

1. SCOPE

This guideline contains the accreditation processes of the Bodies that will carry out verification activities pursuant to the EU ETS legislation and in particular to the AVR Regulation.

1.1 Verification Processes

The greenhouse gas emission verification activities are carried out by the verification bodies to be accredited and assessed at regular intervals by the New Business Education (NBE). The verification activity contains all the works and operations conducted by the verification body to submit a verification report and is performed pursuant to the MRR and AVR as well as guidance documents and requirements in the relevant legal regulations published by the relevant Country Ministry.

1.2 Activities to be accredited

The Scope of Accreditation is formed with the adaptation of the AVR Annex I and contains the activities provided in Table 1. This classification is organized according to technical characteristics of the sectors, processes, industry types and the similarity in complexity.

Table 1: Activities Related to Greenhouse Gas Emissions to Be Included in the Scope of Accreditation - Scope of Application

AG	PURSUANT TO EU ETS
1a / 1b	<ul style="list-style-type: none"> Combustion of fuels in installations, where only commercial standard fuels as defined in Regulation (EU) No 601/2012 are used, or where natural gas is used in category A or B installations. Combustion of fuels in installations, without restrictions
2	<ul style="list-style-type: none"> Refining of mineral oil
3	<ul style="list-style-type: none"> Production of coke Metal ore (including sulphide ore) roasting or sintering, including pelletisation Production of pig iron or steel (primary or secondary fusion) including continuous casting
4	<ul style="list-style-type: none"> Production or processing of ferrous metals (including ferro- alloys) Production of secondary aluminium Production or processing of non-ferrous metals, including production of alloys
5	<ul style="list-style-type: none"> Production of primary aluminium (CO₂ and PFC emissions)

6	<ul style="list-style-type: none"> – Production of cement clinker – Production of lime or calcination of dolomite or magnesite – Manufacture of glass including glass fibre – Manufacture of ceramic products by firing – Manufacture of mineral wool insulation material – Drying or calcination of gypsum or production of plaster boards and other gypsum products
7	<ul style="list-style-type: none"> – Production of pulp from timber or other fibrous materials – Production of paper or cardboard
8	<ul style="list-style-type: none"> – Production of carbon black – Production of ammonia – Production of bulk organic chemicals by cracking, reforming, partial or full oxidation or by similar processes – Production of hydrogen (H₂) and synthesis gas by reforming or partial oxidation – Production of soda ash (Na₂CO₃) and sodium bicarbonate (NaHCO₃)
9	<ul style="list-style-type: none"> – Production of nitric acid – Production of adipic acid – Production of glyoxal and glyoxylic acid – Production of caprolactam (CO₂ emissions)
10	<ul style="list-style-type: none"> – Capture of greenhouse gases from installations covered by Directive 2003/87/EC for the purpose of transport and geological storage in a storage site permitted under Directive 2009/31/EC – Transport of greenhouse gases by pipelines for geological storage in a storage site permitted under Directive 2009/31/EC
11	<ul style="list-style-type: none"> – Geological storage of greenhouse gases in a storage site permitted under Directive 2009/31/EC
12	<ul style="list-style-type: none"> – Aviation activities (emissions and tonne-kilometer data)
98	<ul style="list-style-type: none"> – Other activities pursuant to Article 10a of Directive 2003/87/EC – Verification of free-of-charge emission permit granted based on the above-mentioned activity
99	<ul style="list-style-type: none"> – Other activities, included by a Member State pursuant to Article 24 of Directive 2003/87/EC, to be specified in detail in the accreditation certificate

4 GENERAL MATTERS RELATED TO ACCREDITATION

All processes, except for the on-site assessment process, in the accreditation processes of greenhouse gas emission verification bodies are managed in accordance with the rules laid down in PR-7-01 Procedure for the Accreditation Conformity Assessment Bodies.

