Annual TIER Compliance Workshop

(2025 Compliance Period)

Technology Innovation and Emissions Reduction Regulation (TIER)

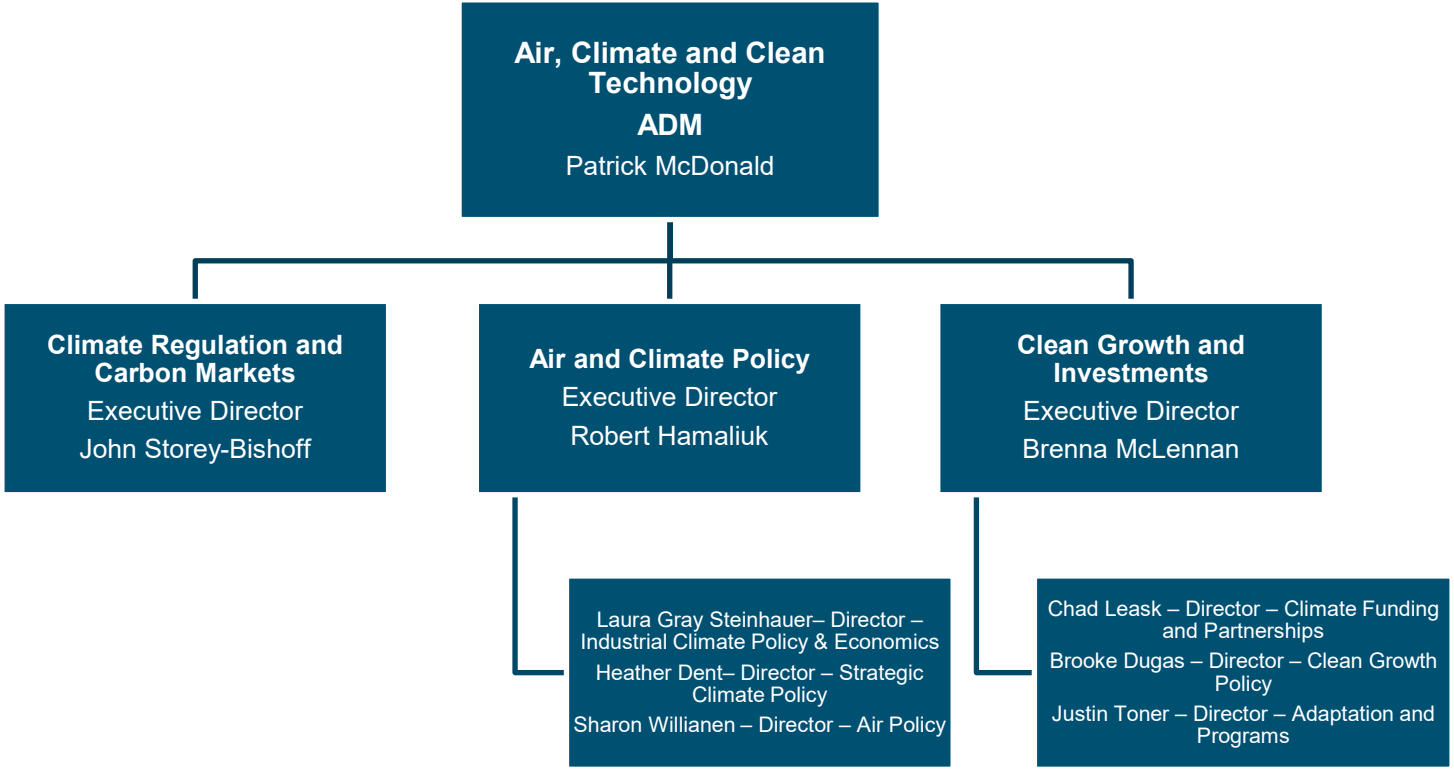
Climate Regulation and Carbon Markets
Alberta Environment and Protected Areas
March 05, 2026

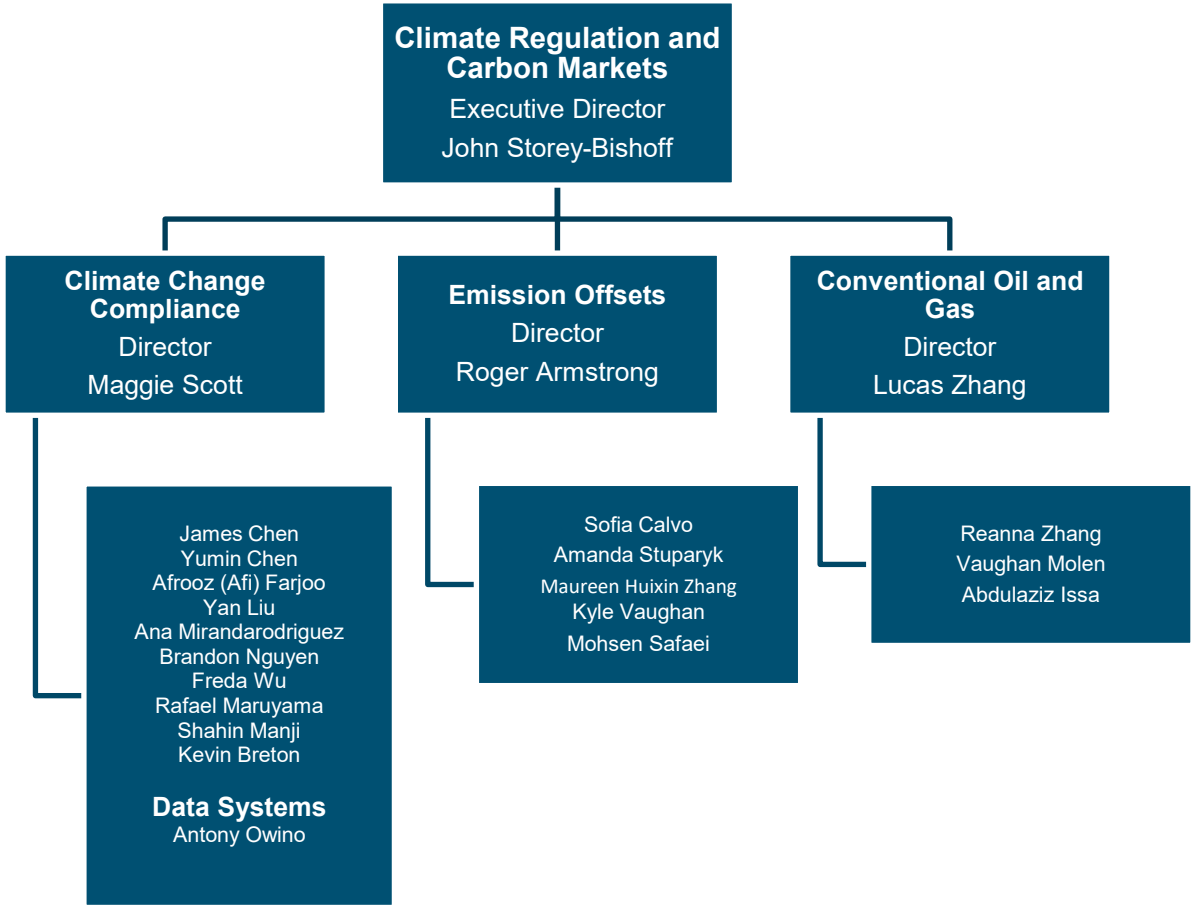
Presenters

- John Storey-Bishoff, Executive Director, Climate Regulation & Carbon Markets
- Maggie Scott, Director, Climate Change Compliance
- Kevin Breton, Senior Climate Change Engineer
- Roger Armstrong, Director, Emission Offsets
- Lucas Zhang, Director, Conventional Oil and Gas
- Reanna Zhang, Program Engineer
- Abdulaziz Issa, Program Engineer

Land Acknowledgement, Introductions and Organization

Climate Regulation and Carbon Markets Branch


Air, Climate and Clean Technology
ADM
Patrick McDonald
Climate Regulation and Carbon Markets
Executive Director
John Storey-Bishoff
Air and Climate Policy
Executive Director
Robert Hamaliuk
Clean Growth and Investments
Executive Director
Brenna McLennan
Laura Gray Steinhauer– Director – Industrial Climate Policy & Economics
Heather Dent– Director – Strategic Climate Policy
Sharon Willianen – Director – Air Policy
Chad Leask – Director – Climate Funding and Partnerships
Brooke Dugas – Director – Clean Growth Policy
Justin Toner – Director – Adaptation and Programs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James Chen
Yumin Chen
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Yan Liu
Ana Mirandarodriguez
Brandon Nguyen
Freda Wu
Rafael Maruyama
Shahin Manji
Kevin Breton
Data Systems
Antony Owino
Sofia Calvo
Amanda Stuparyk
Maureen Huixin Zhang
Kyle Vaughan
Mohsen Safaei
Reanna Zhang
Vaughan Molen
Abdulaziz Issa

Workshop Objectives

- Guidance and information for 2025 compliance reporting
- Highlights of TIER amendments affecting 2025 compliance
- No discussion of MOU or federal benchmark criteria
- No discussion of Direct Investment program

TIER Regulation Overview

TIER Regulation

- Technology Innovation and Emissions Reduction Regulation (TIER) (2020 – present)
  - Third iteration of industrial carbon pricing system in Alberta
  - Only carbon pricing system in Alberta
  - 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 Regulation

- 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
- TIER Fund price set at $95 per tonne CO_2e for 2025

TIER Regulation

- 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 CO_2 and fuels where federal fuel charge applied

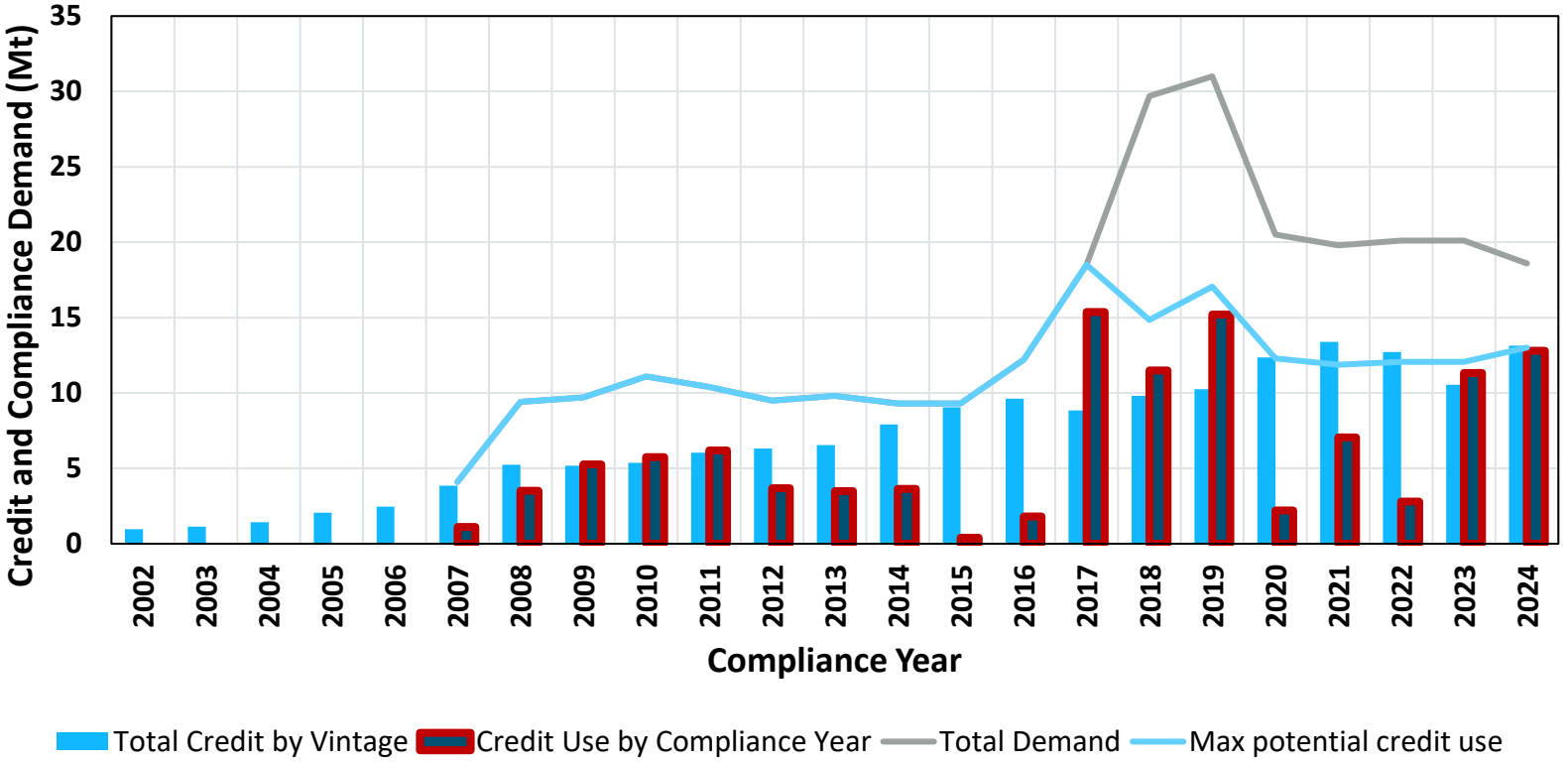
Credit Usage Limit and Expiration

- 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	2024	2025	2026 or later
Maximum % credit usage	70%	80%	90%

