Verification Protocol©

v. 2.0 2005

Verification of Annual Emission Reports of installations engaged in EU emissions trading

This first Verification Protocol for the EU ETS has been developed by the International Emissions Trading Association (IETA) to facilitate an uniform transparent and cost effective verification of installations covered by the EU ETS. Although the Verification Protocol may still be subject to changes received from comments of the users IETA encourages the use of this document by all interested parties.

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Foreword

The International Emissions Trading Association (IETA) is a non-profit organization created in June 1999 to establish a functional international framework for trading greenhouse gas emissions reductions. Our 90 international members include leading multinational companies from across the carbon trading cycle: emitters, solution providers, brokers, insurers, verifiers and legal compliance.

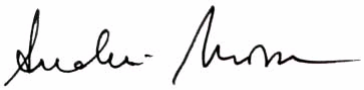
IETA works for the development of an active, global greenhouse gas market, consistent across national boundaries. In doing so IETA focuses on the creation of systems and instruments that will ensure effective business participation.

In March 2004 the IETA Validators & Verification Group on invitation of the European Commission, initiated the drafting of a framework for harmonisation of verification under the EU ETS. Following an initial conference, held on 27 May 2004, in which the outlines of possible harmonisation was formulated, the Work Group set up a number of sub-working groups which would be responsible for drafting:

- the EA Guidance Note for the accreditation of verifiers operating within the EU ETS,
- the GHG auditor required competence and training programme requirements, and
- a Verification Protocol (of which you have a copy in front of you).

The objective of the Verification Protocol is to facilitate cost effective verification with a high degree of confidence that companies assessed against this Verification Protocol

A Work Group subcommittee chaired by Loyds Registrer Quality Assurance has produced thisVerification Protocol based on the intial Verification Protocol developed and made available to the working group by the Dutch Ministry of Spatial Planning and Environment. The Work Group subcommittee included representatives of both industry and member states and earlier drafts of the documents where widely distributed and reviewed by a wider stakeholdergroup. It is envisaged that this Verification Protocol will mark the beginnings of a process to develop standardized verification within the European Community and will form an module of other trading schemes currently developed outside the European Community.



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Questions or comments?

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1 Explanatory outline

EU ETS verification starts in EU on the 1 January 2005, the system requires installations to produce an emission report and have it verified as well as having compliance/ conformity verified with the GHG permit and the associated monitoring methodology and other relevant requirements (as applicable).

This verification protocol is intended as a guide for the verifier. The intention behind the protocol is to enable the verification methods to be standardised as much as possible, so that the verification carried out by different verifiers will produce comparable results.

Certain issues related to EU ETS verification is still under developments or need practical experience to be resolved. These include:

- The scope of the verification related to the compliance / conformity verification elements
- Roles of the various players in the scheme e.g. where is the boundary between competent authority and verifiers?
- What will be the final European Co-operation for Accreditation (EA) requirements under their EA GHG note accreditation requirements?

This protocol may therefore change as these issues are resolved.

The term “shall” is used throughout this document to indicate those provisions which, reflecting the requirements of EU ETS Directive or M&R are mandatory. The term “should” is used to indicate guidance which, although not mandatory, is provided as a recognised means of meeting the requirements.

1.1 How did this verification protocol come about?

The original version of the protocol was due to substantial work undertaken by the Dutch Ministry of Housing, Spatial Planning and the Environment (VROM). They kindly have allowed IETA to amend and further develop their verification protocol to allow it to be used for two things:

- the emerging European Co-operation for Accreditation Guidance Note on verification of GHG under EU ETS
- potentially in other types of GHG verification.

IETA is most grateful to VROM for the original development of this protocol as well as to the multi stakeholder working group that has further developed this protocol. The multi stakeholder group included competent authorities, ministries, industries and verifiers.

The Monitoring and Reporting Decision (M&R) that is part of the European Directive on Emissions Trading as well as the Directive itself have provided the basis for the verification protocol. Developments and experiences in this area have also been examined this includes specifically ISO DIS 14064-3.

1.2 Who is this verification protocol intended for?

The verification protocol is intended as a reference manual for verifiers. This means that it was not formulated as a report but is modular in structure. Each module or fact sheet refers to one of the processes involved.

This document can be read on 3 levels: on a context level, a main steps level and on an activities level. For every level its relationship to other steps and what information is required has been identified. This leads to areas of overlap but this document is designed to serve as a guide rather than a report. The design of this verification protocol is shown in the diagram below (Figure 1).

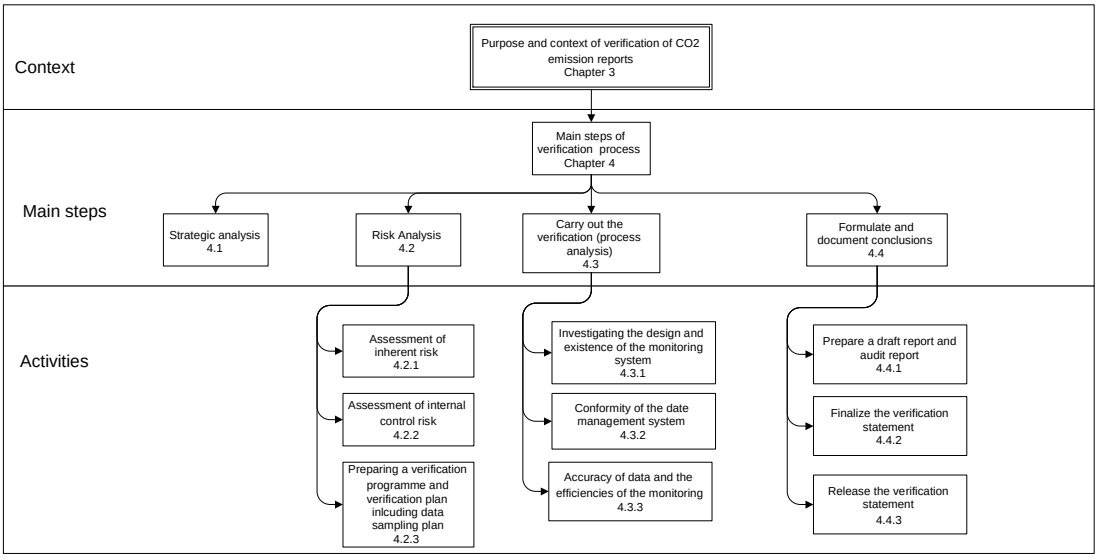

Figure 1: Verification Protocol diagramme

1.3 What is being verified and what is the result of the verification?

The EU ETS Directive and M&R requires that the annual verification shall cover two issues. There are whether the;

- data in the installation's emissions report is fairly stated; and
- installation is in conformity with the agreed GHG permit and with its associated monitoring methodology and other relevant requirements

This protocol covers the verification of both elements.

The result of the verification will be a verification statement, that states whether the installation's emission data of a specific amount is fairly stated and also whether the installation is in conformity with the agreed GHG permit and its associated monitoring methodology and other relevant requirements.

Detailed guidance on the verification process is available from the European co-operation for Accreditation (EA) GHG guidance note (note the term guidance note does not imply that it is not binding on verifiers accredited under its requirements).

The scope of the verification statement will depend upon the extent to which the monitoring methodology as proposed by the operator and approved by the Competent Authority(CA) have covered all elements of the M&R Decision. The procedure and extent of this approval process may differ from one country to the other and within one country from one CA to the other. The verifier will thereto assess what elements of the M&R Decision have been taken into account during the validation and permitting procedure by the CA and which elements were not part of that validation and permitting process. On the basis of this assessment the verifier will then design his Strategic Analysis and Risk Analysis and subsequently carry out his verification plan and verification programme

1.4 What level of assurance is required for the verification?

Emission allowances that are traded have an economic value. For this reason it is important that parties in the market can be sure that emissions and emission allowances are matching in each calendar year. The European Directive requires that the emissions of GHG are determined with a *high level of certainty (assurance)*.

Level of assurance - ***means the degree to which the verifier is confident in the verification conclusions that it has been proved whether or not the information reported for an installation taken as a whole is free from material misstatement.*** Taken from the M&R Decision

Note 1: the level of assurance is used to determine the depth of detail that a verification body designs in their verification plan to determine if there any material errors, omissions and/or misrepresentations

Note 2: there are two levels of assurance as defined by International Federation of Accountants (IFAC) in the International Standard on Assurance Engagements ISAE 3000 December 2003, either as reasonable or limited, which result in a positive form of or a negative form of statement in the verification statement. Please note the positive and negative form is not a reflection about the verification findings it is about the way in which the verification is carried out, depth, detail and wording. High (reasonable assurance as per ISAE 3000) assurance is required for EU ETS verification.

1.5 Do the same verification activities apply for every installation?

Every installation will monitor its CO_2 emissions on the basis of an agreed GHG permit with its associated monitoring methodology. The GHG permit is specific to each installation.

There is only this verification protocol and of necessity it must serve for verifications carried out at all types of installation from the most complex to the simplest. This means that the verification protocol applies generally.

To prevent relatively simple installations from being subjected to a verification programme that is too rigorous, two safety provisions have been incorporated into the verification protocol.

- The verifier will check whether the agreed GHG permit with its associated monitoring methodology, was applied in the development of the emission report. Relatively simple installations will have a more limited GHG permit and monitoring methodology than complex installations, resulting in a simpler verification process.

- The verifier will establish a verification programme for each installation. This verification programme is drawn up on the basis of the strategic analysis and the risk analysis. In this way the verification process will fit the specific circumstances that apply to that installation and will be carried out in an efficient and effective way.

1.6 Do the same verification activities apply for repeated years?

There is only this verification protocol and it serves both for the first verification and subsequent verifications. This protocol applies generally.

Verification processes will vary from year to year dependent on factors such as:

- Changes to the GHG permit, its associated monitoring methodology and other relevant requirements

- Changes at the installation whether associated with its GHG sources or data management system. This would include changes in personnel.

To avoid duplicate work between years the following safety provisions have been built in:

- For both strategic analysis and risk analysis the text specifies that for subsequent years attention be focused on changes and developments not repeating the activities.

- The verifier will establish a verification programme for each yearn. This verification programme is drawn up on the basis of the strategic analysis and the risk analysis. In this way the verification process will fit the specific circumstances that apply to that installation and will be carried out in an efficient and effective way.

2 Introduction

2.1 The purpose of the verification protocol

Verification of installations' emission reports and their conformity with the agreed GHG permit, monitoring methodology and other relevant requirements must be carried out according to a general methodology that is comparable for all. To achieve this, it is important to define the following:

1. A glossary of terms;
2. The level of assurance that must be established concerning the reported emissions;
3. A method for developing an auditing system specific to each installation that covers both data and system;
4. The way in which monitoring information is collected;
5. The requirements with which the report containing the conclusions from the verifier must comply.

2.2 How to use this verification protocol

The glossary of terms can be found in Appendix A.

