Environment Canada Environnement Canada

Canada

Air Quality Management System

Regulating Qualitative Practices for Volatile Organic Compounds

Canadian Flaring and Venting Regulators Forum

16 June 2011 Annual Meeting

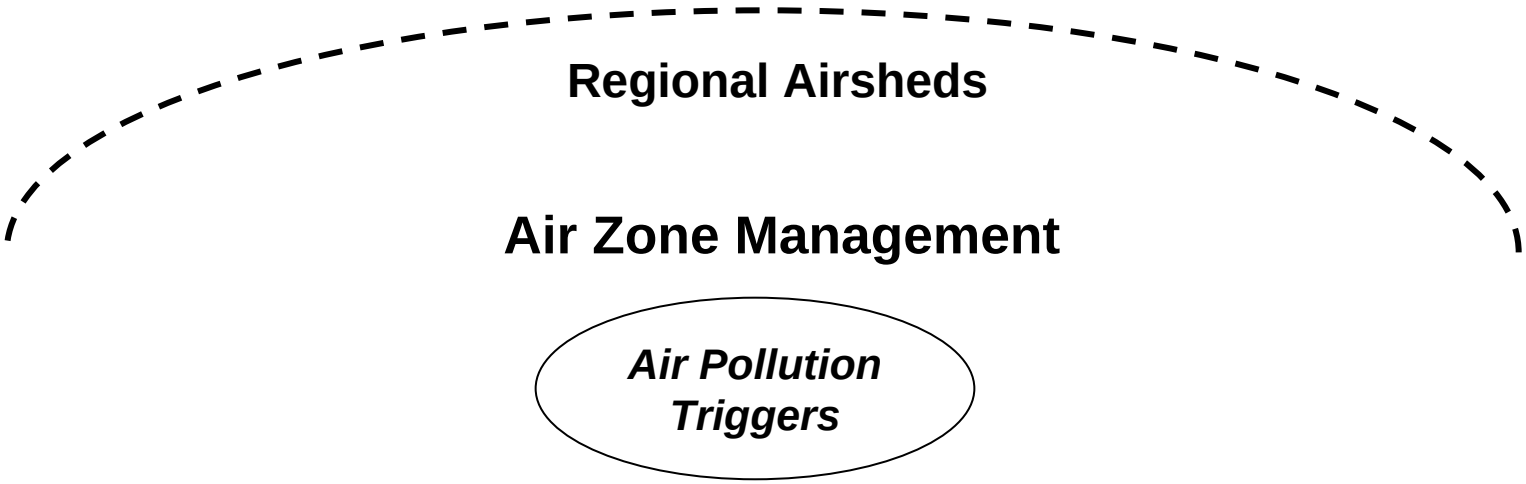
Outline

1. Air Quality Management System
2. Base Level Industrial Emission Requirements
3. Regulating Qualitative Practices for VOCs
4. Regulating Quantitative Limits for VOCs

AQMS – Process Development

- AQMS is a comprehensive approach that addresses emissions from all sources
  - Initial focus on fine particulate matter (PM) emissions, ground-level ozone, and precursors (NO_X, SO_2, and VOC) – all key contributors to environmental & health impacts
  - Requirements to apply to all sources, initially focused on industrial sectors
- AQMS relies on collaboration to improve air quality
  - Engaging all key stakeholders and communities in air quality management

