Monitoring, reporting and verification in the EU ETS

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Overview

★ The role of MRV in the EU ETS
★ EU MRV legislation and principles
★ Emissions monitoring approaches for aviation
★ Summary
The role of MRV in the EU ETS

- Strong compliance framework is essential for the integrity of EU ETS
  
  \[1 \text{ tonne CO}_2 = 1 \text{ tonne CO}_2\]

- Monitoring by operators is at the heart of the EU ETS

- EU ETS has well established MRV principles and practices
EU aviation MRV legislation

★ Commission Decision 2009/339/EC.
  ▪ Provides monitoring and reporting guidelines for aviation:
    ▪ general MRV principles;
    ▪ emissions monitoring requirements; and
    ▪ tonne-kilometre data monitoring requirements.

★ Expands MRV requirements from fixed installations to aviation

★ Builds on existing MRV principles

★ Aims to balance environmental integrity & cost-effectiveness

★ Where possible, consistent with international emissions reporting protocols
  
  e.g. WBCSD/WRI GHG Protocol and IPCC 2006 guidelines for national GHG inventories
Key principles of MRV

- **Completeness** – all emissions included
- **Consistency** – results comparable over time
- **Transparency** – data and assumptions recorded
- **Trueness** – results reflect true data
- **Cost effectiveness** – balance accuracy and cost
- **Faithfulness** – results can be depended on
- **Improvement of performance** – operators can improve performance
The MRV framework for aviation

1. Monitoring
   - Aircraft operator measures CO$_2$ emissions and tonne kilometres

2. Reporting
   - Each operator reports
     - Emissions – once per year
     - Tonne kilometres - once per compliance period

3. Verification
   - Reports checked by an independent, accredited verifier
Key elements of the EU system

- **Operator**
  - develops monitoring plans according to requirements in the legislation

- **Competent authority**
  - reviews and approves the monitoring plans

- **Operator**
  - implements & runs the monitoring system

- **Verifier**
  - checks implementation and operator’s reports

- **Competent authority**
  - has final decision on data presented
Monitoring plan

★ Each operator has specific monitoring plan
★ Based on common standard/format
★ Sets out the exact monitoring methodology including:
  • measurement methods
  • data flow management
  • internal quality controls
  • data archiving etc.
Standardised MRV templates

★ MRV templates developed for aviation
  • Available on our website in 22 languages
  • Examples provided of completed monitoring plans
★ More sophisticated systems by Member States allowed
★ An XML schema for all EU ETS is under development
Monitoring of Fuel Consumption

- Actual fuel consumption measured for each flight

- **Method A**
  
  \[ \text{Method A} = \text{Amount of fuel contained in aircraft tanks once fuel uplift for the flight is complete} \]
  
  - Amount of fuel contained in aircraft tanks once fuel uplift for subsequent flight is complete

  + Fuel uplift for that subsequent flight

- **Method B**
  
  \[ \text{Method B} = \text{Amount of fuel remaining in aircraft tanks at block-on at the end of the previous flight} \]
  
  - Amount of fuel contained in tanks at block-on at the end of the flight

  + Fuel uplift for the flight
Emissions from aviation activities

★ Emissions = Fuel consumed (tonnes) * Emission factor

★ Standard emission factors used
  • jet kerosene = 3.15 t CO₂/t

★ Density - if needed for converting fuel volumes to mass
  • to be taken from best available source
    • onboard measurement, or
    • fuel supplier
    • if not available - standard value

★ Special requirements for non-standard fuels (biofuels)
Reporting of annual emissions

- Aircraft registration numbers and aircraft types used
- Total number of flights
- Total fuel consumption and emissions per fuel type
- Aggregated emissions per Member State per fuel type
  - Flights which depart and arrive in the same MS
  - Flights departing from one MS to another MS or third country
  - Flights arriving from third countries
Simplified MRV procedures for small emitters

- MRV legislation provides simplified procedures for small emitters.
- Enables small emitters to model rather than measure emissions.
- Modelling tool developed by Eurocontrol should be approved for use soon:
  - Simple spreadsheet model
  - Free to use
  - To be available on their website.
Key messages

★ MRV is an important component of the EU ETS
★ MRV approach has recently been extended to aviation
★ Emissions monitored for each flight
★ Simplified MRV approaches for small emitters
★ Templates and good practice examples available on our website
Further information

Aviation and climate change website:

http://ec.europa.eu/environment/climat/aviation_en.htm

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