The descriptions of the processes involved range from "a rough outline" to "fine detail". That is to say, the protocol moves from a description of the general context of the verification protocol to a description of specific details of the processes involved.

Diagram A-0 describes the context of the verification process; Figure 1 sets out the main steps. The diagrams that follow describe the various activities and processes that are part of the main steps in increasing detail (risk analysis, monitoring and drawing up reports).

All the processes are also described in "fact sheets". Each fact sheet contains a description of:

1 The introduction of the process involved (basic information);

2 The criteria that provided the basis for a particular process;

3 The means by which the relevant process is carried out;

4 The desired results of the relevant process.

At the most detailed level of the verification process descriptions have been provided of the procedures involved.

NOTE - The verification protocol is intended as a *reference manual* (a collection of fact sheets). It is not intended as a *report.*

3 Purpose and context of the verification

Name Purpose and context of the verification of emission reports of CO_2 emissions and verification of conformity with agreed GHG permit, monitoring methodology and other relevant requirements

Main steps

1 Preparations for the verification (Carry out a strategic analysis [4.1] and a preliminary risk analysis; [4.2])

2 Carrying out the verification and complete the risk analysis (Perform the audit; [4.3], in EU ETS language the process analysis)

3 Completion of the verification (Formulate conclusions and provide supporting reasons; [4.4])

These are the steps that must be gone through for each installation. However, the verification programme will not be the same for all installations, since not all installations are equally complex. The complexity of the installation will be evident from the information supplied (see “Inputs”).

Purpose During the verification processes the emission report will be verified against the GHG permit, monitoring methodology and other relevant requirements. Additionally the installation’s conformity with other relevant requirements will be verified. The statement of the verifier will state based on the risk based sampling what the GHG emission for the period was and the installation’s conformity with the agreed GHG permit, monitoring methodology and the other relevant requirements.

Inputs

The following basic information is required:

1 An emission report;

2 Information from the Competent Authority (CA) that shows that the GHG permit with its associated monitoring methodology, related to the installation was agreed on a particular date;

3 The installation's GHG emissions permit and monitoring methodology.

4 Further explanation and information provided by the installation during interviews;

5 Information about the emission accounting system, the internal control systems and the system to meet the requirements of the GHG permit, monitoring methodology and other relevant requirements.

6 Information from previous verifications.

Criteria

1 The emissions report data is to be verified based on the 5% materiality requirements and high (reasonable ISAE - 3000) assurance.

2 A certain *materiality* is to be applied during this process. The materiality defines the tolerance threshold for errors. If material errors, omissions and misstatements are encountered the verifier will not be able to approve the emission report. The materiality has been set as 5% by the M&R Decision.

3 The emission report is to be verified on its conformity with the agreed. GHG permit, with its associated monitoring methodology and with requirements in Annex I section 11 and 12.

4 The installations system and GHG information system controls is to be verified on its conformity with GHG Permit, monitoring methodology and other relevant requirements

5 The aim of the verification should be to ensure a high (reasonable as per ISAE – 3000) level of assurance that the emission report is fairly stated and that the installation is in conformity with its GHG permit, monitoring methodology and other relevant requirements.

Outputs The verification process will result in the following documents:

1 An *(external) report* which sets out the conclusion concerning the fairly stated position of the emission report's data and the installation's conformity with its GHG permit, monitoring methodology and other relevant requirements;

2 An *(internal) evidence pack* which explains how the verifier came to his conclusion.

Means The verification is carried out by a verification team (which can consist of one person) who belongs to a *verification body (which can consist of one person subject to accreditation requirements)*. The verification body must be accredited for the performance of verifications.

1 For the verification process the verification team will make use of this verification protocol. The verification protocol provides for interviews with (representatives of) the installation and audits of the system and of the information and data as well as site visits and assessment of GHG sources.

2 The verification team must belong to an independent, accredited verification body.

4 Main steps in the verification process

The verification process consists of four steps or phases: (i) performing a strategic analysis, (ii) performing a risk analysis (preliminary and concluding); (iii) carrying out the verification (process analysis); and (iv) formulation, with supporting audit evidence, of a verification statement.

4.1 Strategic analysis – summary

Name Carry out a strategic analysis

Main steps

1 Make an assessment of the strength / weaknesses of the three dimensions below

2 Make an assessment of the interrelationship of the strength and weakness of the three steps below as applicable to a specific installation

3 Input to the risk analysis

4 Input to the verification plan, data sampling plan and programme

Objective To draw up a verification plan on the basis of an understanding of and evaluation of the strategic issues associated with the emissions report and conformity with the GHG permit, monitoring methodology and other relevant requirements. This will cover the three dimensions:

- The **nature, scope and complexity** of equipment and processes that have resulted in emissions, including the measurement and recording of energy and materials flows and external influences, (including the accuracy of instrumentation and analysis facilities influencing the uncertainty of measurements produced), over the range of operating conditions during the reporting period;
- The data **management system**, from the measurement and recording of material and emission flows through to the aggregation and archiving of data and compilation of emissions information; including the existence of an Environmental Management System according to EMAS, ISO 14001 or equivalent that covers the data management and recording system;
- The **organisational environment**, including the structure of the organisation that manages the operational, maintenance, data accounting systems, within which the emissions information is derived.

Inputs

The following basic information is required:

1 An emission report;

2 Information about the emission accounting system, the internal control systems and the system to meet the GHG permit, monitoring methodology and other relevant requirements

3 The GHG permit with its associated monitoring methodology.

4 Further explanation and information provided by the installation during interviews and site visit.

5 Installation processes, procedures and activities.

6 While the audit is being performed matters can come to light that will require changes to be made to the strategic analysis.

7 Information from previous verifications.

Criteria

1 Strategic analysis is not an assessment / evaluation of the installation's strategic plans or approach to its business. Its focus is strictly on the emissions report and the installations emission accounting system, the internal control systems and the system to meet the GHG permit, monitoring methodology and other relevant requirements

2 The strategic analysis is carried out based on limited "top level" information available and will highlight areas of special concern or weaknesses where further follow up will be necessary

3 The strategic analysis looks at all the input for the three dimensions and then applies conventionally strategic analysis tools such as strength / weakness assessment to identify issues and concerns as well as those area where there are strengths

4 The result of the strategic analysis feeds into the risk analysis and the development of verification plan and programme

Outputs

On completion of the strategic analysis the following information will be available:

- .input to the verification plan being drawn up at the end of the risk analysis
- input into the risk analysis
- input into audit findings

Means

1 The verification team will conduct interviews and document reviews with (the representative of) the installation. Site visit may also be undertaken if necessary, this is specifically relevant for complex sites. Note complex site do not need to be big emitters to be complex.

2 On the basis of the information obtained a strategic analysis will be undertaken covering three dimensions detailed above in objective.

3 To be able to draw up a strategic analysis requires knowledge of the operating activities of the installation of which the emission report is being verified.

Comment: - the strategic analysis will take less time as the verifier becomes more familiar with the emission accounting system and the installation's internal control systems. During subsequent verifications the focus will increasingly be on matters that have changed from previous years.

4.2 Risk analysis - summary

Name Carry out a risk analysis

Main steps

1 Make an assessment of inherent risks (4.2.1);

2 Make an assessment of internal control risks (4.2.2);

3 Draw up verification and data sampling plan and a programme (4.2.3).

Objective To draw up a verification and data sampling plan on the basis of a listing of inherent risks and internal control risks and the results of the strategic analysis.

Inputs

The following basic information is required:

1 An emission report;

2 Information about the emission accounting system, the internal control systems and the system to meet the GHG permit, monitoring methodology and other relevant requirements

3 Information from the CA that shows that the GHG permit with its associated monitoring methodology was agreed on a particular date;

4 The GHG permit with its associated monitoring methodology.

5 Further explanation and information provided by the installation during interviews. (For example: explanation of the way in which a parameter is calculated);

6 While the audit is being performed matters can come to light that will require changes to be made to the risk analysis. Refer to 4.3 for further details;

7 Information from previous verifications.

Criteria

1 The preliminary risk analysis shall comply with EU ETS Directive Annex V requirements. These are:

- "The verifier shall submit all the sources of emissions in the installation to an evaluation with regard to the reliability of the data of each source contributing to the overall emissions of the installation
- On the basis of this analysis the verifier shall explicitly indemnify those sources with a high risk of error and other aspects of the monitoring and reporting procedure which are likely to contribute to errors in the determination of the overall emissions. This especially involves the choice of emissions factors and the calculation necessary to determine the level of the emissions from individual sources. Particular attention shall be given to those sources with a high risk of error and the abovementioned aspects of the monitoring procedure
- The verifier shall take into consideration any effective risk control methods applied by the operator with a view to minimising the degree of uncertainty"

2 The risk analysis is to be drawn up on the basis of the agreed GHG permit, monitoring methodology, other relevant requirements and the applicable emissions report.

3 A certain *materiality* is to be applied during this process. The materiality sets the tolerance threshold for data errors, omissions and misstatements, omissions and mistakes as well as aggregated uncertainty. If material shortcomings are encountered the verifier will not be able to approve the emission report.

4 A certain definition of non-conformitys with the GHG permit, monitoring methodology and other relevant requirements as laid down in accreditation rules is to be applied during this process. If non conformity is identified which do not affect the data in the emission report the verification statement shall state the level of conformity with the GHG permit, monitoring methodology and other relevant requirements If the non-conformity identified affect the materiality of the data in the emission report the verification statement shall state that both the materiality of the emission report and the conformity with the GHG permit, monitoring methodology and other relevant requirements are non satisfactoryt.

Outputs On completion of the risk analysis the following information will be available:

1 Preliminary insight into how up-to-date the GHG permit with its associated monitoring methodology is. If the GHG permit with its associated monitoring methodology proves not to reflect current conditions, the verification will be discontinued and no statement will be issued. The verifier will act on the assumption that the GHG permit with its associated monitoring methodology is up-to-date; unless the contrary becomes evident (see 4.2.1).

2 If there is reasonable certainty that the GHG permit with its associated monitoring methodology reflects current conditions, a verification plan is drawn up. The verification plan will contain a data sampling plan and a verification programme.

- The *verification plan* describes the way in which the audit activities are to be carried out in order to culminate in conclusions on the emission report with a predetermined level of assurance.

- The *verification programme* describes the nature of the activities, at what times they must be carried out and their scope in order for the verification plan to be completed. The verification programme serves as a means of monitoring and recording progress in the activities.
- The *data sampling plan* sets out the detail of the data to be tested in order to reach a conclusion on the materiality of the data.

Means

1 The verification team will conduct interviews with (the representative of) the operator. For the content and conduct of these interviews, see 4.2.1.

2 The verification team will as necessary conduct site visit to identify and verify emissions sources

3 On the basis of the information obtained *preliminary analytical procedures* will be carried out. This will involve the evaluation of characteristic ratio figures and emission trends.

4 On the basis of the information obtained *preliminary system conformity document procedures* will be carried out. This will involve document review of the control system and the system that manages the conformity with the QA/QC requirements. At this stage it will not involved detail discussion with representatives of the installation.