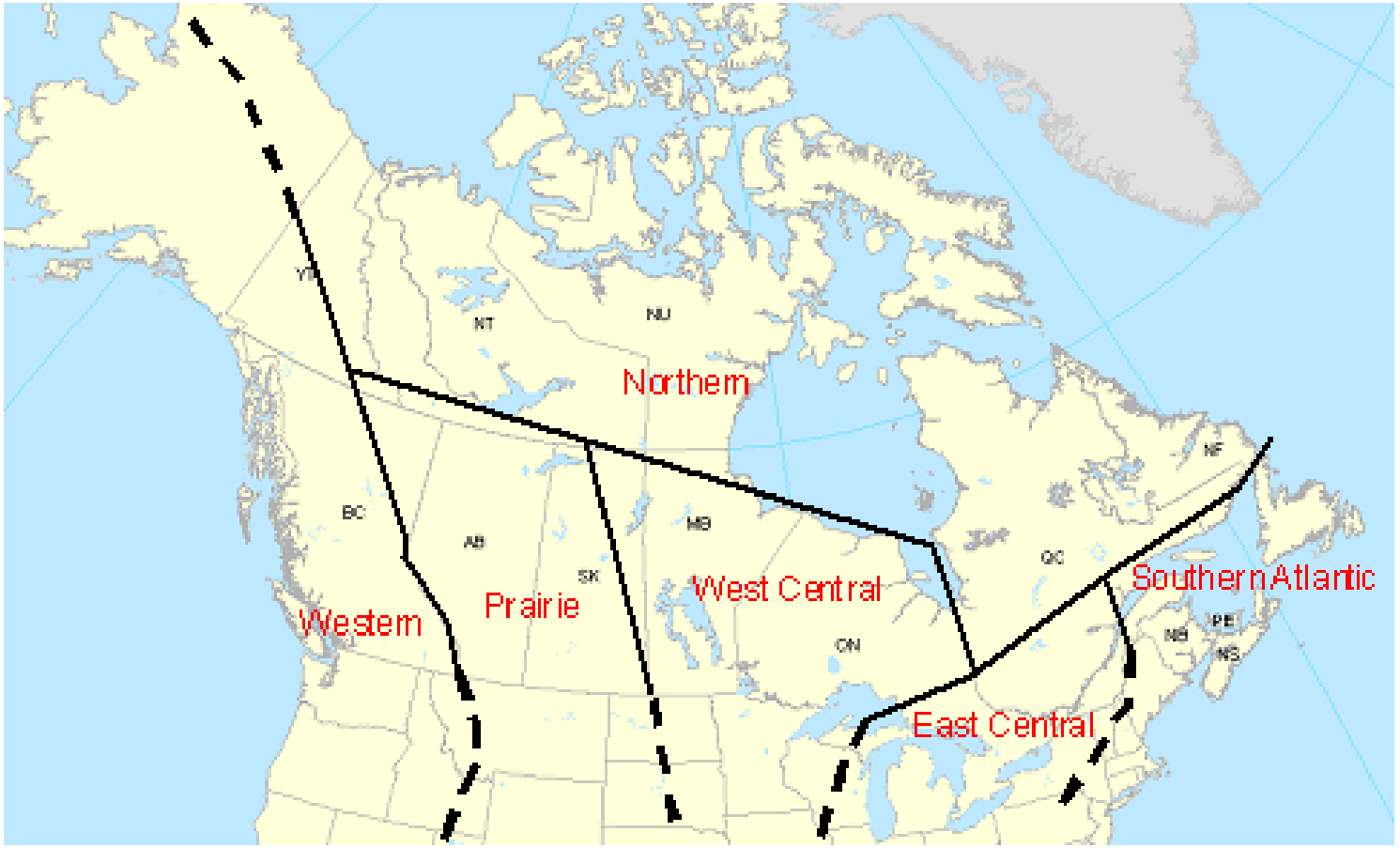
AQMS - Elements



Canadian Ambient Air Quality Standards (CAAQS)

Base-Level Industrial Emission Requirements (BLIERs)

AQMS - Proposed Regional Airsheds



AQMS – BLIER Status

- Includes 3 main interrelated elements:
  1. Canadian Ambient Air Quality Standards (CAAQS).
  2. Air Zone Management/Regional Airsheds.
  3. Base-level Industrial Emissions Requirements for 17 groups:

Alumina/Aluminum	Iron and Steel	Upstream Oil and Gas
Base Metals Smelters	Oil Sands	Non-Utility Boilers and Heaters
Cement	Petroleum Refining	Combustion Turbines
Chemicals (Fertilizers)	Pipelines	Reciprocating Engines
Electricity	Potash	VOCs
Iron Ore Pellets	Pulp and Paper	

