

The EU Emissions Trading Scheme

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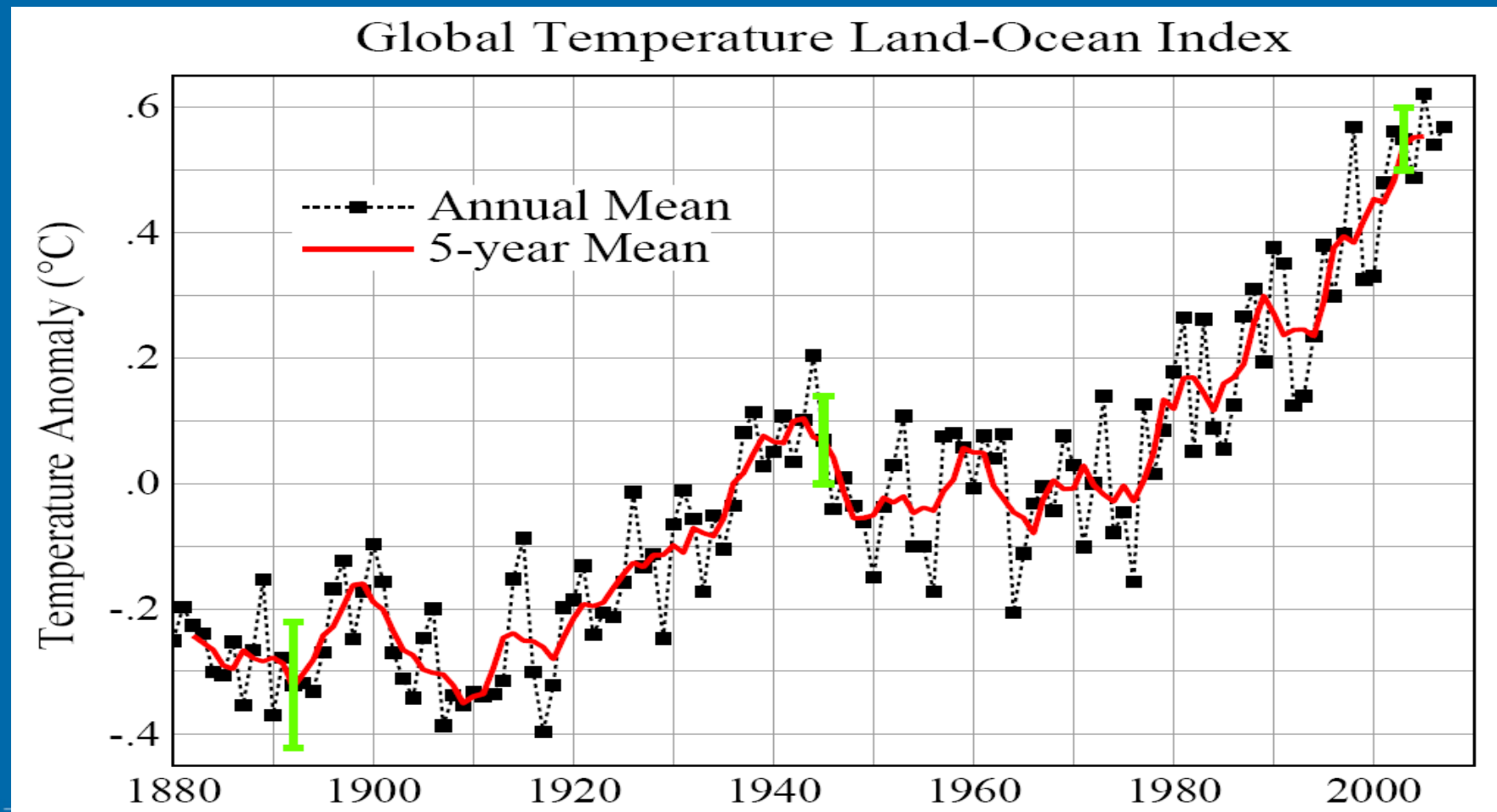
Outline

