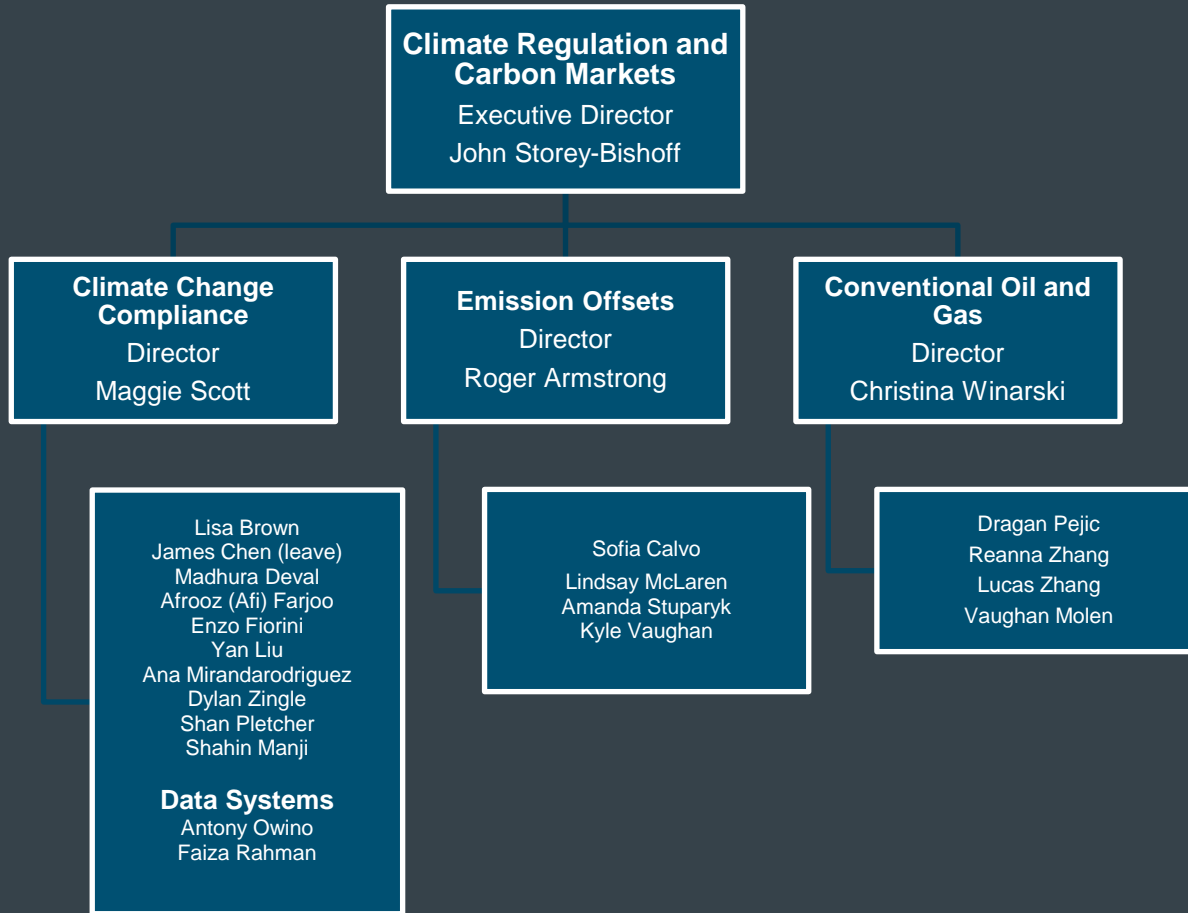
- John Storey-Bishoff, Executive Director, Climate Regulation & Carbon Markets
- Climate Change Compliance Team:
 - Maggie Scott, Director, Climate Change Compliance
 - Shan Pletcher, Climate Change Engineer and CCUS Liaison
 - Lisa Brown, Climate Change Engineer
 - Afrooz Farjoo, Climate Change Engineer

Presenters

- Conventional Oil and Gas Team:
 - Lucas Zhang, Program Engineer
- Emission Offset Team:
 - Roger Armstrong, Director, Emission Offsets
 - Lindsay McLaren, Emission Offset Policy Specialist
 - Kyle Vaughan, Policy Advisor
- TIER Policy Team:
 - Kevin Breton, Lead Engineer /Bio-economy







Regulatory Overview

Alberta's Industrial Greenhouse Gas Regulatory System

Regulatory Background

- Specified Gas Emitters Regulation (2007 – 2017)
 - Facility specific baselines based on historical performance
 - Applied to direct emissions only
- Carbon Competitiveness Incentive Regulation (2018 – 2019)
 - Output based allocation system using assigned and established benchmarks
 - Applied to direct and indirect emissions
 - Provincial carbon levy in place until June 2019 with exemption for conventional oil and gas
 - Opted-in facilities

TIER Overview and Updates

2023 TIER Amendments

TIER Overview

- Technology Innovation and Emissions Reduction Regulation (TIER) (2020 – present)
 - TIER implemented on January 1, 2020, amended regulation January 1, 2023
 - Regulated facilities:
 - Large emitters with annual emissions above 100,000 tonnes of carbon dioxide equivalent in 2016 or subsequent;
 - Imports more than 10,000 tonnes of hydrogen
 - Voluntarily entered the regulation (including aggregate facilities and opted-in facilities)
- TIER is a recognized provincial program under the *Greenhouse Gas Pollution Pricing Act* for 2020 to 2030 (review at 2026)

TIER Overview

- Facilities must comply with the least stringent of:
 - High Performance Benchmark (HPB)
 - In regulation and can be set or updated through Ministerial Order
 - “best in class”
 - Facility-Specific Benchmark (FSB)
 - Based on facility historical performance

High-Performance Benchmarks

- Ministerial Order 03/2024 establishes high performance benchmarks for the 2023 – 2030 period
- HPBs for Refining, Upgrading and Kraft Pulp are being finalized and will be published under a separate M.O.

		High-performance Benchmark (CO ₂ e tonnes per benchmark unit)							
Product	Benchmark Unit	2023	2024	2025	2026	2027	2028	2029	2030
Ammonia	tonne	1.758	1.746	1.735	1.723	1.711	1.699	1.688	1.676
Ammonium Nitrate	tonne	0.1448	0.1428	0.1408	0.1388	0.1368	0.1348	0.1328	0.1308
Bitumen - Oil Sands In Situ	m ³ of bitumen	0.2916	0.2856	0.2797	0.2737	0.2678	0.2618	0.2502	0.2387
Bitumen - Oil Sands Mining	m ³ of bitumen	0.1918	0.1877	0.1835	0.1794	0.1753	0.1712	0.1635	0.1559
Canola Oil - Crude	tonne	0.1118	0.1095	0.1072	0.1049	0.1026	0.1003	0.09807	0.09579
Cement	tonne	0.7704	0.7649	0.7595	0.7541	0.7487	0.7432	0.7378	0.7324
Coal - Bituminous	tonne	0.07083	0.06938	0.06794	0.06649	0.06505	0.06360	0.06216	0.06071
Coal - Sub-bituminous	tonne	0.01223	0.01198	0.01173	0.01148	0.01123	0.01098	0.01073	0.01048
Ethyl Alcohol	litres absolute alcohol	0.001374	0.001346	0.001318	0.001290	0.001262	0.001234	0.001206	0.001178
Ethylene Glycol	tonne	0.4975	0.4927	0.4879	0.4830	0.4782	0.4734	0.4686	0.4638
High-value Chemicals	tonne	0.4722	0.4626	0.4529	0.4433	0.4337	0.4240	0.4144	0.4048
Natural Gas Processing	Alberta gas processing index	0.6517	0.6384	0.6251	0.6118	0.5985	0.5852	0.5719	0.5586
Urea - Granular	tonne	0.2443	0.2393	0.2343	0.2293	0.2243	0.2193	0.2143	0.2094

TIER Overview

- Reduction Targets
 - 2% annual tightening to FSBs and HPBs starting in 2023
 - 4% annual tightening in 2029 and 2030 for oil sands mining, in situ, and upgrading
 - Industrial process emissions not subject to reduction target at this time

Reduction Target

Reduction Target	2023	2024	2025	2026	2027	2028	2029	2030
FSB - General	0.14	0.16	0.18	0.20	0.22	0.24	0.26	0.28
FSB – Bitumen - Oil Sands In Situ	0.14	0.16	0.18	0.20	0.22	0.24	0.28	0.32
FSB – Bitumen - Oil Sands Mining; Upgrading	0.20	0.22	0.24	0.26	0.28	0.30	0.34	0.38
HPB - General	0.02	0.04	0.06	0.08	0.10	0.12	0.14	0.16
HPB – Bitumen - Oil Sands In Situ	0.02	0.04	0.06	0.08	0.10	0.12	0.16	0.20
HPB – Bitumen - Oil Sands Mining; Upgrading	0.08	0.10	0.12	0.14	0.16	0.18	0.22	0.26
FSB – Aggregate Stationary Fuel Combustion	0.12	0.14	0.16	0.18	0.20	0.22	0.24	0.26
FSB – Aggregate Flaring	0.10	0.12	0.14	0.16	0.18	0.20	0.22	0.24

TIER Overview

- Regulated Emissions
 - Large emitter and opted in facilities:
 - Scope 1 emissions
 - Some scope 2 emissions through allocation adjustment– imported electricity, heat and hydrogen
 - Can subtract capture recognition tonnes for facilities with capture.
 - Aggregate facilities
 - Stationary fuel combustion emissions
 - Flaring emissions (starting in 2023)
 - No scope 2 emissions
 - Excludes biomass CO₂ and fuels where federal fuel charge applied

TIER Overview

- True-up Obligation
 - = Total Regulated Emissions (TRE) – Allowable Emissions (AE)
- Treatment of Indirect (Scope 2) Emissions
 - Large emitter and opted in facilities - scope adjustment to Allowable Emissions:
 - Imported heat (I_{he}) = 0.06173 tonnes CO₂e / GJ
 - Imported hydrogen (I_{hy}) = 8.993 tonnes CO₂e / tonne
 - Imported electricity (I_E) = 0.3626 tonnes CO₂e / MWh
 - Ex. AE = Product(s) x Benchmark(s) – [I_{He} x 0.06173 + I_{Hy} x 8.993 + I_E x 0.3626]
 - Aggregate facilities – no scope adjustments to Allowable Emissions

Other TIER Amendments

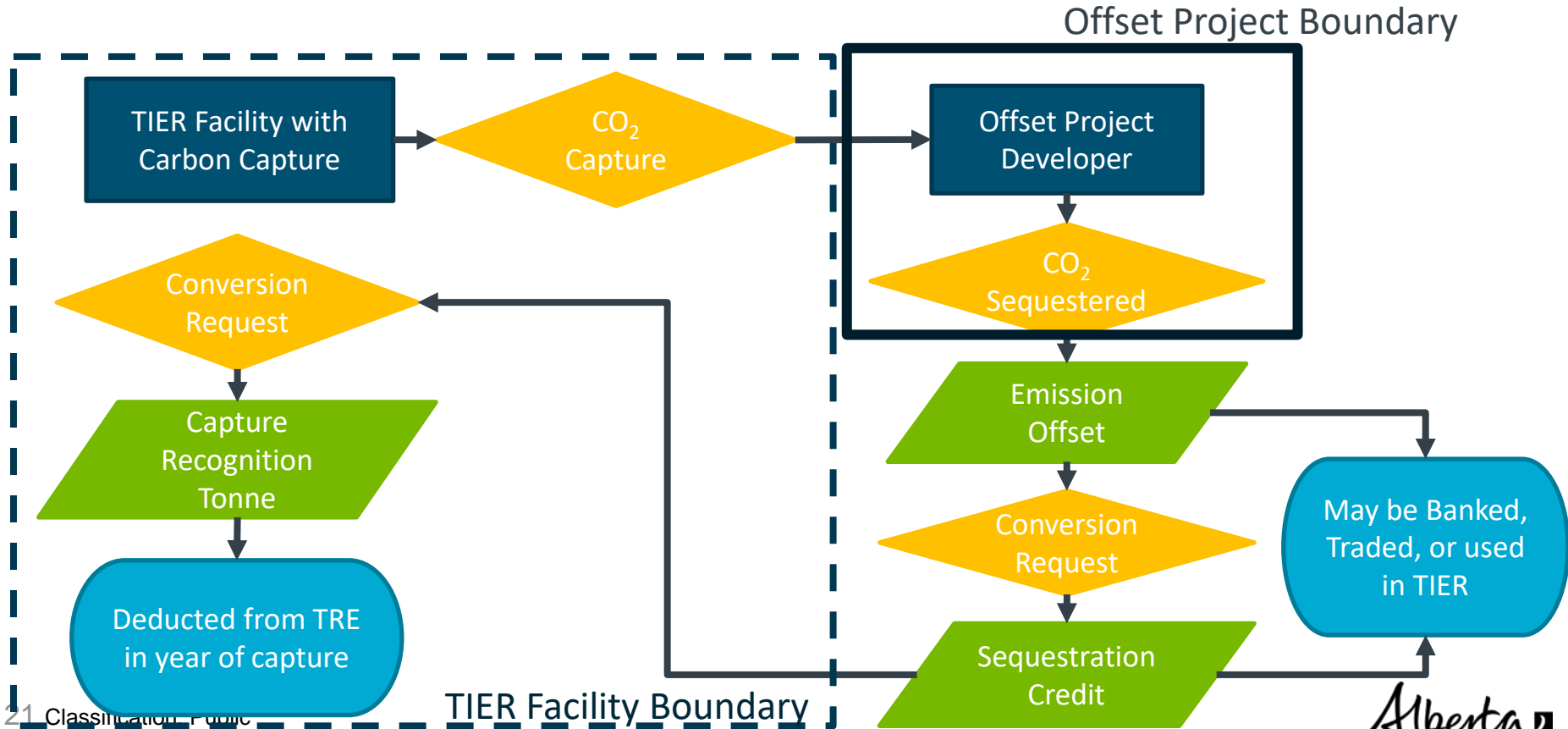
- Opt-In Threshold - Opt-in threshold is 2,000 tonnes CO₂e/year.
- Credit Use Limit - The credit usage limit is 60% in 2023, 70% in 2024, 80% in 2025, and 90% in 2026 forward.
- Credit Expiry – changed to 5 years.
- CCUS treatment, sequestration credits, and capture recognition tonnes
- Biomass – exported CO₂ excludes biomass CO₂.
- Cost Containment Program updates
- Fund prices published through a ministerial order