- Credit expiration occurs after 5 years from year generated
  - Note: For pre-2023 vintage credits, expiry is 8 years
- Use of Capture Recognition tonnes decreases TRE so usage limit does not apply

Annual Credit Generation and Use



 Classification: Public

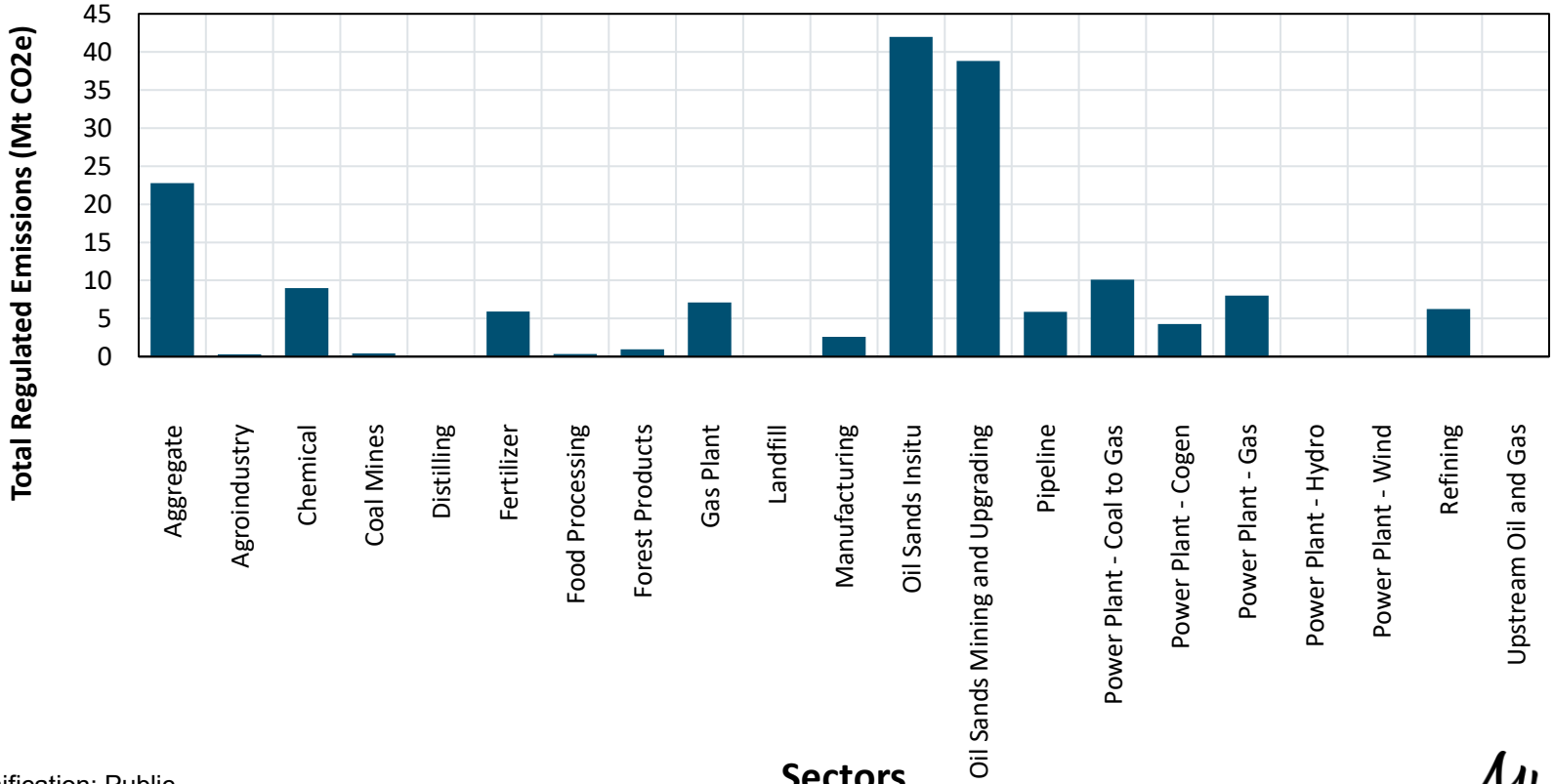
Alberta

TIER Amendments (December 2025)

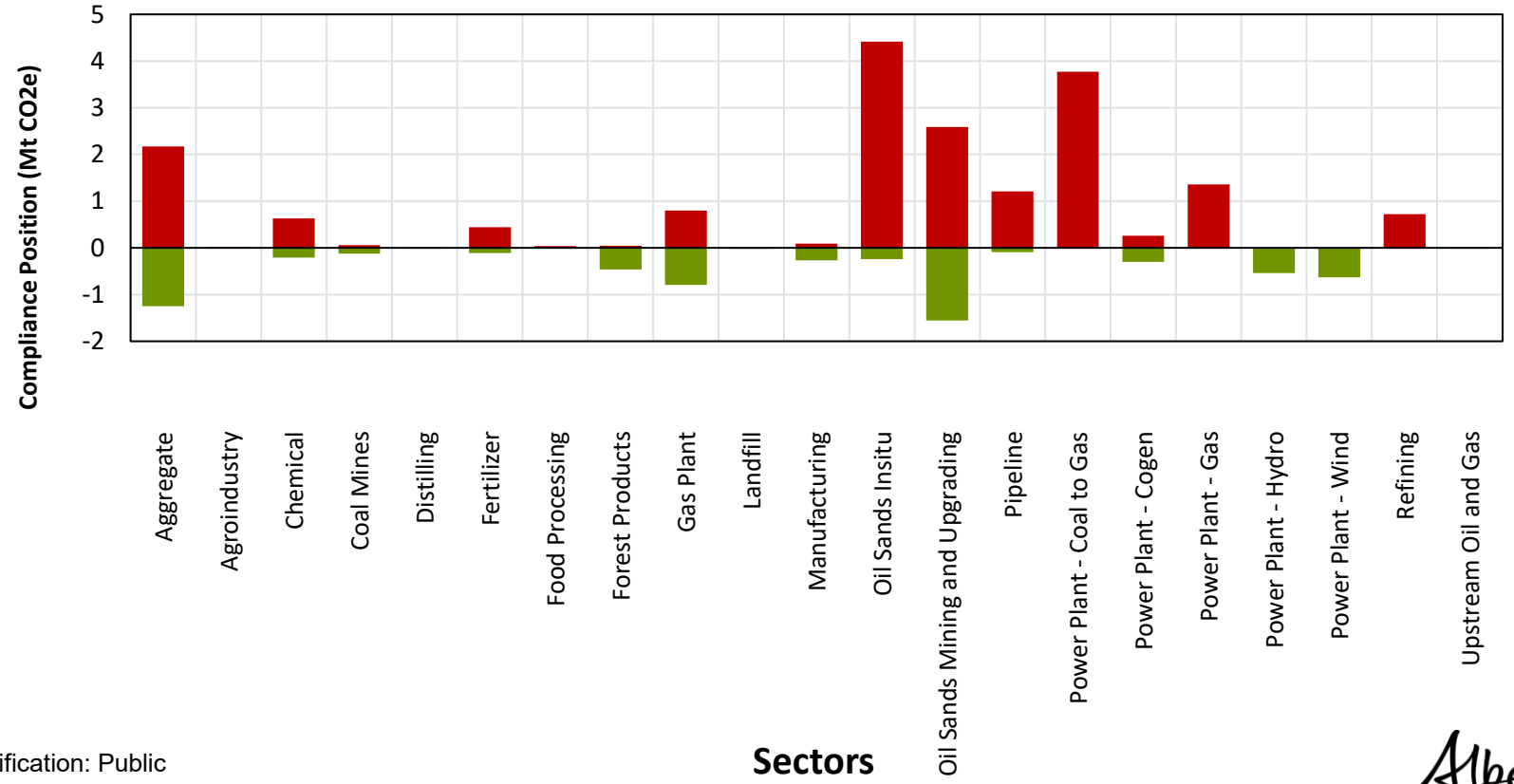
- Direct investment program
- Extended deadlines for opt-in revocation
- Partial year reporting
- Low-emitting status
- Time limitation on resubmission requirements
- Verification refusal criteria

TIER 2024 Compliance Results

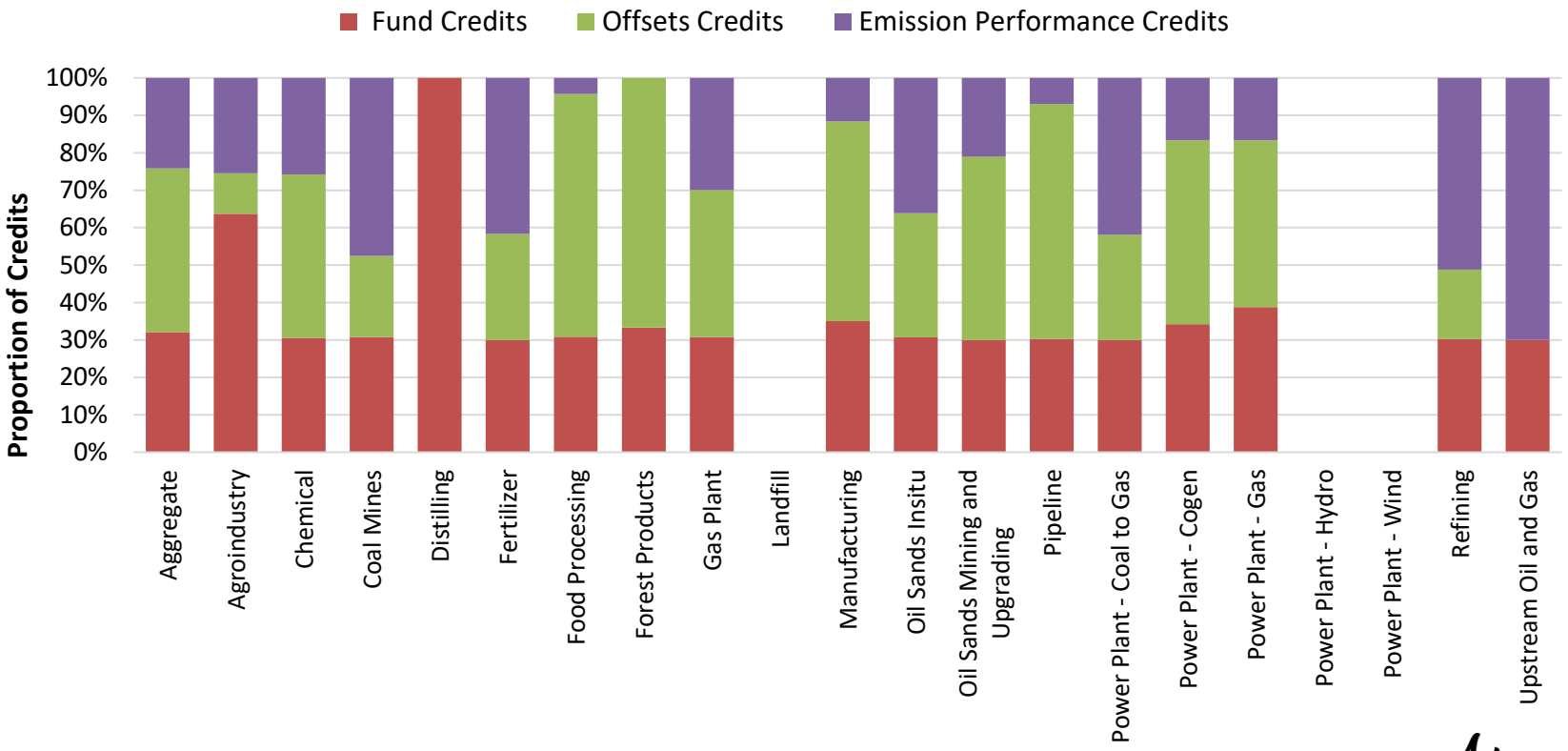
2024 Total Regulated Emissions by Sector



2024 Compliance by Sector



2024 True-Up Method by Sector



Total True-Up Obligations

Compliance Year	Emission Offsets Submitted ($Mt\ CO_2e$)	EPCs Submitted ($Mt\ CO_2e$)	Fund Credits Submitted ($Mt\ CO_2e$)	Total Compliance ($Mt\ CO_2e$)	Fund Payment ($M)
2007 - 2019	52.3	24.9	96.7	173.9	2,059.7
2020	1.2	1.0	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
2023	7.2	4.1	8.7	20.1	564.1
2024	7.2	5.6	5.8	18.6	466.1
Total	**75.2**	**38.3**	**159.4**	**273.1**	**5,005.0**