- ➔ Background
- ➔ Main components
- ➔ Most important MRV requirements
- ➔ UK implementation/good practice
- ➔ Latest developments

Underlying Concerns

- ⇒ Human activity increase of CO₂ >30% in last 200 years
- ⇒ Rate of climate warming greater than at any time during the last 10,000 years
- ⇒ Model predicted temperature increases 2-5°C by the end of the century
- ⇒ 10 warmest years on record since 1990
- ⇒ 2003 record breaking summer blamed for 2045 excess deaths in the UK and 14,802 excess deaths in France
- ⇒ UK river flow down 50-80% by 2050
- ⇒ UK average summer rainfall expected to drop by 60% by 2080
- ⇒ Extreme weather events more frequent
- ⇒ Thermal expansion of ocean water and accelerated melting of glaciers means that sea level is likely to rise by more than half metre by 2100

Temperature Rise

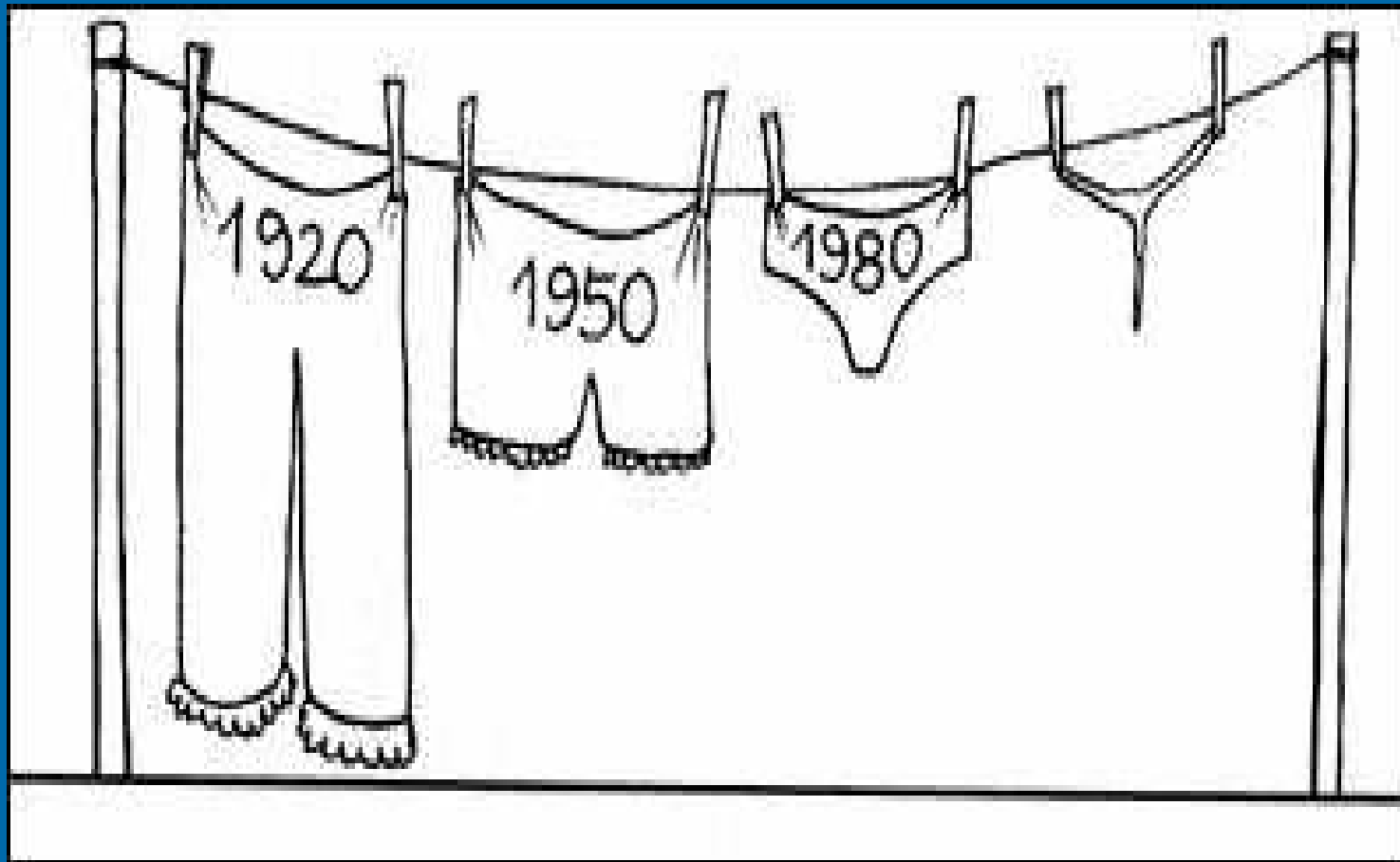


Glacial Retreat

A view down the Whitechuck Glacier in Glacier Peak Wilderness 1973 compared to 2006 (retreat of 1.9 kilometres)



Further evidence of climate change?



International Policy Action

- ➡ United Nations Framework Convention on Climate Change signed at the Earth Summit, Rio de Janeiro, 1992
- ➡ Kyoto Protocol, 1997 - Some developed countries agreed targets to reduce overall emissions of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride by 5.2 % below 1990 levels by 2008 -2012
- ➡ EU ETS part of EC commitment to meet a Kyoto Commitment to reduce all Greenhouse Gases by 8% based on 1990 levels by 2008 - 2012 (UK: 12.5%)
- ➡ COP 15, Copenhagen (December 2009)

EU ETS Directive

- ➡ Directive 2003/87/EC of 13 October 2003 establishing a scheme for GHG emission allowance trading within the Community and amending Council Directive 96/61/EC
- ➡ Article 1: *This Directive establishes a scheme for greenhouse gas emission allowance trading within the Community **in order to promote reductions of greenhouse gas emissions in a cost-effective and economically effective manner***
- ➡ Cap and trade - emissions cut wherever cheapest
- ➡ Predicted to deliver EU Kyoto target at a cost of €2.9-3.7 billion annually (<0.1% EU GDP - compared €6.8 billion/year compliance costs without the scheme)