Year	2023	2024	2025	2026	2027	2028	2029	2030
Fund Price (\$/tonne)	65	80	95	110	125	140	155	170

TIER CCUS Treatment



CCUS Treatment under TIER



Emission Offsets for Geological Sequestration

- Offset project developer (initial credit generator)
- Notifies Alberta Emissions Offset Registry
 - of initial serial range transfers
 - Transferee must have account on Registry
- Not be eligible to stack with the Clean Fuel Regulation
- Can be converted to Sequestration Credits (not reversible)

Sequestration Credit

- Registry to convert Emission Offsets to Sequestration Credits
 - Upon request by project developer
 - Vintage 2022 and forward
- Same 5-year expiry as Emission Offsets
- Sequestration Credit owner can sell, transfer, hold or use
 - If eligible, activity can also generate Federal Clean Fuel Regulation (CFR) credits
- Can be further converted to Capture Recognition Tonnes
 - Only by a facility that captured and exported the CO₂

Capture Recognition Tonnes

- Different than EPCs, Emission Offsets and Sequestration Credits
- Only available to TIER regulated facility that captured and exported the CO₂ (and is owner of the Sequestration Credit)
- Quantities are removed directly from the Total Regulated Emissions (TRE), prior to the compliance calculation
 - In the same compliance reporting year as CO₂ capture occurred
 - EPCs could be generated if TRE is less than Allowed Emissions
 - Not subject to credit use limits
- Sequestration credits converted to capture recognition tonnes are
 - Not bankable, tradable or saleable
 - Only used for the year that the sequestration occurred

Comparison of CCUS Credits

	Emission Offset for Sequestration	Sequestration Credit	Capture Recognition Tonne
Stackable with CFR	✗	✓	✓
Can be banked for future use	✓	✓	✗
Can be sold to other entity?	✓	✓	✗
Can be deducted from TRE	✗	✗	✓
Can be used to meet compliance obligation	✓	✓	✗

Neutral Treatment of Indirects under TIER

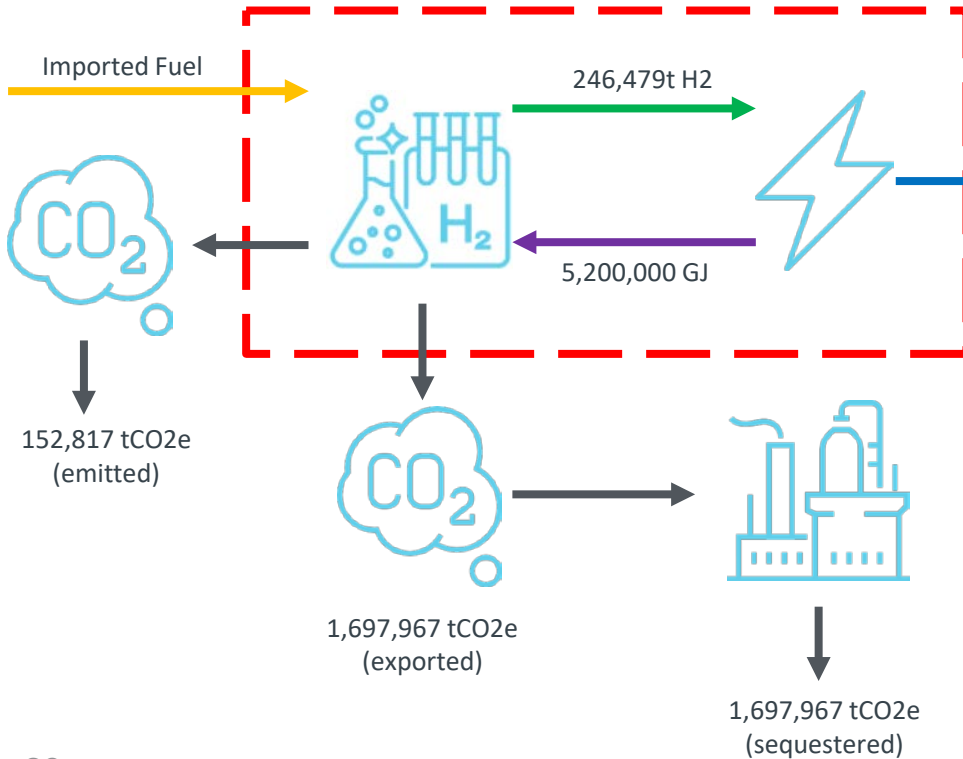
Negative Allowable Emissions

- Revised TIER enables facilities to receive negative allowable emissions.
- This may be necessary for facilities that import heat or hydrogen to generate electricity, or for LFE/opt-in facilities that import CO₂ for on-site sequestration.
- Negative allowable emissions are necessary in these scenarios in order to ensure that accurate emissions allocations are provided across all TIER facilities.
- Without negative allowable emissions, some business models (e.g. imported vs on-site H₂ generation for electricity production), will receive advantageous outcomes in TIER, which violates the principle of consistent treatment.

TIER Indirects System is Neutral

- In TIER, emissions associated with heat, hydrogen, and electricity are allocated at their creation, according to their HPB.
- Net import/export of these quantities is assessed in setting FSBs
 - FSBs are set taking into consideration the offsite emissions associated with the on-site production of heat, hydrogen, and electricity.
 - When calculating compliance, “Scope adjustments” are made to account for the import of heat, electricity and hydrogen in the compliance year
- Without negative allowable emissions at importing facilities, the accounting of emissions allocations is inaccurate and unintended incentives are created.
- This balance of indirects ensures that on-site generation is treated the same as imports of heat, hydrogen, or electricity
 - A key principle is that TIER must be business model agnostic

Scenario 1 – Integrated Facility (Red Boundary)



$$AE = \sum_{i=1} (AR_{i-Y} \times P_i) - ((HPB_{E-Y} \times I_E) + (HPB_{H_2-Y} \times I_{H_2}) + (HPB_{H_e-Y} \times I_{H_e}))$$