4.1 Accreditation Process

In the accreditation process of greenhouse gas emission verification bodies, the following requirements are also met in addition to the rules laid down in PR-7-01 Procedure for the Accreditation of Conformity Assessment Bodies.

4.1.1. Application Process

The Verification Body fills out the FR-7-01-96 Form pursuant to Article 3.1.1 of PR-7-01 Procedure and files an application to the NBE with the documents specified in the form.

The Verification Body takes into consideration the schedule laid down in the relevant Country National Legislation and the AVR. Considering that the verification activities are performed in the first three or four months of each year, the Verification Body requesting accreditation shall submit its application to the NBE at the beginning of September of the previous year at the latest. The Verification Body shall take into consideration that the accreditation process may not be completed in the reporting year even if applications filed after the above-mentioned date are accepted and even if there is no issue preventing the assessment.

The acceptance and reviewing of the application is carried out pursuant to the relevant provision in PR-7-01.

4.1.2. Review of Documents

The assessment team formed pursuant to Article 3.2.2 of PR-7-01 Procedure reviews the documents and records of the applicant Verification Body. The documents required to be reviewed based on the assessment type by the assessment team before the assessment are given in Table 2 below. The entire assessment team must participate in the document review process. If the finding or findings found during the document review prove that the requirements of the standard and the applicable legislation are violated or that the Verification Body has performed its functions in violation of the standard, legislation or normative references, the assessment planning stage does not start and the assessment is not carried out. The period determined for the document review cannot be less than 1.5 man-days.

Table 2: Documents to Be Reviewed before the Assessment

DOCUMENTATION				
DOCUMENTS REQUIRED TO BE REVIEWED BY THE ASSESSMENT TEAM BEFORE THE ASSESSMENT	PRE-ASSESSMENT	FIRST REASSESSMENT	SURVEILLANCE ASSESSMENT	SCOPE EXTENSION
Manual related to the verification process, all the policies, commitments, instructions, check lists (contract review, verifier qualification and authorization records, risk analysis, impartiality and independence, etc.)		√	√	√
Verification Report Model (Pass/Fail)	√	√	√	√
Records related to the competence and accessibility of personnel; lead verifier, verifier and technical expert, performance evaluation criteria and records, personnel competence monitoring plan and application records	√	√		√
All the documents and records required to be submitted to the assessment team before the witness assessment and additionally, all the records related to the monitoring plan of the installation, legal permits, Greenhouse Gas data, first risk analysis results, previous verifications, if available, verification program and verification team		√	√	√

4.1.3. Planning of Assessment

In the NBE assessments, the case officer and the lead assessor take the following matters into consideration while organizing the office and witness assessments of the Greenhouse Gas Emissions Verification Bodies.

- Experience of the Verification Body in relation to the Greenhouse Gas Emissions Monitoring and Reporting Systems, Maturity of the Management System
- Accreditation Scope Request, Number of Activity Groups
- Number of Offices of the Verification Body
- Number of Clients of the Verification Body
- Number of Personnel-verifiers and technical experts
- Verification Activities in other Countries

- Emission levels and complexity of the installations (client diversity, for example: low, medium and high emission installations or low and high emission sources, large or small physical sites)
- Installations Using Standard and/or Non-standard Fuels
- Complexity of the Monitoring Plan
- Monitoring Methodology
- Installations Using Measurement-Based Methodology (CEMS)
- Complaints Against the Verification Bodies

In on-site assessments, man-days of the assessment team are determined as below.

Office assessment: It is carried out by the assessment team. The duration of the office assessment is determined by taking into account the above-mentioned criteria and the results of the document review process. The criterion to be evaluated according to the number of clients of the Verification Body is given in Article 4.1.4 of this Guideline. For the initial accreditation assessment, the duration of the office assessment shall not be less than 2 days under any condition.