Main Components of Cap & Trade

- ➡ Cap overall emissions (UK Phase 2: 1,230MtCO₂; 246/year)
 - ➡ Prescribed activities (Annex I)
 - ➡ National allocation plan (Article 9)
- ➡ Distribute allowances to installation operators (Articles 10 & 11)
 - ➡ one allowance = one tonne of CO₂ equivalent
- ➡ Impose obligations
 - ➡ Permits/Monitoring Plans (Articles 4, 5, 6)
 - ➡ Monitoring and reporting of emissions (Article 14 & Annex IV)
 - ➡ Verification of emissions (Article 15 & Annex V)
 - ➡ Surrender of allowances (Article 12)
- ➡ Trading mechanism/Registry
 - ➡ Buying and selling as appropriate (Articles 12 & 19)

The “MRG”

(Commission Decision 2007/589/EC)

Guidelines for M&R of emissions from activities listed in Annex I of EU ETS Directive

- ➡ Annex I: Definitions; Principles; Monitoring (calculation and measurement options); Uncertainty requirements; Reporting; Retention (of information); Control and Verification; Reference emission factors; Biomass; Activity-specific data/factors; Reporting format; Reporting categories; Small emitters
- ➡ Annexes II-XI: Sector specific guidelines
- ➡ Annex XII: Guidelines for CEMS

- ➡ Annex XIII (N₂O), Annexes XIV & XV (Aviation), Annexes XVI-XVIII (CCS)

Main MRG Monitoring Requirements

- ➡ Determination of emissions by calculation; or measurement (CEMS) if it reliably results in a more accurate determination of annual emissions
- ➡ By approved monitoring plans (Annex I, Section 4.3)
- ➡ Calculation based on:
$$\text{CO}_2 \text{ emissions} = \text{activity data} * \text{emission factor} * \text{oxidation/conversion factor}$$
- ➡ Tier-based approach (Annex I, Section 5.2)
 - ➡ Highest tier default (for larger emitters), minimum set by Annex I, Table 1
 - ➡ Activity data tiers set according to uncertainty thresholds
 - ➡ Other inputs based on IPCC factors, country-specific factors, and installation-specific determinations (frequency of determination & ISO 17025 issues)
- ➡ Fall-back approach (Annex I, Section 5.3) – last resort (overall uncertainty threshold requirement)
- ➡ Control requirements (Annex I, Section 10)