$$TRE = DE - I_{CO_2} + E_{CO_2} + U_{CO_2} - CRT$$

Electricity Export: 4,115,141 MWh

Hydrogen Export: 0 tonnes

Heat Export: 0 GJ

Product Allocations: 1,278,986 tCO2e

Electricity Import: 0 MWh

Hydrogen Import: 0 tonnes

Heat Import: 0 GJ

Allowable Emissions: 1,278,986 tCO2e

Direct Emissions: 152,817 tCO2e

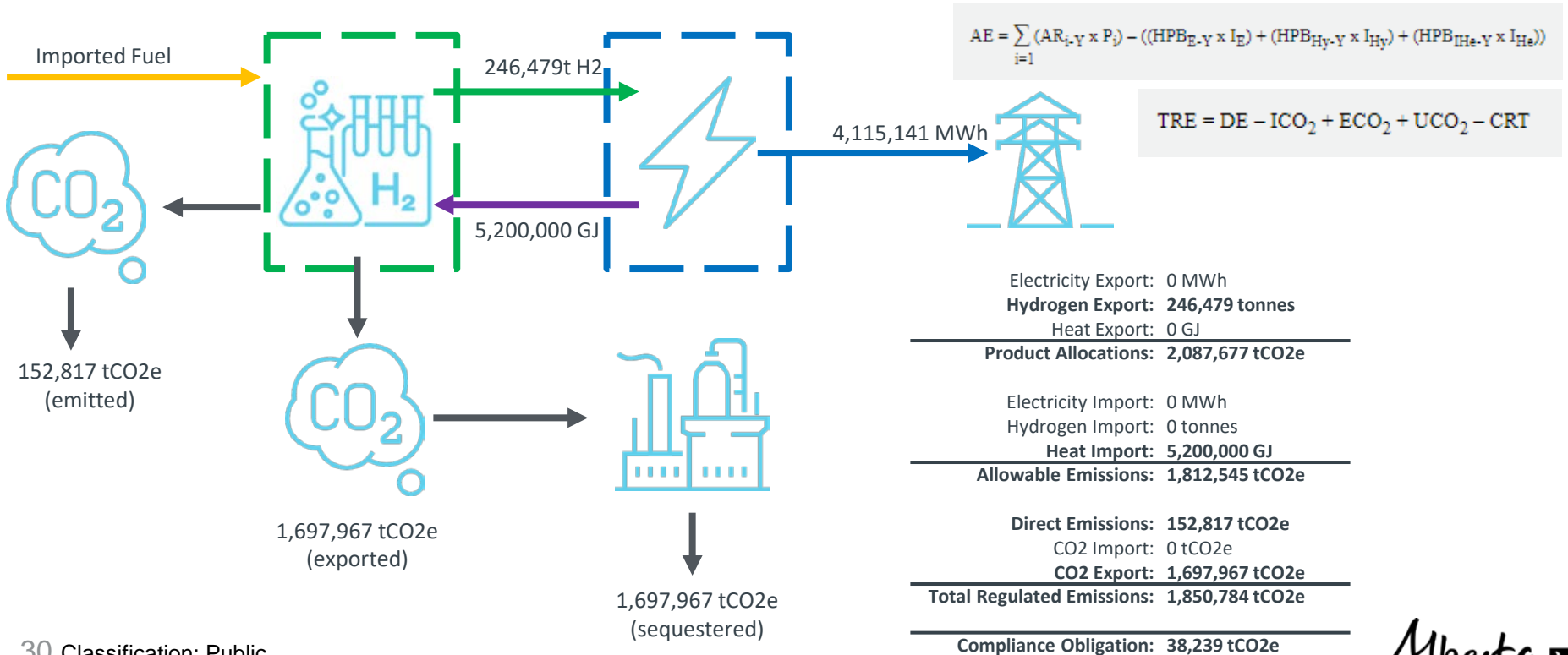
CO2 Import: 0 tCO2e

CO2 Export: 1,697,967 tCO2e

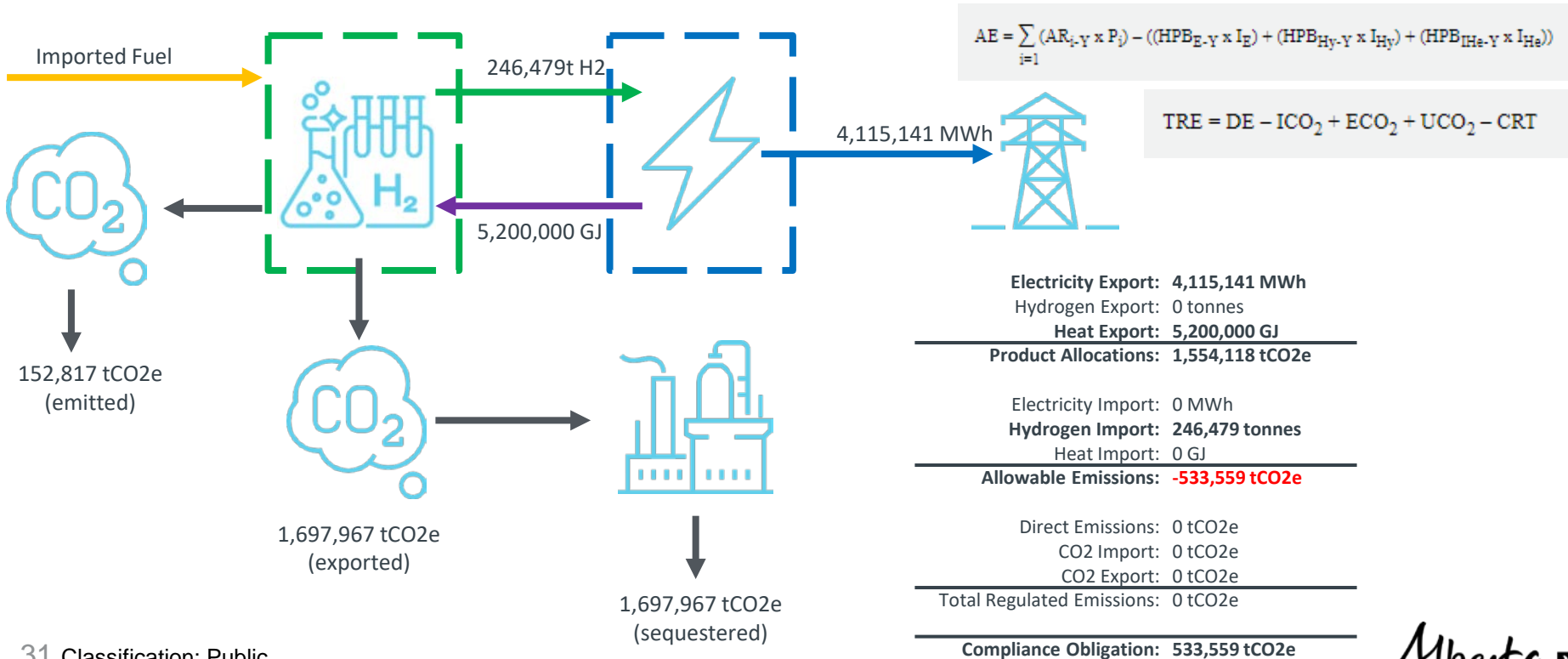
Total Regulated Emissions: 1,850,784 tCO2e

Compliance Obligation: 571,798 tCO2e

Scenario 2a – Merchant Hydrogen (H2 Production Facility)



Scenario 2b – Merchant Hydrogen (Electricity Facility)



Electricity Export: 4,115,141 MWh
 Hydrogen Export: 0 tonnes
 Heat Export: 5,200,000 GJ
 Product Allocations: 1,554,118 tCO2e

Electricity Import: 0 MWh
 Hydrogen Import: 246,479 tonnes
 Heat Import: 0 GJ
 Allowable Emissions: -533,559 tCO2e


Direct Emissions: 0 tCO2e
 CO2 Import: 0 tCO2e
 CO2 Export: 0 tCO2e
 Total Regulated Emissions: 0 tCO2e

Compliance Obligation: 533,559 tCO2e



Net Compliance – All Scenarios

Scenario	Facility Compliance	Offsets Generated	Net Compliance
1. Integrated	571,798	1,697,967	-1,126,169
2a. Hydrogen Facility	38,239	0	38,239
2b. Electricity Facility	533,559	0	533,559
2. Merchant Combined	571,798	1,697,967	-1,126,169



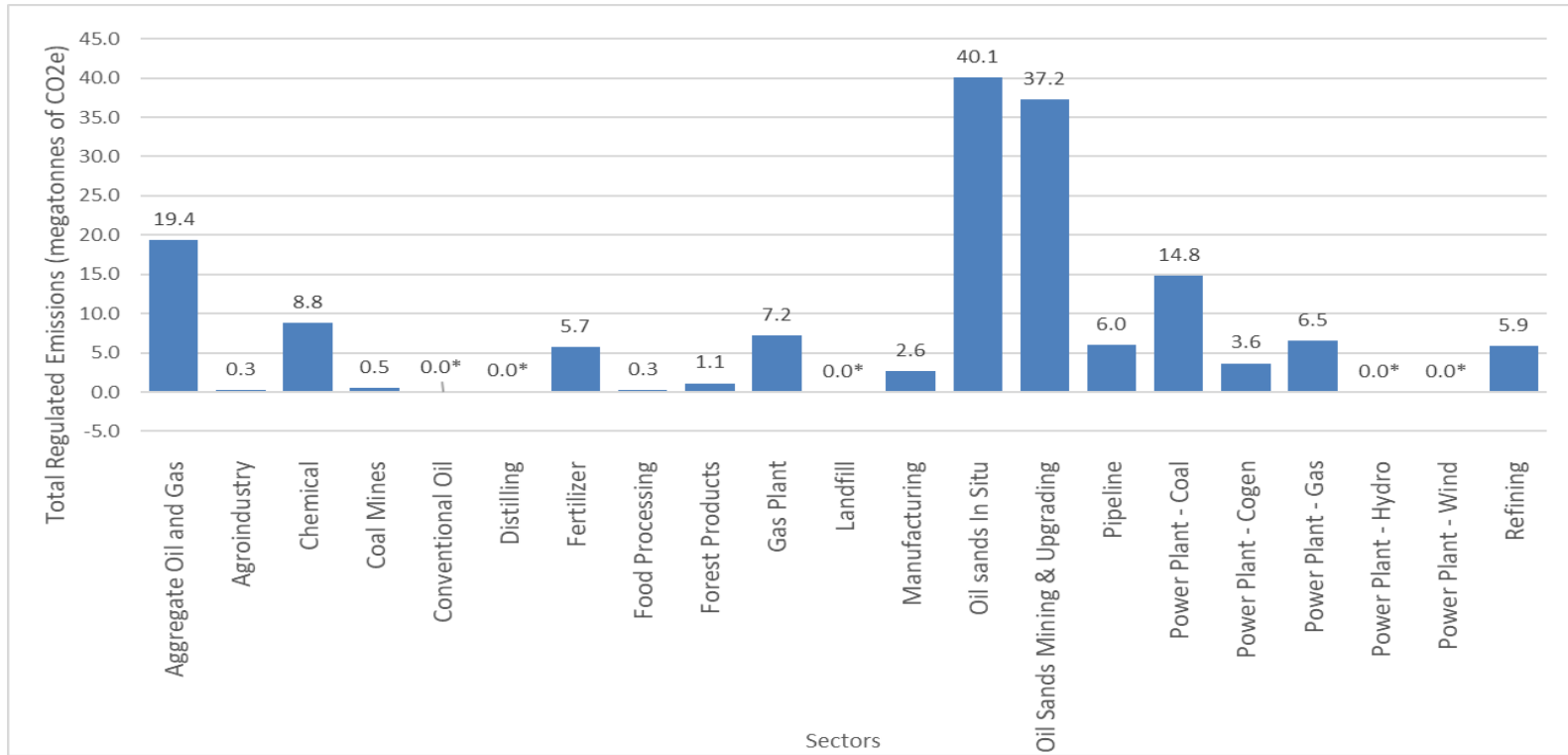
TIER Compliance Results

Large Emitter and Opted-in Facilities

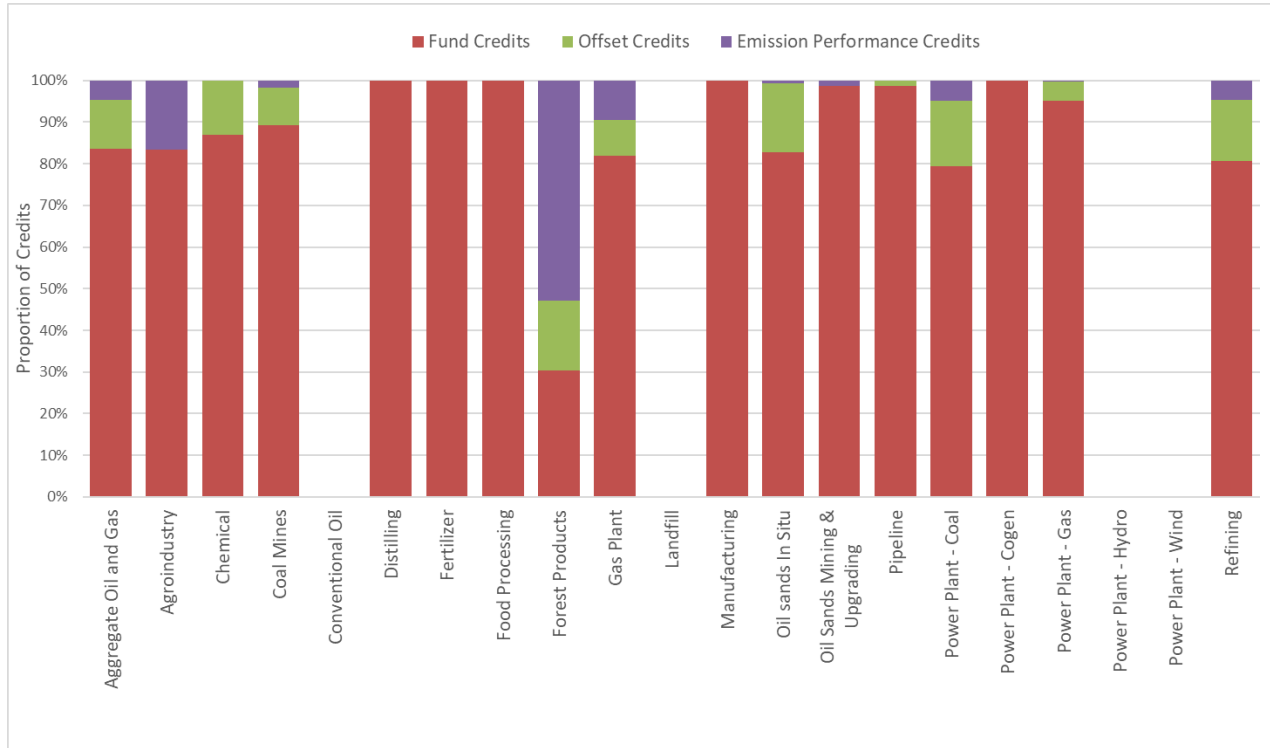
2022 Compliance Results

- 476 compliance reports submitted
- 3 data reports (exemptions provided)
- ~160 MT of CO₂e emissions
- 20.1 MT of true-up obligations
- 6.1 MT of emission performance credits requested