5 To be able to draw up a preliminary risk analysis requires knowledge of the operating activities of the installation of which the emission report is being verified.

Comment: - the preliminary risk analysis will take less time as the verifier becomes more familiar with the emission accounting system and the installation's internal control systems. During subsequent verifications the focus will increasingly be on matters that have changed from previous years.

Comment

1 The risks relate to the possibility that errors and/or omissions in the emission report are material. As an installation's monitoring system becomes more efficient, the risks grow proportionally less in severity, leading to a comparable reduction in the activities needing to be carried out by the verifier.

2 The risk relates to the possibility of non conformity with requirements in the GHG permit, monitoring methodology and other relevant requirements. As an installation's data management system become more effective and efficient the risk grow proportionally less in severity leading to less requirements for actual testing of the system and hence a reduction in the activities needed to be carried out during verification

3 The risk analysis should result in the verification plan, the data sampling plan and the verification programme being specific to and appropriate for the installation concerned. If the installation is not of a very complex type, the scope of the verification activities will be more limited than for a complex installation. In all cases, however, the steps of this verification protocol will be gone through.

4 For repeated verifications the risk analysis also include an element of review of historical risk analysis findings and an understanding of any major deviations, whether positive or negative with historical risk analysis findings

4.2.1 Assessment of inherent risks

Please note the next four sections (4.2.1.1 - 4.2.1.2) are listed separately but would be conducted together. This listing is to facilitate the explaining rather then to indicate that they are separate activities.

4.2.1.1 Assessment of inherent risk – procedure

Name	Assessment of the inherent risk (see definition for understanding the concept please)
Further details	4.2.1.2
Objectives	1 An assessment of the inherent risk is a required input for drawing up a verification plan and a data sampling plan. 2 Once the activities have been completed the verification team must have reason to assume that the GHG permit with its associated monitoring methodology is up-to-date.
Inputs	The following basic information is required: 1 An emission report; 2 Information from the CA that shows that the GHG permit with its associated monitoring methodology of the installation was agreed on a particular date; 3 The installation's GHG permit with its associated monitoring methodology; 4 The installation data management system to review for risk of non conformity with GHG permit, monitoring methodology and other relevant requirements 5 Further explanation and information provided by the installation during interviews and document reviews and site visit; 6 While the verification is being performed matters can come to light that will require changes to be made to the risk analysis. Refer to 4.3.1 for further details. 7 At the end of the verification the preliminary risk analysis is reviewed and the risk analysis completed to meet the requirements in the EU ETS Directive Annex V
Criteria	The overview of the inherent risks is drawn up on the basis of the agreed GHG permit, monitoring methodology, other relevant requirements and knowledge of the operational activities.

Outputs

Once the listing of inherent risks is completed the following information will be available:

1 An overview of the inherent risk. The inherent risk gives an indication of where significant errors, omissions and misstatements or incompleteness could arise in the reported emissions and where significant non conformity could exist in the data management systems' conformity with the agreed GHG permit, monitoring methodology and other relevant requirements.

2 A first insight into whether the GHG permit with its associated monitoring methodology reflects the current situation. If the GHG permit with its associated monitoring methodology subsequently turns out not to be up-to-date, the verification is discontinued and no statement can be issued. A GHG permit with its associated monitoring methodology is not up-to-date if:

> Significant changes have taken place at the installation after the monitoring methodology was agreed by the CA but were not reported to the CA (see also 4.2.1.2).
>
> Whether a change is significant or not is assessed on the basis of guidance from the CA and the requirements in the M&R.

3 The verifier will act on the assumption that the GHG permit with its associated monitoring methodology is up-to-date unless the contrary becomes apparent. If it is also established that the monitoring methodology has been agreed by the CA, the verification will be continued ("go/no go" decision);

4 A first insight into whether the installation's data management system is in conformity with the GHG permit, monitoring methodology and other relevant requirements.

The list of inherent risks will not result in a separate written report unless circumstances have arisen as described in (2) above. The summary of the inherent risks will be incorporated in the verification plan and data sampling plan. (see 4.2.3).

Means

1 The analytical procedures will result in an impression of notable deviations that could point to an inherent risk.

2 The system conformity document review procedures will result in an impression of the notable deviations that could point to an inherent risk.

3 The verification team will conduct one or more interviews with (the representative of) the operator as well as review documentation and site visit. During the interview(s) any significant changes will be discussed that may have taken place during the emissions reporting period at the installation or in the organisation of the monitoring and reporting or data management system. The verifier will make every effort to uncover such information during the *preliminary* interview with the operator.

4 The drawing up of a risk analysis requires knowledge of the operational activities of the installation whose emission report is being verified.

4.2.1.2 Assessment of inherent risks – activities

Examine the following documents:

1 The installation's GHG permit with its associated monitoring methodology ;

2 Ensure that the CA has agreed the monitoring methodology. If the CA agreed the monitoring methodology more than 1 year ago: ask whether there were reasons to update the GHG permit with its associated monitoring methodology.

3 Emission report (including the emission reports of earlier years). Check that the emission report has been drawn up in conformity with the M&R requirements (Annex I section 11 and 12) or, where superseded by, requirements in the agreed GHG permit with its associated monitoring methodology

4 Possibly: operator correspondence with the CA, if relevant (e.g.: the operator has announced a change in the monitoring methodology).

5 The installation's data management system to ensure conformity with the requirements on data management in the agreed GHG permit, monitoring methodology and other relevant requirements.

6 Check that there is enough time available between receiving the documents and the required submission of emission reports to the CA to carry out verification in accordance with this verification protocol.

Familiarise yourself with the company subject to verification

The GHG permit with its associated monitoring methodology provides an overview of the production processes at the installation and the way in which monitoring is organised. Included are:

- A description of the facilities and the production processes that are carried out at the installation;

- The following special circumstances must be noted: the exporting of CO_2 emissions; process emissions; the use of biomass (see Figure 2).

List significant/notable differences from previous year:

1 Substantial malfunctions/shut downs in the production process;

2 Construction of new installations or closure of existing installations;

3 Changes in the nature and/or functioning of existing installations;

4 Expansion of existing installations and the production process;

5 Outsourcing of components of the manufacturing process;

6 Changes in the organisation of the monitoring and reporting process (see also "Listing Internal Control Risks", 4.3.1.1);

7 Changes in data management system and QA/QC procedures

8 Changes in the method of monitoring as a result of:

- A request from the authorities (ascertain the reason for this);
- Measurements/estimations of emissions that were not previously being discharged or measured (ascertain the reason for this);
- Correcting of errors or omissions in the monitoring methodology (investigate the reason for this);
- Changes in the tier level of measurements (CO_2 emissions) as a result of the availability of more or better data, or better measuring methods.

9 If the monitoring methodology has changed: investigate whether this has been reported to the CA. If reported, investigate whether the changes in the monitoring methodology have been approved by CA.

10 If in the opinion of the verifier the monitoring methodology and/or the installation have undergone drastic change during the period applicable to the verification, without the CA having been notified, the verification should be halted and the operator informed. If the CA has approved the amendments, the verification can be continued. In all other cases, no verification statement can be issued.

Preliminary analytical procedures

Compare the data in the emission report with the data from the previous years and ask for an explanation of any obvious differences. Notable differences include substantial changes in emissions compared with previous years which on the basis of current activity data cannot immediately be explained.

Preliminary data management document review

Compare the documented (whether in paper or electronic form) data management system with the data management requirements in the GHG permit, monitoring methodology and other relevant requirements. Notable difference between the system and requirements shall feed into the risk analysis. Notable difference between system in previous year and the current system shall feed into the risk analysis. Include review of any action taken as a result of issues mentioned as needing improvement in last reporting period's verification report / management letter.

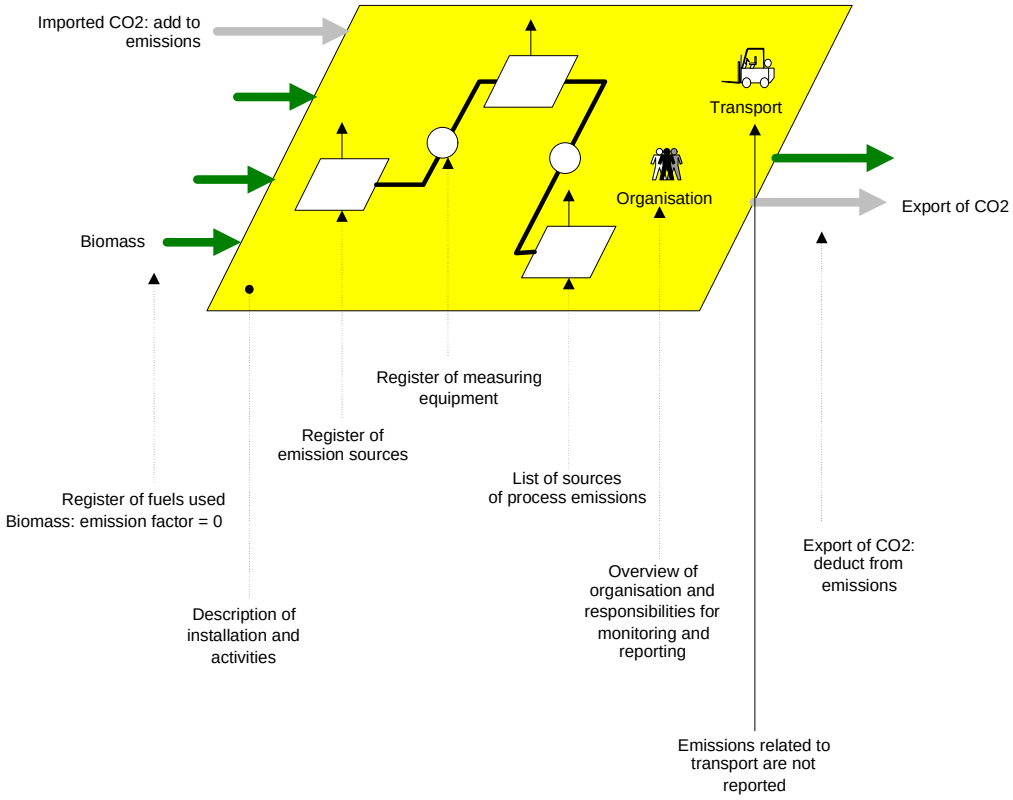

Figure 2: The use of Biomass

4.2.2 Assessment of internal control risks

4.2.2.1 Assessment of internal control risk – procedure

Name	Assessing the internal control risk
Further details	4.2.2.2
Objective	An assessment of the internal control risk is a required input for drawing up a verification plan and data sampling plan.
Inputs	The following basic information is required: 1 An emission report; 2 The GHG permit with its associated monitoring methodology agreed by the CA 3 Information about the emission accounting system, the internal control systems and the system to meet the GHG permit, monitoring methodology and other relevant requirements (also sometimes referred to as the installations data management system); 4 Further explanation and information provided by the installation during interviews and document reviews and site visit; 5 An understanding of the inherent risks; 6 While the verification is being performed matters can come to light that will require changes to be made to the risk analysis. Refer to 4.2 for further details; 7 Information from previous verifications.
Criteria	1 Listing the internal control risks does not take place until the CA has agreed the GHG permit with its associated monitoring methodology and there is reason to believe that it is up-to-date. 2 The overview of the internal control risks is drawn up on the basis of the agreed. GHG permit, monitoring methodology and the other relevant requirements

Outputs

When the activities have been completed an overview of the internal control risks will be available. This will give an impression of:

- the effectiveness of the emission accounting system, including data checking processes, and the internal control that have been set up by the installation to control the inherent risk and in doing so, prevent and detect material deviations.

