GHG Emission Verification in Alberta

Pincher Creek, Alberta

"Refinery Row", Edmonton, Alberta

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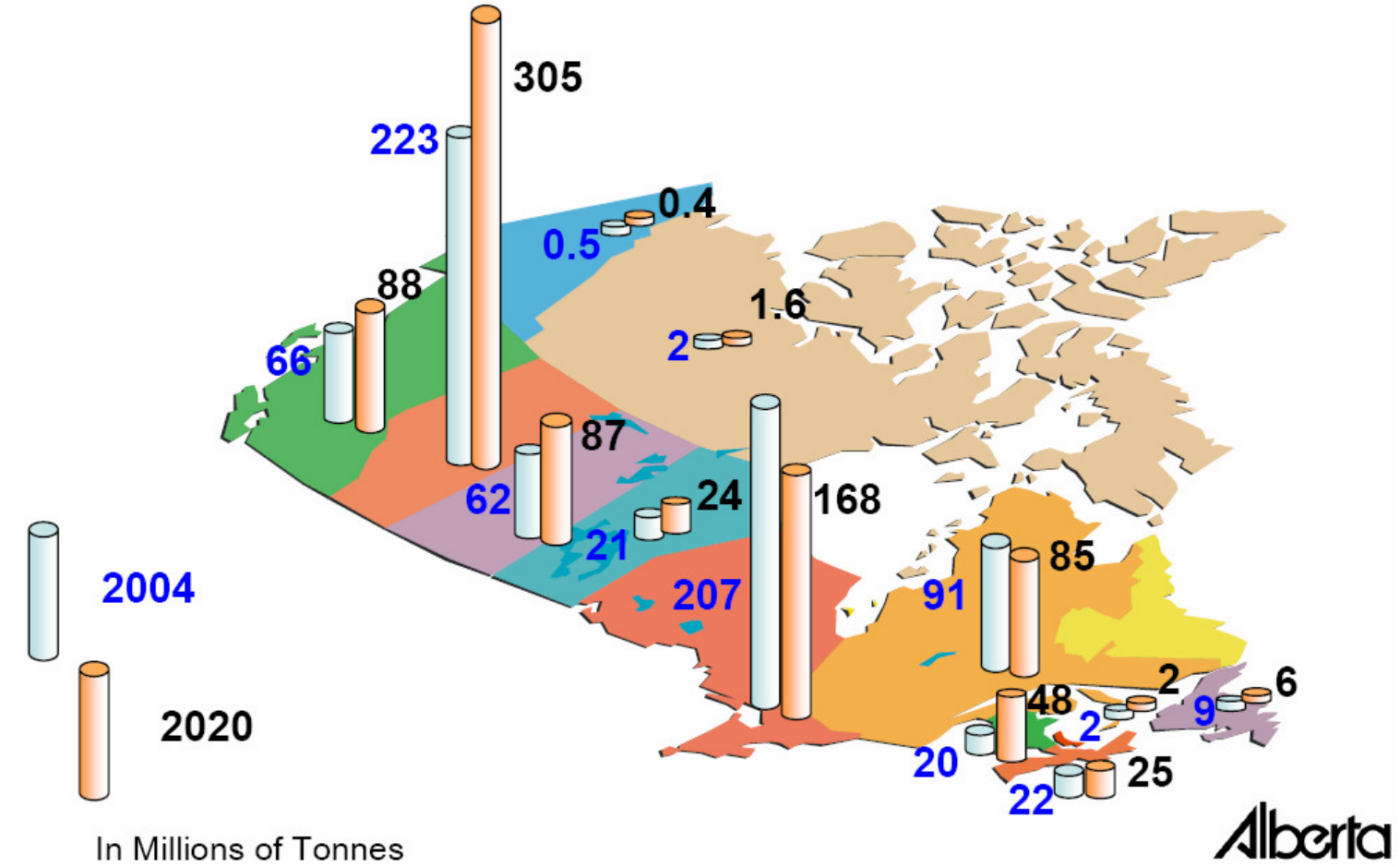
Presentation Overview

- Background
- Specified Gas Emitters Regulation
- Third Party Verification Process
- Verifier's Observations
- Conclusions
- Questions & Answers