2022 Total Regulated Emissions by Sector



2022 True-Up Obligation by Sector



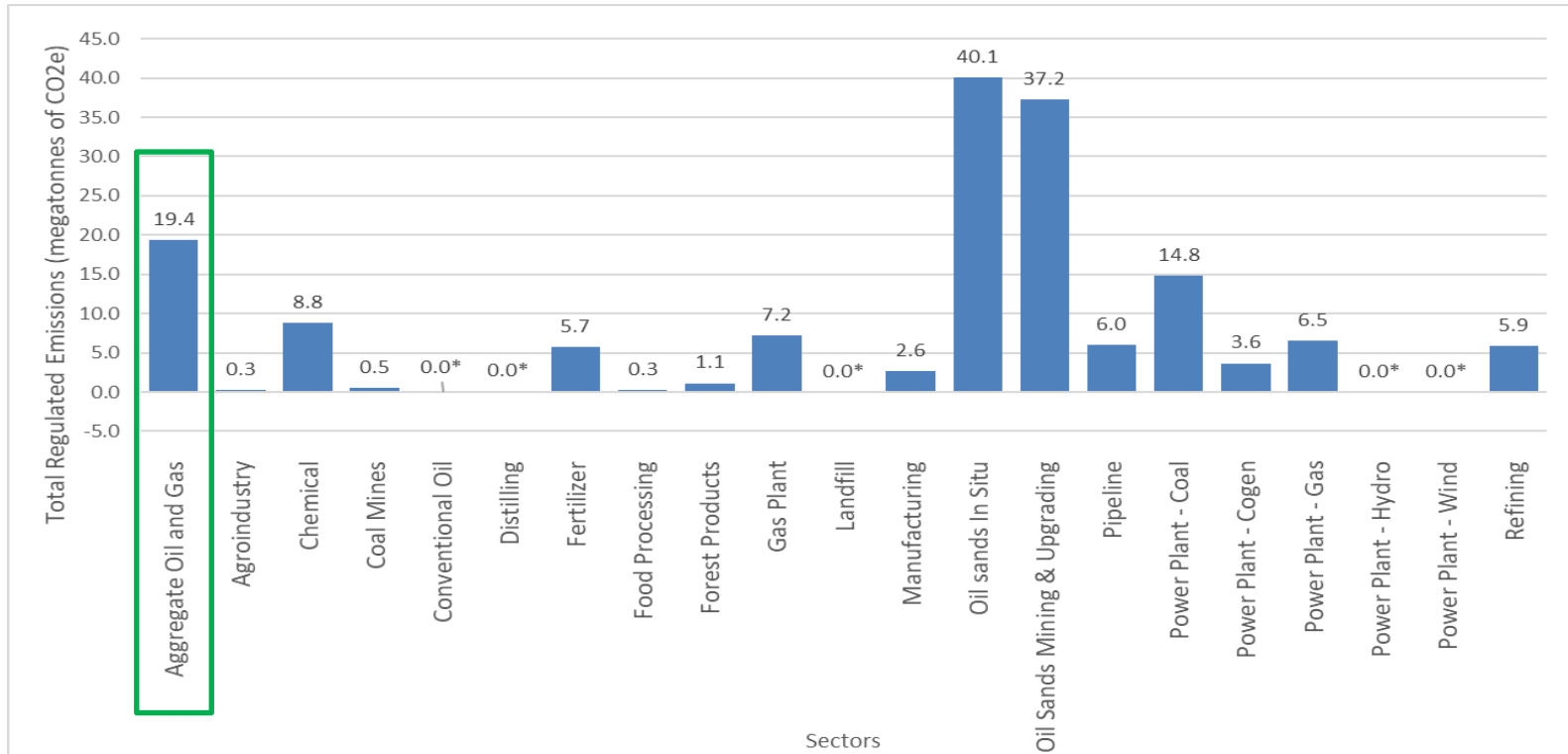
Total True-Up Obligations

Compliance Year	Emission Offsets Submitted (megatonnes CO ₂ e)	EPCs Submitted (megatonnes CO ₂ e)	Fund Credits Submitted (megatonnes CO ₂ e)	Total Compliance (megatonnes CO ₂ e)	Fund Payment (\$Million)
2007 (half year)	0.9	0.2	3	4.1	45.2
2008	2.9	0.6	5.9	9.4	88.3
2009	3.8	1.5	4.4	9.7	66.3
2010	3.9	1.9	5.3	11.1	78.9
2011	5.4	0.8	4.2	10.4	62.9
2012	3	0.7	5.9	9.5	93.7
2013	2.2	1.3	6.3	9.8	94.4
2014	2.3	1.3	5.6	9.3	84.3
2015	0	0.3	9	9.3	135.7
2016	0.8*	1	10.3	12.2	206.5
2017	9.2*	6.1	3.1	18.5	94.2
2018	8.0*	3.9	17.8	29.6	533.2
2019	9.9*	5.3	15.9	31.0	476.1
2020	1.2*	1	18.3	20.6	547.6
2021	5.1*	2.1	12.6	19.8	503.5
2022	2.2*	0.6	17.3	20.1	864.0
Total	60.8	28.6	144.9	234.4	3,974.8

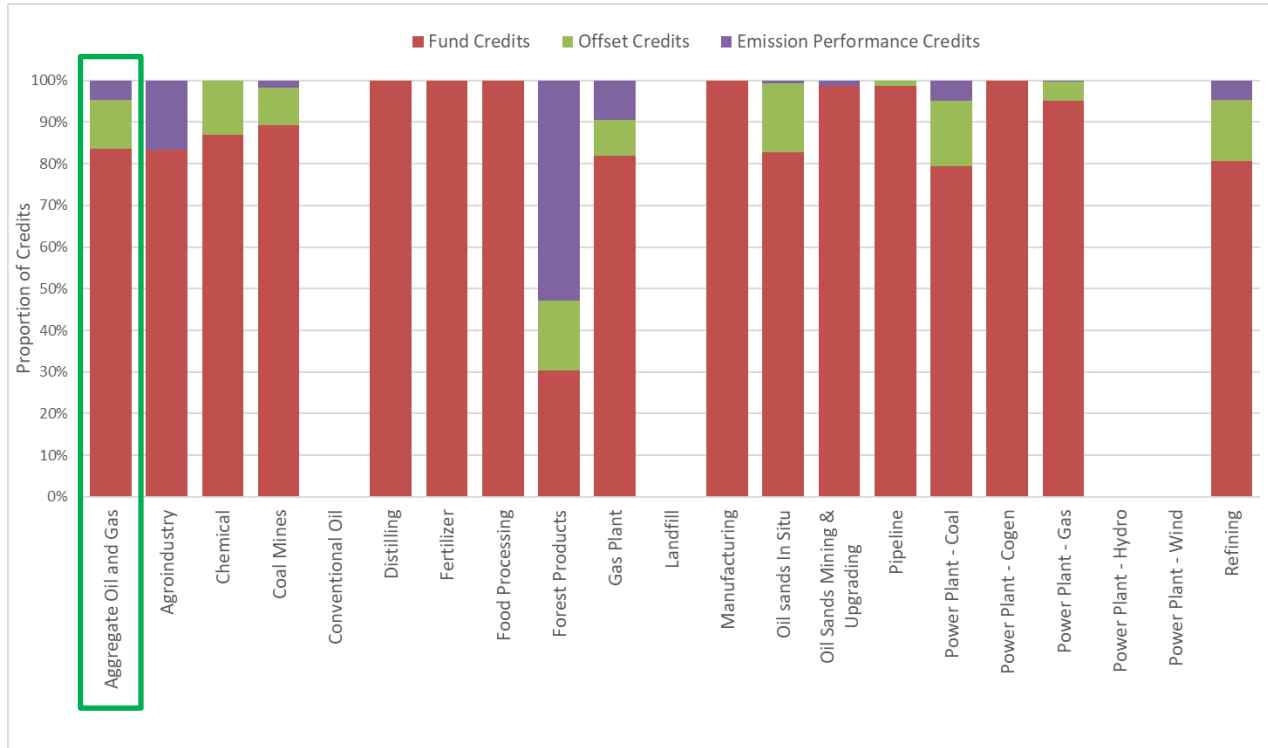
*Includes 5.2 Mt total from 2016-2022 of additional credits issued under section 7(1.2) of the SGER and section 16(3) of the CCIR and section 19(3) of TIER.

Aggregate Facilities


2022 Total Regulated Emissions by Sector



Credit Usage for Compliance



2022 Aggregate Compliance Update

- 2022 Active Aggregates: 245
- 2022 Facilities: ~ 57,000
- Compliance rate: 97%
- Compliance orders issued; 9 (1 referral to investigations)
- EPC requests: 78 

Compliance 2022 Gaps

- Did not include all the 12 months of volumes due to in-year divestures
- Petrinex volumes amended following the submission of the report
- Submitting offset credits without valid Serial Ranges from the Registries
- Status of EPC or EO credits not set to “**Pending Retirement**” on the Registries
- Errors in the credit serialization numbers
- Omission of Facilities from 2022 Confirmation of Regulation (CoR) facility list
- Wrong facility list (CoR)
- Inconsistent GHG quant Methods reported vs benchmark reference years
- Incorrect Facility Specific Benchmark (FSB) or product/benchmark unit
- Empty or inaccurate tab E2 cell D8, the number of fund credits submitted
- Peer Reviewer signing as Designated Authority

2023 Aggregate Reporting Reminders

- Flaring & SFC Emissions
- All compliance reports need to be third-party verified
 - E.g., retracing and reviewing the **original data records** (e.g., Petrinex) for the year
- Register **both** aggregate facility and company **names** on the Alberta Carbon Registries to receive EPCs and retire them for compliance usage
- Use the latest Confirmation of Regulation List issued for 2023
 - If no changes in the facility list for 2023, use the most recent list issued prior to 2024
- Submit FC Purchase Form ahead of payment: **Note AGID in deposit memo**
- \$65 per tonne to obtain one fund credit for 2023 compliance true-up
- Due June 30, 2024
- Currently reviewing benchmark **unit correlation results** as part of developing the 2023 FSBs – a potential change of unit for some aggregates

2023 Aggregate Compliance Report Form Update

- Tab B1: added columns for flaring volumes and emissions
- In tab B2, AESO IDs and relevant Petrinex IDs that supplied the gas for power generation (exported electricity)
 - Read the **pop-up Note** for details
- Tab E2 and tab Fund Credit Purchase: the number of fund credits submitted need to match for the aggregate ID of the compliance report

2023 Compliance Reporting

Requirements and Improvements

Upcoming Key Dates for TIER

Report	Deadline	Compliance Year
Forecasting Report Update	March 15, 2024	2023 (previous year)
Cost Containment Application	March 31, 2024	2023
Compliance Report and True Up	June 30, 2024	2023
Facility Specific Benchmark Application	September 1, 2024	2024
Opted-in and Opt-in Revocation Application	September 1, 2024	2025
Forecasting Report	November 30, 2024	2025 (future year)

Opt-in Process



Opt-In Process

- Two pathways:
 - Competitively impacted
 - Review Standard for Developing Benchmarks for currently regulated products
 - Emissions-Intensive and Trade Exposed
 - Emissions threshold lowered to **2,000 tCO₂e** for emissions-intensive-trade-exposed pathway
- Standard for Developing Benchmarks will be published shortly with updated tables of regulated products and EITE sectors.

Opt-In Process

- Application Reminders:
 - Ensure applicant is *Person Responsible*
 - Include boundary file
- Director discretion clause to consider opt-in applications after the deadline is for extenuating circumstances
 - Applicant must submit evidence of why application was not submitted by deadline

Exemption from Federal Fuel Charge

- Once accepted, letter from director sent to Certifying Official and copied to Environment and Climate Change Canada
- Person responsible must complete Application for Determination form to submit to Environment and Climate Change Canada
- Exemption certificate is then applied for from Canada Revenue Agency

Standard for Developing Benchmarks

Emissions Coverage - Flaring

- To December 31, 2022, only stationary fuel combustion was considered in benchmark calculations for aggregate facilities.
- For 2023 onwards, aggregate FSBs and compliance reports will include flaring emissions
- Flaring reduction target set at 10% in 2023, tightening at 2% annually.
- Venting and fugitive emissions are not considered for aggregate benchmark setting under TIER.

$$FSB = \frac{\sum_{y=1}^Z \sum_{c=1}^r [(E_{SFC_{c,y}} + E_{CO2_{c,y}}) \times (1 - RT_Y) + E_{FLR_{c,y}} \times (1 - RT_{Y,F})]}{\sum_{y=1}^Z \sum_{c=1}^r P_{c,y}}$$

Benchmark Calculations (LFE and Opt-In)

- Benchmark calculations are updated for the 2023 compliance year.

$$FSB_{j,Y} = FSB_{tightening,j} \times (1 - \mathbf{RT}_Y) + FSB_{non-tightening,j}$$

$$FSB_{tightening,j} = \frac{1}{\sum_{F=1}^g P_{j-F}} \times \sum_{F=1}^g TRE_{j-F} - IP_{Generated,j-F} - EE_{j-F} + E_{heat\ used,j-F} + E_{H2\ used,j-F}$$

$$FSB_{non-tightening,j} = \frac{1}{\sum_{F=1}^g P_{j-B}} \times \sum_{F=1}^g IP_{Generated,j-F} + E_{electricity\ used,j-F}$$

$$E_{heat\ used} = (H_{cogeneration} + H_{import} - H_{export}) \times \mathbf{0.06299}$$

$$E_{H2\ used} = (H2_{import} - H2_{export}) \times \mathbf{9.068}$$

$$E_{electricity\ used} = (Elec_{self-generated} + Elec_{import} - Elec_{export}) \times HPB_{electricity}$$

Constants used in calculation of $E_{heat\ used}$ and $E_{H2\ used}$ because they are included in the tightening portion

Cost Containment Program

- Cost Containment Program provides relief for facilities experiencing economic hardship:
 - Compliance Flexibility – No credit use limit
 - Cost Containment Benchmark (BCCA) – Additional emissions allocations
- Cost containment available only for facilities with a first year of commercial operation before January 1, 2023
- Application deadline is March 31 of the following year
- Cost containment designation will apply for a fixed 5-year period.
- Any additional emissions allocations provided are ramped down over the 5-year period.
- Facilities with cost containment designation can now earn EPCs

Year	BCCA Fraction
0	1.00
1	1.00
2	0.75
3	0.50
4	0.25

Standard for Developing Benchmarks

- Version 2.3 to be published in near future with updates to:
 - Revisions to EITE assessment based on latest available data from Statistics Canada and Trade Data Online.
 - EITE assessment affects TIER opt-in process
 - Clarifications of best-in-class pathway for potential HPB development
 - Generally based on *real* facility data from outside Alberta
 - Improved clarity on Cost Containment application process and updated form to be published

Alberta Greenhouse Gas Quantification Methodologies

Alberta Greenhouse Gas Quantification Methodologies

- Provide consistent and standardized approach to quantifying emissions, production and other reported parameters
- Provide level playing field for facilities within the same sector and across all sectors
- Standardize benchmarking approaches for regulated facilities
- Aligned with federal greenhouse gas reporting where appropriate
- Department will continue to work on developing more chapters (fugitive, waste and wastewater, etc.)