2024 Compliance Results

- The department publishes TIER results on a regular basis.
  - Published to open.alberta.ca
  - Alberta industrial greenhouse gas compliance - Open Government
- Oil sands emission intensity is also published on a regular basis
  - This data requires post-processing and merging of cogeneration data
  - 2024 data update is being worked on, will be posted to open.alberta.ca when approved
  - Alberta Oil Sands Greenhouse Gas Emission Intensity Analysis - Open Government

2025 Partial Year Reporting and Opt-in Revocation

2025 Partial Year Reporting and Opt-in Revocation

- The federal fuel charge was removed effective April 1, 2025.
  - Altered the economic value of being TIER regulated for opted-in facilities
  - Amended regulation allowed full opt-out or partial year reporting for 2025
- **TIER Amendment:** Applications to revoke opt-in designations for 2025 and 2026 were due by December 31, 2025
- **TIER Amendment:** Applications to request partial-year reporting for 2025 (January 1 – March 31, 2025) were due by December 31, 2025

2025 Partial Year Reporting and Opt-in Revocation

- Facilities approved for partial year reporting should have received a partial year reporting form for 2025
  - **IMPORTANT:** Revised forms were sent to correct an error in calculating the maximum credit usage.
    - Use version 26.2 of the form for partial year reporting
    - For facilities with in-year benchmarks, use version 26.3
  - Contact the department if you do not have a form or unclear are on which form to use
- Facilities may continue to opt-into TIER if criteria are met
  - Applications due September 1 of the year before
  - Facilities that anticipate generating EPCs or associated with CCS projects

Department Review and Assurance Process

Review and Assurance Process

- Types of assurances under TIER system:
  - Third party verification
  - Automated reviews
  - Technical / Engineer review
  - Government reverification

Review and Assurance Process

- Risk factors considered:
  - Facility emissions
  - Facility complexity
  - True-up obligation
  - EPC generating potential
  - Changes and trends

Review and Assurance Process

- Batch automation tools used for core checks:
  - Initial administrative checks
  - Key compliance checks
  - Trending and analytical

Ensure that compliance report form is filled out correctly!

Review and Assurance Process

- Detailed reviews conducted by engineers
  - Understand facility operations and emission sources
  - Conduct analysis (i.e., sector level comparisons)
  - Work with facilities
  - Reviewers provide recommendations
- Department increasing efficiency in reviews and will have more timely close out of prior reviews

Objectives of TIER Verifications

- Provide assurance that there are no material errors in a GHG statement (i.e., compliance report, emission offset project reports)
  - Finding and resolving issues that are not easily identified by the Department
- Provide assurance that regulatory submissions are meeting the regulation and standards
- Provide assurance that there are no material impacts to TIER fund revenue to the Province
- Provide assurance that there is no over-issuance of emission performance credits (EPCs) or emission offsets under TIER system

Extended Verification Review

- New internal review procedures for verifications
- Objectives
  - Gain better understanding of verifications conducted under TIER
  - Deeper dive into areas of concern
  - Development of corrective actions
  - Support new provision under TIER to refuse verifications

Extended Verification Review

- Detailed reviews of verifications conducted for each verifier
- 1 to 3 sets of working papers requested from all verifiers
- Reviewers working with verifiers directly to address questions and areas of concern
- Formal corrective actions may be requested

Observations from Extended Verification Reviews

- 15 verification bodies conducted verifications for 2024
- Improved performance observed
- Verification processes are well documented
- Diversity in working papers provided
- Areas of concern:
  - Verifier expertise in sectors
  - Source data vs reliance on controls
  - Presentation of verification findings
  - Inaccuracies in verification plans and reports
  - Regulatory understanding (Standards, AQM)
  - Peer review documentation
  - Completeness

New Verification Requirements

- **TIER Amendment:** Director may refuse to accept a verification completed by a third-party assurance provider due to:
  - Investigation by their accreditation organization
  - Investigation by the Department
  - Failure to meet requirements of verification standard
  - Accreditation body does not meet requirements of verification standard.
  - Discretion by the director, under reasonable grounds
- Procedures and criteria to be developed in Standard for Validation, Verification and Audit
- Provision will not be applied for the 2025 compliance period

Compliance Report Correction Timelines

- Increased efficiency in compliance review process
  - Automation
  - Updated review processes
  - Close-out backlog of compliance reviews
- **TIER Amendment:** Resubmissions of compliance reports to correct errors is limited to 4 years from the time of submission, starting in 2026
  - Provide certainty to facilities and reduce any historic liabilities
  - Improve department review processes
  - Does not apply to compliance reports already resubmitted

EPC Issuance

- Majority of 2024 EPCs issued in January 2025
- EPCs were not issued or adjusted if:
  - Quantification methodology or other issues identified
  - Reviewer questions are unresolved
  - Facility under reverification process
  - Facility is not registered or have facility account on the Alberta Carbon Registries
- Department uses a risk-based approach to issues EPCs
  - Preliminary assessments conducted
  - Timelier issuance of EPCs
  - Intends to issue remaining EPCs once reviews and issues resolved

EPC Issuance

- Reminders for EPC generating facilities:
  - Ensure facility is registered and has a facility account on Alberta Carbon Registries
  - EPCs need to be issued to the Person Responsible
  - Facilities to provide reasons for EPC generation
  - EPCs are revocable licenses

2025 Compliance Reporting

Requirements and Improvements

Upcoming Key Dates for TIER (LEs and Opt-Ins)

Report	Deadline	Compliance Year
Forecasting Report Update	March 15, 2026	2025 (previous year)
Cost Containment Application	March 31, 2026	2025
Capture Recognition Tonne Conversion	May 31, 2026	2025
Compliance Report and True Up	June 30, 2026	2025
Facility Specific Benchmark Application	September 1, 2026	2026
Opt-in Application	September 1, 2026	2027
Forecasting Report	November 30, 2026	2027 (future year)
Opt-In Revocation	December 31, 2026	2027

2025 Compliance Reporting Form

- No changes to compliance reporting forms, except for partial year reports
  - For partial year reporting, please use revised v.26.2 provided by the department
- Compliance Reporting forms for 2025 have been sent to Reporter and Certifying Official for each large emitter or opted-in facility under TIER
  - Please let the department know if you have NOT received a compliance reporting form EPA.GHG@gov.ab.ca

Cost Containment Program

- Designed to alleviate economic hardship imposed as a result of TIER compliance on regulated facilities.
  - Economic hardship defined as TIER compliance costs exceeding:
    - 3% of facility sales, or
    - 10% of facility profits (based on sector profit margin)
- To be eligible for cost containment, facilities must:
  - Meet the sales and/or profit thresholds
  - Have a first year of commercial operation earlier than 2023
  - Belong to a sector with a trade exposure measured as high or very-high
- Cost containment application must include:
  - Cost containment application form
  - Audited financial statements (multiple years)
  - Validated emissions reduction plan
- Provide notice to department 6 – 8 weeks in advance
  - This is intended to allow department time to work with facilities to ensure completeness of submission

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
- Application deadline is March 31 of the following year
  - i.e. March 31, 2026 is deadline for 2025 compliance year
- Cost containment designation will apply for a fixed period, up to 5 years.
- Any additional emissions allocations provided are ramped down over the 5-year period.
- Facilities with cost containment designation can earn EPCs

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
- Separate guidance provided to partial year reporters and specific reporting forms

Person Responsible

- Definition in Section 1(1)(hh) of TIER
- For LE/Opt-in, person responsible is the person responsible on the last day of the compliance year:
  - Ex., For 2025 compliance year, the person responsible is defined on Dec 31, 2025
- 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 CO_2 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 2025: 80% of tonnes owed
- Credits must be
  - held by person responsible
  - in pending retired status on the Alberta Carbon Registry
  - 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

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

No changes in mandatory requirements for 2025

Deviation Requests

- Facility may submit a deviation request if unable to meet mandatory quantification methodologies.
- If a missing data procedure can be used according to Chapter 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
  - request should include how facility will comply with mandatory requirements in subsequent reporting
  - review approval letter carefully, often conditions included
  - Alternative quantification methodologies proposed are conservative
- Department tracks deviations to inform review of quantification requirements

Quantification Methodologies not in AQM

- For site specific methods (not prescribed in the AQM):
  - Technically representative of site operations
  - **Accurate and/or Conservative**
  - Consistent with benchmark period, if relevant
  - Verifier to confirm appropriateness

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

TIER Verifications

- 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
- Requirements for third party assurance providers (verifiers and validators) and auditors
  - TIER section 27
  - Standard for Validation, Verification and Audit
- New Verification Report template for 2025 (first introduced in 2024)
- Verification is required for 2025 partial year reports:
  - Virtual site visits permitted if TRE is less than 5,000 tonnes CO_2e

Facility Exemptions

- Facilities that meet certain criteria may request an exemption under section 24 of TIER
- **TIER Amendment**: Eligible facilities may apply to the director for ***low-emitting status*** under section 24.1:
  - Facilities that have 2 consecutive years with TRE less than 10,000 tCO_2e
  - Exemption in effect until facility emissions exceed 50,000 tCO_2e
    - TIER compliance would apply again in the year after emissions exceed 50,000 tCO_2e

Confidentiality Requests

- Indicate in the compliance report form and include letter
- Be clear on what is being requested
  - Specific fields in the compliance report form
- Provide justification for request
  - Section 28 of TIER
- Working on streamlined request form to be published before June 30
- Requests not meeting regulatory requirements will be denied
  - Review decision letter
- While a decision is pending, confidentiality is presumed

Data Requests

- TIER section 29 allows for third parties to request access to compliance reports and benchmark applications, under a few conditions.
- The department requires that the request must first be made to the person responsible for the facility in question.
  - If refused or no response for 30 days, the applicant may then request this information from the Director.
- Any data contained in a compliance report or benchmark application that is subject to confidentiality under section 28 will NOT be shared.

Renewable Electricity Facilities EPCs

- Alberta Climate Change Compliance team 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
- 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** must not exceed AESO export

Key Take-Aways

- Person responsible to submit verified compliance report by June 30, 2026 for the 2025 compliance year
- Facilities that do not meet true-up obligation by June 30th could receive a compliance order
- Positive verification opinion required
  - Any material errors must be resolved before submission
- Required true-up obligation (credits retired or fund payment made) must be complete before submitting your compliance report
- Credit use limit is 80% for 2025
- Fund Credit price is $95 per tCO2e for 2025

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, 2026
- 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 fund 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 SWIFT Code	CIBC 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	EPA.Revenue@gov.ab.ca

- Receipt will be provided

TIER Offset System Update

Overview of offset system updates

Climate Regulation and Carbon Markets
Alberta Environment and Protected Areas
March 05, 2026

ALBERTA EMISSION OFFSET SYSTEM

18 PROTOCOLS

409 PROJECTS

OVER 101 MILLION TONNES
OF EMISSION OFFSETS TO DATE

- Offsets are generated by projects that have voluntarily reduced, removed or sequestered eligible GHG emissions via an approved activity
- Offsets are monitored, measured and quantified using government approved quantification protocols
- Regulated facilities can use offsets to be compliant under TIER
- Creates and supports an economic and environmental market by driving private investment in emission reduction activities.