Background

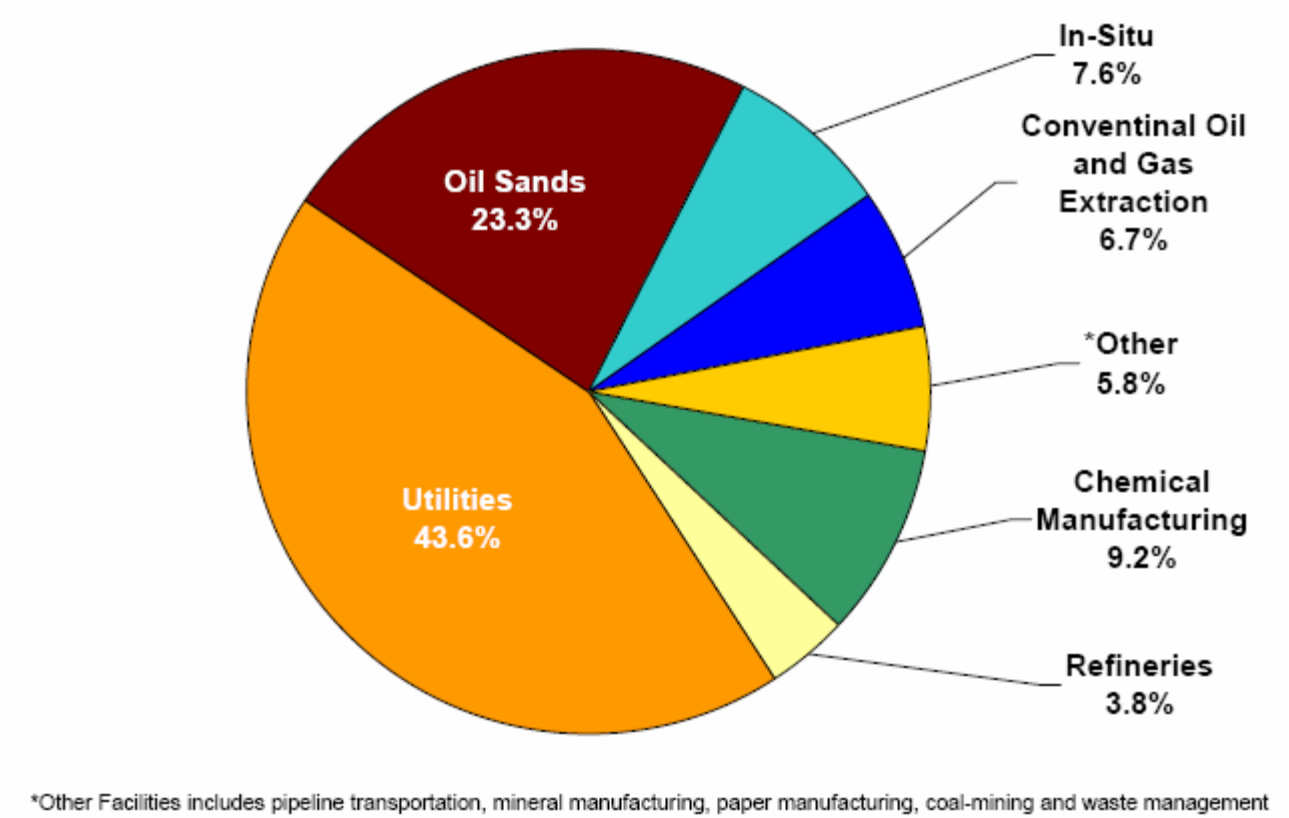
- Alberta has fossil fuel based, GHG intensive oil & gas economy: resource extraction, upgrading and transport
- Alberta is the first jurisdiction in North America to regulate GHG emissions

Alberta's GHG Emission in Canadian Context



Source: Alberta Environment

Distribution of CO_2e Emissions by Industrial Sector in 2007



*Other Facilities includes pipeline transportation, mineral manufacturing, paper manufacturing, coal-mining and waste management

Source: Alberta Environment, Report on 2007 Greenhouse Gas Emissions

Specified Gas Emitters Regulation (SGER)

- SGER came into effect July 1, 2007 requiring all facilities in Alberta emitting over 100,000 metric tonnes CO_2e per year to reduce emission intensity by 12% below their 2003-2005 baseline intensity
- 100 large point source facilities account for approx 50% of total Provincial GHG emissions

Specified Gas Emitters Regulation (SGER)

- New Facilities (post-2000) have phase in period based on years of commercial operation ramping up to 12% reduction limit
- 106 facilities reported total GHG emissions of 114.4 megatonnes (Mt) in 2007 representing a decrease < 1% from 2006 when 103 facilities reported emissions of 115.0 Mt
- CO_2 accounted for 96% of the total, CH_4 (2%), N_2O (1%), hydrofluorocarbons (<1%), sulphur hexafluoride (<1%), 0% perfluorocarbons