Control Requirements

- ➡ Operator required to maintain written procedures covering:
 - ➡ Data flow (acquisition and handling), including methods of calculation
 - ➡ Assessment of risks to misstatement (errors, misrepresentations or omissions) in the annual emissions report, or non-conformity with the approved monitoring plan, permit or MRG
 - ➡ Management of competences for assigned responsibilities
 - ➡ QA of measuring equipment and IT
 - ➡ Internal review of reported data (validation – vertical/horizontal checks)
 - ➡ Outsourcing
 - ➡ Corrections and corrective action
 - ➡ Records
 - ➡ Any other control activities required to mitigate identified risks (under the control system risk assessment)

EU ETS Verification

- ➡ To confirm reliability, credibility and accuracy of monitoring systems and reported data (further contribution to EU ETS integrity)
- ➡ Contracted between operator and verifier in the UK (permit requirement to submit a verified annual emission report)
- ➡ Scope of work:
 - ➡ Strategic analysis, risk assessment, verification, internal and external verification reports (MRG Annex I, Section 10.4)
 - ➡ Annual emissions report verified as satisfactory *if the total emissions are not materially misstated, and if, in the opinion of the verifier there are no material non-conformities* (based on reasonable assurance, i.e. a high level of certainty)
 - ➡ Misstatements, non-conformities and recommended improvements reported
- ➡ In the UK, “Verifier” means *a verification body or person accredited (and, if required, endorsed by UKAS) to carry out the verification requirements of Article 15 of the Directive. In this context, “accredited” means accredited by a member of the ‘European Co-operation for Accreditation’ having regard to the latter’s greenhouse gas verification guidance [reference to EA-6/03]*