Mandatory Quantification Methodologies

- Chapter 1 – Stationary Fuel Combustion
- Chapter 2 – Flaring
- Chapter 4 – Venting
- Chapter 5 – On-Site Transportation
- Chapter 8 – Industrial Processes
- Chapter 12 – Imports
- Chapter 13 – Production
- Chapter 14 – Carbon Dioxide Emissions from Combustion of Biomass
- Chapter 15 – Aggregate Facilities
- Chapter 16 – Cogeneration Benchmark Calculation
- Chapter 17 – Measurements, Sampling, Analysis and Data Management

Mandatory Quantification Methodologies

- Mandatory Quantification Methodologies
 - Appendix A – References
 - Appendix B – Fuel Properties
 - Appendix C – General Calculation Instructions
 - Appendix D – Conversion Factors
 - Appendix E – Additional Information for the Alberta Gas Processing Index
- Facilities submit deviation requests to the department to propose alternative method if unable to adhere to mandatory method
 - Department will provide a time limited approval letter to facility if deviation request is accepted.

Quantification Methodologies not in AQM

- “If a quantification methodology is not provided in the Alberta Greenhouse Gas Quantification Methodologies for a certain emission source or parameter, a facility may use a site-specific methodology. Site specific methodologies should be documented in the facility's Quantification Methodology Document (QMD).”
- Choose methodology that is appropriate
 - Technically representative of site operations
 - **Conservative**
 - Consistent with benchmark period, if relevant
 - Verifier to confirm appropriateness

Waste and Wastewater Emissions

- Use of biomass fuels (including biogas and landfill gas) for Stationary Fuel Combustion, On-Site Transportation, and Flaring covered, plus Carbon Dioxide from Combustion of Biomass in the AQM
- Sampling requirements
 - Chapter 17 covers renewable and biomass gases; liquid fuels from renewables and biomass; renewable solid fuels and biomass
 - If sampling more frequent than required, must use data collected
- For other processes, facility-specific process
 - Ensure documented in QMD, including justification for chosen methodology and factors

Biomass CO₂

- Direct emissions does not include biomass CO₂ emissions
- From AQM:
 - “Biomass” means organic matter consisting of or recently derived from living organisms.
- All emissions must be reported
- Biomass CO₂ to be reported in Section B4:
 - CO₂ Emissions from Combustion of Biomass
 - CO₂ Emissions from Decomposition of Biomass
- If not reported as biomass CO₂, then report in Section B1.
- From ECCC GHGRP:
 - “CO₂ emissions from biomass decomposition” means releases of CO₂ resulting from aerobic decomposition of biomass and from the fermentation of biomass.

BREAK

Standard for Completing Greenhouse Gas Compliance and Forecasting Reports

- Provides requirements for compliance and forecasting reporting
- Provides level requirements for required quantification methodologies
- No updates to compliance standard ahead of June 30th deadline

Person Responsible

1(1)(hh) “person responsible” means, subject to subsection (2)(c):

- i. Where the release of the specified gas occurs at a conventional oil and gas facility, the operator, if any, of the conventional oil and gas facility
- ii. subject to subclause (i), where the release of the specified gas occurs at a facility that is the subject of an approval or registration under the Environmental Protection and Enhancement Act, the holder of the approval or registration,
- iii. subject to subclause (i), where the release of the specified gas occurs at a facility that is not the subject of an approval or registration referred to in subclause (ii) but is the subject of an approval or other authorization issued by the Alberta Energy Regulator or the Alberta Utilities Commission, the holder of that approval or authorization, or
- iv. subject to subclause (i), where the release of the specified gas occurs at a facility other than a facility described in subclause (ii) or (iii), the owner of the facility;

Person Responsible

- For LE/Opt-in, person responsible is the person responsible on the last day of the compliance year:
 - Ex., For 2023 compliance year, the person responsible is defined on Dec 31, 2023
- Department will process notification of change in Person Responsible after Dec 31 (not in year)
 - Will process notification of change for facility contacts (i.e. reporters and certifying officials)
- Emission performance credits are issued to the Person Responsible for the compliance period

Emissions Completeness

- “Direct Emissions”: all specified gases released from sources located at a facility
 - *not including* biomass CO₂ emissions
 - *not including* fuel for which a fuel charge has been paid under the *Greenhouse Gas Pollution Pricing Act* (Canada) with exemption certificate covering the period
- All direct emissions within facility boundary must be reported
 - Emissions from contractors, drilling rigs, etc.
 - Negligible emissions
- If the source meets the definition for “negligible emissions”, can use alternative quantification method
 - defined in Standard for completing greenhouse gas compliance reports
 - all “negligible emissions” count in the Direct Emissions

Usage of Credits

- TIER Requirements
 - Maximum credit usage for 2023: 60% of tonnes owed
 - 2017 or new vintage credits may be used
 - Reminder
 - **2016** and older credits have ***expired***
- Credits must be
 - held by person responsible
 - in pending retired status
 - in the account of the regulated facility (EPCs only)
 - Correctly tabulated on compliance report
 - Separate tabs for EPCs and Offsets
 - Serial ranges must be correct and match reported totals
 - Ensure that there is no overlap with credits already used

Credit Usage Limit and Expiration

- Credit use limit to increase 10% per year, starting in 2024.
- Designed to increase credit demand in TIER, and to allow increased compliance flexibility for TIER regulated facilities.

Compliance Year	2023	2024	2025	2026 or later
Maximum % credit usage	60%	70%	80%	90%

- Credit expiration occurs after 5 years from year generated

Quantification Methodology Document

- QMD an essential reference for verification and department internal reviews
 - Still seeing QMDs missing information (examples: equations, emission factors, sample calculations, negligible emissions method, justifications for chosen methods and emission factors)
- QMD must be kept up-to-date
 - Update quantification methodologies as each becomes mandatory
 - Must follow format in Compliance Standard
- Do not need value updates, but should have sample calculations
 - Sample calculation workbooks must supplement use of emission management software, and provided to verifier
- If deviation request(s) granted by department, include in QMD

Deviation Requests

- Where unable to fully implement the prescribed quantification requirement, a deviation request can be made
- If a missing data procedure can be used according to Chap 17 AQM, a deviation request is not needed.
- If mandatory quantification method is not followed and deviation not in place, verification finding should result
- Deviations are limited
 - granted for one year
 - review approval letter carefully, often conditions included
 - request should include how facility will comply with mandatory requirements in subsequent reporting
 - Alternative quantification methodologies proposed are conservative
- Department tracks deviations to inform review of quantification requirements

Confidentiality

- If requesting confidentiality on reporting form, must include letter with submission
- Be clear on specific fields in the compliance report form
- Letter should clearly justify how requested data meets criteria under the regulation
- Requests that are not fully justified may be rejected
 - review decision letter prior to subsequent requests
 - if request rejected, suggest not requesting in future submissions unless conditions change that warrants confidentiality

Confidentiality

- If requesting confidentiality on reporting form, must include letter with submission
- Be clear on specific fields in the compliance report form
- Letter should clearly justify how requested data meets criteria under the regulation
- Unjustified requests are rejected
 - review decision letter prior to subsequent requests
 - if request rejected, suggest not requesting in future submissions unless conditions change that warrants confidentiality

Key Take-Aways

- Person responsible to submit verified compliance report by ***June 30, 2024*** for the 2023 compliance year
- Positive verification opinion required
 - Any material errors must be resolved before submission
- Required true-up (credits retired or fund payment made) must be complete *before* submitting your compliance report
- Fund Credit price is **\$65** per tCO₂e for 2023
 - [Ministerial Order 62/2022 - Environment and Protected Areas](#)

Contents of Compliance Submission Package

- Completed Compliance Report Form (Excel workbook)
- Signed Statement of Certification (SoC)
- Verification Report, including
 - Signed Statement of Verification (SoV)
 - Signed Statement of Qualifications (SoQ)
 - Signed Conflict Of Interest Checklist (COI)
- Fund Credit Purchase Form
- EPC Request Form
- Quantification Methodology Document
- Area Fugitives Report (as required)
- Emissions reduction plan report for facilities with cost containment designation
- Confidentiality request for specified parts of the submission (optional)

Compliance Report Submission

- Send to EPA.GHG@gov.ab.ca by June 30, 2024
- Payment by cheque
 - Submit a cheque payable to “Government of Alberta” along with the fund credit purchase form:

Government of Alberta
Finance and Administration Branch
Alberta Environment and Protected Areas
6th floor, South Petroleum Plaza
9915 108 Street NW
Edmonton, Alberta
T5K 2G8

Compliance Report Submission

- Electronic payment
 - Submit payment by electronic fund transfer and **provide the fund credit purchase form**. Note that it takes 3 or more days to process.

Account Name	PA Technology Innovation & Emission
Bank Name	CIBC
SWIFT Code	CIBCCATT
Bank Address	10102 Jasper Avenue Edmonton
Institution Number	0010
Transit Number	00059
Account Number	92-74219
Ministry/Department	Alberta Environment and Protected Areas, Finance and Administration Branch
E-mail	AEP.revenue@gov.ab.ca

- Receipt will be provided

Using Credits for True-Up Obligation

- Emission performance credits (EPCs) and offset credits must be in a pending retirement state on the [registry](#) prior to submission
- Action on the registry should be submitted 10 business days in advance
- EPCs must be retired to the facility that are using them to true-up
 - If you are new to TIER and want to use EPCs for compliance, create account and facility on registry

EPC Issuance

- Ensure facility is registered on Alberta Carbon Registries
- EPCs need to be issued to the Person Responsible
- Facilities to provide reasons for EPC generation
- EPCs will not issued or adjusted if:
 - Quantification methodology issues
 - Reviewer questions are unresolved
- Department uses a risk-based approach to issues EPCs
 - First wave within six months of compliance deadline
- EPCs are revocable licenses

Renewable Electricity Facilities EPCs

- Will issue EPCs in June for renewable electricity facilities that submit compliance package by March 31
 - Renewable Energy Certificates must be retired in WREGIS
- Retired RECs must match claimed production in Section B6
- Electricity export in Section B4 should match AESO export

WREGIS REC Retirement

- New process was initiated to retire RECs in WREGIS system for electricity production claimed under TIER, for 2022 onwards
- Alberta Climate Compliance administers annual compliance program
 - Organizations invited to participate in program, instructions emailed separately
 - RECs from opted in renewable electricity facilities (generators in WREGIS) must be retired to program by compliance deadline

Compliance Report Form Update

- Compliance report form for 2023 will be posted shortly.
- Updates to form include:
 - Global Warming Potentials
 - Inclusion of Capture Recognition Tonnes (CRT) and Sequestration Tonnes
 - Total Regulated Emissions calculations
 - Provide EPEA approval numbers, AUC approval numbers, AESO IDs, and/or Petrinex IDs
 - Ensure that Person Responsible indicated in report corresponds to the EPEA approval holder, AUC license holder

Compliance Report Form Update

- Updates to form (continue):
 - Updated fields for facilities applies AB-CWB (wasted hydrogen)
 - Wasted hydrogen includes hydrogen that is flared and vented
 - Wasted hydrogen from hydrogen that is generated on-site and imported hydrogen
 - List fuels consumed on site (section B8) – fuels that are and are not subject to the Federal Fuel Charge
 - Section E format updated for entries of EPC, offset credits, sequestration credits, and capture recognition tonne serial ranges used for compliance
 - List any deviation requests that the facility has been approved for

Compliance Report Form Update

- Updates to form (continue):
 - Added field in the Statement of Verification for verifier to indicate whether the opinion is Positive, or Qualified
 - If the verifier is unable to provide a positive or qualified opinion, contact the department.
- Additional guidance has been created on using electronic signatures
 - [Guide to Signing Technology Innovation and Emissions Reduction Regulation Forms \(alberta.ca\)](#)

Department Status

- Reverifications
 - 2022 Compliance Reports and Emission Offset Project Reports are underway and aimed to be completed by March 31, 2024
 - Process to contract new third-party assurance providers and quantifiers for 2023 reverifications
- Annual compliance reviews and EPC issuance
 - Staff working through 2020, 2021, 2022

Department Status

- Facility Specific Benchmark Assignments:
 - ~170 FSB assignments required for 2023 and onwards
 - Approximately 95 FSBs are complete and assigned
 - High priority to review benchmark applications and updates
 - Reminder deadline is September 1, 2024 for 2024 FSBs
 - If passed the September 1, the director may request a verified FSB application

Verification Requirements

Standard for Validation, Verification and Audit

- Requirements for third party assurance providers (verifiers, validators) and auditors
- Verification process, risk assessment, site visits, verification report, government reverifications, etc.
- Update to the standard to remove training requirements for Modules 4 and 5 for the 2023 compliance submission.