Biological Methane

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

Renewables

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

Agricultural

- Agricultural N_2O reductions (NERP)

CO_2 Sequestration

- CO_2 capture and permanent geologic sequestration
- Enhanced oil recovery

Energy Efficiency

- Energy efficiency projects
- Waste heat recovery

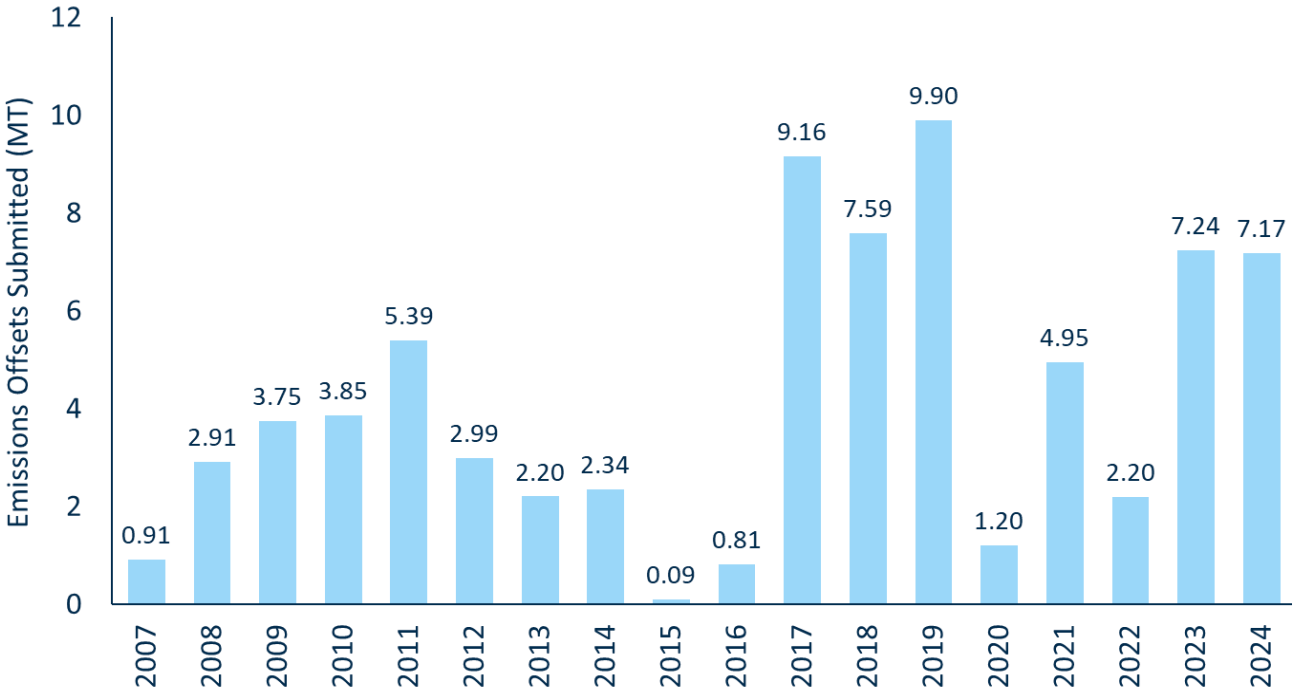
Oil and Gas Methane

- Pneumatic devices
- Vent gas reduction

*Protocol flagged for removal

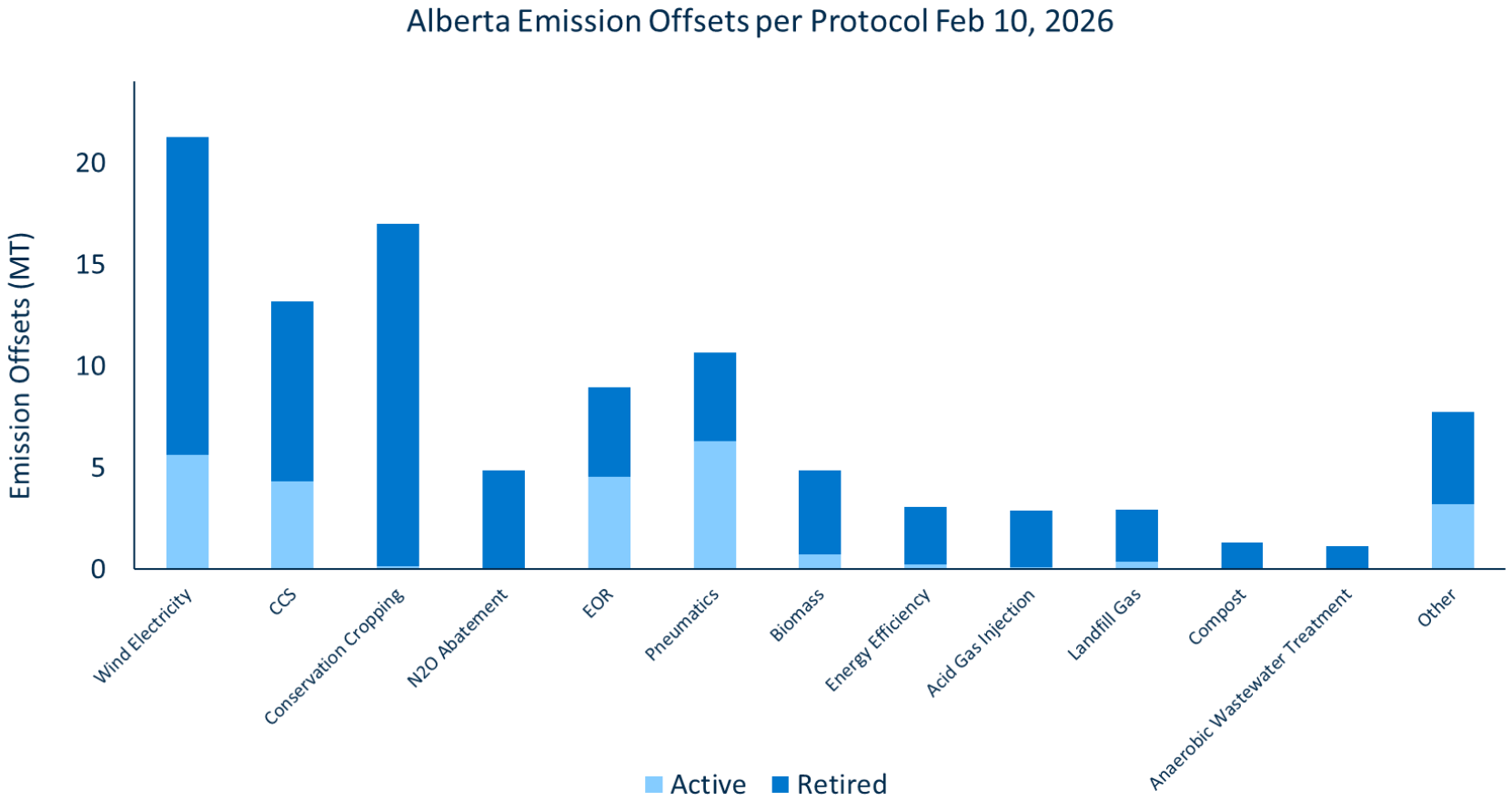
2. Alberta Emission Offset Stats

Emission Offsets Submitted for Compliance by Year



2024 Compliance
Top 3 Used Credits:

1. Wind = 2.05
2. Pneumatics = 1.64
3. EOR = 1.07


Alberta Emission Offsets per Protocol Feb 10, 2026
Emission Offsets (MT)
0
5
10
15
20
Wind Electricity
CCS
Conservation Cropping
N2O Abatement
EOR
Pneumatics
Biomass
Energy Efficiency
Acid Gas Injection
Landfill Gas
Compost
Anaerobic Wastewater Treatment
Other
Active
Retired

3. Offset System Updates

Standard for Emission Offset Project Developers

- Version 3.3 update posted on June 16, 2025
- Offset Project Reporting Period: Maximum 2-year reporting period for 2023+ vintage onwards, updated required to submit report from 6 to 9 months after the reporting period end.
- Contiguous reporting – Project Update Notice form
- Clarified processes for concurrent registration with WREGIS/AEOS

Vintage Year	2023 vintage onwards
Reporting Period	2 years maximum – must not be longer than 24 months
Report Due	Submission of complete registration to the registry - Within 9 months after end of reporting period

Alberta

Standard for Validation, Verification and Audit

- Updated version 5.3 on February 21, 2025
- All third-party assurance providers that provide validations or verifications under TIER must meet each of the eligibility requirements in section 27 of TIER.
- 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.
- This information must be documented in the Verification Report as well as AB specific training (completion dates and modules).

- UPDATED
  - Offset Verification Report Template (version 4.0) Starting January 1, 2025, the Alberta Emissions Offset Registry will only accept verification reports completed using the Offset Verification Report Template (Version 4.0).

2025 Partial Year Reporting – Federal Fuel Charge

- **The federal fuel charge was removed effective April 1, 2025**
  - Amended regulation allowed full opt-out or partial year reporting for 2025
  - This affected Alberta emission offset projects for 2025 onwards
- **Department released a memo to stakeholders (on the AEOS webpage – Memos: Stakeholder Notice: Alberta Emission Offset System and the Federal Consumer Carbon Price – April 7, 2025)** https://www.alberta.ca/alberta-emission-offset-system#jumplinks-4
  - The regulations do not affect obligations for reporting periods prior to April 1, 2025.
- Most affected protocols were revised to align the offset protocol with the carbon levy or fuels tax.
- These emissions are no longer levied, therefore offset project developers are now required to quantify all "**Included**" sources/sinks as "non-levied" as outlined in the applicable protocols – protocols that were not edited will also quantify all "Included" SSs.
- The department will work on updating the offset project report form in 2026.

Alberta

Renewable Electricity Facilities - Offsets

- Alberta Emission Offsets follow a different process compared to the compliance team.
- EPA has enabled renewables to be registered in both the Alberta offset system and the WREGIS system (Western Renewable Energy Generation Information System) at the same time.
- AEOS has a unique process for concurrent registration of renewables to ensure no double counting occurs against system rules.

Process for concurrent enrolment in AEOS and WREGIS

1) List project on the AEOR, ensuring the Project Plan states it will generate both emission offsets and RECs. Update the plan if already initiated.
2) Request the AEOS/WREGIS Intake Form by emailing the Director or EPA.
3) Complete the AEOS Intake Form for each Offset Project/Generating Unit to be registered in both AEOR and WREGIS.
4) Submit the completed Intake Form + Offset Project Plan to EPA.GHG@gov.ab.ca.
5) Director reviews, issues approval/conditions, and sends the signed form to WREGIS.
6) Register the Generating Unit in WREGIS; approval will only occur after WREGIS receives the approved AEOS Intake Form.

Terms & Conditions for AEOS–WREGIS Concurrent enrolment

- Allocate monthly GU/AEOR MWh and fuel-type percentages in WREGIS and document them in each offset project report; allocations must align with AEOS claims and must not be double counted. Allocations are irreversible.
- Must notify the AEOS Director of any relevant changes during the crediting period.
- Must include transparent and verifiable annual allocation summaries and supporting records in each offset project report.

EPA Annual Reverifications

- Department ongoing focus on pneumatics (largest credit generator), renewables (highest new projects), and microgeneration (small scale solar)
- Overall results are Positive – Some persistent immaterial errors include:
  - Deviation requests required for protocol deviations – i.e. annual gas compositions
  - Pneumatic devices being moved – need to have change management practices in place for operators
  - Recalculation errors and incorrect usage of factors

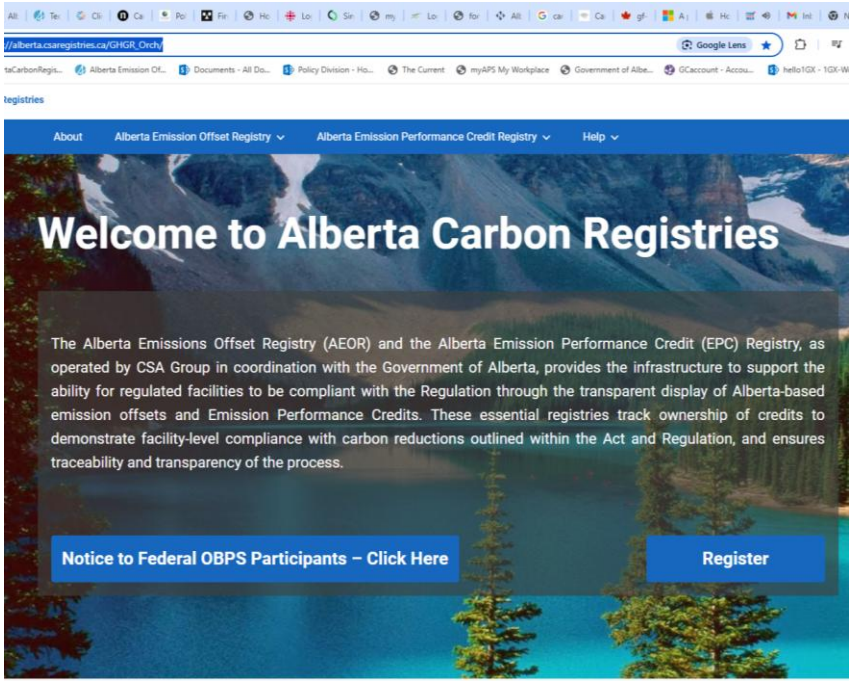
Compliance Year	# of projects	# of offsets audited
2024	4	47,314
2023	5	317,561
2022	5	1,598,733

Extended Verification Reviews

- New internal review procedures for verifications of offset projects and offset credit claims
- Objectives
  - Gain better understanding of verifications conducted under TIER
  - Deeper dive into areas of concern
  - Development of corrective actions
  - Support provision under TIER to refuse verifications
- Verification reviews including reports, working papers and processes of verifications conducted for each offset project
- The offset team will endeavor to work with verifiers directly to address any questions or areas of concern – mostly transparency in reports
- Formal corrective actions may be requested by the director

Registry Submissions for Compliance

- TIER 2026 compliance deadline is June 30th
- Credits (EO's and EPC's) must be in responsible persons acc't & in pending retirement status prior to deadline
- Registry processes all actions as received so plan transfers AND pending retirement requests accordingly
- Ensure the Action Request is properly submitted in your registry account – if you don't see it in Pending Actions – it was not submitted
- Project registration and serialization are not guaranteed to be processed if submitted after June 1st



Registry Development – Labels

- The department has asked the registry to explore creating a 'label credit' action
- This will not be a 'conversion' like Sequestration Credits but simply a label
- Requests have been centered around CCS removal project activities
- **Proposed New Credit Labels (exploring a number of common removals):**
  - Removal – DACCS
  - Removal – BECCS
  - Removal – Others: Ag/Forest/Industrial Carbon
- **Proposed processes:** best applied during registration/serialization of a projects credits – only available to the project developers
- Label will need to be planned – documented in the Offset Project Report and independently verified
- New statutory declaration will be created to support the break-out of removals versus reduction credits

4. Protocol Updates

Biomass Waste Combustion for Energy Generation

- Version 2.3 to be published in Spring 2026.