- The effectiveness of the data management system in controlling and managing conformity with the data management system requirements in the agreed GHG permit, monitoring methodology and other relevant requirements.

The assessment of internal control risk will not result in a separate written report unless verification was stopped prematurely (GHG permit with its associated monitoring methodology not updated or not up-to-date). The obtained information will be incorporated in the verification plan and the data sampling plan (see 4.2.3.1).

If the internal control risk associated with the emissions report is considerable, the scope of the activities will need to be extended in order to be certain that the agreed GHG permit with its associated monitoring methodology is in fact being applied in the development of the emission report and that the data is free from material misstatements (see 4.3).

If the internal control risk associated with the data management system is considerable the scope of the verification activities will need to be extended in order to be certain that the data management system complies with the data control requirements in the agreed GHG permit with its associated monitoring methodology and other relevant requirements.

Means

The verification team will conduct one or more interviews with (the representative of) the operator and will obtain relevant documentation about the organisation, of the emission accounting system and the internal control system. The verification team will visit the site and identify the emission sources. During the interview(s) it will be discussed whether there has been changes during the emissions reporting period in the organisation of the emission accounting system and internal control systems with regard to the agreed GHG permit with its associated monitoring methodology (see 4.2.2.2;

1 On the basis of the information obtained *analytical procedures* will be carried out. This involves the evaluation of significant ratios and trends of emissions. In the case of notable differences investigation will take place whether plausible explanations can be provided in order to give an impression of the internal control.

2 On the basis of information obtained *document review procedures* will be carried out. This involves comparing the data management system with the data management requirements in the GHG permit, monitoring methodology and other relevant requirements. In the case of notable differences between the data management system and requirements investigations shall take place as to their impact on the emission report's materiality and their impact on the conformity of the data management system with data control requirements in the agreed GHG permit, monitoring methodology and other relevant requirements.

3 The drawing up of a risk analysis requires knowledge of the operating activities of the installation of which the emission report is being verified.

4.2.2.2 Assessment of the internal control risks – activities

Obtain an understanding of the emission accounting system, the internal control system and the system to meet the GHG permit, monitoring methodology and other relevant requirements

The verification team will conduct one or more interviews with (the representative of) the operator and will obtain relevant documentation about the organisation of the emission accounting system, the internal control system and the system to meet the GHG permit, monitoring methodology and other relevant requirements. The organisation of the following will be assessed:

1 The procedure followed from measurement to reporting. Obtain an understanding of the organisation of tasks, responsibilities, powers and competences in monitoring and reporting on the basis of the following subjects:

- Segregation of duties. The internal control risks are considerable if measurements, calculations, analyses, checks and reporting tasks are not performed by separate persons;
- Role of subcontractors where relevant;
- Documentation management and establishing the sources of information;
- The way in which material errors, omissions and misstatements are being prevented or rectified;
- Changes compared with previous years;
- The existence and effective functioning of management systems such as ISO9001`, EMAS or ISO14001 and (certified) computer information systems covering the activities under verification and how these relate with the CO_2 emission reporting;
- Sections of the installation that are being audited/certified by third parties with written proof thereof.

2 Procedure for the validation of measuring equipment (comparative measurements, calibration), determining of reference figures and maintenance. What guarantees exist that calibration of measuring equipment takes place when it should, observations are checked and analyses of fuels are carried out?

3 Investigate whether information systems that are being used in the monitoring system are part of the normal administrative information systems. Where the information systems are separate from the normal administrative information systems, the internal control risks are greater. For instance: activity data are kept in a separate spreadsheet and are not taken from the financial administration (e.g.: a SAP system).

Investigate the interface between information systems for emission monitoring and the main information system of the organisation. Where data from the main information system are used for emission monitoring purposes transcription errors may occur.

4 Investigate whether the points above have been changed from previous years and if they have, why this is so. Determine whether these changes should have led to an amendment and renewed agreement of the. GHG permit with its associated monitoring methodology.

5 Investigate whether the points above result in conformity with the installation's data management system and the agreed data control requirements in the GHG permit, monitoring methodology and other relevant requirements

6 In the following situations it can be assumed that the internal control risks are (relatively) great:

- The emission accounting system, the internal control system and the system to meet the GHG permit, monitoring methodology and other relevant requirements are not well documented;
- Little or no segregation of duties has been arranged;
- Separate information systems are in use to generate the required data;
- The monitoring method is different from the years before.
- There is no established and maintained data management system that meets the GHG permit, monitoring methodology and other relevant requirements

New information

- While performing a test of control, matters can come to light that may necessitate a new analysis of the internal control risks.
- In that case investigate the relationship between the new information (e.g.: the control system is not functioning at its best) and the information already available. Modify the verification plan and data sampling plan accordingly (see 4.2.3.2).

4.2.3 Preparing a verification programme and verification plan including data sampling plan

4.2.3.1 *Preparing an verification programme and verification plan – procedures*

Name	Prepare verification programme and verification plan including data sampling plan
Further details	4.2.3.2
Objective	For the formulation of the verification plan the information from the strategic analysis and about inherent risks and internal control risks is combined. On the basis of this information, the materiality and non conformity criteria, the GHG permit with its associated monitoring methodology and the installation's data management system, an audit approach can be drawn up. This approach is specific to the installation.

For the formulation of a data sampling plan the results from the risk analysis together with the GHG permit and monitoring methodology is combined. On the basis of this the data sampling plan can be prepared to set out the approach to data auditing. The approach is specific to the installation, the result from the strategic analysis, the result from the risk analysis, the GHG sources and the installation.

Inputs The following basic information is required:

1 Overview of the strategic strength and weaknesses

2 Overview of the inherent risks;

3 Overview of the internal control risks.

4 Overview of the GHG sources

Criteria The verification plan is drawn up on the basis of agreed materiality and non conformity criteria and the desired level of assurance.

The data sampling plan is the detailed development of the verification plan into specific data sets and tests.

Outputs The activities in this process result in a *verification plan with its associated data sampling plan*. The verification plan also contains a *verification programme* that describes how the verification plan with its associated data sampling plan is operationalised

Means -

4.2.3.2 Preparing a verification programme and verification plan including data sampling plan – activities

Verification plan and its associated data sampling plan and verification programme

The *verification programme* covers the activities that pave the way for the verification. These activities consist of walk-through tests, document reviews, observations at the installation and interviews (control tests) and audit sampling (both data and information), analytical procedures (substantive) and document review procedures (substantive).

The *verification programme* covers the nature, timing and scope of the activities that make up the verification plan.

The nature and scope of the activities in the verification plan and its associated data sampling plan and verification programme are determined by the materiality criteria and the likelihood of material errors, omissions and misstatements as well as the non conformity criteria and the likelihood on non conformitys.

Materiality

- An error or omission in the emission report can be such that it could influence the judgement of the user of the emission report. In this case the user of the emission report is the national authority and the CA.

- The materiality threshold is defined in the M&R Decision as 5%.

Likelihood of material errors, omissions and misstatements

- The likelihood of a material error can be deduced from the strategic analysis and the assessments of inherent risks and internal control risks.

    1 *Inherent risks* are low at installations/installations that (i) are not complex and (ii) where the way in which the emissions in the emission report are determined is not complex and (iii) where few differences compared to previous years have come about. See also “Listing of inherent risks”.

    2 *Internal control risks* are low at installations where the likelihood of material errors, omissions and misstatements is controlled by (i) documented (whether in paper or electronic form) data management systems, (ii) where segregation of duties has been applied (iii) and by integrating the monitoring system as far as possible in existing reporting systems and (iv) where few or no changes have come about in comparison to previous years. See also “Listing internal control risks”.

Non conformity

Non conformity is defined in the accreditation rules as:

“Non-conformity - The absence of, or the failure to implement and maintain, one or more requirements from the GHG permit or the monitoring methodology or other relevant requirements (see later for definition), but NOT resulting in errors, surpassing the materiality threshold. Non conformitys should be included in the report to the client and their existence mentioned in the verification statement”

Likelihood of non conformitys

- The likelihood of a non conformity can be deduced from the strategic analysis and the assessments of inherent risks and internal control risks.

3 *Inherent risks* are low at installations/installations that (i) are not complex and (ii) where the way in which the data management system is defined and developed is not complex and (iii) where few differences compared to previous years have come about. See also "Listing of inherent risks".

4 *Internal control risks* are low at installations where the likelihood of non conformity is controlled by (i) documented (whether in paper or electronic form) and implemented data management systems, (ii) where segregation of duties has been applied (iii) where few or no changes have come about in comparison to previous years. See also "Listing internal control risks".

Scope of the verifier's activities

Where the likelihood of material errors, omissions and misstatements and non conformity are great, the verification team needs to carry out more activities to obtain certainty that the agreed GHG permit with its associated monitoring methodology has been applied and that the data management system complies with the agreed GHG permit, monitoring methodology and other relevant requirements. These activities consist of performing walk-through tests, document reviews, interviews, site visit, audit sampling (data and information), analytical procedures and data review procedures. The table below sets out the scope of the verification team's activities in relation to the inherent risks and internal control risks.

		Internal control risks		
		High	**Average**	**Low**
Inherent risks	**High**	Maximal	High	Average
	Average	Substantial	Average	Small
	Low	Average	Small	Minimal

The shaded fields indicate the necessary scope of the verification team's activities.

Conduct of the verification

During the verification two activities occur. The first is related to the design, existence and effectiveness of the monitoring system and the materiality of the GHG data. The second is related to the conformity of the data management system To do this the verification team will use control tests that are directed at the system itself (design and existence), that data itself (materiality) and methods that are directed at the effective functioning of the system (substantive analysis).

- Where the internal control risks are high, the verification team cannot rely sufficiently on the activities of the installation to prevent material errors, omissions and misstatements and non conformitys, and the emphasis in the verification is placed on samples and analytical procedures.

- Where the internal control risks are low, the verification team will be able to rely more on the control tests and analytical procedures and will be satisfied with limited samples.

Sequence of activities in the verification plan and its associated data sampling plan/verification programme

1 The verification starts with the audit of the design and existence of the monitoring and data management systems. These investigations consist of walk-through tests, observations at the installation and interviews as well as document reviews.