Witness assessment (office phase): It is carried out by the Lead assessor, assessor or the technical expert at the office of the Verification Body. It is the phase where the entire internal verification documentation of each activity selected for the witness assessment is assessed. These are; pre-contract evaluation and records, contract, strategic analysis, risk analysis, verification plan, all calculations, independent review and all activities following on-site verification.

Witness assessment (at the site of the installation): It is carried out by the Lead assessor, assessor and the technical expert. It is the phase where witnessing of Verification Body and its activities in installation site conducted. The number of assessment days is planned as at least one day for each witness activity by taking into consideration the minimum durations in the applicable legislation. If the NBE assessment team cannot witness all the verification activities carried out at the installation site for any reason whatsoever (for example, long-term activities in the facility for C-type facilities), the witness assessment activity is carried out by making a sampling which properly represents the verification activity. In this case, the Verification Body conducts the planning of the witness assessment in perfect harmony with the NBE. If the said representation does not occur, the NBE may reject the witness assessment and may request the planning of witness assessment on an activity stated in another installation.

4.1.4. Initial Accreditation Assessment

The initial accreditation assessment is planned as office assessment, witness office assessment and witness site assessment by taking the following matters into consideration.

- The number of assessment man-days is planned according to the provisions of Article 4.1.3.
- During the initial accreditation assessment, all the offices of the Verification Body which carry out important activities (important activities: creation and approval of policies, development and approval of process or procedures, first evaluation of competences, approval of technical personnel

and subcontractors, control of the process and outcomes of personnel competence monitoring, determination of technical requirements for verification, contract review comprising the technical review of applications, independent review processes) are assessed.

- Depending on the requested scope of accreditation, at least one witness assessment is carried out for each of the cluster selected from Table 3.

Clusters are prepared for the purpose of planning the witness assessments during the accreditation processes of the Verification Bodies. The activity groups are used as basis in the accreditation applications not the clusters.

4.1.5. Surveillance Assessment

The surveillance assessment is planned as office assessment, witness office assessment and witness site assessment by taking the following matters into consideration.

- In the surveillance assessments carried out during the accreditation cycle, file review for at least one installation in each activity group given in Table 3 and included in the scope of accreditation is conducted. (For rules, please see 4.1.4)
- For the activity group 1b (if it is within the scope of accreditation), at least one file review shall be conducted for each year.
- While organizing witness assessments, other activity groups which were not witnessed in the initial accreditation assessment may be preferred.
- At least one witness assessment shall be carried out for installations using CEMS during the accreditation cycle.

4.1.6. Reassessment

The reassessment is planned as office assessment, witness office assessment and witness site assessment by taking the following matters into consideration.

- During the planning of reassessments, it must be ensured that all the clusters within the scope of accreditation are covered by witness assessments during the accreditation cycle.
- The case officer and the assessment team are responsible for the selection of witness assessments.
- For all activity groups which are not within the scope of witness assessment, file review is conducted.

4.1.7 Scope Extension Assessment

Scope extension assessment can be planned independently or carried out together with the

surveillance assessment or reassessment.

- If the scope for which the application has been filed belongs to a cluster which is not within the scope of existing accreditation, the witness assessment shall be carried out. However, if the activity group of which the scope is extended is within the same cluster (see Table 3) as an activity group within the existing scope of accreditation of the Verification Body, the scope extension assessment can be carried out only with the office assessment provided that the case officer and the assessment team come to an agreement. In the office assessment, at least one client file shall be reviewed.
- The scope extension assessment cannot be carried out without completing the document review process laid down in Article 4.1.2 of this Guideline.

4.1.8 Lack of Activities in the Scope of Accreditation

The Verification Bodies shall prove that they possess and maintain the required competences in all the scopes for which they are accredited. If it is understood while planning the reassessment that the Verification Body does not have any clients in certain activity group or groups, said group or groups are not included in this reassessment scope. Said scopes are not accredited at the completion of the reassessment.

