

# **Capacity Building for the Implementation of the EU Emissions Trading Directive in the new EU Member States**

**Workshop  
Budapest, 10<sup>th</sup> – 12<sup>th</sup> October 2005**

## **Guide on Verification**

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# ■ Content

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1. **Scope of the Manuals**
2. **Manual No.1: Guide on Monitoring and Reporting**
3. **Manual No.2: Guide on Verification**
4. **Manual No.3: Guide on Accreditation**
5. **Summary and Conclusion**

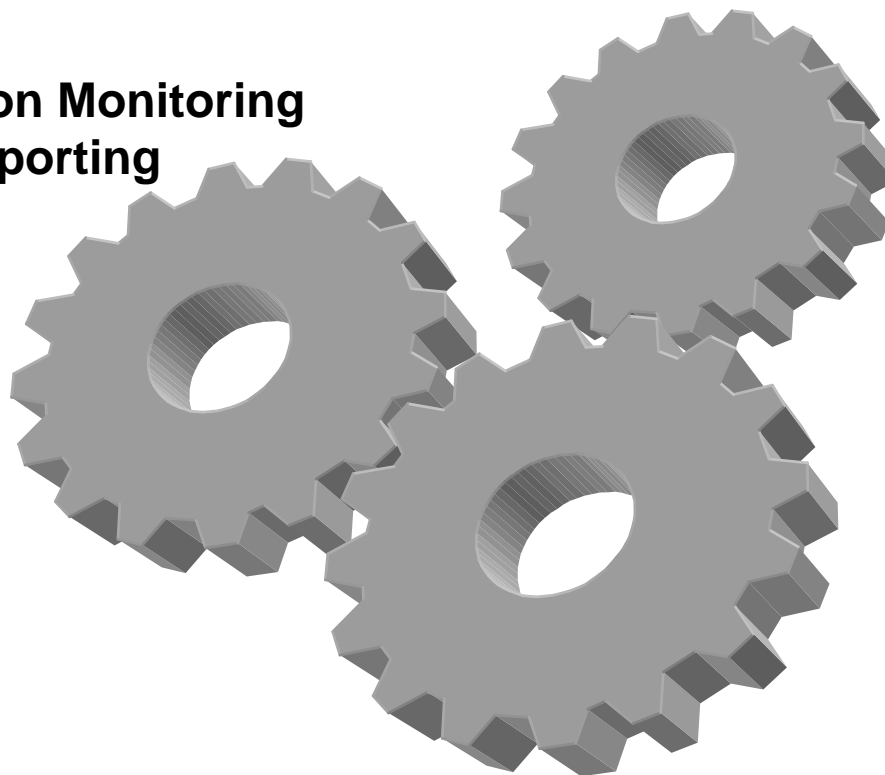


## ■ Interrelationship between Manuals

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**Guide on Monitoring  
and Reporting**