- Revisions include:
  - Inclusion of heat generation as eligible project type
  - Clarification levied emission Sources are to be Included from April 1, 2025 onwards
  - Reviewed and revised records and requirements for flexibility methane avoidance from landfill

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Vent Gas Reduction Protocol

- Working with a technical working group to add an additional category: Surface Casing Vent Flow
- Remove the September 30, 2025 deadline for category 2
- Public comment period: spring or early summer 2026
- Review public comments and updated protocol summer 2026

CO_2 Capture and Permanent Geologic Sequestration

- Version 2.0 released January 7, 2025 Revisions include:
  - Eligible reservoir expansion
  - Definition and true-up requirements for a reversal
  - TIER liability clarity in the event of a reversal
  - Flexibility mechanism for liability limitation
  - Inclusion of direct air capture as eligible capture source
    - Removal credit type
  - Other updates and regulatory alignments
- Continued work on PPA possible inclusion for DAC

CCS and EOR Protocol Update

CCS

- Working with technical working group to consider power purchase agreements for direct air capture projects
- Adding clarifying guidance on reversal accounting
- Publish for public comment in spring or early summer 2026

EOR

- Updated description of reversal to align with Quantification Protocol for Carbon Dioxide Capture and Permanent Geologic Sequestration
- Added definition of targeted geologic storage zone(s)
- Updated descriptions of emissions from subsurface to atmosphere, in both the baseline and project conditions

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.

Alberta Carbon Registries: [https://alberta.csaregistries.ca/GHGR_Orch/](#)

Questions or concerns can be addressed to epa.ghg@gov.ab.ca.

Conventional Oil and Gas Aggregate Facilities

Environment and Protected Areas
March 5, 2026

Agenda

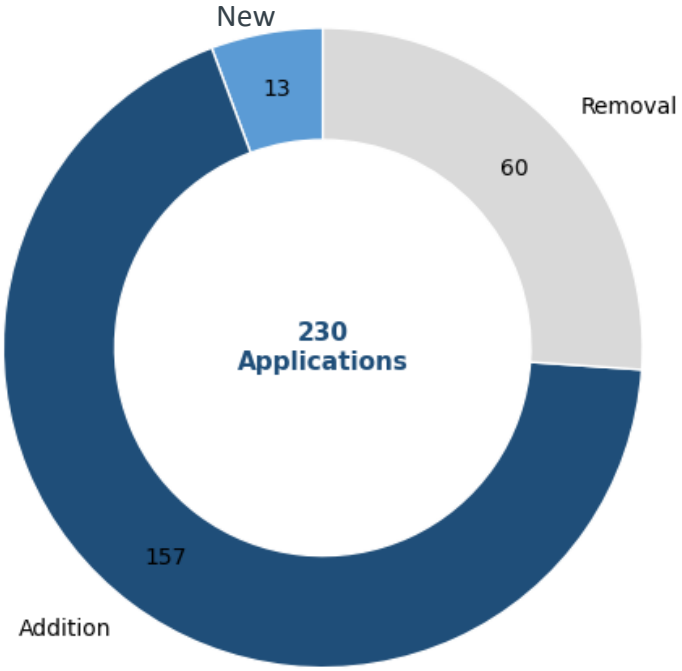
- Aggregate Program Overview and Background
- Enrollment Updates and Key Reminders
- Summary of the 2024 Compliance Year
  - Aggregate Facility Emissions
  - Compliance Observations
- Guidance and Key Updates for 2025 Reporting
- 2025 and 2026 FSBs
  - Default Facility-Specific Benchmarks
  - Benchmark Applications and Requests

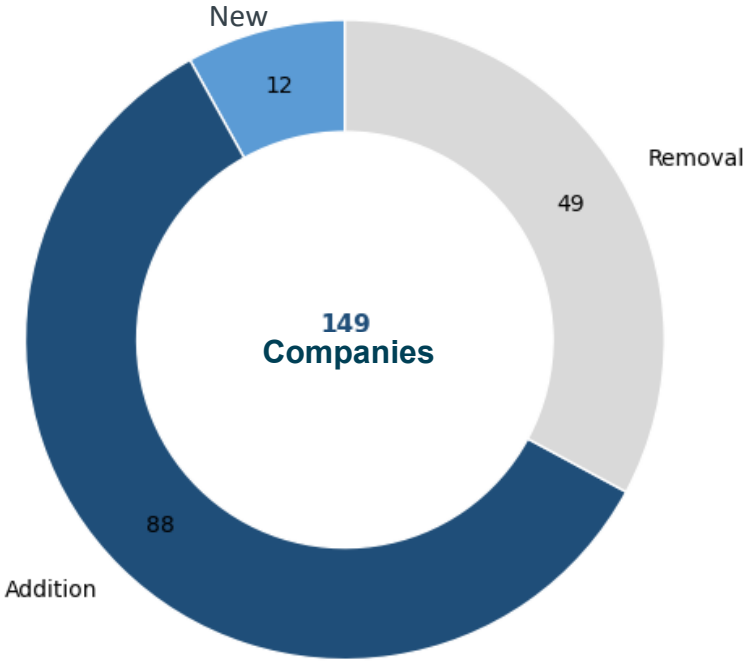
Aggregate Program Overview and Background

Item\Year	2020	2023/2024	2025
Regulatory Driver	TIER Introduced	TIER Amendment	The FFC Removed; TIER Opt-Out
Scope	SFC Emissions	SFC + Flaring Emissions	
	Voluntary; Smaller (< 100,000 t CO_2e/y) conventional oil and gas facilities;		
Aggregates	225 to 283		
Petrinex IDs	55,000 to 62,000		

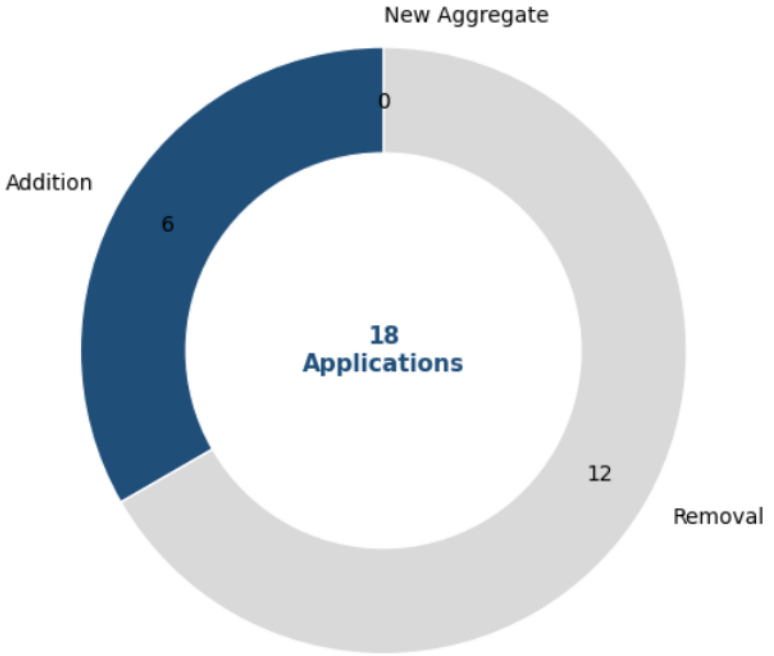
Enrollment Updates and Key Reminders

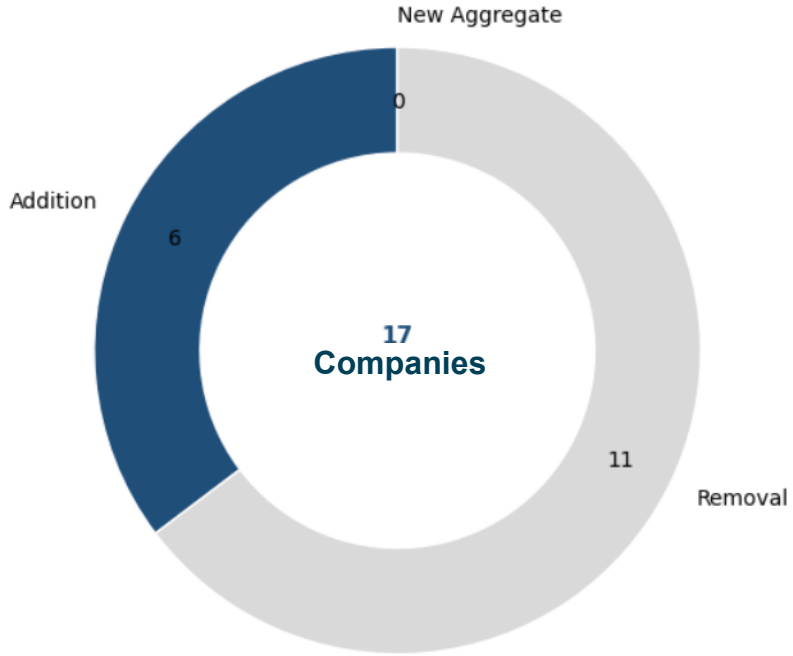
2025 TIER Aggregate Application and Applicant Summary





2026 TIER Aggregate Application and Applicant Summary





2025 and 2026 Opt-out Results

- 41 aggregates did not submit an op-out application
- 19 aggregates requested to revoke aggregate facility designation for 2025
- 48 aggregates requested to revoke aggregate facility designation for 2026
- 175 aggregates requested to submit aggregate facility partial year (January 1 - March 31) reporting for 2025 and revoke aggregate facility designation for 2026

End of Year Facility Review

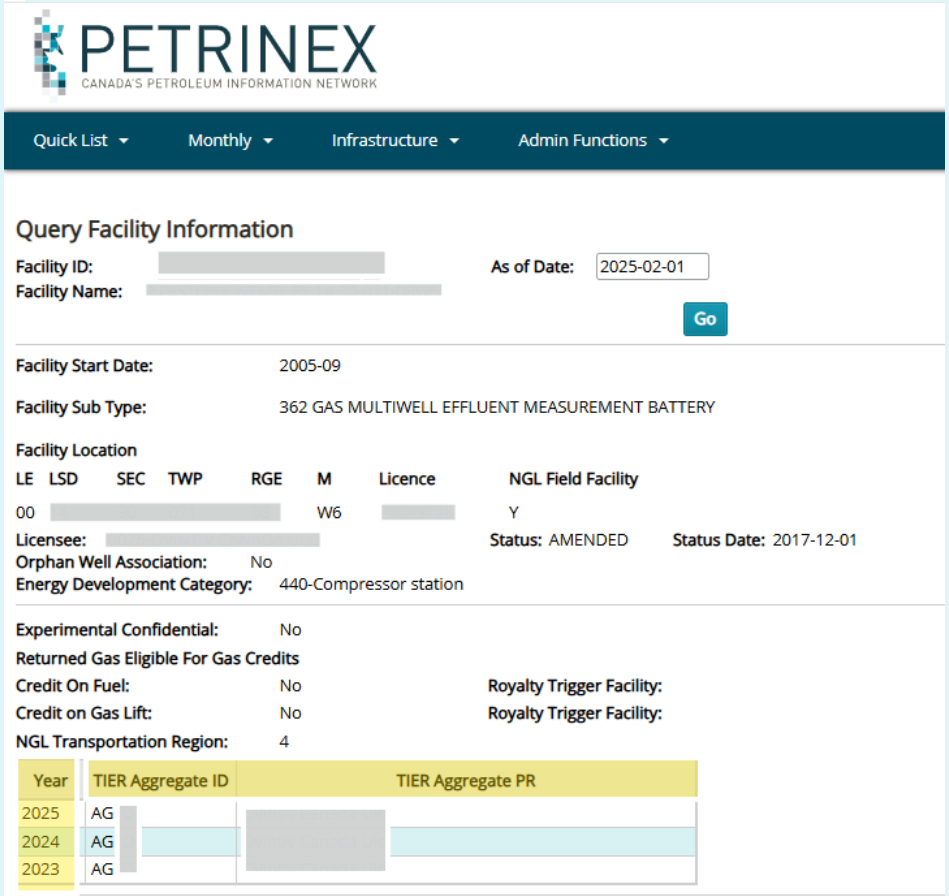
- Automatic renewal
  - An automatic renewal letter has been sent to aggregate facilities that had no population change during 2025.
- The end-of-2025 clean-up
  - TBD facility ID removals – It is recommended to obtain a Petrinex ID first before enrolling a site in the TIER aggregate program
  - Operatorship mismatch removals
  - Removal of COG facilities with direct emissions of 100,000 t CO_2e or more
  - May submit a TIER Aggregate Notification Form.