BLIER - Process Development

- Environment Canada leads CCME process (with AB and ON champions)
- BLIER groups:
  - All groups invited federal, provincial, industry, and non-government organization representatives.
  - Aim is to reach consensus within the working groups (where consensus cannot be reached among all participants, the government participants will aim to reach consensus).
- Groups wrap up at the end of 2011 with recommendations

BLIER – “Defined”

- May be quantitative or qualitative performance requirements defined for an individual source or piece of equipment, for a facility, a specific process or fuel-type or any combination of the above

- Are intended to reflect requirements for industrial emissions in areas where ambient air quality standards are being met - they result in **“good” performance** and are not intended to achieve all emission reductions needed to meet CAAQS

- Additional measures could be implemented by provinces at industrial facilities as part of air zone management
  - Could factor in economic and competitiveness considerations into their decision making process
  - Depends on age and/or extent to which facilities currently have control technologies installed

BLIER - Energy Sector(s) Application

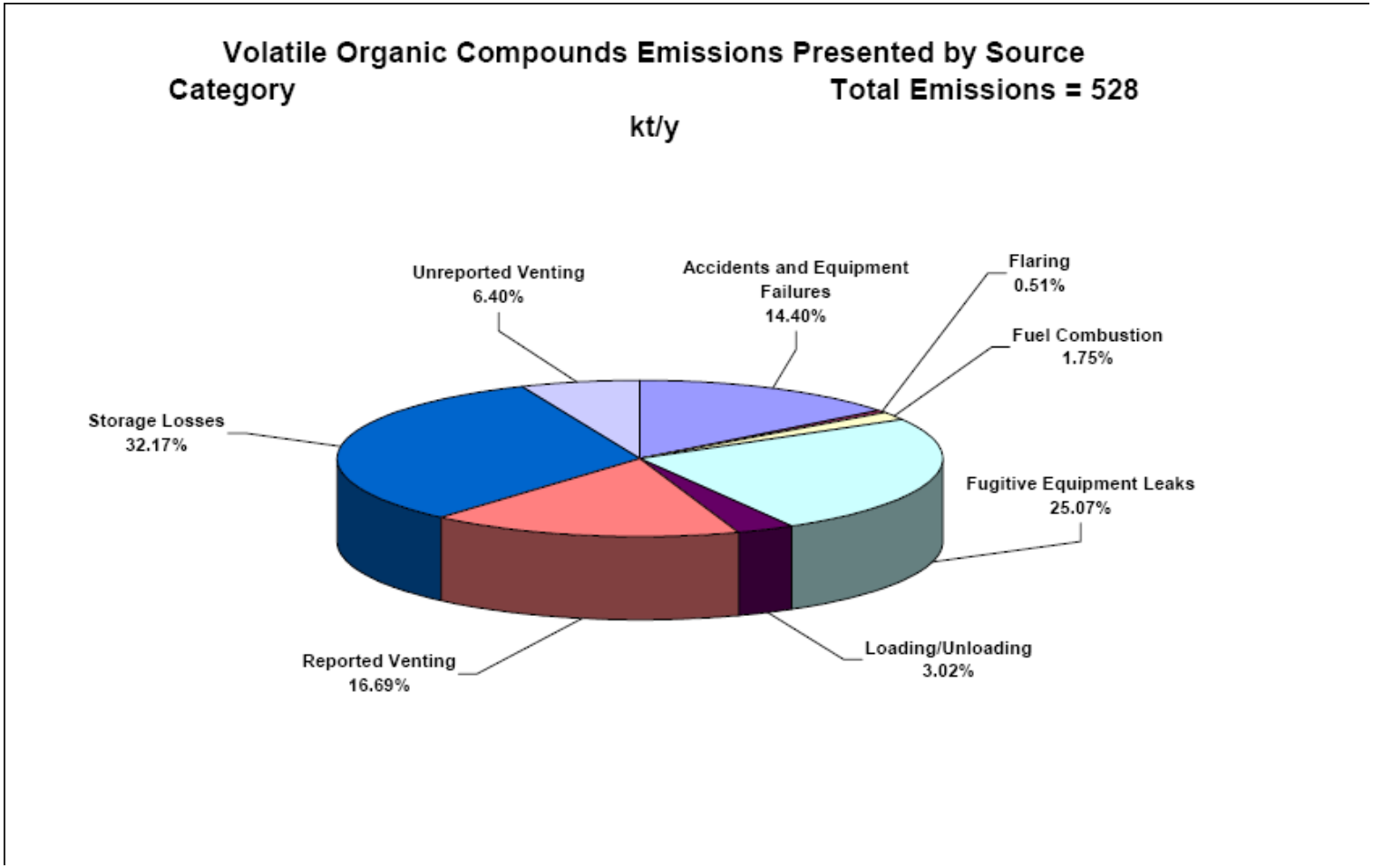
BLIERs potentially apply to:

- **Pipelines & terminals (natural gas, crude oil, refined products),**
- **Oil Sands,**
- **Petroleum Refineries, and**
- **Upstream Oil and Gas**

BLIERs under development:

- **Reciprocating Engines**
- **Gas Turbines**
- **Boilers and Heaters**
- **Oil Sands Minefleet truck performance ?**
- **Sulphur Recovery**
- **Refinery Facility Performance Benchmarks**
- **Steam Methane Reforming**
- **Qualititative Practices to Lower VOC Emissions**

VOC - Upstream Sources



VOC – Background Research

Environment Canada engaged a contractor (AECOM) to investigate current practices that reduce fugitive emissions from equipment leaks and storage losses from the oil and gas sectors:

- Scope: unintentional equipment leaks, storage and transfer losses
- Sectors: conventional oil production; extraction and processing of oil sands; offshore and frontier oil production; downstream refining; bitumen and heavy oil upgrading; natural gas production and processing; natural gas transmission, distribution and storage
- Final report delivered in May 2011

VOC – Industry Coverage

Hydrocarbon Production and Processing

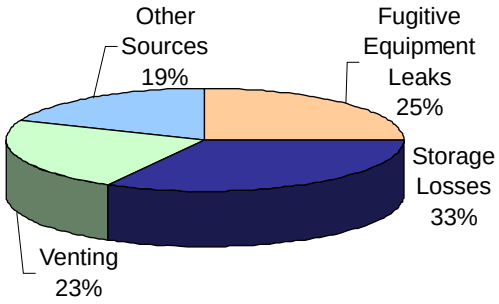
- In 2010, both the **Upstream Oil and Gas** and the **Oil Sands** BLIERs groups concluded that "*fugitive emissions of VOCs from equipment leaks be controlled through a regulated code of practice*". The UOG group also recommended that "*a regulated code of practice mandating technologies and operating practices to reduce VOC emissions from new and existing storage tanks and loading operations*."
- VOC emissions from **petrochemical manufacturing** will be covered by any measures developed. (chemical sector not active in early BLIER development)
- **Refining** - CPPI has requested that the refining sector not be included within the scope of the VOC BLIER work group. CPPI is participating as an observer.

VOC – Source Coverage

BLIER will regulate practices to address uncontrolled VOC Emissions:

- **Equipment Leaks**: leak detection and repair, directed inspection and maintenance
- **Storage Losses:** technologies and operating practices for new and existing storage tanks
- **Transfers:** operating practices for loading and unloading operations

VOC Emissions Profile (2000)



Source: CAPP, 2004

VOC – Stakeholder Engagement

- Kick-off teleconference April 05
  - "to *develop work practices and equipment standards which address VOC emissions from equipment leaks, storage and loading / unloading at these facilities*".
- May 11 (Calgary)
  - Proposed storage tank requirements
- June 21 (Calgary)
  - Proposed equipment leak requirements; discuss storage tank comments
- July 13 (Ottawa)
  - Proposed loading/unloading requirements; discuss equipment leak comments
- September 22 (Calgary)
  - Responding to stakeholder comments
- October 25 or 26 (Calgary)
  - Concluding discussion on all elements

Other Upstream BLIERs

Recommendations from Upstream group 2009-10:

- **Venting BLIER (VOC)**
- Flaring BLIER (SO2)