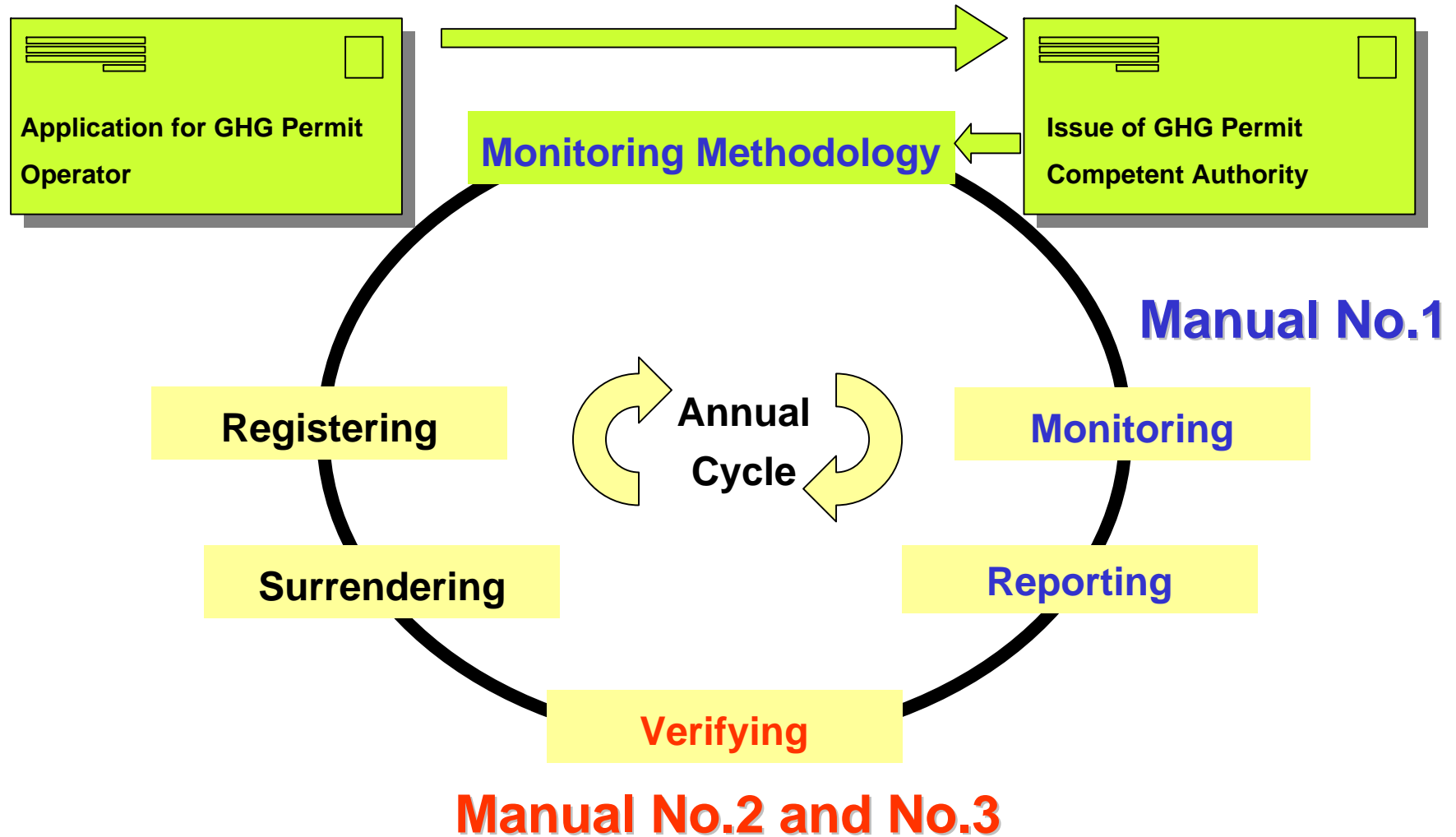
**Guide on Accreditation**



**Guide on Verification**



## ■ Scope of the Manuals



## ■ GHG Permit

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**Member States shall ...**

**... assure that from 1 January 2005 no installation covered by the EU ETS undertakes any activity unless its operator holds a GHG permit (*Article 4*)**