Mandatory Verification Requirements

- Compliance reports and benchmark applications must be verified before submission
- Emission offset project reports must be verified before offset credits are serialized
- Verifications must be conducted to a reasonable level of assurance
- A positive opinion is required
 - Qualified opinions will be assessed by the department;
 - If a verifier is unable to provide a positive or qualified opinion, the verifier and facility/project should contact the department.

Mandatory Verification Qualifications

- Verification Standard - Part 1 Section 3(1): Lead verifiers and peer reviewers must have
 - minimum of 3 years of experience in providing verifications;
 - successfully completed ISO 14064-3 training;
 - lead verifiers, peer reviewers, and designated signing authorities must have successfully completed Alberta specific verification training;
 - demonstrable technical knowledge of the quantification of applicable parameters;
 - demonstrable technical knowledge of the process operations and production of the sector.
- TIER - Section 27(2): As of July 1, 2023
 - Third party assurance providers must be accredited as a verification body to the ISO Standard 14065:2020 by a member of the International Accreditation Forum.

Updates to Verification Standard

- Materiality Assessment – Part 1 Section 5(e)(v)
 - any individual identified quantifiable error, omission, or misstatement exceeds:
 - 5 percent – with total regulated emissions or allowable emissions less than 500,000 tCO₂e
 - 2 percent – with total regulated emissions or allowable emissions equal/greater than 500,000 tCO₂e
- Part 1 Section 3(1)(h.1)
 - Virtual site visits may be conducted automatically if certain conditions are met
 - Aggregate facilities
 - Some opted-in facilities

Mandatory Verification Requirements

- Verifiers may conduct 5 consecutive verifications for compliance reports followed by a two-year break
 - Includes verification company and any verification team member
 - Does not include verifications of benchmark applications

Verification Training Requirements

Verification Training Modules:

- Module 1 Course Overview and TIER Regulation Background
- Module 2 Overview of TIER Regulation and Standards
- Module 3 TIER Verification Requirements
- **Module 4 Alberta Greenhouse Gas Quantification Methodologies**
- **Module 5 Verification of Benchmark Applications**
- Module 6 Verification of Compliance Reports
- Module 7 Emission Offset Project Developers

Verification Training Requirements

- Verification of Compliance Report
 - Completion of Modules 1 and 2 (no graded quiz)
 - Completion of Modules 3 and 6 (with graded quiz)
- Verification of Emission Offset Project Report
 - Completion of Modules 1 and 2 (no graded quiz)
 - Completion of Modules 3 and 7 (with graded quiz)
- Designated Signing Authorities are only required to take Modules 1 and 2
- To register for this training, contact the department at epa.ghg@gov.ab.ca

Questions?

Contact:
EPA.GHG@gov.ab.ca



LUNCH BREAK

Agenda

Time	Topic
9:30 – 9:40	Introductions and Organization
9:40 – 10:10	Regulatory Overview <ul style="list-style-type: none">• Regulatory background• TIER overview & updates• CCUS treatment• Neutral treatment of indirects
10:10 – 10:25	TIER Compliance Results and Learnings <ul style="list-style-type: none">• Large emitter & opted in• Aggregate
10:25 – 11:05	2023 Compliance Reporting Requirements <ul style="list-style-type: none">• Key dates and reminders• Opt-in process• Quantification methodology requirements• Benchmark standard updates
11:05 – 11:35	Questions / Network Break

Time	Topic
11:35 – 12:05	2023 Compliance Reporting Requirements (continue) <ul style="list-style-type: none">• Compliance reporting overview• Renewable electricity facilities• Verification requirements
12:20 – 1:30	Lunch Break
1:30 – 1:45	Verification Observations and Learnings
1:45 – 1:50	Compliance and Enforcement Actions
1:50 – 2:00	Update on Specified Gas Reporting Regulation
2:00 – 3:00	Alberta Emission Offset System <ul style="list-style-type: none">• Updated offset statistics• Offset system updates• Protocol updates
3:00 – 3:30	<ul style="list-style-type: none">• Closing/Questions/Networking

Verification Observations and Learnings

TIER Verifications

- 21 third party assurance providers conducted verifications for 2022 compliance period
 - 480 regulated facilities that require verification
- Purpose of verification is to provide assurance to the department that there are no material errors in compliance reports, benchmark applications and offset project reports.
- Third party assurance providers are subject to regulatory requirements
- Accreditation is now required for verification bodies
 - Not the only requirement under TIER and standards

Challenges in Verifier Performance

- Regulatory requirements
 - Regulation and standards
 - Large emitters/opted in facilities and aggregate facilities
- Quantification methodologies
 - Understanding quantification methodology requirements key to successful verification
 - Quantification methodology document completeness
 - Deviation requests
 - Where there is lack of accuracy, conservativeness will be applied
 - Negligible emissions need to be assessed
 - Incorrect methodologies applied (i.e. sampling frequency, data gaps, weighted averages)

Challenges in Verifier Performance

- Accuracy versus conservativeness
 - Where there is lack of accurate data, department will apply a conservative approach
- Assessment of production and benchmark unit
 - Ensure consistency between compliance report and benchmark
 - Understand different production metrics like AB-CWB and ABGPI
- Source data
 - Assessment of source data (i.e. meter data, calibration, standard conditions)
- Reliance on controls
 - Sole reliance on controls without testing
 - Ex. Use of quantification methodologies that are not prescribed in the AQM

Challenges in Verifier Performance

- Substantive testing required
 - Relying on trending analysis is not appropriate
 - Sufficient data sampling required
 - Recalculations are required
- Risk assessment
 - Correlating risk assessment to verification procedures
- Incomplete verification scope
 - Missing source and risk areas (i.e., facility boundary, waste and wastewater)
 - Incomplete risk assessment that does not adequately address all applicable sources and risk areas

Challenges in Verifier Performance

- Materiality assessment
 - Total error calculation is prescribed in the standard
- Referencing incorrect criteria
 - Referring to wrong criteria in verification process
- Verifier qualifications and experience
 - Observed lack of technical expertise in sectors in verification teams
 - Observed junior level verifiers or individuals with no verification experience conducting site visits
 - Consider retaining technical expertise for certain sectors
 - Be accurate in naming the verifiers and team members that participated in the verification

Challenges in Verifier Performance

- Site visits (virtual vs physical)
 - Certain criteria that allows for virtual site visits
 - Verifiers are expected to conduct a risk assessment to determine whether it is appropriate to conduct virtual site visits
- Ensuring impartiality in verification process
 - Peer reviewers cannot sign Statements of Verification
 - Peer reviewers cannot be technical experts
 - Peer Reviewer must be independent can not be involved in the verification activities (other than the peer review process)

Challenges in Verifier Performance

- Providing inaccurate information
 - Use of templates – prior reports, working papers
 - Generic verification procedures that do not apply to all facilities and sectors
 - Reminder: different criteria apply to aggregate facilities vs. large emitter/opted in facilities
 - Statements made in reports that are inaccurate
 - Facilities should review the verification report before submitting to the department

Consequences of Incomplete or Deficient Verifications

- For the department:
 - Requires more resources and time to address issues with verifiers
 - Develop, implement and enforce follow-up actions to address deficiencies
 - Address impacts of missed material findings in facility or project assertions
- For the verifier:
 - Required to conduct reverifications or additional follow-up actions on verifications conducted with little or no budget
 - Face enforcement action from the department or accreditation body
 - Lose clients due to poor performance in verification

Consequences of Incomplete or Deficient Verifications

- For the facility or project:
 - More resources and costs for the facility/project to address the error
 - Require to resubmit and re-verify a report or application
 - Require to retain new verifier to conduct a re-verification
 - Subject to additional compliance obligation from follow-up actions
 - Potential removal or cancellation of emission offsets or emission performance credits

Take Aways for Verifiers and Facilities

- Consider the purpose of your role in the regulatory system
 - Provide assurance to the department that there are no material or risk of material errors in compliance submissions
 - Provide findings to the department to help with the assessment of the compliance submission
- Take time to understand the regulation and standards before pursuing a verification engagement
- Consider the qualifications and expertise of verification team
- Encourage facilities to be active participants in the verification process
 - Ensure that verifier retained have adequate technical understanding and meeting requirements under the Regulation and Standard
 - Take time to understand the procedures being conducted
 - Review verification plans and reports being provided

Opportunities for Improvement in TIER Verification Process

- Exploring opportunities to streamline verification processes
- Conducting further review of verifier qualifications and experience requirements
- Continuing to develop verification training materials
- Continuing to engage and work with verifiers to understand challenges and ways to improve verification process
- Working with accreditation bodies to ensure that verifier performance is meeting TIER requirements

Compliance and Enforcement Actions

Error Correction in Compliance Submissions

- Material errors or significant errors:
 - Require corrections retroactively and/or current year
 - Facilities should disclose errors to department
 - Resubmissions and reverifications if needed are requested by the director
 - For example:
 - Quantification errors, repeated errors (resulting in under compliance)
- Immaterial errors:
 - Require “move-forward” corrective action
 - For example:
 - Random, typographical, non-repeatable errors

Offences under TIER Regulation

- Offences under TIER are prescribed in Section 33 including (not limited to):
 - Contravenes section 12 – net emissions must not exceed allowable emissions
 - Contravenes section 7(4) (5) – submit a benchmark application in accordance with the Standard for Developing Benchmarks
 - Facility submits a compliance report that is not in compliance per Section 15(4)
 - Verifier performs the functions of a third party assurance provider but does not have the qualifications
- Possible compliance action:
 - Issuance of compliance order or warning letter
 - Issuance of administrative penalty

Streamlined Compliance Action

- Late submissions are automatically flagged as non-compliant
- Facilities that do not meet true-up obligation by June 30th will receive a compliance order
- Facilities with repeated non-compliances may receive administrative penalty
- Ensure the full compliance package and true-up obligation is met by deadline
 - Fund Credit Purchase Form essential for processing payment

Specified Gas Reporting Regulation (SGRR)

SGRR Overview

- Alberta's mandatory Greenhouse Gases (GHG) reporting program for facilities emitting over 10,000 tonnes of CO₂ equivalent per year
- Single Window with Environment and Climate Change Canada (ECCC) GHG Reporting Program
- 744 facilities reported to SGRR for 2022
- Annual reporting deadline is ***June 1***

SGRR – 2023 Updates

- Global Warming Potentials (GWP) are updated to align with the Greenhouse Gas Reporting Program (GHGRP)
- The Specified Gas Reporting Standard will be updated and posted
- Confidentiality approvals are generally aligned with requests under TIER
- Boundary file link (use polygon, not line features):
https://www.alberta.ca/system/files/custom_downloaded_images/sgr-r-steps-to-creating-a%2520-facility-boundary-map.pdf

SGRR/GHGRP links

- Federal GHGRP Single Window Information Management (SWIM) website: <https://ec.ss.ec.gc.ca/>
- SGRR: <https://www.alberta.ca/specified-gas-reporting-regulation>
- GHGRP: <https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/facility-reporting/about.html>

Questions?