During these investigations confirmation will be sought of the decision related to the strategic analysis. When such confirmation is obtained the approach to the verification will not be modified. If the decisions can not be confirmed or errors are identified in the data and information used to derive the strategic analysis it may prove necessary to modify the verification approach. The result will be more document reviews, site reviews, sampling and interviews.

During these investigations confirmation will be sought of the assumptions about the internal control risks that were developed during the risk analysis (see 4.2.2). When such confirmation is obtained, the approach to the verification will not be modified (see "scope of verification activities"). If it is confirmed that the internal control risks are greater than anticipated, it may prove necessary to modify the verification approach (see above). The result will be that more comprehensive sampling will take place.

If the verification programme is modified while the audit tasks are being carried out, an amended verification plan and associated data sampling plan will be produced.

2 This is followed by investigation of the effectiveness of the system. These tests consist of samplings and analytical procedures.

- *Audit samplings* involve two activities firstly the selection of emission figures and verification of the information that resulted in those figures. Secondly the selection of data management activities and verification of the information that manages and controls those activities including reviews of records. At all times there must be supporting documentation confirming how figures and any intermediary steps were arrived at as well as how the data management system is operated.

- *Analytical procedures* include comparisons of emissions from the same sources over a period of several years or investigation of whether the reported figures can be confirmed by other analytical means.

- *Document review procedures* include review of evidence of operation of data management system procedures and their design in conformity with GHG permit, monitoring methodology and other relevant requirements.

4.3 Carrying out the verification (process analysis) - overview

Name Carrying out the verification (process analysis)

Main steps

1 Investigate the design and existence of the monitoring system (4.3.1)

2 Investigate the effectiveness of the monitoring system (4.3.2)

3 Investigate the materiality of the reported data

4 Investigation of the conformity of the data management system with the requirements in the agreed GHG permit, monitoring methodology and other relevant requirements.

Objective Carrying out the verification involves the collection and documentation of *audit evidence*.

The audit evidence and the GHG permit with its associated monitoring methodology are compared with each other. Using the materiality criteria, it is then established whether the agreed GHG permit with its associated monitoring methodology was in fact applied in the formulation of the emission report. This requires a high (reasonable ISAE – 3000) level of assurance.

The audit evidence and the GHG emission report are compared with each other. Using the materiality criteria it is established whether the GHG emission report is fairly stated. This requires high (reasonable ISAE – 3000) level of assurance.

The audit evidence and the data control requirements in the agreed GHG permit, monitoring methodology and other relevant requirements are compared with each other. Using the non conformity criteria it is then established whether the installation's data management system and its operation comply with the data control requirements in the agreed GHG permit, monitoring methodology and other relevant requirements.

Inputs

1 Emission report of the installation;

2 Documentary evidence: documentation which confirms that an activity has taken place concerned with monitoring (e.g.: calibration of measuring equipment; purchasing of fuels; taking meter readings), the way in which something has taken place (e.g.: calculations) and the final result of those activities in terms of a fairly stated emission report

3 Interview with the installation to obtain further information.

4 Records and documentary evidence that the data management system is operational and confirmation that its is designed and operated in conformity with the data control requirements in the agreed GHG permit, monitoring methodology and other relevant requirements.

Criteria

The following documents provide the basis for the audit:

1 The verification plan. The verification plan contains a verification programme and a data sampling plan;

2 The GHG permit with its associated monitoring methodology agreed by the CA.

3 The installation's established and maintained data management system

4 The GHG permit, monitoring methodology and other relevant requirements

Outputs

1 The execution of the audit will result in the collection of audit evidence, which will provide the basis on which the data conformity of the emission report is assessed as well as for assessing the conformity with the data control requirements in the agreed GHG permit, monitoring methodology and other relevant requirements

2 During the audit matters relating to the emission accounting system, the data management system and internal control can come to light that will necessitate the modification of the strategic analysis and / or the risk analysis. This will lead to modifications in the verification plan and its associated data sampling plan and the verification programme.

For example: during the audit it appears that the data systems need to be improved. If this is the case, the scope of the tasks will need to be extended so that they are capable of providing sufficient supporting audit evidence to lead to the desired level of assurance in the verification statement.

3 If material errors, omissions and misstatements are encountered in the data, this will result in the present version of the emission report being rejected. If it is possible to make changes to the emission report (i) that can be corroborated and (ii) that comply with the agreed GHG permit, monitoring methodology and M&R Annex I Section 11 ands 12 requirements, a new version of the emission report will be audited.

4 If non conformity are found in the data management system the installation will be given the opportunity to correct such non conformitys within the time frame of the verification plan. Any outstanding non conformitys at the end of the verification will result in a non conformity statement in the verification statement except in cases where this results in a material error in the emissions report in which case the current version of the emission report will be rejected, subject to the same provisos above about material errors in the emissions report..

5 If it is impossible to gather sufficient audit evidence, no verification statement can be provided.

Means The verification team will investigate the design, existence, effectiveness and conformity of the system used to monitor emissions and control data.

1 An understanding is obtained of the effectiveness of the *emission accounting system*, *internal control* and *the system to meet the GHG permit, monitoring methodology and other relevant requirements* by conducting *interviews, site reviews, document reviews, walk-through tests* and *observations* at the installation itself.

2 Shortcomings and errors that are material are traced by means of *audit sampling* and *analytical procedures.*

3 Short comings that are non conformitys are traced by means of *audit sampling* and *document review procedures*

3. The verification team will communicated with the customer as the audit tasks commence. On completion of the activities at the installation further communications will be arranged.

4.3.1 Investigating the design and existence of the monitoring system

Please note the next four complete sections (4.3.1.1 - 4.3.1.2) are listed separately but would be conducted together. This listing is to facilitate the explaining rather then to indicate that they are separate activities.

4.3.1.1 Design and existence of the monitoring system – procedures

Name Investigating the design and existence of the monitoring system

Further details 4.3.1.2

Objective To obtain knowledge concerning the *design*, *existence* and *conformity* of the emission accounting system and internal control.

Inputs

1. Emission report of the installation
2. The installation's data management system
3. Documentary evidence: documentation that confirms that an activity has taken place concerned with monitoring (e.g.: calibration of measuring equipment; purchasing of fuels; taking meter readings).
4. Documentary evidence including records that confirms that a data management system is operational and complaint and covers the activities of the emission report.
5. Interview with the installation to obtain further information.
6. Information from previous verifications

Criteria The following documents provide the basis for the audit:

1. The verification plan. The verification plan contains an verification programme and a data sampling plan;
2. data control requirements in the GHG permit, monitoring methodology and other relevant requirements
3. The GHG permit with its associated monitoring methodology agreed by the CA.

Outputs

1 If in the opinion of the verification team the emission accounting system and internal control are functioning efficiently, this conclusion will be entered in the verification report (see 4.4.1).

2 If in the opinion of the verification team the emissions accounting system which is part of the data management system is in conformity with the data control requirements in the agreed GHG permit, monitoring methodology and other relevant requirements, this conclusion will be entered in the verification report.

3 In cases of non conformity between the data control requirements in the agreed GHG permit, monitoring methodology and other relevant requirements and the design, and operation of the emission accounting system relevant non conformity shall be raised and a non conformity statement in the verification statement be produced accordingly. In cases where the non conformity is resulting in a materiality concern with the emissions report further investigations shall be undertaken to resolve the matter or a material error statement in the verification statement shall be produced as far as the materiality of the emissions report is concerned.

4 In case of doubt about the design and existence of the emission accounting system and internal control that could result in material errors, omissions and misstatements in the emission report the verification plan and its associated data sampling plan will need to be modified (4.2.3). This will result in the verification programme requiring more control tests so that sufficient assurance that the monitoring system meets the requirements set out in the GHG permit with its associated monitoring methodology can still be achieved.

5 In cases of doubt about the conformity of the data management system with requirements in the GHG permit, associated monitoring methodology and other relevant requirements additional document review site review, sampling and tests shall be carried out. This will result in the verification programme requiring more time so that sufficient assurance can still be achieved.

Means

1 The *design* of the emission accounting system and internal audits is established by inspecting the information provided in the GHG permit with its associated monitoring methodology and the emission report. Operators are required to make available the design and implementation of the data management system. The information provided can be further explained and justified by the operator during interviews.

2 The *existence* of the emission accounting system and internal audits is established by means of walk-through tests. These involve taking certain reported emissions and tracing them back to the "source", i.e. a measurement or activity data and an emission factor. Investigation takes place to ascertain whether all the actions described in the GHG permit with its associated monitoring methodology are actually being carried out.

3 In addition to the walk-through tests described above the *existence* of the emission accounting system and internal audits can be ascertained by means of interviews and observations carried out at the installation. Observations allow the verifier to personally ascertain whether an action is carried out in accordance with the requirements set out in the GHG permit with its associated monitoring methodology.

4 In addition the materiality of the emission report shall be tested by means of data tests and sampling to confirm that the emission report is fairly stated.

5 The conformity of the data management system can be test by means of the above steps as well be means of document review and site reviews and interviews. Such processes allow the verifier to ascertain the conformity of the system with stipulated requirements in the GHG permit and its associated monitoring methodology and other relevant requirements.

6 The purpose and structure of the verification will be discussed during the introductory meeting with the operator.

4.3.1.2 Design and existence of the monitoring system – activities

Arranging the introductory meeting

1 Arranging the *introductory meeting*.

- Announce the date of the verification and check the availability of those concerned.
- Inquire about the safety regulations and, if necessary, arrange for appropriate safety clothing to be available.
- Describe the purpose of the verification and the activities, if desired.

Note the roles and responsibilities of those concerned. Peruse any supplementary documentation relating to the organisation of internal audits.

2 Check whether the information and responsibilities for monitoring and reporting correspond with the agreed GHG permit with its associated monitoring methodology. Take particular note of the segregation of duties (the divisions of responsibilities for recording, processing and reporting among different people in the organisation). During interviews ask those directly or indirectly involved whether they are familiar with the prescribed procedures and whether these are being applied.

3 Check whether quality assurance and control measures have been established in line with the GHG permit, monitoring methodology and other relevant requirements.

4 Check during interviews whether there have been any changes in the organisation of the internal audits from those recorded in the abovementioned documentation.

5 Check during site observations/ visit whether there have been any changes in the GHG sources.

6 Check whether documented (where in paper or electronic form) information exists about the following issues, insofar as they are part of the GHG permit, monitoring methodology and other relevant requirements:

- Effective functioning of measuring equipment (calibration; malfunctions, repairs; determining reference figures and comparative measurements);
- Information about repairs, malfunctions, extensions or incidents at the installation that could affect the reported emissions;
- ISO14001 or EMAS certificates.

6. Ask for a visit of (the relevant parts) of the installation, and ascertain whether measuring equipment is at its designated place (by one or more random checks). At the same time ascertain whether the measuring equipment is being used.