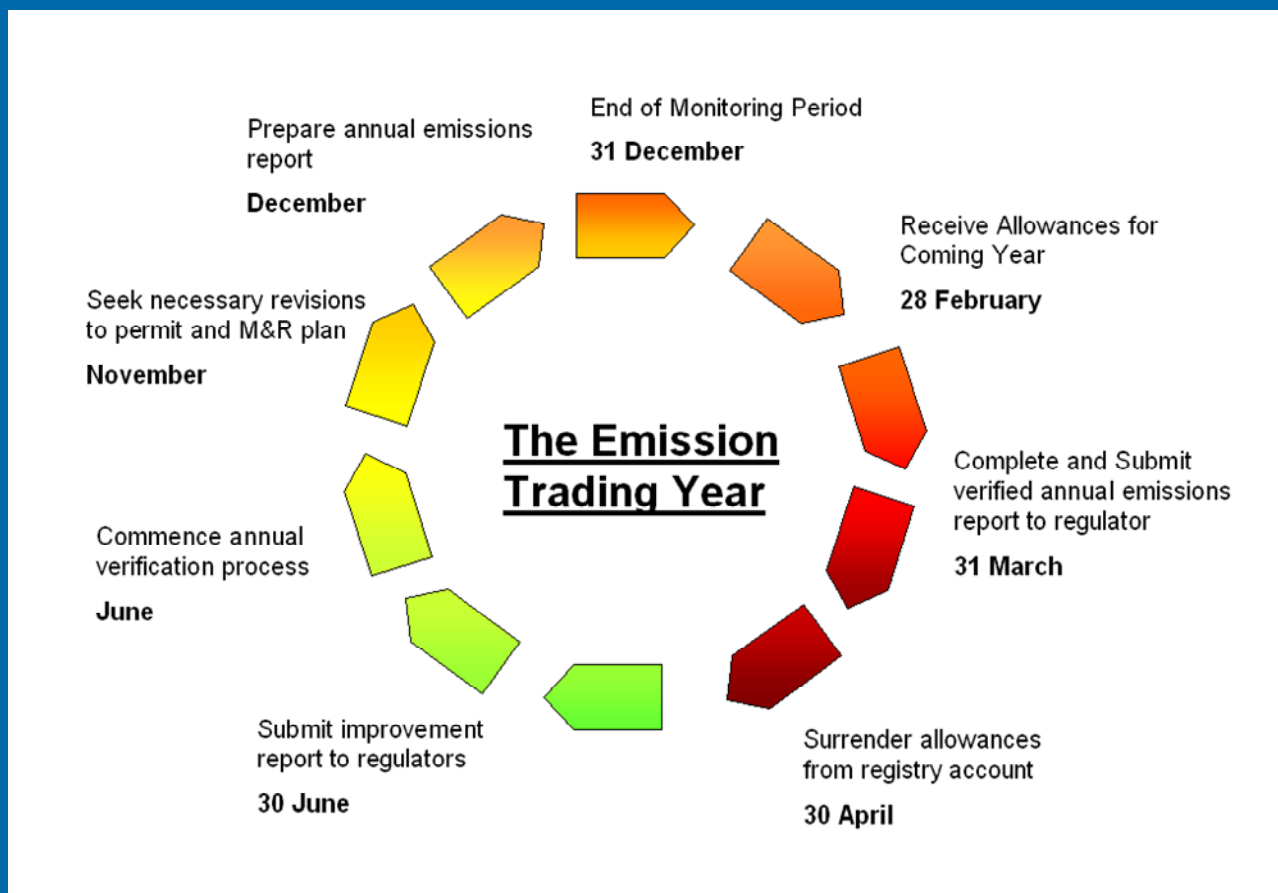
Summary of UK Implementation

- ➡ Directive (2003/87/EEC): October 2003
- ➡ UK GHG Emissions Trading Scheme Regulations entered into force 31st December 2003
- ➡ Commission Decision establishing guidelines for M&R of GHG Emissions 29th January 2004
- ➡ 1,100 permits including approved M&R plans issued by 31st December 2004
- ➡ Re-issue of Consolidated Regulations 2005
- ➡ Start of Phase 1 on 1st January 2005 - just CO₂
- ➡ Revised Commission Decision for M&R of 18th July 2007
- ➡ Permits re-issued for Phase 2 (2008-2012) by 31st December 2007
 - ➡ ca. 900 permitted installations
 - ➡ still just CO₂

Key Roles

- ➡ DECC (DEFRA, BERR), DfT - Development of Regulations, policy, and the national allocation plans
- ➡ Regulators (Environment Agency, SEPA, EANI, DECC Offshore) - Permitting, Enforcement, Inspection
- ➡ Environment Agency operates the UK Registry
- ➡ Operators - Permits to operate, M&R, and surrendering sufficient allowances
- ➡ Verifiers (accredited by UKAS or a fellow member of the European co-operation for Accreditation according to EA-6/03)
- ➡ Traders/Brokers - EU ETS Registry

Our Annual EU ETS Compliance Cycle



UK Good Practice

- ➡ Dedicated “National Once Task and Finish Groups” established
- ➡ Strong coordination/communications between Government, Regulators, Verifiers and Industry:
 - Emissions Trading Group (also MRV and Regulators Groups)
 - Consultations/workshops
- ➡ Electronic Application and Permitting System
- ➡ Helpdesks and websites for queries and products/guidance. Standard Forms
- ➡ Lean approach: costs kept down

Web Addresses

www.environment-agency.gov.uk/emissionstrading

www.defra.gov.uk/environment/climatechange/trading/eu/operators/mon-rep-ver.htm

<http://ec.europa.eu/environment/climat/emission/>

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

Environment Agency Web-site

Environment Agency - EU Emissions Trading Scheme - Microsoft Internet Explorer


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Address <http://www.environment-agency.gov.uk/business/topics/pollution/32232.aspx> Go Links

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24 April 2009



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- ▶ Phase 2 monitoring plans
- ▶ Phase 2 contingency fund applications
- ▶ Apply for a permit
- ▶ ETS 3.2 - Application to the new entrant reserve


EU Emissions Trading Scheme

Want to know more about the EU Emissions Trading Scheme? This section will give you all the information you need including how to make an application.