**Application for GHG Permit shall ...**

**... include measures planned to monitor and report emissions in accordance with the MRG (*Article 5*)**

**GHG Permit shall ...**

**... contain monitoring requirements, specifying monitoring methodology and frequency (*Article 6*)**

***(1) Theory not practise***

***(2) Practise differs from MS to MS and within MS***

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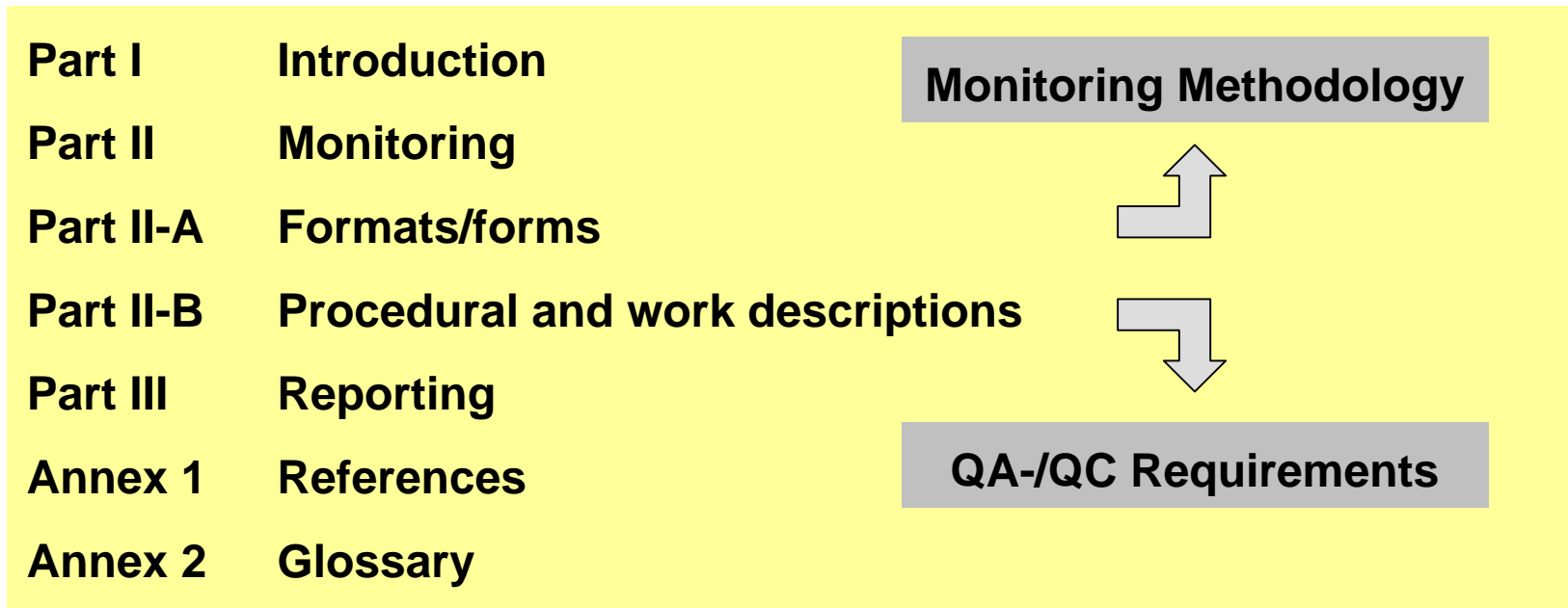
## ■ Case Study



- **Power Station**
- **400 MW**
- **2 Sources**  
(combustion; flue gas cleaning),
- **3 Streams (linked to sources)**  
(coal, timber, limestone)
- **2 Streams (not linked to sources)**
  - (FBA Furnace Bottom Ash)
  - PFA Pulverised Fuel Ash)



## ■ Structure of Manual No.1



***Case Study explains formats/forms and QA-/QC measures!***



## ■ **Formats/forms**

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### **Monitoring Methodology**

- 1. Exact definition of the installation and activities**
- 2. Information on responsibilities for M&R**
- 3. List of fuel and material streams**
- 4. List of sources**
- 5. List of tiers**
- 6. Description of the metering devices**
- 7. Description of the sampling of fuel and materials**
- 8. Description of the sources or analytical approaches**
- 9. Description of CEM**
- 10. Description of QA/QC for data management**
- 11. Information on links with EMAS**



# ■ Procedural and Work Descriptions

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## Quality Assurance, Quality Control and Data Management

1. Identification of greenhouse gas sources
2. Sequence and interaction of monitoring & reporting procedures
3. Responsibilities and competence
4. Methods of calculation or measurement
5. Measuring equipment
6. Reporting and records
7. Internal review
8. Corrective and preventive action



## ■ Reporting

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**ETS Directive**    no special reporting format required

**MRG**                special reporting formats required  
(shall be used as basis)

**UK**                 Form ETS7 for Annual Monitoring Report  
(*Form ETS2 for Monitoring Plan*)

**Germany**        Electronic reporting procedure with integrated  
verification report / statement

***(1) Member State specific reporting formats and procedures!***

***(2) No recommendation is given in Guide on Monitoring & Reporting!***

## ■ References

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- **DEFRA / SEPA (May 2004)**  
**Competent Authority Guide to the Commission Decision establishing Guidelines for Monitoring and Reporting in accordance with the EU ETS**
- **DEFRA / SEPA (June 2004)**  
**Example for the Completion of Monitoring and Reporting Plan Template**
  - coal fired power station
  - oil fired power station
  - iron and Steel
  - glass
  - gas fired power station
  - small scale combustion
  - cement
  - pulp and paper
- **DEHST (January 2005)**  
**Monitoringkonzept (in German)**
- **DEFRA / SEPA (August 2005)**  
**EU ETS – Annual Emission Report**  
**Guidance to Operators for the Completion of Form ETS 7**

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## ■ Structure of Manual No.2