Aggregate Enrollment Updates and Reminders

- The TIER Aggregate Notification Form (v2.6)
  - Updated data validation for the Date cell in the SoC tab
  - Enabled former/current, or new certifying official to sign in the SoC tab
  - Note that aggregate enrollment application forms are submitted on ETS while the Notification form should be e-mailed to the EPA inbox (see the Instructions tab)
- Petrinex Infrastructure data continues to show the current and previous years' TIER aggregate enrollment information

Petrinex TIER Aggregate Information

- Example screenshot: Petrinex Facility enrolment display for 2023, 2024, 2025
- Note: The TIER information on Petrinex is for reference only while the CoR letters are the official records for compliance purposes



Aggregate Enrollment Updates and Reminders (cont'd)

- It is recommended to
  - Obtain a Petrinex ID first before enrolling a site in the TIER aggregate program
  - Avoid double enrollment in both aggregate and opt-in programs
  - Ensure all forms are signed, certified before submissions
    - A signed SoC page may be submitted with the application as a PDF
- Operators are responsible for reviewing their facility lists promptly upon receiving a Confirmation of Regulation letter.

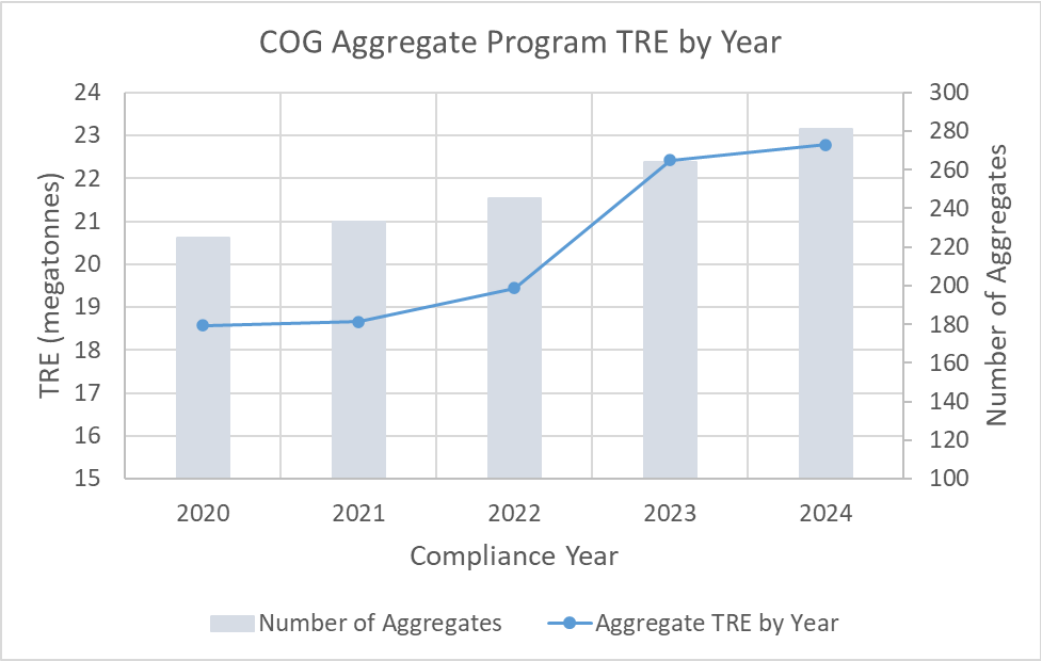
Aggregate Enrollment Updates and reminders (cont'd)

- Re-enrollment flexibility
  - Opted-out aggregate facilities remain opted-out unless re-enrolled
    - The enrollment deadline remains November 15, 2026, for 2026 reporting
    - Removal application deadline is December 1, 2026, for 2027 reporting
- For aggregate facilities that are staying in TIER
  - There is no major change to TIER aggregate enrollment processes
    - It is recommended to not register TBD facilities until they have a valid Petrinex ID
  - Companies can continue adding or removing COG facilities from an aggregate as well as creating or revoking an aggregate
  - The department will continually send out Confirmation of Regulation letters

Summary of the 2024 Compliance Year

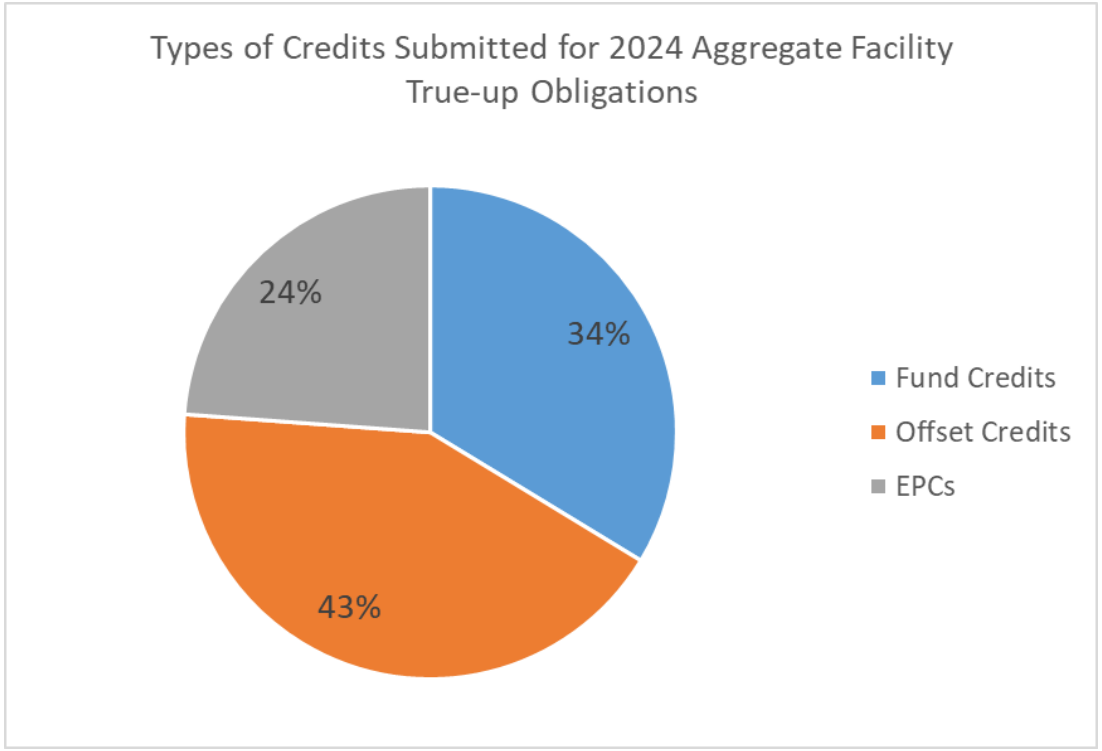
2024 Aggregate Facility Emissions

- 281 aggregates; 22.8 Mt CO_2e (~14%); 3rd largest sector



2024 Aggregate Facility Emissions

- True-up: 2.2 Mt
- Credit usage
- EPC potential: 1.3 Mt
- 20 compliance orders
- Compliance rate to date: 91%
  - Compliance review ongoing



2024 Compliance Gaps

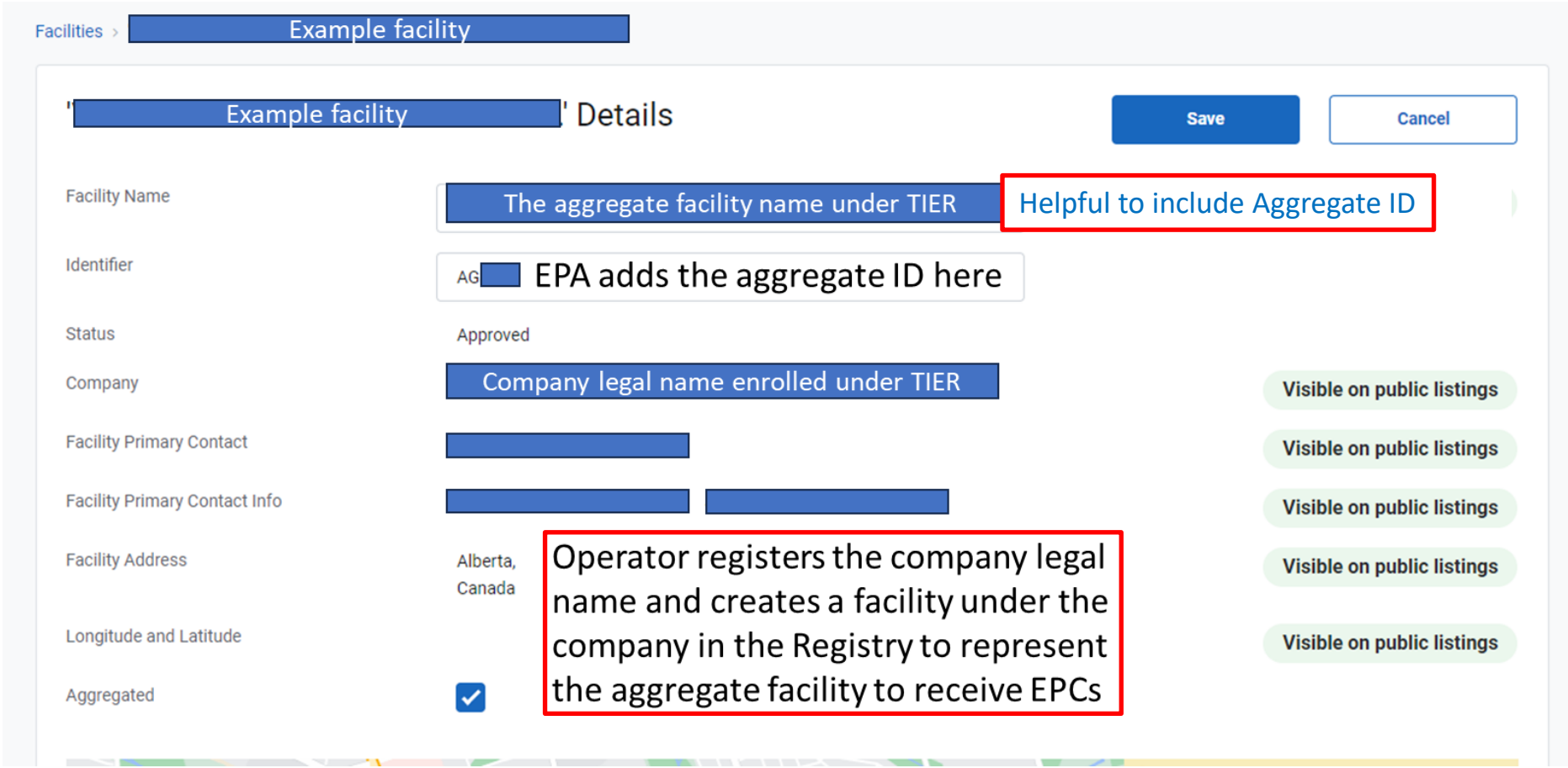
- Petrinex volumes amended following the submission of the report
- Status of EPC or EO credits not set to “Pending Retirement” on the Registries; Or no valid serial range was provided in the report.
- Wrong facility list (CoR)
  - TIER information in Petrinex infrastructure data is for reference only, not the official records.
- Inconsistent GHG quantification methods reported vs benchmark reference years
  - E.g., default open flaring of rich gas in benchmarking vs. incinerators in the report
- Incorrect Facility Specific Benchmark (FSB) or product/benchmark unit

2024 Compliance Gaps (cont'd)

- Empty EPC comments in the EPC Request form
  - Section 15(4) of the TIER Regulation – "… include the information required…"
- Not updating TBD facility IDs with actual Petrinex IDs
- Did not submit Fund Credit Purchase Form ahead of payment and **note the aggregate facility ID in the deposit memo**
- No payment
- Referral to Crown Debt Collections, Treasury Board and Finance
  - A potential next step if a compliance order is breached

Aggregate EPC Issuance

- The department initiates EPC issuance in the Registry based on accepted compliance reports
- If you have not done so, please create a facility that represents the aggregate facility under your company in the Registry. For details, please refer to the Alberta Carbon Registries Manual (Help - Resources; e.g., **Create a Facility** on page 37 of 47).
- Having an account in the Registries for offset projects does not mean there is a facility created under the account for the aggregate to receive (or use) EPCs


Facilities
Example facility
Example facility Details
Save
Cancel
Facility Name
The aggregate facility name under TIER
Helpful to include Aggregate ID
Identifier
AG
EPA adds the aggregate ID here
Status
Approved
Company
Company legal name enrolled under TIER
Facility Primary Contact
Facility Primary Contact Info
Facility Address
Alberta, Canada
Longitude and Latitude
Aggregated
Visible on public listings
Visible on public listings
Visible on public listings
Visible on public listings
Visible on public listings
Operator registers the company legal name and creates a facility under the company in the Registry to represent the aggregate facility to receive EPCs

Guidance and Key Updates for 2025 Reporting

2025 Aggregate Reporting Reminders

- Use the latest Confirmation of Regulation List issued for the **2025** reporting year
  - Automatic renewal letters were sent to aggregates that did not have population changes in 2025
- Ensure the volumetric data in Petrinex and the compliance report is **current and consistent**
- Submit the Fund Credit Purchase Form ahead of payment: **Note the Aggregate Facility ID (AGXX) in the deposit memo**
  - Instruction is in the Form (email to **EPA.Revenue@gov.ab.ca**)
  - $95 per tonne to obtain one fund credit for 2025 compliance true-up
  - Both the report and payment are due June 30, 2026