4.1.9 Administrative Measures

The NBE may suspend and withdraw the accreditations of or reduce and change the scope of the accreditations of bodies which do not comply with the provisions of the EU ETS legislation and/or of the relevant Country National Legislation. The NBE procedure PR-7-01 establishes the matters related to the suspension and withdrawal of the accreditation or to the reduction of the scope. Administrative measures are imposed if the following situations occur in addition to said matters. These are:

- a) in case the minimum man-days and minimum price laid down in the legislation are violated or return invoice/receipt is issued for this reason,
- b) in case the minimum site visit durations are violated or the failure to carry out site visit is detected,
- c) in case the assessment process is prevented, misinformation or misleading information and documents are submitted to the NBE or the discrepancies deemed as rectifiable non-conformities are not remedied in the duration granted despite the warning, the accreditation of the Verification Body is withdrawn.

In case the provisions of the legislation stated below (but not limited to these) are not complied with

- i. in case the activities are performed which are not in the authorization scope or the in the accreditation scope,
- ii. in case personnel is assigned or employed in violation of the provisions of the legislation and of this Guideline,

- iii. in case the Verification Body ceases to meet competence and competency requirements determined by the NBE, the accreditation of the Verification Body is suspended.

The Verification Body shall state in the contract it enters into with its client which actions should be taken in case of administrative measures.

4.2. Witness Assessments

While carrying out the assessments of both a Verification Body which files a new application and an accredited Verification Body, the NBE organizes witness assessments which may represent the requested or accredited scopes and verifiers (Personnel of the Verification Body- Lead Verifier, Verifier, Technical Expert).

In an accreditation cycle, the assessment program shall include at least one witness assessment for each cluster defined in Table 3. The activities for which witness assessment must be carried out are determined by the NBE by using the plans which are submitted by the Verification Bodies to the NBE and which contain the verification processes to be carried out in the following year.

The witness assessments are performed in two separate phases, which are the review of the documents and records at the office of the Verification Body and the site of the installation.

In the witness assessment (office phase), the entire internal verification documentation (pre-contractual requirements, strategic analysis, risk analysis, verification plan, verification team competence records, records of the installation, contract with the installation, a copy of the monitoring plan of the installation) related to the activities for which the witness assessment must be performed is assessed.

Table 3: Activity Groups to Be Handled during the Assessment

CLUSTERS	ACTIVITY GROUP	SCOPE OF ACCREDITATION
A	1a, 1b, 7	<ul style="list-style-type: none"> – Combustion of fuels in facilities (CO2 emissions) – Production of pulp from timber or other fibrous materials (CO2 emissions) – Production of paper or cardboard (CO2 emissions)
B	6	<ul style="list-style-type: none"> – Production of caprolactam (CO2 emissions) – Production of lime or calcination of dolomite or magnesite (CO2 emissions) – Manufacture of glass including glass fibre (CO2 emissions) – Manufacture of ceramic products by firing (CO2 emissions) – Manufacture of mineral wool insulation material (CO2 emissions) – Drying or calcination of gypsum or production of plaster boards and other gypsum products (CO2 emissions)