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<b>Part I</b>	<b>Introduction</b>
<b>Part II</b>	<b>Verification process</b>
<b>Part II-A</b>	<b>Verification requirements based on ETS Directive</b>
<b>Part II-B</b>	<b>Verification requirements based on MRG</b>
<b>Part III</b>	<b>Verification report and verification statement</b>
<b>Annex 1</b>	<b>References</b>
<b>Annex 2</b>	<b>Glossary</b>



# ■ Verification Requirements (ETS Directive)

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## Strategic Analysis

- Basis for verification, overview of all the activities and their significance for emissions

## Process Analysis

- Site visit and spot-checks to determine the reliability of the reported data and information

## Risk Analysis

- Evaluation of the data of each source regarding reliability
- Identification of those sources with a high risk of error
- Consideration any effective risk control methods applied by the operator



## ■ Documents, Procedures, Methods

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### Documents to be reviewed

- GHG permit (including approved monitoring methodology)
- Annual emission report (including applied monitoring methodology)
- “Primary” documents (e.g. invoices, data records)

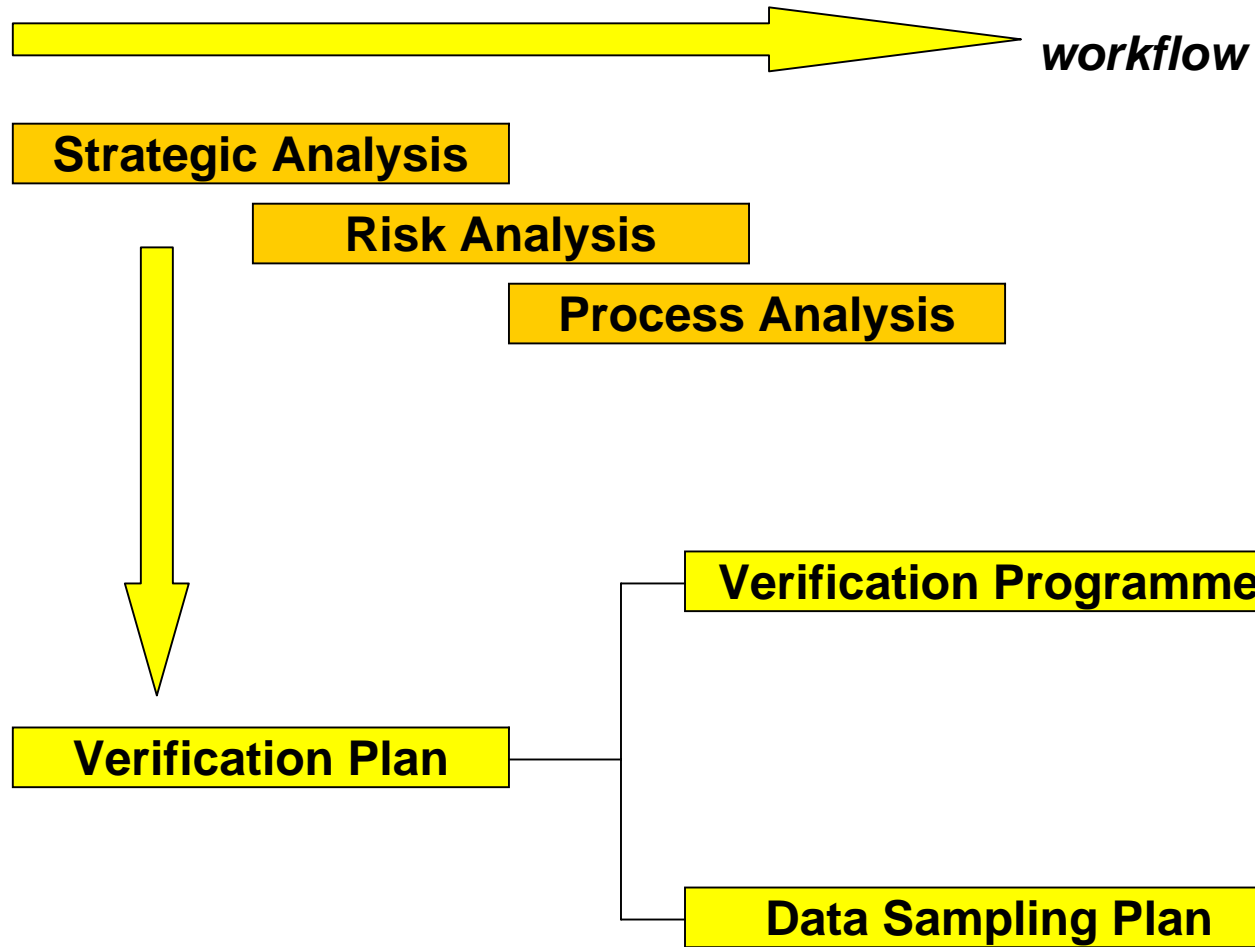
### Procedures to be investigated

- Implementation of Monitoring Methodology
- Internal QA-/QS-measures
- Data management including determination of CO<sub>2</sub> emissions