What is the EU Emissions Trading Scheme (EU ETS)?

The scheme is one of the policies introduced across the European Union (EU) to help it meet its greenhouse gas emissions reduction target under the Kyoto Protocol. The EU has to make an eight per cent reduction on 1990 levels by the first Kyoto Protocol commitment period (2008 - 2012).

The UK Kyoto target is 12.5 per cent. The EU ETS will also contribute to delivering the UK's domestic goal of a 20 per cent reduction in CO₂ emissions by 2010.

 Using Kyoto units in the European Union Emissions Trading Scheme (PDF, 206KB)

How the EU ETS works

The scheme is cost-effective and operates by the allocation and trading of greenhouse gas emissions allowances throughout the EU - one allowance represents one tonne of carbon dioxide equivalent.

An overall limit, or 'cap', is set by Member State's Governments on the total amount of emissions allowed from all the installations covered by the scheme. The allowances are then distributed to the installations in the scheme.

At the end of each year, operators are required to ensure they have enough allowances to cover their installation's emissions. They have the flexibility to buy additional allowances (on top of their free allocation), or to sell any surplus allowances generated from reducing their emissions.

These options create a flexible compliance regime for operators and also ensures emissions are effectively capped across the EU.

The scheme currently has two operating phases:

- Phase 1 from 1 January 2005 to 31 December 2007
- Phase 2 from 1 January 2008 to 31 December 2012










Installations covered by the EU ETS are those which carry out activities listed in Annex I of the EU ETS Directive. These include energy activities, production and processing of ferrous metals, mineral industries and pulp and paper industries.

What the EU ETS means for your business

The EU ETS Directive requires all installations carrying out activities listed in Annex I to hold a greenhouse gas emissions permit. The conditions of the permit will require installations to monitor and report emissions in accordance with the Commission's guidelines for monitoring and reporting.

Each year emissions data must be verified, and the equivalent number of allowances surrendered. All transactions and surrendering of allowances take




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Related Links

- ▶ EU Emissions Trading Scheme charges

External Links

-  NetRegs - EU Emissions trading scheme
-  EU ETS - dti
-  National Allocation Plan - Defra

We are not responsible for the content of other web sites.

Internet

DECC MRV Web-page

Defra, UK - European Union Emissions Trading Scheme - Operators - Monitoring, Reporting and Ver - Microsoft Internet Explorer

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Address <http://www.defra.gov.uk/environment/climatechange/trading/eu/operators/mon-rep-ver.htm> Go Links



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EU Emissions Trading Scheme (ETS)

ETS operators

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- [Directive & Regulations](#)
- [NAP Overview](#)
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- [Emissions Trading Registry](#)
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Monitoring, Reporting and Verification

Regulators are responsible for operational functions such as permitting, monitoring and reporting, registry administration, verification, enforcement and data management.

Regulators include: Environment Agency, Scottish Environmental Protection Agency; Department for Environment, Northern Ireland and the Department of Trade and Industry for offshore installations.

To improve operators' access to information, all documents and tables related to activities overseen by the regulators will be placed on the EA website. This site will be updated with information regarding this move in due course.

Guidance on annual verification for the EU Emissions Trading Scheme

This guidance document provides practical information and advice on the process and requirements for annual verification required by the EU ETS Directive, the Commission's Monitoring and Reporting Decision, and installation monitoring and reporting plans and Greenhouse Gas Permits. It aims to assist operators, verification bodies, and regulators to perform verifications consistently throughout the UK.