C	2 & 8	<ul style="list-style-type: none"> – Refining of mineral oil (CO₂ emissions) – Production of carbon black (CO₂ emissions) – Production of ammonia (CO₂ emissions) – Production of bulk organic chemicals by cracking, reforming, partial or full oxidation or by similar processes (CO₂ emissions) – Production of hydrogen (H₂) and synthesis gas by reforming or partial oxidation (CO₂ emissions) – Production of soda ash (Na₂CO₃) and sodium bicarbonate (NaHCO₃) (CO₂ emissions)
D	3,4 & 5	<ul style="list-style-type: none"> – Production of coke (CO₂ emissions) – Metal ore (including sulphide ore) roasting or sintering, including pelletisation (CO₂ emissions) – Production of pig iron or steel (primary or secondary fusion) including continuous casting (CO₂ emissions) – Production or processing of ferrous metals (including ferro-alloys) (CO₂ emissions) – Production of secondary aluminium (CO₂ emissions)
		<ul style="list-style-type: none"> – Production or processing of non-ferrous metals, including production of alloys (CO₂ emissions) – Production of primary aluminium (CO₂ and PFC emissions)
E	9	<ul style="list-style-type: none"> – Production of nitric acid (CO₂ and N₂O emissions) – Production of adipic acid (CO₂ and N₂O emissions) – Production of glyoxal and glyoxylic acid (CO₂ and N₂O emissions) – Production of caprolactam (CO₂ emissions)
F	10 ,11	<ul style="list-style-type: none"> – CO₂ transfer (CO₂ emissions) – Geological storage of greenhouse gases in a storage site permitted under Directive 2009/31/EC
G	12	<ul style="list-style-type: none"> – Aviation activities (emissions and tonne-kilometer data)
H	98	<ul style="list-style-type: none"> – Other activities pursuant to Article 10a of Directive 2003/87/EC – Verification of free-of-charge emission permit granted based on the above-mentioned activity groups
I	99	<ul style="list-style-type: none"> – Other activities, included by a Member State pursuant to Article 24 of Directive 2003/87/EC, to be specified in detail in the accreditation certificate

The Verification Body organizes a witness assessment each year for the activity No 12 (Initial accreditation, surveillance and reassessment)

The Verification Body shall submit to the NBE assessment team before the witness assessment all the documents and records required to be submitted to the assessment team and additionally, all the

records related to the monitoring plan of the installation, legal permits, Greenhouse Gas data of the installation, first risk analysis results, previous verifications, if available, verification programme and verification team. Said documents and records shall be submitted to the NBE assessment team so as to allow the review thereof (in general two weeks before the witness assessment at the latest).

The witness assessment of the activity group No 1 (1a , 1b) can be combined with the witness assessment of said activity group if a facility assessed in another activity group has combustion unit(s) with a power 20 MW or more (except for the combustion unit(s) in the accredited scope- except for the main activity). While determining the duration of the witness assessment, verification operations related to the activity group No 1 are also taken into consideration.

4.3 Use of Accreditation Mark

The accredited Verification Bodies may not use the NBE Accreditation Mark on the verification reports due to reasons arising from the application of the relevant greenhouse gas scheme or due to its absence in the scheme/legislation, but may refer to the accreditation in writing.

The Verification Body, besides the above-mentioned conditions, may use the NBE Accreditation Mark pursuant to the provisions of the NBE G-1-06.

5 STANDARDS AND DOCUMENTS USED IN THE ACCREDITATION PROCESS

Standards and normative documents (including legislation) to be used in the accreditation of the Verification Bodies are listed below. ISO 14064-3 and ISO 14066 standards and IAF MD 6 guideline are prepared independently of the greenhouse gas schemes for the monitoring, reporting and verification of greenhouse gas emissions. Special conditions related to the greenhouse gas emission scheme are laid down in the EU ETS/relevant Country National Legislation.

Standards and Normative Documents:

- **ISO 14065:** Greenhouse gases - Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition
- **ISO 14064-3:** Greenhouse gases - Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions
- **ISO 14066:** Greenhouse gases - Competence requirements for greenhouse gas validation teams and verification teams
- **EA 6/03:** EA Document for Recognition of Verifiers under the EU ETS Directive
- **IAF MD 6:** IAF Mandatory Document 2014 for the Application of ISO 14065: 2013 Standard
- **European Commission Best Practice Guides;** AVR and MRR Explanatory Guidances, Key guideline notes and templates

EU ETS Legislation:

- **Directive 2003/87/EC of the European Parliament and of the Council:** Directive 2003/87/EC of the European Parliament and of the Council establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC
- **Regulation No 600/2012 (AVR):** Regulation No 600/2012/EU on the verification of greenhouse gas emission reports and tonne-kilometer reports and the accreditation of verifiers pursuant to Directive 2003/87/EC
- **Regulation No 601/2012 (MRR):** Regulation No 601/2012/EU on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC
- European Commission Guidelines and Templates: Documents at <http://ec.europa.eu/clima/policies/ets/monitoring/> for the monitoring, reporting and verification of EU ETS emissions.