Specified Gas Emitters Regulation (SGER)

Compliance Options:

1. Meet reduction targets
   - direct facility efficiency improvements
2. Climate Change Fund Credits
   - Purchase Fund credits at $15/tonne: promote development & deployment of technologies that reduce GHGs
3. Emission Performance Credits (EPCs)
   - from another regulated facility that has reduced emissions below intensity limit
4. Emission Offsets
   - purchase Offset Credits from an approved Offset project operating in Alberta

Third Party Verification

Purpose & Policy Intent:

"to improve the overall assurance of the system and to bring additional expertise and scrutiny to bear."

Verification Standards

- ISO 14064 Part 3 – Greenhouse Gases: Specification with guidance for the validation and verification of greenhouse gas assertions
- Standards for Assurance Engagements, Canadian Institute of Chartered Accountants (CICA) Handbook
- International Standard on Assurance Engagements (ISAE) 3000

Level of Assurance

- Limited assurance: moderate level or negative assurance based on identifying anomalies rather than an endorsement

  "Based on our work described in this report, nothing has come to our attention that causes us to believe that the GHG statement is not, in all material respects, in accordance with the approved quantification protocols"

Parties Involved in Verification

Verification Process

- Engaging a Third Party Verifier
- Develop Verification Plan
- Review Documentation & Supporting Info
- Site Visit
- Verification Report & Statement of Verification
- Closing Meeting

Field Portion of Verification

- Site tour, identification of GHG sources
- Confirm facility boundary
- Meet personnel
- Identify fuel inputs and products
- Identify key measurement meters
- Look for additional GHG sources
- View random samples of records
- Review data management system
- Visit on-site laboratories

Office Portion of Verification

- Review calculations and documentation
- Relate calculations to physical processes
- GHG estimation methodology review
- Emission factor review
- Confirmatory calculations
- Review production metric for intensity
- Develop verification report, sign-off forms
- Peer review

Verification Issues - First Compliance Cycle

- quality of verification varied significantly
- some Verifiers signed-off on reports that did not meet basic regulatory requirements
- some verification reports were incomplete
- industry complained that limited capacity resulted in high initial costs and reports coming in late
- some Verifiers slipped into the role of consultant or advocate for the facility
- confusion over the level of assurance being verified to (limited vs. reasonable)
- not using prescribed forms

Verification Issues - First Compliance Cycle

- not submitting signed originals
- signing-off on unapproved methodologies
- applying different baseline emission intensity for compliance reports than approved in baseline application
- submitting unapproved offsets for compliance
- differing perceptions of verification between engineers and accountants
- clear jump in effort and resources required to shift from reporting to meeting compliance obligations both for facilities and government

Verifier's Observations

Verifier's Observations

- "how you are received" and levels of preparation vary from facility to facility
- Staffing levels vary, no dedicated GHG dept., often a part-time job for 1 or 2 staff
- Facilities understand processes very well, strong in calculations but need to demonstrate verifiable flow of info

Metering & Calibration

- Facilities vague about meter calibration
- Product custody transfer meters used for invoicing purposes may be owned and maintained by a third party
- Calibration reports not readily available for viewing during the site visit
- Maintenance on a “complaint basis”

Facility Boundary

- **Regulation:** *Facility is any plant, structure or thing that sits on one or more contiguous or adjacent sites that are operated and function in an integrated fashion*
- Third party ownership and operation of sub-stations, off-site power generation, cogeneration

Data Management

- Varying levels of sophistication in data management systems
- Electronic systems with limited reliance on manual transfer of info are most robust
- “flow of information” diagrams are ideal
- Watch for error propagation in spreadsheets

Program Review

- Re-verification of 10% of facilities annually
- Annual assessment of program & identification of areas of risk
- Heavy reliance on fund credits – in first year 55 facilities out of 96 made Fund contributions for compliance purposes
- Some facilities view program as a type of "operating tax"

Conclusions

- The Regulation and verification process is a good example of a working system
- Establishes initial stages of a carbon market, the “shadow price” of carbon will be built into investment decisions leading to new carbon reduction opportunities
- Third party verification improves overall assurance of the system, adds credibility provincially, nationally, and internationally

Wrap Up

More info:
http://environment.alberta.ca/631.html

Thank-you for your interest.

Questions?

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