7. Carry out on-site inspections as much as possible of whether the steps of a particular procedure described in the GHG permit with its associated monitoring methodology are being put into practice (note: an inspection applies only for that moment and in itself does not provide adequate assurance that they have been carried out throughout the entire audit period).

8. Check whether there are special circumstances. These may concern CO_2 emissions: use of biomass as fuel; presence of process emissions and importation and/or exportation of CO_2 (see Figure 2). Ascertain how these circumstances have been fitted into the GHG permit with its associated monitoring methodology. For example: is the exportation of CO_2 emissions treated as an emission factor, or are the exported emissions deducted directly from the CO_2 emission total?

9. Carry out walk-through tests (number and type are set out in the verification plan and its associated data sampling plan). To do this, select measured or calculated emissions, calculated or analysed emission factors, calculated or analysed oxidation factors and calculated uncertainties. Continue by tracing these figures through to the source data. Check whether all the steps are verifiable. Compare the actual procedures with those described in the GHG permit with its associated monitoring methodology and possibly in other documentation. Investigate whether the procedures are applied throughout the year (e.g.: approved monthly recorded meter readings). Check whether all the necessary information is adequately documented (whether in paper or electronic form).

10. Test the operation of procedures by evaluating the documentary evidence with regard to certain parameters in the Annual Emission Report that demonstrates whether the steps referred to were taken to produce the Annual Emission Report.

11. Establish on the basis of the above activities whether the internal audits are operating effectively.

4.3.2 Conformity of the data management system

4.3.2.1 Conformity that data management system – procedures

Name Investigating the conformity of the data management process

Further details 4.3.2.2

Objective By means of document review, interviews and observations an assessment is made whether the data management processes are in conformity with the requirements of the installation GHG permit, monitoring methodology and other relevant requirements.

Inputs The assessment of the data management system is conducted with reference to the following:

1. the data management and control requirements detailed in the GHG permit, the approved monitoring methodology and other relevant requirements

2. the installation's data management process description including procedures, roles and responsibilities, data flow charts and installation maps etc.

3. associated documentary evidence that demonstrates the data management processes are designed, implemented, operational and effective.

4. interview with relevant installation personnel

5. inspection of site, plant and equipment to confirm documentary evidence

Criteria The investigations are carried out using the following information:

1 the verification plan and verification programme

2 the installation GHG permit and monitoring methodology and other relevant requirements

3 insights gained from previous verifications (the design and existence of the monitoring system, see 4.3.1).

Outputs A documented assessment of the installation data management system describing in particular area of potential non conformities or risk of non conformity with the GHG permit, its associated monitoring methodology and other relevant requirements. This shall include an assessment of potential non conformities on the reported data and on overall conformity. Also the potential risk to the quality of reported data will be described. This shall include an assessment as to the impact on the reported emissions data of any such risk area. Where possible the impact(s) should be quantified. The assessment should also describe the key components of the installation data management process.

4.3.2.2 Conformity of the data management system – activities

Carrying out audit sampling

The audit shall sample the installations data management processes to determine their effectiveness. As a result of strategic analysis and risk analysis the testing of the data management processes should focus on areas of greater risk.

Data Management Process Review

The review shall take into account the following through document review, site review and interview:

- Definition of organisational structure, roles and responsibilities
- Methods by which conditions of the GHG permit, monitoring methodology and other relevant requirements are included in the installation data management processes

- Vertical and horizontal data management system audits
- Installation data system and internal audits reviews

Determining conformity

On the basis of document review and discussion with installation personnel the verifier shall reach a decision as to the level of conformity with the requirements of the installation GHG permit, monitoring methodology and other relevant requirements.

Conclusion on conformity

Where the installations processes are found not to be in conformity with the requirements outlined above then the verification team shall describes these in the verification report. Their impact on the materiality of the existing and future data shall be evaluated.

Concluding discussion about the verification

Arrange a discussion in which the provisional findings of the verification are discussed with the installation. Topics that can be discussed during this meeting are:

- Points that have not yet been finalised and still need to be resolved before the verification can be finalised. These points may include: inconsistencies; non conformitys and audit evidence.

- Points related to non conformity with the GHG permit and associated monitoring methodology and the need for their communication to the Competent Authority and if material their affect on the verification process.

- Assessment of modifications that need to be made to the installation's data management system and arriving at agreements as to how this should be done. This relates both to those modification necessary to clear non conformity and those aimed at improving the system

4.3.3 Accuracy of data and the effectiveness of the monitoring system

4.3.3.1 Accuracy of the data and effectiveness of the monitoring system – procedures

Name Investigating the accuracy of the data and the effectiveness of the monitoring system

Further details 4.3.2.2

Objective By means of analytical procedures, an assessment is made whether the system for monitoring emissions is functioning effectively.

By means of analytical procedures an assessment is made as to whether the data derived from the application of the requirements in the agreed GHG permit with its associated monitoring methodology is correct and complete.

Inputs The audits of the figures are carried out on the basis of the following documents:

1. Emission report of the installation;
2. Audit evidence: documentation that confirms that an activity has taken place concerned with monitoring (e.g.: calibration of measuring equipment; purchasing of fuels; taking meter readings).
3. Interview with the installation to obtain further information.

Criteria The investigations are carried out using the following information:

1 The verification plan and its associated data sampling plan. The verification plan contains a verification programme;

2 The GHG permit with its associated monitoring methodology agreed by the CA;

3 Insights gained from previous audits (the design and existence of the monitoring system, see 4.3.1).

Outputs

1 Conclusion on the accuracy and completeness of the data

2 If no material errors or omissions are encountered, a report can be issued (see 4.4).

3 If material errors and omissions are discovered, the present version of the emission report cannot receive a verification statement.

4 If the errors and omissions can be rectified a new version of the emission report will be presented to the verification team. This will take place on the condition that the changes can be corroborated by evidence;

5 If a new version of the emission report can be presented, the verification team needs to re-examine the risk analysis in the light of the changes that have been introduced. This may result in modification of the verification plan and the verification programme.

Means

Testing the effective functioning of the monitoring system and the data correctness and completeness is done by means of *audit sampling* and *analytical procedures*.

1 During the analytical procedures significant ratios and trends are analysed. The ratios provide an indication of the size of the anticipated CO_2 emissions. The trend gives an indication of the relationship between such matters as fuel consumption, production and CO_2-emissions.

2 Audit sampling consists of carrying out detailed checks of elements from a total of information. For example: reported emissions from a selection of emission sources are traced back to the basic data (measurements, calibration of the equipment that is used, activity data, emission factors, oxidation factors).

3 Once the activities at the installation have been completed a concluding meeting is organised.

4.3.3.2 Accuracy of the data and effectiveness of the monitoring system – activities

Carrying out audit sampling

Take random samples of a few emission sources. The nature and scope of the samples have been decided in the verification plan and its associated data sampling plan and verification programme. Make a note of special circumstances when conducting sample tests (use of biomass, importation or exportation of CO_2, process emissions and CEMS).

Select:

- Emission sources that are required to be measured under the GHG permit with its associated monitoring methodology;
- Emission sources from the emission report; and
- Emission sources from the permit for the discharge of greenhouse gas emissions (CO_2 emissions).

Obviously emission sources indicated in the agreed GHG permit with its associated monitoring methodology and the emission report must all be the same. That is to say: each emission source must appear in both documents mentioned above.

Emissions that are registered by *measurements*:

- Compare the type and the location of the measuring equipment that is present with the requirements in the monitoring protocol. Check the frequency of the measurements: periodic/continuous measurements (CEMS and/or PEMS). Check whether the measuring equipment is calibrated in accordance with the regulations in the GHG permit with its associated monitoring methodology or as required in the M&R.

Emissions that are *calculated*:

1 Examine a print-out of the *calculations*. Check whether the spreadsheets or other software in use have been documented (whether in paper or electronic from). Verify totals and subtotals.

2 Examine the *activity data* (fuel consumption, use of raw materials, etc). Check whether the type and units match the information in the GHG permit with its associated monitoring methodology. Trace the activity data back to their source, such as invoices for purchased fuel. Check whether the activity data have been established in accordance with the tier level set in the GHG permit with its associated monitoring methodology.

   - Activity data based on fuels: check whether the *net calorific value* is standard, calculated or is the result of analyses. In all cases verify the units and compare with relevant requirements in the GHG permit with its associated monitoring methodology.

     - If the net calorific value is determined on the basis of calculations: compare the calculated factor with the standard factor and check whether the calculation is documented (whether in paper or electronic form) and can be reproduced.

     - If the net calorific value is determined on the basis of analyses: check whether the responsible laboratory is certified in accordance with EN ISO17025 or as agreed with CA. Compare the analysed values with the heating values. Check

how the sampling was conducted and whether this was properly documented (whether in paper or electronic from).

3 Verify *emission factors/reference figures.* Check the units. Check whether the emission factors/reference figures are standard, calculated, or are the result of analyses. Check whether the emission factor/reference figure was established according to the tier level laid down in the GHG permit with its associated monitoring methodology.

- If the emission factors have been determined on the basis of calculations: compare the calculated factor with the standard factor and check whether the calculation is documented (whether in paper or electronic form) and can be reproduced.

- If the emission factor has been determined on the basis of analyses: check whether the responsible laboratory is certified in accordance with EN ISO17025or as agreed with CA. Compare the analysed emission factors with the standard emission factors. Check how the sampling was conducted and whether this was properly documented (whether in paper or electronic form).

- The emission factor may contain a correction for exported CO_2 emissions. Check whether, and in what way, this correction was made. Examine the documentation and calculation of the used emission factor as described above.

- The emission factor may be zero on account of the use of biomass. If applicable, check the nature and origin of the biomass used. If the fuel used consists partly of biomass: check the way in which the fraction used has come about. This may include sampling, analysis and documentation. Check whether the responsible laboratory is certified in accordance with EN ISO17025 or as agreed with CA

4 Check the *oxidation factors*. Check whether these are standard, calculated or analysed. If they were calculated, check the documentation of the calculations and whether they can be reproduced. Verify the units and compare the oxidation factor with standard oxidation factors. Compare the used tier level with the requirements in the monitoring protocol. If the oxidation factors have been established through laboratory analysis: check whether the responsible laboratory is certified in accordance with EN ISO17025 or as agreed with CA. Check how the sampling has been conducted and whether this has been properly documented (whether in paper or electronic form). Check whether the oxidation factor has not already been included in the emission factor.

Conclude on data

Review all the findings on the data set and emission report from strategic analysis, risk analysis through to the assessment of the data and determine whether the emissions report is accurate and complete

Review the preliminary risk analysis and completed in line with requirements in EU ETS Directive Annex V.

Concluding discussion about the verification

Arrange a discussion in which the provisional findings of the verification are discussed with the installation. Topics that can be discussed during this meeting are:

- Points that have not yet been finalised and still need to be resolved before the verification can be finalised. These points may include: inconsistencies; errors and audit evidence.
- Assessment of modifications that need to be made to the emission report and arriving at agreements as to how this should be done. Modifications obviously concern non-material errors, omissions and misstatements that have been encountered.
- Possible findings with regard to the monitoring protocol that is in use.