NBE Documents

- Guideline on Accreditation of Greenhouse Gas Emission Verification Bodies
- Application Form for Verification Bodies FR-7-01-96
- Witness Assessment Form FR-7-01-99
- Assessment Report FR-7-01-100
- Checklist FR-7-01-97

6 REQUIREMENTS FOR VERIFICATION BODIES

The Verification Bodies shall have an organizational structure and quality management system formed in accordance with the standards ISO 14065, ISO 14066 and ISO 14064-3, with the relevant EA and IAF guidelines and the EU ETS/relevant Country National Legislation (https://ec.europa.eu/clima/sites/clima/files/ets/monitoring/docs/good_practice_application_14065_management_system_en.pdf).

The Verification Body shall prove that it has the necessary technical and administrative competence in the activity-specific industry process parameters, test methods, measurement/monitoring arrangements, calculation methodology and the relevant legislative provisions for the activities for which the Verification Body requests to be accredited among the EU ETS or the relevant relevant Country National Legislation activities given in Table 1. In this regard, the criteria related to the minimum obligatory technical Competence for the Verification Bodies are given in Table 4. The documents that prove the compliance of these criteria shall be submitted to the NBE at the application.

If the Verification Body uses computer programs or similar automated systems for the practices in the assessed field, the Verification Body must meet the following conditions:

- The software used must be relevant. The following conditions must be met to ensure this:
 - The software used must be validated before use.
 - The software used must be revalidated periodically.
 - In case of software and hardware changes, revalidation must be performed.
 - The required software updates must be performed.
- Procedures related to the data integrity and security must be formed and implemented.
- Maintenance of the computers and automated systems must be carried out in order to ensure the proper operation thereof.
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Table 4: Criteria Related to the Minimum Obligatory Technical Competence of Verification Bodies

TECHNICAL EXPERTISE AND COMPETENCE	KNOWLEDGE AND SKILLS RELATED TO TECHNICAL COMPETENCE
Assessment of the Monitoring Plans	
	Assessment and understanding of the monitoring plans comprise the following: <ul style="list-style-type: none"> – To understand how the monitoring plan is implemented in the installation – To be able to check the emission report against the requirements in the monitoring plan – To analyse information and data to confirm whether the monitoring plan is still appropriate (during the verification process) and is being implemented
Specific Greenhouse Gas Activity and Technology	
	The Verification Body must have the technical competence for the following: <ul style="list-style-type: none"> – To identify and understand which key operations impact the Greenhouse Gas Emissions of the installation – To understand the actual operational processes used by the installation – To assess the installation's boundaries and check which activities are covered by the EU ETS and/or the relevant Country National Legislation – To have the general knowledge of the technologies applicable to the industry sector in which the Verification Team carries out the verification activities – To have the general knowledge of Global warming and Greenhouse Gas potentials

Relevant Greenhouse Gas Sources	
	<p>The Verification Body must have the technical competence for the following:</p> <ul style="list-style-type: none"> – To understand and have the knowledge of the installation's activities, equipment and relevant processes, emission sources and source streams, and the categorization of source streams – To categorize the installations and to know and implement the applicable requirements for each category – To assess the completeness of source streams and emission sources – To assess the production inputs and outputs relevant to Greenhouse Gas emissions
Quantification, monitoring and reporting including relevant technical and sector issues	
	<p>To be able to understand and have knowledge of techniques relevant for monitoring and reporting which requires skills such as the ability to</p> <ul style="list-style-type: none"> – To assess the selection, use and maintenance of measurement and calibration devices – To determine the extent of testing needed to check the completeness, accuracy and reliability of information used in the analysis – To identify corroborating information that supports the material correctness of the reported data – To conclude whether to accept or reject the information or whether to modify the testing related to this information – To identify the purpose of computations and what methodology is required – Having knowledge and understanding of EU ETS specific monitoring issues such as: – Where a standard calculation-based methodology is used to determine the Greenhouse Gas emissions: the method for determining activity data; the origin and application of calculation factors; the appropriate units used to express the activity data and calculation factors