Contact:
EPA.GHG@gov.ab.ca



TIER Offset System Amendments

Overview of system amendments

Environment and Protected Areas
February 15, 2024



Agenda

- Emission Offset Stats
- Offset System Updates
- Protocol Updates
- Questions and Discussion

Alberta's Emission Offsets

- Offsets are generated by projects that have voluntarily reduced GHG emissions via an approved activity
- Offsets are quantified using quantification protocols
- Large emitters use offsets to be compliant under TIER
- Creates and supports an economic environmental market by driving private investment

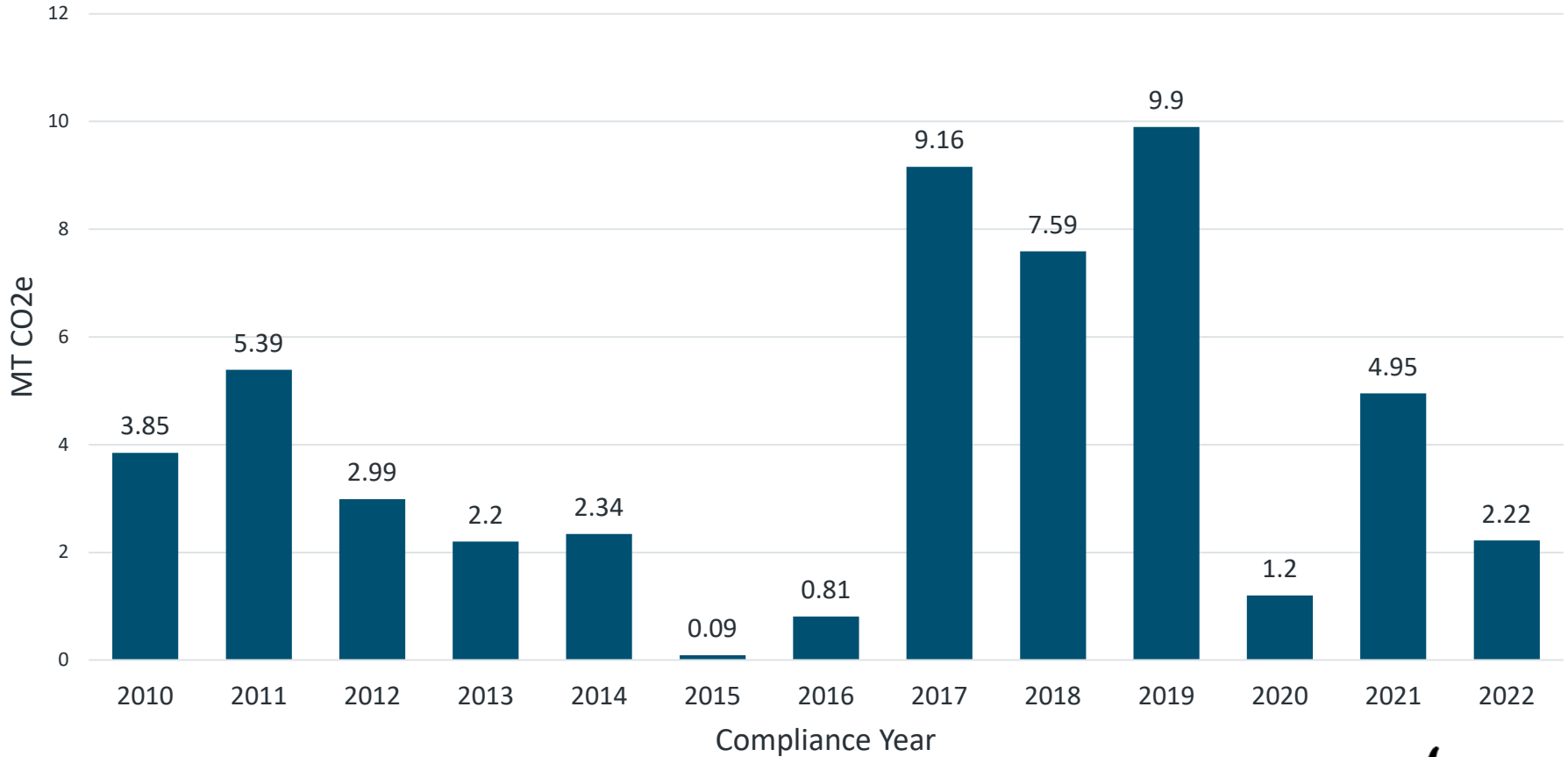
18 PROTOCOLS

OVER 400+
PROJECTS

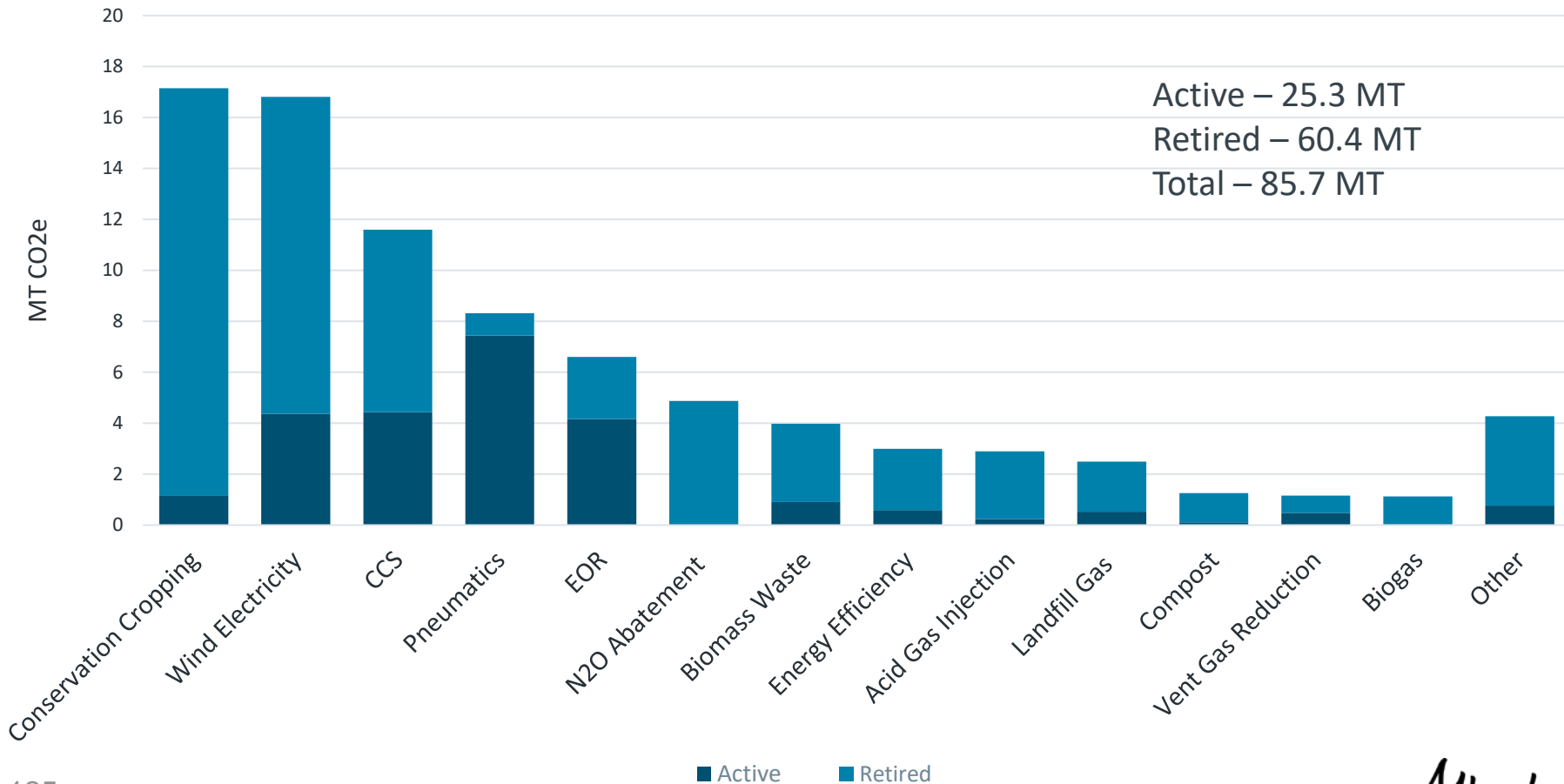
OVER 85+ MILLION TONNES
OF EMISSION OFFSETS
TO DATE

Emission Offset Stats

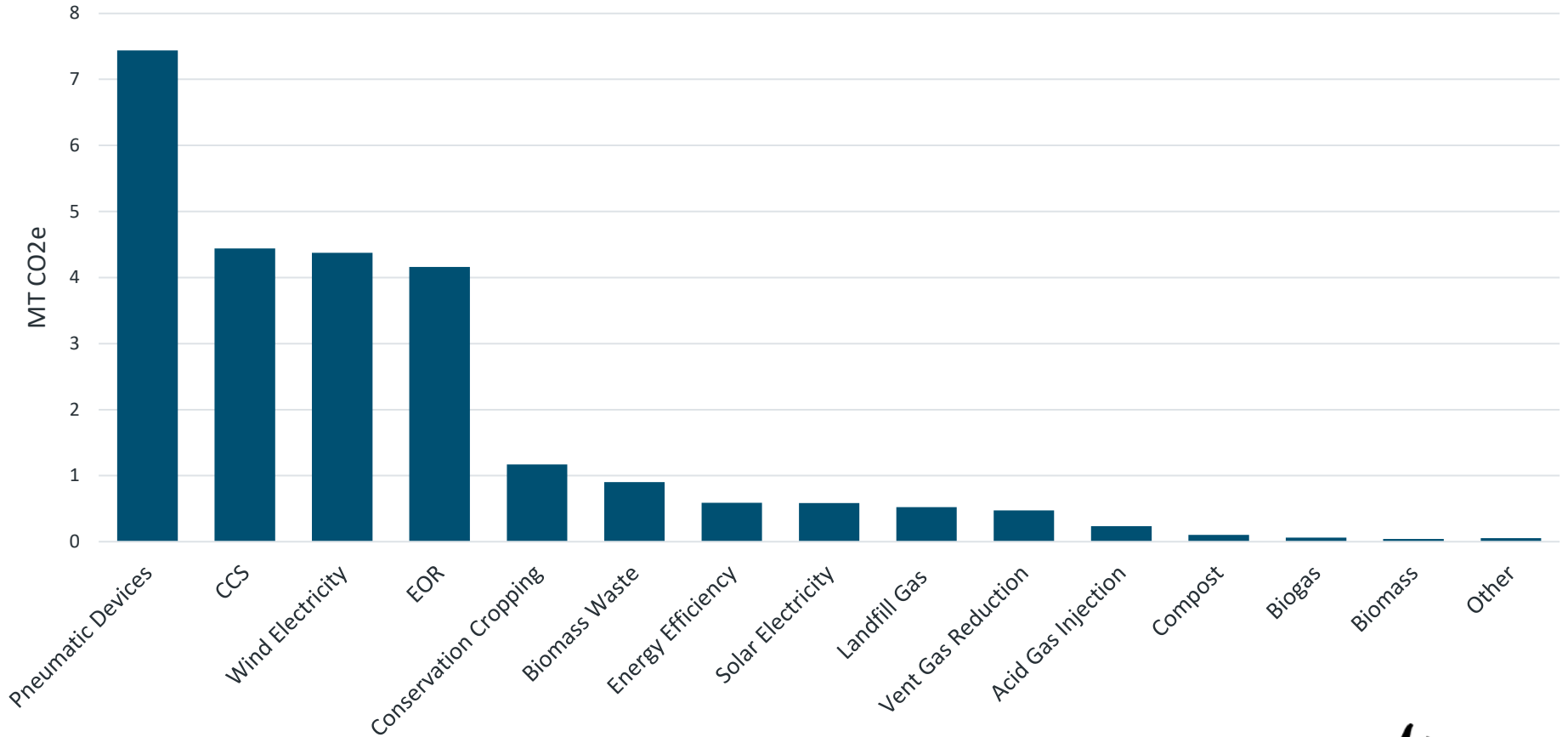
Emission Offsets Submitted For Compliance by Year



Alberta Emission Offsets per Protocol February 1, 2024



Active Emission Offsets per Protocol as of February 1, 2024



Offset System Updates

Standards Overview – Emission Offsets

TIER Regulation incorporates four standards:

- 1. Standard for Validation, Verification and Audit**
 - Requirements for third party assurance providers (validators and verifiers) and auditors
- 2. Standard for Completing Greenhouse Gas Compliance and Forecasting Reports**
 - Requirements for facility reporting and forecasting
- 3. Standard for Establishing and Assigning Benchmarks**
 - Requirements for benchmarks, transition allocations and cost containment
- 4. Standard for Greenhouse Gas Emission Offset Project Developers**
 - Requirements for Alberta emission offset project developers/verification considerations for projects

Offset Project Crediting Period

- For projects initiated on or after January 1, 2023 the default crediting period is 10 consecutive years with a potential for a 5-year extension if the project is able to demonstrate financial need.
 - Extension requests must be submitted no more than 16 months before and no less than 30 days prior to credit end date
- Previously crediting period was 8 years with a potential 5 year extension, or 10 years with director approval and no potential for extension.
- Some project types may have other crediting periods as set out in a specific protocol (e.g. carbon capture and storage/enhanced oil recovery).