### Methods to be applied

- Document reviews
- Interviews
- Site visits

## ■ Verification Process (MRG)



# ■ Strategic Analysis

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## Complexity of the installation

- Categories of activities, activities, sources and streams?
- Calculation or measurement?

## Operational structure, especially data management system

- What kind and how many sampling, analysing metering?
- What kind of data collection, processing and archiving?

## Organizational structure, especially responsibilities

- Who is operator and “CO<sub>2</sub> manager”?
- What kind of responsibilities are delegated and to whom?

## QA-/QS-measures

- Handbook, procedural descriptions, work descriptions?
- Stand alone system or integrated system (QMS, EMS)?

# ■ Risk Analysis

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## Risks relate generally to

- material errors, omissions and misstatements in reported data
- non-conformities with requirements of the GHG permit

## Inherent risk

- probability of a parameter to a misstatement that could be material (due to missing internal control system)

## Internal control risk

- probability that the internal control system does not detect / prevent / correct non conformities

## ■ Inherent Risks, Internal Control Risks

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### **Inherent Risks are generally low at installations with**

- simple technology, i.e. not too complex
- simple and transparent work flow
- only few or no differences to previous year

### **Internal control risk are generally low at installations with**

- documented and implemented data management system
- segregation of duties
- integration of monitoring and reporting in existing systems
- only few or no changes to previous years

# ■ Process Analysis

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## Site visit

- site of the installation (compliance audit)
- installation's head office (if data are processed there)
- other locations (e.g. supplier)

## Confirm/check, whether

- monitoring and reporting complies with GHG permit,
- data management is effective,
- QA-/QC-processes are implemented,
- personnel is aware of responsibilities and duties,
- physical meters are in line with and maintenance plan/system,
- no essential changes have occurred,
- abnormal operations are handled clearly (e.g. repairs)

## ■ Verification Requirements (MRG)

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1. Understanding of activities
2. Understanding of data management systems
3. Establishing an acceptable material level
4. Analysing the data risks
5. Drawing up a verification plan
6. Carrying out a verification plan
7. Checking the accuracy level
8. Request to provide missing data and/or to revise calculation

Strategic A

Process A

Strategic A

Risk A

Strategic A

Process A

Risk A

Strategic, Process, Risk A



# ■ Verification Report and Statement

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## LEGAL REQUIREMENTS

### 1. Validation report

The verifier shall prepare a report on the validation process stating whether the annual emission report is satisfactory.

*(ETS Directive)*

### 2. Verification judgement

At the end of the verification process, the verifier shall make a judgement with respect to whether the emissions report contains any material misstatement.

*(MRG)*

## RECOMMENDATIONS / REQUIREMENTS

- **Verification process report**

**is used for internal independent technical review**

*(EA-6/03 and ISO/DIS 14064-3)*

# ■ Internal Verification Process Report

## Background documentation

- Information concerning the industry and legislative environment within which the installation operates,
- Information about organisational boundaries of the installation,
- Information about the identification of CO<sub>2</sub>-sources and fuel and material streams,
- Procedures for quantifying CO<sub>2</sub> emissions,
- An annotated process flow diagram, characterising mass and energy flows for CO<sub>2</sub> sources and metering and sampling devices,
- Extracts or copies of important agreements, contracts, etc. with relevance to CO<sub>2</sub> emissions.

# ■ Internal Verification Process Report

## Process documentation

- Evidence of the verification plan including any changes,
- Details of the anticipated and actual verification programme,
- Details of the anticipated and actual data sampling plan,
- Records relating to verification team personnel, including verifier competence and performance evaluation,
- Records of who completed the activities, when they were performed and how these activities contributed to the verification findings and conclusions,
- Results of the risk assessment including evidence of inherent and control risk assessments (materiality level),
- Evidence that the verifier has a clear understanding of the operator's data management and internal control system.