4.4 Formulation and corroboration of conclusions

Name Formulation and corroboration of conclusions

Main steps

1 Prepare a draft verification statement, draft audit report and if agreed a management letter setting out the findings of the verification (4.4.1).

2 Finalise the verification statement on the basis of the collected audit evidence (4.4.2).

3 Release the verification statement (4.4.3).

Objective Drawing on the collected audit evidence, the materiality criteria that were applied and the agreed GHG permit with its associated monitoring methodology, the conformity criteria that were applied and the installation's data management system a statement is given on the accuracy and completeness of the emission report and the conformity of the data management system. This conclusion is presented in the form of a verification statement. The statement is corroborated with supporting audit evidence in the form of an *audit report*.

Inputs

1 Audit evidence that is collected and documented during the verification.

2 If during the risk analysis it emerges that the GHG permit with its associated monitoring methodology is not current, there is no need to collect further audit evidence. In that case no verification statement will be issued (see 4.2.1).

Criteria

The conclusions concerning the emission report will be based on:

1 The GHG permit with its associated monitoring methodology agreed by the CA;

2 Materiality criteria that have been formulated in advance;

3 All the steps and activities formulated in the verification plan must have been gone through and completed.

The conclusions on the data management system will be based on:

1. The data control requirements in the agreed GHG permit, monitoring methodology and other relevant requirements

2. Conformity criteria that has been formulated and agreed in advance

3. All the relevant steps and activities formulated in the verification plan must have been gone through and completed

Outputs

The formulation and corroboration of conclusions will result in the following:

1 A verification statement concerning the accuracy and completeness of the data in the emission report.

- A *satisfactory*[1] *statement as far as data is concerned* will be issued unless the following circumstances are present
  - During the risk analysis it emerges that the emission report was not drawn up on the basis of the GHG permit with its associated monitoring methodology agreed by the CA.
  - During the risk analysis it emerges that significant changes have occurred in the installation after the monitoring methodology was agreed by the CA.
  - During the audit material errors, omissions and misstatements were discovered.
  - During the audit it emerges that not enough audit evidence can be collected to arrive at a conclusion.

[1] Satisfactory as required in EU ETE Annex V point 11

2 A verification statement concerning the conformity with the GHG permit, monitoring methodology and other relevant requirements

- A *conformity statement as far as the data management system* is concerned will be issued unless any of the following circumstances are present:
  - During the conformity assessment of the data management system it emerges that the system is not in conformity with the requirements in the GHG permit, monitoring methodology and other relevant requirements
  - During the risk analysis or the conformity assessment it emerges that the system has changed substantially from that required in the agreed GHG permit, associated monitoring methodology and other relevant requirements
  - During the risk analysis or conformity assessment it emerges that the system is being operated differently then described in the data management system or described verbally.
  - During the audit it emerges that not enough audit evidence can be established to arrive at a conclusion

3 In all cases the conclusion issued by the verifier, as presented in the report, must be corroborated by a written *audit report*. The audit report contains the collected audit evidence. The verification plan is included as an Annex. If the verification activities have given cause for modification of the audit plan, the plan will be assigned a new version number. The most recent version of the audit plan will be included in the audit report.

4 If desired a *management letter* will be issued.

Means

Verification statement must comply with the following requirements

The verification statement must refer to the exact Emission Report that has been verified (i.e. date and version number).). At a minimum, the verification statement must include the following elements, ordinarily in the following layout:

- Name and address of the installation
- Scope of verification, including a reference to the Permit and specific exclusions
- Respective roles and responsibilities of the installation, the verifier and the Competent Authority
- Reference to the exact version of the Emission Report that has been verified

- Basis of statement (verification procedures followed and the Monitoring and Reporting Guidelines).
- Confirmation of accuracy and (effective) implementation of monitoring systems in accordance with the GHG permit, monitoring methodology and other relevant requirements.
- Total GHG emission data per activity verified (as an aggregate not broken down per source)
- Verification statement with regard to data quality, completeness and materiality in the form of an affirmative statement.
- Verification statement regarding the conformity of the data management system.
- Applicable year
- Address and accreditation reference for verifier
- Dated and signed on behalf of the verifier by authorised signature.

If the verification statement is the result of work from two or more verifiers, the contract and final verification statement shall be the responsibility of one verifier.

The confidentiality of verification evidence and internal reports must be guaranteed.

4.4.1 Prepare a draft report and audit report

4.4.1.1 Preparing a draft report and audit report – procedures

Name	Preparing a draft verification statement and audit report
Further details	4.4.1.2
Objective	On the basis of the collected audit evidence the verifier will draw up his proposed verification statement and a draft audit report and will present them to the reviewer.
Inputs	1 Confirmation about whether the GHG permit with its associated monitoring methodology has been agreed and is a reflection of the current situation (see 4.1); 2 Audit evidence with regard to the design and existence of the monitoring system (see 4.3.1);

3 Audit evidence with regard to the conformity of the installation's data management system

4 Audit evidence concerning the data conformity and effective functioning of the monitoring system (see 4.3.2);

5 Audit evidence concerning the data materiality in the emissions report.

6 The most recent version of the verification plan (see 4.2.3).

Criteria The conclusions about the emission report are based on:

1 Materiality criteria that have been formulated in advance;

2 The GHG permit with its associated monitoring methodology agreed by the CA;

3 The collected audit evidence about the design, existence and the effective functioning of the monitoring system.

4 The collective audit evidence about the materiality of the emissions report and it being fairly stated

The conclusions on the data management system are based on:

4. The data control requirements in the agreed GHG permit, monitoring methodology and other relevant requirements

5. Conformity criteria that has been formulated and agreed in advance

6. The collective audit evidence about the data management system and its conformity.

7. All the relevant steps and activities formulated in the verification plan must have been gone through and completed

Outputs 1 The verifier formulates the recommendations for a statement on the basis of the audit evidence. Except for incidences of inadequate audit evidence, material errors or omissions or if there is no current, agreed GHG permit with its associated monitoring methodology or there is non conformity with the data control requirements in the GHG permit, monitoring methodology or other relevant requirements, a satisfactory verification statement will be issued.

2 The audit evidence is processed in an audit report, which in turn provides the basis for the granting or withholding of a satisfactory verification statement. The audit report is an internal document.

Means 1 The draft verification statement and audit report are drawn up by the verification team performing the audit on the basis of audit documentation.

4.4.1.2 Prepare a draft report and audit report - activities

Drafting an audit report

Draft an audit report which sets out what activities have been carried out and what conclusions the activities have led to. The activities carried out must match those that were described in the verification plan.

The audit report must contain information (or references to the information) that supports the conclusions about the identified risks and the errors and/or omissions and / or non conformitys that were encountered.

The audit report must at least discuss the following issues:

- The conclusions about the identified risks and the reason for every change made from the original analysis of the risks. In addition it should include discussion of the changes made in the performance of the audit as far as the planning is concerned;
- Changes in the activities of the installation and the industry in which it operates that the verifier has become aware of since the verification plan was drawn up and which have necessitated modification of the verification plan;
- The overall conclusion when assessing identified errors and/or omissions and the question whether the errors and/or omissions are material;
- The overall conclusions when assessing the conformity of the data management system.
- The conclusion with regard to the planned approach to the audit and the competent, relevant and reasonable basis created by the collected evidence for the formulation of conclusions (adequacy).

The final audit report is presented to the reviewer assigned to the verification

Draft verification statement

The verifier draws up recommendations for the type of statement that is to be issued. These recommendations are made on the basis of the collected audit evidence and the conclusions drawn from it (audit report).

4.4.2 Finalise the verification statement

4.4.2.1 Finalise the verification statement – procedures

Name Finalising the verification statement

Further details 0

Objective The draft verification statement and internal audit report are presented to the reviewer at the verification body. The person responsible needs to establish whether the audit evidence leads to the proposed statement. This person will also investigate whether all the steps and activities set out in the audit plan have been gone through and completed. Once the reviewer has approved the statement and report, it can be released.

Inputs

1 Draft verification statement;

2 Draft audit report;

Criteria The conclusions concerning the emission report are based on the following:

1 The most recent version of the verification plan;

2 The materiality criteria;

3 The non conformity criteria; and

4 The collected audit evidence about the emissions report's data being stated fairly and the data management systems conformity with the GHG permit, monitoring methodology and other relevant requirements.

Outputs

1 The statement of the verifier about the verified emission report and the data management system;

2 The report of the verifier which may be kept internally but will be authorised by the reviewer.

Means The reviewer from the verification body finalises the verification statement on the basis of the documented audit evidence.

4.4.2.2 Finalising the verification statement - activities

Finalising the verification statement

The representative of the verification body finalises the verification statement and draft report. This is recorded in the file.

Composing a file

During the verification a file containing the documents must be kept to support:

- All conclusions of significance with regard to the verification of the emission report;
- All conclusions of significant with regard to the verification of the conformity of the installation's data management system
- The adequacy of the audit activities.

By the time that the verification is nearing its conclusion the file needs to contain all documents that provide the evidence that is required in order to form a competent, relevant and reasonable foundation for the conclusions. If additions or alterations are made in the documents in the file after that time, these should be of an editorial nature or provide further explanation of the audit activities carried out. Additions or alterations are not permitted after the audit file has been made available to other bodies or authorities.

Indicate clearly which information has been added or altered in analyses or memorandums of previous verifications that are being used in the current verification. State exactly what has changed and on what date. If a document is removed from the file, a copy of it must be left in the file so that its completeness is not affected. Dossier documents that were created electronically are subject to the same rules with regard to their composition, evaluation and management as the documents created by hand. Every computer file that contains information and is an integral part of the file documents should be saved. Heed must be taken of national legislation and regulations concerning the keeping of documents.

The audit file contains all the documents material to the verification for the corroboration of the conclusions set out in the report. The file should include:

- Acceptance of the engagement;
- Company data;
- GHG permit with its associated monitoring methodology ;
- Installation's relevant correspondence with the CA;
- Conclusions drawn on the basis of identified inherent risks;
- Conclusions drawn on the basis of identified control risks;

- verification plan (in all its different versions, if there is more than one);
- A record of the nature, time and the scope of the activities that were performed;
- Indication of who carried out the verification activities;
- Evidence that activities carried out by experts were duly supervised and that these activities have been assessed;
- Records of interviews with installation experts;
- Letters/memos sent to the client;
- Audit report;
- Verification statement.

Drawing up the report

Once the required level of assurance has been obtained through the verification activities the person in charge of the verification will draw up a report that comprises the components described in 4.4.1.2.

4.4.3 Release the verification statement

4.4.3.1 Releasing the verification statement – procedures

Name	Releasing the verification statement
Further details	-
Objective	The statement of the verifier is part of the installation's emission report. The definitive version of the emission report is certified, after which the report including the verification statement is submitted to the CA by the installation
Inputs	1 Statement from the verification body about the emission report and the conformity of the data management system; 2 Final version of the installation's emission report.