- [Guidance on annual verification for the EU ETS](#) (PDF 500 KB)
- [The Quick Guide for Operators on Preparing for Annual Verification](#) (PDF 60 KB)
- [Frequently Asked Questions on Annual Verification](#) (PDF 200 KB)

The Country-specific Factor List

This document contains tables of emission factors and calorific values for use in annual emissions reporting for the EU ETS. The national factors are Tier 2 and Tier 2a emission factors and net calorific values for specific fuels used by particular industries. The data have largely been extracted from the UK Greenhouse Gas Inventory (as presented in the 2008 National Inventory Report) that is presented on an annual basis to the United Nations Framework Convention on Climate Change. The Greenhouse Gas Inventory is developed independently to the EU Emissions Trading Scheme.

The factors in these spreadsheets should only be used in accordance with the requirements in the installation's Monitoring and Reporting Plan, which is part of the Greenhouse Gas Permit.

- [Final version: Tables of emission factors and calorific values for use in annual emissions reporting for the EU ETS](#) (Excel 160 KB)

Verification opinion statement template



This subject is now dealt with by the Department of Energy and Climate Change.

► [See www.decc.gov.uk](http://www.decc.gov.uk)

Latest EU ETS Development: N₂O

- ➡ Nitrous oxide emissions from nitric acid plant
- ➡ By opt-in during EU ETS Phase 2 (2008 - 2012)
 - ➡ Applications currently approved from the Netherlands and Austria
- ➡ MRG amended (Commission Decision of 17 December 2008; OJ, L24/18, 28th January 2009)
 - ➡ Annex XIII: Activity-specific guidelines for determination of nitrous oxide (N₂O) from nitric acid, adipic acid, caprolactum, glyoxal, and glyoxylic acid production
- ➡ Proposed activities for mandatory inclusion from 1st January 2013 (the start of EU ETS Phase 3)

Latest EU ETS Development: Aviation

- ➡ Directive 2008/101/EC amending Directive 2003/87/EC to include aviation
- ➡ Annex I activity from 2012, but:
 - ➡ Baseline t-km (payload x distance) requirement 2010 (to apply for free allowances)
 - ➡ Aircraft operators to report verified annual emissions for 2010 onwards (fuel consumption x emission factor)
- ➡ UK expecting ca. 1,500 monitoring plan submissions by 31st August for approval by 31st December 2009 (Europe ca. 6,800)
- ➡ Special geographical and scale of operator challenges
- ➡ Commission may adopt detailed provisions for verification (amended Article 15)
- ➡ MRG amended and common templates planned

Latest EU ETS Development: CCS

- ➡ MRG amendments to cover carbon capture and storage
 - ➡ Appropriate changes to the general guidelines of Annex I and to Annex XII (Guidelines for determination of emissions or amount of transfer of GHG by CEMS)
 - ➡ Annex XVI Capture
 - ➡ Annex XVII Transport
 - ➡ Annex XVIII Geological storage (MRV only in the event of leakage)
- ➡ Approved by the EC Climate Change Committee 16th March 2009

Revision of the EU ETS Directive

- ⇒ For Phase 3 (from 1st January 2013)
- ⇒ Extensions to proposed listed activities and gases
- ⇒ Final confirmation awaiting outcome of COP15
- ⇒ DECC planning 10 main work-streams, including on benchmarking, carbon leakage, auction design, and MRV
- ⇒ Main issues MRV:
 - ⇒ Article 14: Commission adoption of an M&R Regulation
 - ⇒ Article 15: Commission adoption of a Regulation for verification of emission reports, and for accreditation and supervision of verifiers(Both by 31st December 2011)

Concluding Comments

- ➡ An ETS puts emphasis on what rather than how
- ➡ It establishes maximum allowable emission level (compressed cap)
- ➡ It enforces the cap with increased emphasis on robust MRV and allowance surrender obligations
- ➡ It avoids dictating how each source is to comply (no elvs), and provides an incentive to go beyond allocations
- ➡ It puts a price on the emission - ca. €13.5/tCO₂ in April 2009
- ➡ Harmonised implementation important for equity and confidence - need a common currency
- ➡ EC keen to explore global linking (common outputs likely to be more important than completely common structures)



Conference

Next presentation at 14.00

**How direct emissions measurements can support
emissions trading schemes**

Rod Robinson, NPL