## ■ Verification Judgement or Statement

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### Verified without comments

- no material errors, omissions and misstatements
- monitoring and reporting in accordance with the GHG permit
- any inconsistencies have been resolved and are no longer an issue

### Verified with comments

- non-conformities with the GHG permit have been detected, that
  - could be resolved by the operator and/or
  - have not caused material errors, omissions and misstatements

### Not verified

- non-conformities with the GHG permit have been detected, that
  - could not be resolved by the operator and
  - have caused material errors, omissions and misstatements

## ■ References

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- **DEFRA** (*August 2005*)  
**EU Emissions Trading Scheme  
Guidance on Annual Verification**
- **IETA** (*September 2005*)  
**Verification Protocol, version 2.0 (2005)**  
**Verification of Annual Emission Reports of installations engaged in  
EU emission trading**



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## ■ Structure of the Manual No.3

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<b>Part I</b>	<b>Introduction</b>
<b>Part II</b>	<b>Guidance for recognition of verification bodies under the EU ETS</b>
<b>Annex 1</b>	<b>Procedures for the accreditation of independent entities</b>
<b>Annex 2</b>	<b>Impartiality and independence</b>
<b>Annex 3</b>	<b>References</b>
<b>Annex 4</b>	<b>Glossary</b>



## ■ Definition of Verifier in MRG

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### Verifier

means a competent, independent, accredited **verification body** with responsibility for performing and reporting on the verification process.

- **Verification Body or Verifier** (requirements for organisation)
- **Verification Team** (requirements for group of individuals)
- **Auditor** (requirements for individual)

# ■ Competency Requirements for Verification Bodies

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## The verification body should

- demonstrate that it has available sufficient qualified personnel,
- have effective procedures for the training and recruitment of competent staff, and monitoring their performance,
- maintain their own competence by ensuring that their knowledge is updated periodically to reflect current best practice in the field,
- ensure that the performance of auditors and reviewers is regularly reviewed, including on-site witnessing of verification activities,
- establish and maintain personnel records, which demonstrate that the personnel are qualified in accordance with the requirements on emissions trading.

## ■ Education and Work Experience of Auditors

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### Auditors should - as a minimum -

- either hold a science and technology or business qualification from a tertiary institution [minimum 3 years program] or,
- be able to demonstrate completion of work experience and other personal development activities which provide communication, technical and/or business as well as analytical skills necessary to conduct verification and,
- have a minimum of four years full time work place experience as a manager, or other professional role involved in
  - environmental management auditing and verification of environmental data
  - emissions related management and technology

## ■ Knowledge for Auditors

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### The auditor's knowledge should consist of:

- the applicable national legislation on emissions trading in conjunction with the ETS Directive, the MRG and an installations' typical GHG permit including monitoring methodology,
- differences in interpretation by CA of the coverage of the ETS Directive, e.g. scope of combustion installations, level of assurance, materiality,
- the specific activity or the industrial sector in which the installation is engaged,
- data and information auditing methods including data risk analysis,
- assessing data management and QA/QC systems,
- activities required to identify failures in the CO<sub>2</sub> reporting systems and the assessment of the impact of failures on the emission report.

# ■ Competency Requirements for Verification Teams

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## Each team member should:

- have a knowledge of the national and EU legislation,
- have a knowledge of data auditing,
- have a clear understanding of his individual role,
- be able to communicate effectively,
- have been selected on the basis of knowledge and experience and skills (team as a whole meets the requirements of verification).

# ■ Auditor Training Course (1)

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## EU and national legislation on emission trading

- Knowledge of ETS Directive, Linking Directive and MRG,
- Knowledge of national legislations and related regulations,
- Ability to perform an assessment of conformity with the requirements of the EU and national legislation,
- Awareness of
  - the Kyoto Protocol and relevant international and national commitments under the Kyoto Protocol,
  - the broader role of emissions trading,
  - mechanisms required to make it operational.

## ■ Auditor Training Course (2)

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### Data and information auditing

- knowledge of monitoring and reporting principles, materiality, inaccuracy and uncertainty,
- the roles of quality assurance and quality control,
- sampling in data verification and methods of checking data.