2025 Aggregate Reporting Reminders (cont'd)

- Credit usage limit: 80%
- Credits must be
  - Held by the "person responsible"
  - In "Pending Retirement" status
  - In the account of the regulated facility (EPCs only)
  - Correctly tabulated in the report form
    - 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

2025 Aggregate Reporting Reminders (cont'd)

- The **Alberta Carbon Registries Manual** has instructions on retiring credits (Help – Resources).
  - Page 24: Retire Emission Offsets
  - Page 44: Pending Retirement (EPC credits)
  - **The last step: Follow the payment instructions to complete the transaction:** *"Once the retirement has been approved, email notification will be sent to you with invoice and payment instructions."*
- If generating EPCs:
  - Fill out the EPC Request tab: *Description of activities taken at the facility that resulted in emissions intensity improvements*
  - Register **both** aggregate facility and company **names** on the Alberta Carbon Registries to receive EPCs (The Manual: Page 37)

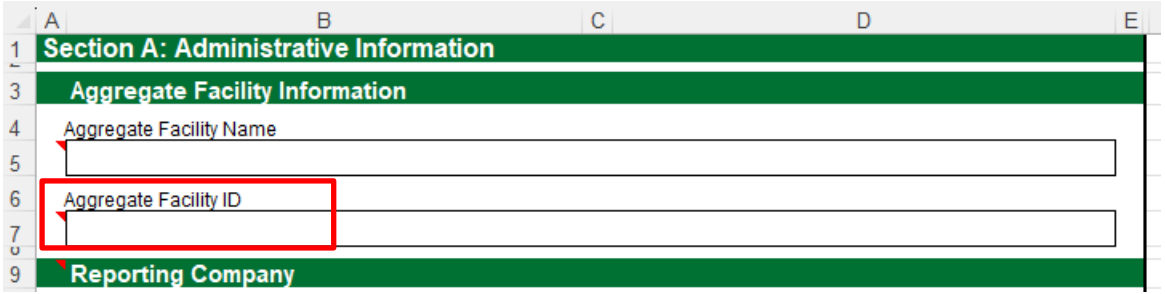
2025 Aggregate Reporting Reminders (cont'd)

- All compliance reports need to be third-party verified. E.g.,
  - Retracing and reviewing the original data records (e.g., Petrinex) for the year
  - Identifying the GHG quantification methods used in the assigned FSBs, and verifying that the methods used in the CRs are consistent with benchmarking
  - Calculating the Total Error (Equation 5-12, VVA) when discrepancies remain unresolved, to provide supporting evidence for the final verification statement
- Reduction targets for SFC and flaring emissions are 16% and 14%, respectively
- For aggregates that are assigned a special benchmark unit (Receipts excluding ZEF or Disposition excluding ZEF)
  - Report the production accounting (denominator) volumes as **"0"** for the facilities listed in the "ZEF List" tab of the review workbook attached to the FSB letter

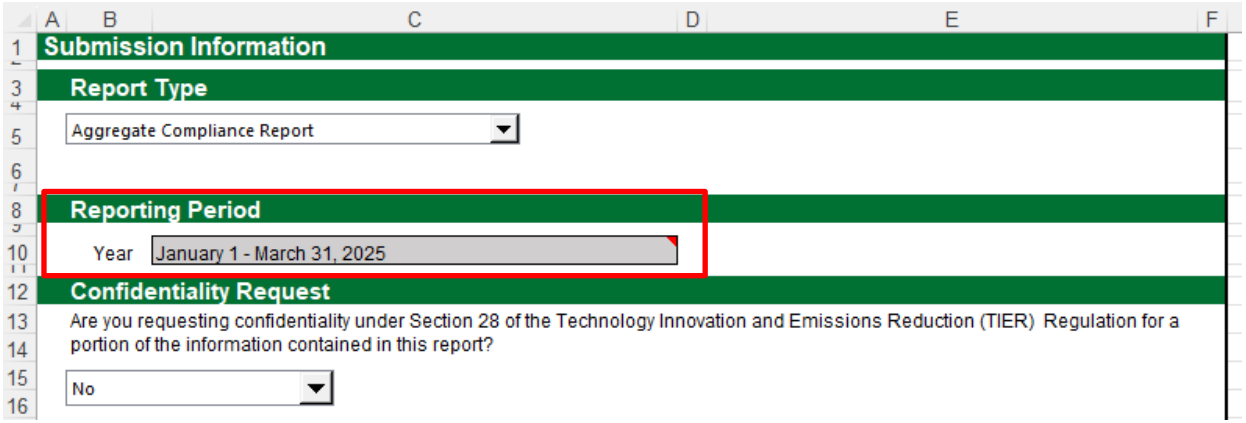
2025 Partial-Year Reporting

- The following is guidance for the preparation and submission of a partial-year compliance report for 2025:
  - A partial-year compliance report form is available for download at https://www.alberta.ca/conventional-oil-and-gas.aspx.
  - In accordance with section 36(7), a “year” for a partial-year compliance report is the period from January 1, 2025, to March 31, 2025. Therefore, only emissions (both Petrinex and non-Petrinex), production, and other reportable data for this period is included in the compliance report.
  - Third party verification is required for the partial-year compliance report as per the Standard for Validation, Verification and Audit.

2025 Compliance Reporting Template



- The Reporting Period is determined automatically based on Aggregate Facility ID and its approved opt-out application, if any.



Verification of 2025 Compliance Reports

- Verifiers may submit a request for deviation from the Section 2.2.2 requirement for a maximum of five consecutive verifications
  - **Aggregate facilities that submit a full-year or partial-year 2025 compliance report and subsequently exit the TIER program for the 2026 compliance reporting year**, with 2025 serving as their final compliance year under the regulation
  - The Director will issue an approval letter to the verifier, if granted

2025 Facility-Specific Benchmarks

Overview of 2025 FSBs

- In 2025, the department received
  - 1 request to change the benchmark unit
  - 12 requests to change the benchmark reference years
  - 2 requests to change both benchmark years and units
  - 3 benchmark applications

Overview of 2025 FSBs (cont'd)

- Director's default benchmark for new aggregates (12)
  - Assigned to aggregates for their first compliance reports if no benchmark application was submitted
  - BM unit is selected through internal correlation analysis
  - Calculated using Petrinex data and Director's default emission factors
- Default benchmark adjustment (248)
  - Assigned to aggregates that did not submit an FSB application for 2025
  - Calculated using previously submitted SFC, flare emissions and production data from compliance reports or prior FSB applications
  - Adjusted as necessary depending on the impact of aggregate population changes (details provided in the following slides)
- Benchmark application for new aggregates (3)
  - Assigned after the FSB applications are accepted after EPA's review

Selecting a Benchmark Unit

- One of the following benchmark units can be requested by the person responsible for an aggregate, or be assigned by EPA:
  - Production, disposition, or receipts of specified energy products, expressed in m^3 oil equivalent volumes; Or
  - Disposition or receipts of specified energy products, excluding the volumes of **specified Zero-Emitting Facility** (ZEF), where applicable, expressed in m^3 oil equivalent volumes (as per Benchmarking Standard 9.1.2)
- An alternative benchmark unit may be assigned by the department, or at the request of the company on its own initiative (e.g., disposition to external non-operational facilities) if the above benchmark units are found not representative after assessments

Selecting a Benchmark Unit (cont'd)

- Pearson's correlation coefficient r_{Agg} (Equation 9-3, the benchmarking standard) is used to evaluate the representativeness of a unit
  - Should be calculated using monthly data;
  - May be assessed using annual (year-to-year) data in place of monthly data when appropriate, such as when emissions are seasonal or strongly influenced by ambient air temperature (Section 9.1.2.2)
  - Can be computed using spreadsheet functions such as Excel's built-in function "=CORREL(array1, array2)"

Example Correlation Matrix for an Aggregate

- The department generates correlation matrices for each aggregate for the approved reference years and the most recent three years, using volumetric data in Petrinex

	FUEL+FLARE	FUEL	FLARE
RECxZEF	0.78	0.78	-0.23
DISPxZEF	0.62	0.61	-0.09
PROD, PROC, FRAC	0.25	0.25	0.01
REC	0.24	0.23	-0.01
DISP	0.20	0.19	0.03

	FUEL	DISP	DISPxZEF	FLARE-OtherGases	PROD, PROC, FRAC	REC	RECxZEF	FLARE	FUEL+FLARE
FUEL		0.19	0.61	-0.41	0.25	0.23	0.78	-0.42	1.00
DISP			0.57	0.05	0.72	0.99	0.36	0.03	0.20
DISPxZEF				-0.08	0.76	0.52	0.84	-0.09	0.62
FLARE-OtherGases					0.02	0.01	-0.22	1.00	-0.33
PROD, PROC, FRAC						0.63	0.38	0.01	0.25
REC							0.40	-0.01	0.24
RECxZEF								-0.23	0.78
FLARE									-0.34

Selecting Benchmark Years

- The default reference period includes the year prior to being accepted into TIER and the first two years regulated under TIER, as defined in Table 7, section 9.1.1, Standard for Developing Benchmarks (v2.5)
- Benchmark years and units are inter-connected and are evaluated together in correlation analyses
- The forms for benchmark year and unit change requests have been combined into a single form to:
  - Accommodate requests involving either or both types of changes; and
  - Allow assessment of inter-connected impacts through a streamlined process

Aggregate Facility Benchmark Unit and Reference Years Request Form

BM Years and Units Change Requests

- Requests to change benchmark years or units should
  - Follow the Standard for Developing Benchmarks
  - Align with Section 7(6) of the TIER Regulation
  - Ensure that they are representative of the aggregate facility's composition, configuration and emissions
    - With comparable or improved correlations
- If the requested benchmark unit is receipts or disposition, the department
  - Evaluates the impact of ZEFs, and
  - May assign a special unit such as receipts excluding ZEF or disposition excluding ZEF based on the ZEF assessment

Benchmark Application

- 2025 benchmark applications are under review
  - An appropriate BM unit is selected
  - Petrinex volumes are correctly cast back to the BM reference years using the approved final version of the 2025 CoR facility list
  - Representative GHG quantification methodologies are applied
  - Verification report is prepared by a qualified third-party verifier
- ZEFs impact is assessed when a product unit is Disposition or Receipts during review by EPA. An FSB may be assigned using DISPxZEF or RECxZEF based on the assessment
- No population adjustment applied

2025 Benchmark Adjustments and ZEF Assessments

2025 Default Benchmark Adjustment

- Is based on data from previously submitted compliance reports or FSB applications, or Director's default calculations
- The impact of aggregate population changes on benchmark years' fuel and flare to production intensities is evaluated through icast/i calculations to determine if adjustments to previous data are needed.
- Internal scripts and tools was developed / updated to assist in the adjustment process
- As previously communicated, the Zero-Emitting Facility (ZEF) treatment is applied across the board in the program
  - The ZEF treatment, if applicable for an aggregate, is applied before icast/i calculations

Assessment of ZEF Impact

- ZEF Eligibility Criteria (all must be true) for a Petrinex facility:

Criterion	Threshold
(Fuel and Flare) Volume Intensity	< 10% of aggregate volume intensity
(Fuel+Flare) Volume share	< 0.5% of aggregate total (Fuel+Flare) volume
Facility type	GS, PL, TM, MS, IF, CT & WS **(excludes well batteries / BTs)**
Consistency	Must qualify in **both** the 2025 compliance year **and** the reference years combined

ZEF Assessment Procedure

Step 1 : Identify ZEFs in the 2025 CoR facility list

- Calculate volume intensity ((fuel+flare) ÷ production accounting volume based on REC or DISP) for each Petrinex facility for 2025, and for the reference years combined
- Determine each facility's fuel+flare volume as a percentage of aggregate total for 2025, and for the reference years combined
- Select facilities meeting all ZEF criteria (BM year + Ref years)

Step 2 : Subtract ZEF volumes

- Remove ZEF production accounting volumes from totals (based on REC or DISP) creates the xZEF unit (e.g., RECxZEF)

Step 3 : Calculate the ZEF impact metric

- Calculate the intensity ratio: 2025 volume intensity ÷ reference years' volume intensity
- Compute this ratio with and without ZEF volumes
- If the ratios differ **by ≥5%** (up or down), consider changing the benchmark unit

Step 4 : Determine the benchmark unit

- **Option A**: Switch to Production if correlation results are better or comparable AND no significant production volumes associated with significant emissions are missed
- **Option B**: Choose REC or RECxZEF, by considering correlations and ZEF impact metric