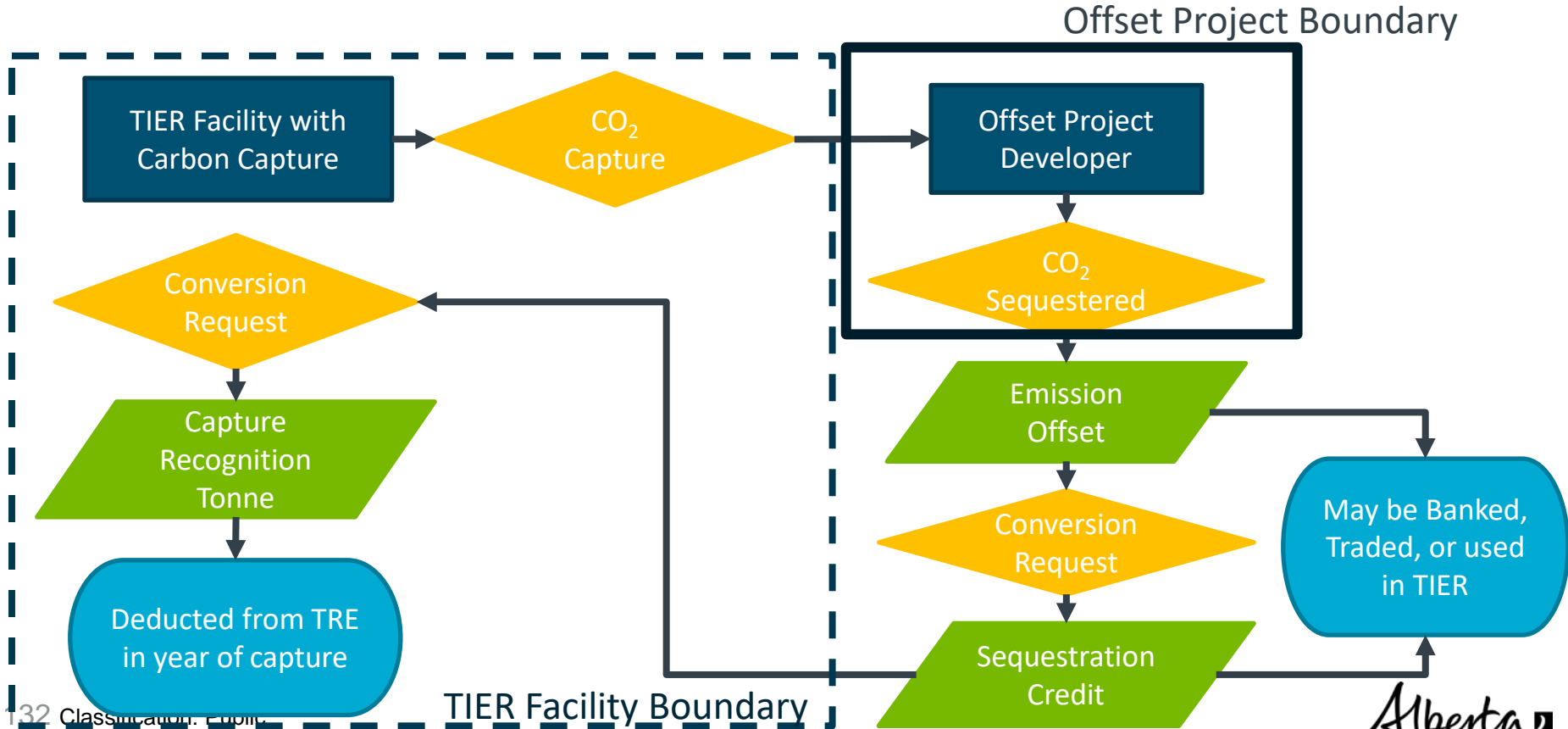
Offset Project Reporting Period

Vintage Year	2022	2023+
Reporting Period	No max length	2 years maximum
Report Due	December 1, 2024	Within 6 months after end of reporting period
Example	If reporting period ends Dec 31, 2022, the report is due Dec 1, 2024.	If reporting period ends Dec. 31, 2024 the report must be submitted by June 30, 2025.

Credit Expiration

EPCs Year that credit was issued in respect of	Compliance Years	Emission Offsets Year emission reduction occurred	Compliance Years	Sequestration Credits Year sequestration occurred	Compliance Years
2014 or earlier	2020	2014 or earlier	2020	-	-
2015 and 2016	2021	2015 and 2016	2021	-	-
8-year period		9-year period		9-year period	
2017	2018 – 2025	2017	2017 – 2025	-	-
2018	2019 – 2026	2018	2018 – 2026	-	-
2019	2020 – 2027	2019	2019 – 2027	-	-
2020	2021 – 2028	2020	2020 – 2028	-	-
2021	2022 – 2029	2021	2021 – 2029	-	-
2022	2023 – 2030	2022	2022 – 2030	2022	2022 – 2030
5-year period		6-year period		6-year period	
2023	2024 - 2028	2023	2023 – 2028	2023	2023 – 2028
2024	2025 – 2029	2024	2024 – 2029	2024	2024 – 2029
2025	2026 – 2030	2025	2025 – 2030	2025	2025 – 2030

New - CCUS Treatment under TIER



Electricity Grid Displacement Factor v3.1

	2024	2025	2026	2027	2028	2029	2030
Electricity Benchmark (tCO ₂ e/MWh)	0.3552	0.3478	0.3404	0.3330	0.3256	0.3182	0.3108
EGDF (tCO ₂ e/MWh)	0.4901	0.4602	0.4303	0.4005	0.3706	0.3407	Matches HPB onward

- Projects initiated in 2024 forward uses the grid factor published for each year (each quantification of the emission reductions will apply factor for that year)
- The electricity grid factor will mirror the benchmark after 2030.
- Projects initiated before January 1, 2024 may use the grid factor of the version of the handbook in effect at the time of initiation – unless a subproject is added to an aggregated project (all update); a deviation approval mandates updating; or the director instructs updates.

Verification of Offset Projects



- Standard for Validation, Verification and Audit version 5.2 effective 2023 forward
- As of June 30, 2023, all third-party assurance providers must be accredited as a verification body to ISO 14065 by an International Accreditation Forum (IAF) accreditation organization.
- Verification is similar but distinct from facility GHG compliance reporting - report template for emission offset projects located on AEOS website. All sections must be completed.

Verification Qualifications

- All third-party assurance providers that provide validations or verifications under TIER must meet each of the eligibility requirements in section 27 of TIER and meet Standard for Validation, Verification and Audit requirements.
- Verification Standard - Part 1 Section 3(1): Requirements for Lead verifiers and peer reviewers
- Project developers should request certificates and documentation of meeting the main criteria and requirements.
- Review technical sector-specific knowledge and experience.
- A positive opinion* is required
 - Qualified opinions will be assessed by the department;
 - If a verifier is unable to provide a positive or qualified opinion, the verifier and project should contact the department.

Verifications – Offset Projects

- Verifiers must use the Regulation, Standards, Quantification protocol as criteria for the review. The Offset Project Report, the Offset project plan are reviewed to ensure completeness of GHG Assertions.
- If the project is not meeting a protocol criteria – the project developer most likely should have a deviation approved from the department.
- Verifiers review previous verifications to determine if immaterial findings were corrected by the project developer.
- Verifiers must review the projects' adherence to the protocol and / or review all deviation approvals from the department.
- Aggregated projects – verifiers must review reporting aggregate reporting sheets – is the subproject eligible for crediting during the reporting period, can the project support its Activity Start Date, and site visits to see the operations.

Deviation Requests

- Where unable to fully implement the prescribed quantification requirement, a deviation request can be made
 - cannot grant if deviation is based on preference for alternative method
- If mandatory quantification method is not followed and deviation not in place, verification finding should result
- Deviations are limited
 - Generally to one project* and generally apply for the reporting period being verified
 - Verifiers are required to review approval letter carefully, often conditions included
- Department tracks deviations to inform review of offset project claims

Standard for GHG Emission Offset Project Developers

- Version 3.2 effective 2023 forward.
- Div 1 Sec 2 All references to an emission offset project in Part 1 include an aggregated project unless otherwise provided.
- Div 1 Sec 7(1) An emission offset project developer may submit two or more emission offset subprojects to the Registry as an aggregated project.
- Project documentation to list an aggregated project includes the Offset Project Plan and Aggregated Project Planning Sheet
- Subprojects are **unique to each** emission offset project and remain in the project for the crediting period*, unless the director approves a transfer;

Emission Offset Projects Aggregated Requirements

Aggregated Project Planning & Reporting Sheets

- Templates, version 3, for aggregated planning and reporting sheets available on the Registry – Resources section.
- Main purpose of Aggregated Project Planning Sheet (APPS) is to provide a clear and transparent report of subprojects included in a project (go-forward crediting as required in Standard) *Subprojects must be active with all required information to be included in a project.
- Main purposes of Aggregated Project Reporting Sheet (APRS):
 - To demonstrate that subprojects included in a project report have been previously identified and submitted in a planning sheet, and
 - To ensure no duplicate subprojects are being claimed.
- **Key that project developers ensure subproject information included in APPS is complete and accurate!**

Alberta Carbon Registries Update

- Working on updates to the emission offset platform for: crediting period, credit expiry, new credit types.
- New credit types only apply to CCS/EOR sequestration projects.
- Emission offset conversion to 'sequestration credit'
- 'Sequestration credit' further converted into 'capture recognition tonne' (applied to current year TRE under TIER).

Alberta Carbon Registries Update

- Registry continues to enforce the following:
 - Project Initiations will have a **30-day resubmission requirement** if the registry rejects a submission due to incomplete or deficiencies in reviews.
 - If a project does not resubmit complete documentation in 30 days the offset start date and offset project plan must be updated to the new submission date.
- Registry will only accept .kmz project boundary files

Re-verification 2021/2022 Compliance Years

- Focus on pneumatics, conservation cropping, solar, biomass and CCS projects.

Compliance Year	# of projects	# of offsets re-verified
2021	6	221,321
2022	5	1,598,733

- Most findings immaterial to be corrected on go-forward basis by project developers.

Federal OBPS Recognized Units

- Alberta has a MOU with ECCC to enable use of Alberta emission offsets to be used as recognized units for compensation under the federal OBPS
- ECCC has approved the following protocols as acceptable for compensation under the OBPS as long as all OBPS criteria are met:
 - Greenhouse Gas Emission Reductions from Pneumatic Devices,
 - Aerobic Composting
 - Aerobic Landfill Bioreactors
 - GHG Reductions from Fed Cattle
 - Selection for Low Residual Feed Intake in Beef Cattle
- Registry statuses reflect federal OBPS usage – Deadline for action requests in registry **June 30th** to ensure time for reviews per ECCC MOU
 - *Pending Retire Federal OBPS (credit owner submits request)*
 - *Retired – Federal OBPS (ECCC confirms usage for OBPS)*
- *Federal offset system has launched with 2 approved protocols (landfill/refrigeration systems)*

Protocol Updates



Biological Methane

- Aerobic Composting
- Fed cattle
- Landfill gas capture and combustion
- Low residual feed intake markers in beef cattle
- Aerobic landfill bioreactor
- Biogas production and consumption



Renewables

- Biofuel production and usage
- Distributed renewable energy generation
- Biomass waste energy
- Solar electricity generation
- Wind powered electricity generation



Agricultural

- Agricultural N₂O reductions (NERP)



CO₂ Sequestration

- CO₂ capture and storage in deep saline aquifers
- Enhanced oil recovery



Energy Efficiency

- Energy efficiency projects
- Waste heat recovery



Oil and Gas Methane

- Pneumatic devices
- Vent gas reduction

There are 18 approved quantification protocols
in the Alberta emission offset system

GHG Emission Reductions from Pneumatic Devices

- Protocol revised due to Directive 060 amendments affecting eligibility for some project types.
- Technical working group worked throughout 2022 and 2023.
- Version 3.0 published in December 2023.
- This protocol is effective January 1, 2023 and must be used to quantify emission offsets generated in the 2023 vintage going forward.
- Existing projects **must update their Offset Project Plan** to the new version if they intend to register 2023 vintage emission offsets.

CO₂ Capture and Permanent Storage



- Protocol is currently under revision
- Technical Working Group initiated in December 2023
- Revision will focus on a number of edits and improvements, including:
 - Expansion of eligible storage reservoir
 - Updating and alignment with other relevant regulations and guideline documents

Forest Carbon Offsets on Private Forestlands



Technical Seed Document – Forest Carbon Offsets on Private Forestlands has been submitted to the Department.

- Methodology currently under revision

Activities include extending rotation ages, reducing forest harvest intensity, improving forest growth rates and/or mitigating wildfire risk.

Targeted lands include First Nation Reserves, Treaty Land Entitlements, Métis Settlements and private lands.

New Protocol Submissions

- Biochar
- Refrigeration Systems
- Annual review of existing protocols

Other considerations

- Federal developments impact on regulatory additionality
 - Reducing methane emissions from Canada's municipal solid waste landfills

Where to Learn More

- Website will link to all relevant materials
 - [Alberta Emission Offset System | Alberta.ca.](#)
 - Subscribe to mailing list to stay up to date.
- Questions or concerns can be addressed to [epa.ghg@gov.ab.ca.](mailto:epa.ghg@gov.ab.ca)

Questions?

Contact:
EPA.GHG@gov.ab.ca



Thank You