### Performing a verification engagement

- knowledge of the verification process incl. reporting procedures
- the role played by different team members and lead auditor's role and responsibility
- ability to act as a lead auditor and complete a verification engagement
- awareness of third party inspection in the scheme

## ■ References

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- **EA-6/03** (*March 2005*)  
**Guidance for the Recognition of Verification Bodies under EU ETS Directive**
- **ISO 17025** (*May 2005*)  
**General requirements for the competence of testing and calibration laboratories**



# ■ Content

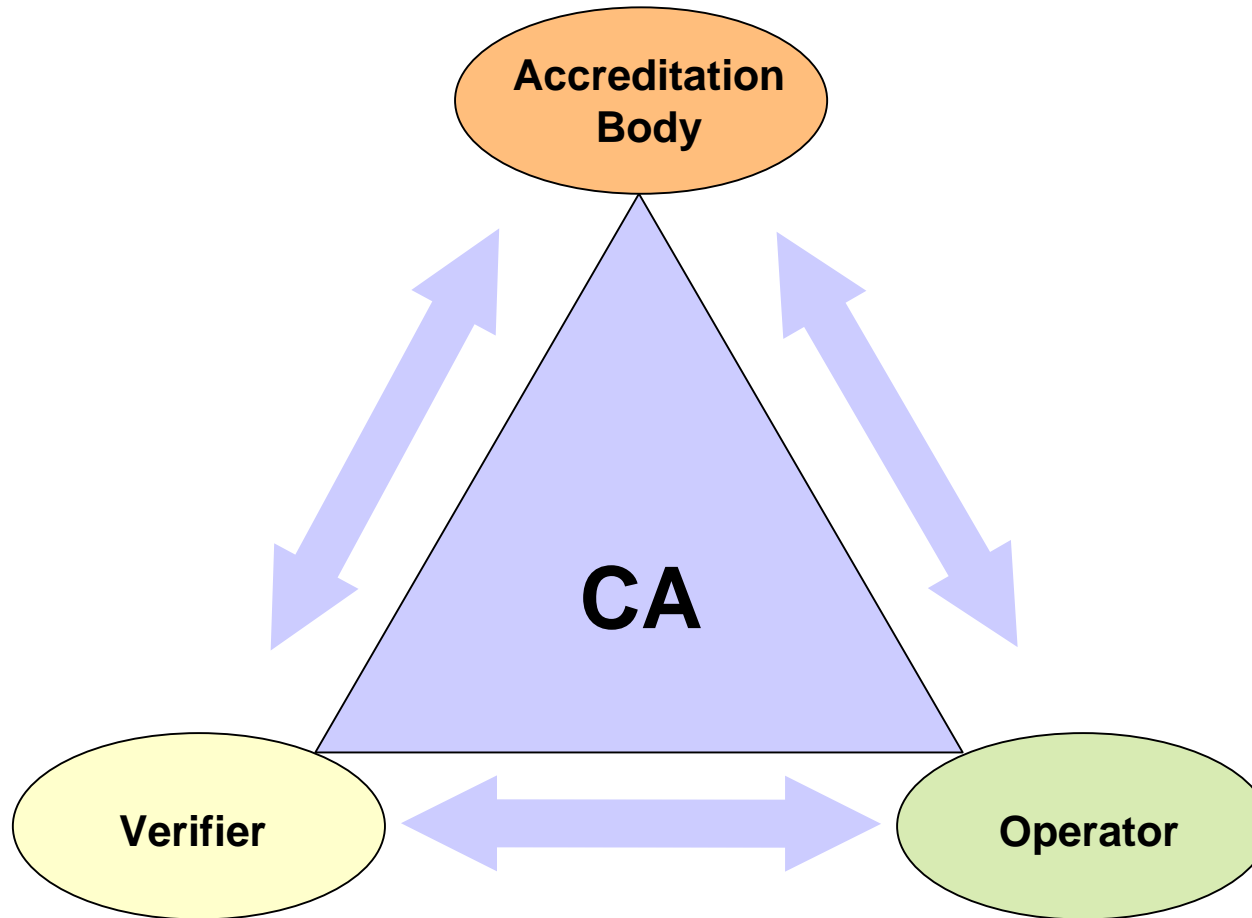
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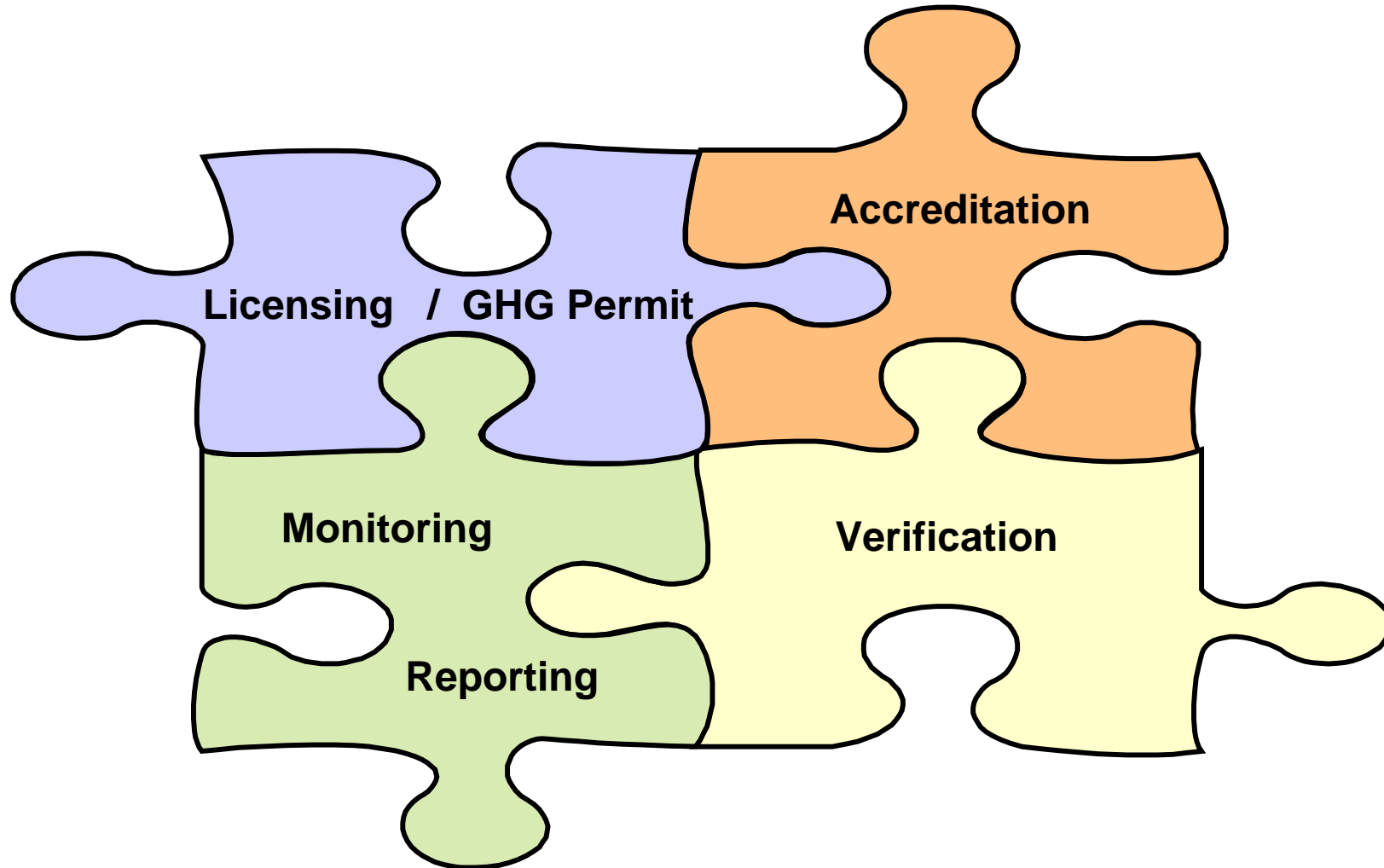
## ■ Key Actors

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# ■ Key Processes

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## ■ Selected TÜV Expertise in Emissions Trading

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**2002 – 2003**

**Development of draft MRG**

**2004 – 2006**

**Support to the Commission's Work related to the implementation, evaluation and further development of the MRG**

**2005 – 2006**

**Support to the Commission's Work related to the review of the MRG**

**2004**

**Verification of application forms for the allocation of EU allowances**

**2004 – today**

**Examination for publicly certified verifier for emissions trading**

**2004 – today**

**Validation, verification of CDM-projects (*Designated Operational Entity*)**

**2004 – today**

**Pre-Determination of JI-projects (*applied for Independent Entity*)**

- **Any Questions? Please contact:**
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