ZEF Report Example

ComplianceYear	SummedActivityID	2019	2020	2021	2022	2023	2024	2025
ComplianceYear_2025	DISP	638654.8501	492467.4936	529809.6306	485964.0272	577714.7753	480871.417	350517.653
	FLARE-OtherGases	2269.8	1033.3	2023.7	2469.8	9370.9	7110.7	1775.8
	FUEL	13261.7	12217.9	13374.9	13976.3	14145.5	13119.1	12360.2
	PROD, PROC, FRAC	339151.1282	292131.2004	309777.5021	266588.9603	284543.0273	230611.0773	174295.3719
	REC	329152.6808	226301.2418	249142.6504	A 245381.0247	B 319869.4774	276335.5084	195101.0745
	FLARE-ACGAS	0	0	0	0	0	0	0
	FUEL+FLARE	15531.5	13251.2	15398.6	C 16446.1	D 23516.4	20229.8	14136
	DISP Vol. Intensity	0.024319083	0.026907766	0.029064402	0.033842217	0.0407059	0.042069042	0.040328925
	REC Vol. Intensity	0.047186309	0.058555578	0.061806359	0.067022705	0.073518737	0.073207385	H 0.072454752
	PROD PROD, PROC, FRAC Vol. Intensity	0.045795218	0.045360441	0.049708581	0.061690852	0.0826462	0.087722586	0.081103703
	Total REC ZE volumes	145129.0614	125709.544	104559.222	76722.7998	71123.1283	62559.2431	60649.631
	REC_xZEF vol	184023.6194	100591.6978	144583.4284	E 168658.2249	F 248746.3491	213776.2653	134451.4435
	REC_xZEF Vol. Intensity	0.084399492	0.131732541	0.106503215	0.097511402	0.094539679	0.094630711	G 0.105138328

Corr. Annual data (All years)	FUEL+FLARE
REC	0.63684206
RECxZEF	0.945209692
DISP	0.334855539
DISPxZEF	
PROD, PROC, FRAC	-0.003500759

Corr. Monthly data (All Ref_years)	FUEL+FLARE
REC	0.823663808
RECxZEF	0.803772019
DISP	0.744392222
DISPxZEF	0.720388808
PROD, PROC, FRAC	0.384300963

I = (C+D)/(A+B)

J = (C+D)/(E+F)

	RF Years Combined Volume Intensity	2025 vs. RF
REC	0.070698743	1.024837912
RECxZEF	0.095740446	1.098160003
DISP	0.037570082	1.073431898
DISPxZEF		
PROD, PROC, FRAC	0.071509854	1.118519732

K = H/I

L = G/J

[redacted] ZEF Review Summary		Comments
ZEF Impact metric	1.071545061	
Test Unit	RECxZEF	
Rf yrs	2022 2023	

Cell I19/I18 L/K

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ZEF Report Example

Corr. Annual data (All years)	FUEL+FLARE
REC	0.63684206
RECxZEF	0.945209692
DISP	0.334855539
DISPxZEF	
PROD, PROC, FRAC	-0.003500759

Corr. Monthly data (All Ref_years)	FUEL+FLARE
REC	0.823663808
RECxZEF	0.803772019
DISP	0.744392222
DISPxZEF	0.720388808
PROD, PROC, FRAC	0.384300963

	RF Years Combined Volume Intensity	2025 vs. RF
REC	0.070698743 K	1.024837912
RECxZEF	0.095740446 L	1.098160003
DISP	0.037570082	1.073431898
DISPxZEF		
PROD, PROC, FRAC	0.072509854	1.118519732

AGXX ZEF Review Summary		Comments
ZEF Impact metric	1.071545061	*Cell I19/I18*
Test Unit	RECxZEF	
Rf yrs	2022 2023	
Default Unit	REC	
2024 BMU sent	REC	
Comment on the comparison of r against test unit	Better on yearly data & comparable on montly data	
Comment on potentially missing volumes for non-ZE, if switched to production as unit	Missing Feul and Flare volumes associated Rroduction unit is : 690.40 (4.8840 % of total FUEL+FLARE)	
Recommended BMU for 2025	RECxZEF	

ZEF Impact Metric : 1.072 → 7.2% delta exceeds the 5% threshold L / K

Annual correlation improves from 0.637 → 0.945 when ZEF volumes are removed

Production not suitable : weak correlation (-0.004) and 4.88% of Fuel+Flare volumes (690 m^3OE) would be missing the associated production volumes (denominator)

- Removing ZEF volumes produces a more representative benchmark and RECxZEF is recommended for 2025 FSB

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2025 Benchmark – 4 Key Intensity Equations

- SFC

$$i_{SFC} = \frac{\sum_{y=1}^{n} V_{SFC,y,l_y}}{\sum_{y=1}^{n} V_{PROD,y,l_y}}$$ Equation 9-13

$$icast_{SFC} = \frac{\sum_{y=1}^{n} V_{SFC,y,l_r}}{\sum_{y=1}^{n} V_{PROD,y,l_r}}$$ Equation 9-15

- Flare

$$i_{FL} = \frac{\sum_{y=1}^{n} V_{FL,y,l_y}}{\sum_{y=1}^{n} V_{PROD,y,l_y}}$$ Equation 9-14

$$icast_{FL} = \frac{\sum_{y=1}^{n} V_{FL,y,l_r}}{\sum_{y=1}^{n} V_{PROD,y,l_r}}$$ Equation 9-16

For a walkthrough of the FSB Population Impact Analysis and the application of these equations, please refer to the 2024 Compliance Workshop material (slide 143).

Benchmark Adjustments for Population Changes

- FSB adjustment depends on the Intensity Ratios (IR_{SFC} or IR_{flare})

$$IR_{SFC} = icast_{SFC} / i_{SFC} \qquad IR_{flare} = icast_{FL} / i_{FL}$$

($icast$: Intensity of Petrinex fuel or flare at the BM years using the COR lists of 2025 compliance year,

i: Intensity of Petrinex fuel or flare at the BM years using COR list of the BM years)

Fuel/Flare Intensity Ratio IR	SFC Emissions Adjustment	Non-Petrinex SFC Emissions Adjustment	Flaring Emissions Adjustment
0.98 < IR < 1.02	No adjustment	No Adjustment	No Adjustment
1.02 =< IR <= 1.10	Multiply by IR	Multiply by IR	Multiply by IR
IR > 1.10	Multiply by IR	No Adjustment	Multiply by IR
IR < 0.98	Multiply by IR	Multiply by IR	Multiply by IR

- **Note:** If there is not population change since the benchmark was previously assigned, no adjustment will be applied.

FSB Calculation

- $FSB_j = \frac{E_{SFC,tj} \times (1 - RT) + E_{FL,tj} \times (1 - RT_{FL})}{P_{t,y,l_y}}$ Equation 9-19(a)
- $E_{SFC,tj} = \sum_{y=1}^{n} E_{SFC,y,l_y} \times \frac{icast_{SFC}}{i_{SFC}}$ Equation 9-17
- $E_{FL,tj} = \sum_{y=1}^{n} E_{FL,y,l_y} \times \frac{icast_{FL}}{i_{FL}}$ Equation 9-18

For a walkthrough of the FSB Adjustment and application of these equations, please refer to the 2024 Compliance Workshop (slide 145).

FSB checks - Data Validity Through Automation

- **Automated Tools**: Python scripts streamline FSB generation, ZEF treatment analysis, and internal data validation reducing manual effort and ensuring consistency across all aggregate facilities
- **Cross-Source Volume Comparisons:** Volumes and emissions used in benchmarking are validated against multiple independent sources:
  - Prior compliance reports, Benchmark applications, Default calculations derived from Petrinex data
- **ZEF assessments**: Automated identification of Zero-Emitting Facilities per benchmarking Standard criteria, including ZEF consideration in intensity ratio impact assessment, correlation analysis, and benchmark unit recommendation
- **Continuous development**
  - Regular code updates ensure scalability as data size increase
  - Flagged discrepancies tracked systematically; known issues reviewed regularly to maintain data accuracy and integrity

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2026 Facility-Specific Benchmarks

2026 FSB Approach

- **To reiterate**, the TIER aggregate program objectives for 2026 and onwards are to
  - Allow voluntary enrolment with compliance requirements
  - Incentivize emissions reduction by enabling aggregate facilities to earn EPCs through verifiable improvements in facility performance
- The 2026 FSB approach is projected to offer EPC opportunities comparable to those in 2024, while incorporating measures to mitigate the impact of dilutive effects
- Highlights from the updated Standard for Developing Benchmarks (v2.5) are as follows

The 2026 Aggregate Benchmarking Framework

- Is designed to enable a like-for-like comparison of emissions performance across the same cohort of COG facilities by facility type (e.g., well batteries, gas gathering systems, gas plants) between the reference years and the reporting year, while minimizing potential bias or noise introduced by Low Emitting Facilities (LEFs; see **sections 9.1 – 9.3** of the benchmarking standard)
- The 2026 **FSB application** form will retain the same overall format used in previous years, ensuring consistency for submitters. It will also include automated features that identify facility types from Petrinex IDs and perform corresponding calculations.

The 2026 Aggregate Benchmarking Framework (cont'd)

- In anticipation of declining populations across most aggregate facilities, the 2026 **default FSB** calculations (**section 9.5.1** of the benchmarking standard) will be based on a default FSB form that mirrors the structure of an FSB application form, but in a significantly simplified format. This replaces the previous (2025 and earlier FSBs) adjustment approach based on icast/i.

The 2026 Aggregate Benchmarking Framework (cont'd)

- In response to the termination of the federal fuel charge effective April 1, 2026, each **facility type** within an aggregate—such as well batteries, gas gathering systems, gas plants, custom treating facilities, tank terminals, and injection facilities—will be assigned **an FSB** beginning with the compliance year 2026, based on a benchmark unit representative of that facility type.

The 2026 Aggregate Benchmarking Framework (cont'd)

- Aggregate facilities that opt out of the TIER aggregate program for the 2026 compliance year—and are subsequently **re-enrolled**—may retain their previously established benchmark reference years, provided that:
  - The composition of the re-enrolled aggregate facility is identical to, or
  - A subset of, the previously opted-out aggregate facility.

Low Emitting Facilities (LEF) Treatment

- A Low-Emitting Facility (LEF) is a Petrinex facility (based on Petrinex ID) – inclusive of all facility types – whose combined fuel and flare volumes average less than 500 e^3m^3 across the reference years (i.e., total volume divided by the number of reference years).
- The effects of LEFs may be amplified in the 2026 reporting period due to increased flexibility in aggregate enrollment, following the end of the federal fuel charge. Accordingly, for 2026 and later FSBs, the production accounting volumes based on the assigned benchmark unit(s) for an aggregate **must exclude** the volumes associated with any **LEFs**, where applicable. This LEF treatment applies only to production volumes and **does not affect emissions data**.

Participation of New Facilities

- For 2026 FSBs, new facilities without data in the reference years may be excluded from total production volume calculations for the aggregate (see section 9.1.2). To support the participation of new facilities for EPC opportunities, a more recent year may be added to the reference year set (up to a maximum of three years). Alternatively, a new aggregate may be created for the new facilities with new reference years.

Newly Built Best-In-Class Sites

- **Newly built sites** demonstrating innovation and best-in-class performance may be included in the total production volume calculations for the aggregate, even if the aggregate's reference years precede the new sites' first operational year, to support comparison against the legacy facility cohort.
- A facility within (or under consideration for enrollment in) the Conventional Oil and Gas Aggregate Program under TIER may, upon request by the person responsible, be evaluated and recognized by the Director as best-in-class when it demonstrates **strong performance** in areas such as emissions intensity, operational efficiency, and environmental stewardship compared to similar facilities in Alberta's conventional oil and gas sector.

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Newly Built Best-In-Class Sites (cont'd)

- Recognition as a best-in-class facility typically reflects performance within the lower quartile (25th percentile) of emissions intensities for the facility type in the program, supported by evidence of
  - Advanced technologies
  - Electrification, or
  - Process innovations that reduce greenhouse gas emissions and promote sustainability.
- For more details, please refer to the Standard for Developing Benchmarks (v2.5); October 2025 webinar materials; Stay tuned for the Fall 2026 webinar.

Summary of Deadlines

- November 15, 2026: Adding facilities / creating a new aggregate for 2026 reporting
- December 1, 2026: Removing facilities for 2027 reporting
- December 1, 2026: 2026 FSB application; Request to change benchmark units or reference years

Contact the Department

Conventional Oil and Gas Unit
Climate Regulation and Carbon Markets Branch
Alberta Environment and Protected Areas

Website: https://www.alberta.ca/conventional-oil-and-gas.aspx

- TIER System support contact form

Email: EPA.GHG@gov.ab.ca

- Request a Microsoft Teams meeting
- Request a phone call back

Specified Gas Reporting Regulation (SGRR)

SGRR Overview

- Alberta's mandatory Greenhouse Gases (GHG) reporting program for facilities emitting over 10,000 tonnes of CO_2 equivalent per year
- Utilizes the Single Window Information System with Environment and Climate Change Canada's (ECCC) GHG Reporting Program
- 768 facilities reported to SGRR for 2024
- Annual reporting deadline is ***June 1***

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
- Boundary file link (use polygon, not line features): https://www.alberta.ca/system/files/custom_downloaded_images/sgrr-steps-to-creating-a%2520-facility-boundary-map.pdf