Criteria The reviewer or the team leader of the verification from the verification body certifies the final version of the installation's emission report. Certification provides the assurance that the present version of the emission report is true to the version checked by the verifier.

Outputs After it has been certified the verification statement can be included in the installation's emission report. The emission report with the final verification statement can now be submitted by the installation to the CA.

Means The person responsible at the verification body releases the verification statement by signifying consent in manner acceptable to the verification body.

A Glossary of Terms

Due to copy write requirements the text from ISO DIS14064 part 3 can not be included here. Reference are made to relevant definitions. Readers are recommended to obtain their own copy and as the DIS should be formally available in January 2005.

Term	Description	Source
Accounting system	An accounting system is the series of tasks and records of an entity by which transactions are processed as a means of maintaining financial records. Such systems identify, assemble, analyze, calculate, classify, record, summarize and report transactions and other events.	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
Accuracy	The degree of precision and/or margin of error in reported information that is required by users in order to be able to make decisions with a high level of assurance. Note: the characteristics that determine accuracy vary depending on the type of information.	ISO/WD 14064-3.1, 3.1
Analytical procedures	Analytical procedures consist of the analysis of significant ratios and trends including the resulting investigation of fluctuations and relationships that are inconsistent with other relevant information or deviate from predictable amounts.	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
Annex I activity	The activities mentioned in Annex I of the European Commission Directive on CO_2 emissions trading which therefore come under the Directive.	Annex I, Directive on CO_2 emissions trading
Reasonable assurance	In an audit engagement, the auditor provides a high, but not absolute, level of assurance, expressed positively in the auditor's report as reasonable assurance, that the information subject to audit is free of material misstatement.	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
Audit	The objective of an audit [of the information being verified] is to enable the [verifier] to express an opinion on whether [the information] is prepared, in all material respects, in accordance with an identified reporting framework The phrases used to express the [verifier's] opinion are "give a true and fair view" […] or "present fairly, in all material respects," which are equivalent terms. A similar objective applies to the audit of financial or other information prepared in accordance with appropriate criteria.	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC

Audit evidence	Audit evidence is the information obtained by the [verifier] in arriving at the conclusions on which the audit opinion is based. Audit evidence will comprise source documents and accounting records underlying [the emission report] and corroborating information from other sources.	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
Audit plan	The [verifier] must draw up an audit plan in which the likely scope and approach of the audit are laid down. These should be conveyed in sufficient detail to provide a sound basis for the design of the audit program. (300.8)	Guidelines for financial audits, 2002 edition, NIVRA (300.8)
Audit program	An audit program sets out the nature, timing and extent of planned audit procedures required to implement the overall audit plan. The audit program serves as a set of instructions to assistants involved in the audit and as a means to control the proper execution of the work.	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
GHG information system		ISO DIS 14064 part 3 section 2.16
GHG information system control		ISO DIS 14064 part 3 section 4.5
Correctness of information	The information presented is complete; the information is reliable.	Stuyt projects BV, p.12 “External verification investigation”
Criteria	Criteria are the standards or benchmarks used to evaluate or measure the [emission report] during an assurance engagement. Criteria are important in the reporting of a conclusion by the [verifier] as they establish and inform the intended user of the basis against which the [emission report] has been evaluated or measured in forming the conclusion. Without this frame of reference any conclusion is open to individual interpretation and misunderstanding. Criteria in an assurance engagement need to be suitable to enable reasonably consistent evaluation or measurement of the [emission report] within the context of professional judgement. Suitable criteria are context-sensitive, that is, relevant to the engagement circumstances.	Guidelines for financial audits, 2002 edition, NIVRA. Glossary
Criteria, verification		ISO DIS 14064 part 3 section 2.33

Detection risk	Detection risk is the risk that the [verifier's] substantive procedures will not detect a misstatement that exist in [emission report] that could be material, individually or when aggregated with misstatements in other balances or classes.	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
Emission	Emission of greenhouse gasses in the atmosphere from sources present in an installation.	Art.3.b Directive on CO_2 emissions trading
Emission report		
Error	The term "error" refers to an unintentional misstatement in the [emission report]	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
External verification	Verification by an independent third party.	Bureau Stuyt, "External verification investigation"
Fraud	The term "fraud" refers to an intentional act by one or more individuals among management, those charged with governance, employees, or third parties, which results in a misrepresentation of [the emission report].	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
GHG programme	(Note this relates to an overall government level programme not one within an operator / installation)	ISO DIS 14064 part 2 section 2.19
High (reasonable ISAE – 3000) level of assurance	The expression "high level of assurance" refers to the [verifier] having obtained sufficient appropriate evidence to conclude that the [emission report] conforms in all material respects with identified suitable criteria. In rare circumstances, the [verifier] may be able to provide absolute assurance, for example, where the evidence available is conclusive and reliable because the [emission report] is determinate, the criteria definitive and the process applied comprehensive. However, because of the limitations of the engagement process, a high level of assurance is ordinarily less than absolute. The [verifier] designs the engagement to reduce to a low level the risk of an inappropriate conclusion that the [emission report] conforms in all material respects with identified suitable criteria. (Standard 100, para. 29)	Guidelines for financial audits, 2002 edition, NIVRA. Glossary

Independence	Three independent parties are involved in assurance engagements: the [verifier], the responsible party and the user. The [verifier] provides assurance to the intended user concerning the [emission report] that is the responsibility of the [reporting installation]. [This guarantees independence, provided the verifier belongs neither to the installation, nor to the intended user(s).]	Guidelines for financial audits, 2002 edition, NIVRA. 100.9
Installation (hereafter: installation)	A stationary technical unit in a installation in which one or more activities referred to in Annex I [of the Directive] are carried out, and activities carried out in a similar installation directly associated with those activities and related to them in a technical way that may have consequences for emissions and pollution.	Art.3.e Directive on CO2 emissions trading
Internal control system	An internal control system consists of all the policies and procedures (internal controls) adopted by the management of an entity to assist in achieving management's objective of ensuring, as far as practicable, the orderly and efficient conduct of its business, including adherence to management policies, the safeguarding of assets, the prevention and detection of fraud and error, the accuracy and completeness of the accounting records, and the timely preparation of reliable […] information. The internal control system extends beyond these matters which relate directly to the functions of the accounting system.	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
Level of assurance		ISO DIS 14064 part 3 section 2.24
Management letter	On completion of the verification process the verifier may inform the management of the verified installation of matters that do not affect the verification statement but which nevertheless need to be improved.	
Materiality	Information is material if its omission or misstatement could influence the economic decisions of users taken on the basis of the information. Materiality depends on the size of the item or error judged in the particular circumstances of its omission or misstatement. Thus, materiality provides a threshold or cut-off point rather than being a primary qualitative characteristic which information must have if it is to be useful.	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
Materiality		ISO DIS 14064 part 3 section 2.25
Material Discrepancy		ISO DIS 14064 part 3 section 2.26

Operator	A person who operates or manages an installation, if provided for under national legislation, who has been given the authority to make economic decisions concerning technical operations.	Art.3.f Directive on CO_2 emissions trading
Opinion	The auditor's report contains a clear written expression of opinion on the [emission report] as a whole. An unqualified opinion is expressed when the auditor concludes that the financial statements give a true and fair view (or are presented fairly, in all material respects,) in accordance with the [Monitoring Methodology].	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
Other relevant requirements	when used in conjunction with the term monitoring methodology means – those requirements in M&R Decision Annex I related to definitions (section 2) principles (section 3) and QA/QC procedures (section 7), reporting format (section 11) and reporting categories (section 12) as well as any National legal requirements applicable to the EU ETS Directive	EA CC GHG Guidance Note October 2004
Permit for greenhouse gas emissions	A permit granted pursuant to Articles 5 and 6 [of the Directive on CO_2 emissions trading].	Art.3.d Directive on CO_2 emissions trading
Person	Natural person or legal person.	Art.3.g Directive on CO_2 emissions trading
Public, the	One or more persons and, as accords with national legislation or use, associations, organisations or groups of persons.	Art.3.i Directive on CO_2 emissions trading
Reasonable assurance	In an audit engagement, the [verifier] provides a high, but not absolute, level of assurance, expressed positively in the audit report as reasonable assurance, that the information subject to audit is free of material misstatement.	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
Reliability	Reliability implies a guarantee of truthfulness, measurement and/or completeness. More precisely it can be defined in terms of the following aspects of faithfulness: ■ Existence: an asset or liability exists at a given date. ■ Completeness: there are no unrecorded assets, liabilities, transactions or events, or undisclosed items. ■ Rights and obligations: an asset or liability pertains to the entity at a given date. ■ Occurrence: a transaction or event took place which pertains to the entity during the period. ■ Measurement: a transaction or event is recorded at an appropriate carrying value.	Guidelines for financial audits, 2002 edition, NIVRA

Report	The [verifier] must evaluate his findings from the control information obtained and use these as the basis for his opinion concerning the [annual emission report]. This evaluation will also include the assessment of whether the [emission report] has been drawn up in compliance with the [agreed monitoring protocol]. The [report] must present a clear opinion about the [emission report] as a whole.	NIVRA guideline 700
Risk analysis	See Risk, engagement.	
Risk, audit	Audit risk is the risk that the [verifier] gives an inappropriate audit opinion when the [emission report] is materially misstated. Audit risk has three components: inherent risk, control risk, detection risk	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
Risk, inherent	Inherent risk is the susceptibility of a [parameter in the emission report] to misstatements that could be material, individually or when aggregated with misstatements in [other parameters], assuming that there were no related internal controls.	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
Risk, internal control	The risk that a misstatement that could occur in a [parameter in the emission report] and that could be material, individually or when aggregated with misstatements in [other parameters, will not be prevented or detected and corrected on a timely basis by the accounting and internal control system.	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
Substantive procedures	Substantive procedures are tests performed to obtain audit evidence to detect material misstatements in the [information being audited], and are of two types: ■ Test of details of transactions and balances; and ■ analytical procedures.	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
Tests of control	Tests of control are performed to obtain audit evidence about the effectiveness of: ■ the design of the accounting and internal control systems, that is, whether they are suitably designed to prevent or detect and correct material misstatements; and ■ the operation of the internal controls throughout the period.	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC
Validation		ISO DIS 14064 part 3 section 2.32

Verification		ISO DIS 14064 part 3 section 2.36
Verification body		
Verification obligation	The member states undertake to ensure that the reports [emission reports] filed by the operators in compliance with Article 14 (3) are verified in accordance with the criteria set out in Annex V [of the Directive] and that the competent authority is provided with the relevant information.	Art 15, Directive on CO_2 emissions trading
Verification Statement		ISO DIS 14064 part 3 section 2.34
Verifier		ISO DIS 14064 part 3 section 2.37
Walk-through test	A walk-through test involves tracing certain [reported emission data] through the [emission registration system].	Handbook of International Auditing, Assurance, and Ethics Pronouncements 2004 edition, IFAC