TECHNICAL EXPERTISE AND COMPETENCE	KNOWLEDGE AND SKILLS RELATED TO TECHNICAL COMPETENCE
	<ul style="list-style-type: none"> – Where a mass balance methodology is used: the inputs and outputs of the mass balance and the methodology used to determine the inputs and outputs; – Where a measurement based methodology is used: the system and elements used for continuous measurement, the standards applied, the measurement points and measuring frequencies, the calibration procedures, the parameters used for determining the Greenhouse Gas emissions, the sampling rates, the requirements for determining missing data, data management and storage, and the method used to check the results of continuous measurement – The required tiers and corresponding uncertainty thresholds; – Where a fall back methodology is used: the approach used for assessing and quantifying the uncertainty, knowledge of the ISO Guide to Expression of Uncertainty in Measurement or another equivalent internationally accepted standard in order to assess whether the overall uncertainty assessment is in accordance with requirements – Knowledge of the relevant standards: e.g. calibration standards, measurement standards, management system standards and their use – Assessing compliance with uncertainty thresholds and the validity of information used to calculate uncertainty levels of activity data and calculation factors (under and outside the installation's control); – Application of the monitoring and reporting principles laid down in the Communiqué on the Monitoring and Reporting of Greenhouse Gas Emissions or in Article 5-9 of the MRR – Assessing data gaps, the conservativeness of the approach to complete the data gap and measures to avoid double counting of Greenhouse Gas Emissions – The techniques for chemical analysis, sampling and sample preparation, including the application of a sampling plan and chain of custody
Knowledge Related to the Installation's Organization and Quality Assurance System	
	<ul style="list-style-type: none"> – Installation's specific data flow and risk assessment – Installation's specific control activities in relation to data flow – Overall organization of the installation with respect to monitoring and reporting, as well as the control environment in which the installation's accounting system operates – Procedures mentioned in the Communiqué on the Monitoring and Reporting of Greenhouse Gas Emissions/MRR; e.g. procedures for data flow activities and control activities; and for managing the responsibilities for monitoring and reporting within an installation
Knowledge Related to Verification Agreements	
	<ul style="list-style-type: none"> – Understanding the provisions in the contracts and/or other agreements with the installation which prevent and/or may prevent the performance of the verification in accordance with the relevant requirements (e.g. assessment durations)

6.1 Competence for the Personnel of Verification Bodies

The Verification Body shall employ personnel which is competent in the matters given in the table above independently of the qualification criteria laid down in the applicable related Country National legislation.

The verification team that will carry out the verification activity must meet the minimum competence criteria in Table 4 as a team.

A verification team can consist of one person provided that this person meets all the competence criteria.

If the Verification Body can prove its competence only for some of the criteria in Table 4 at the accreditation application, the applied scope is assessed only for the field for which its competence is proved and the process is executed thus. Example: If the competence related to the measurement-based methodology practice cannot be proved at the time of application, the scopes related to the activities for which measurement methods are frequently used are excluded from the scopes of the accreditation process with the recommendation of the assessment team and the approval of the case officer determined during the evaluation process.

6.1.1 Competence of Verifiers

A (EU ETS/related Country National Legislation) auditor working under the responsibility of the lead auditor carries out the following activities if assigned:

- Confirm the scope of verification with the installation
- Make the lead auditor aware on whether the verification objectives are addressed in the detailed verification planning
- Undertake the process analysis
- Resolve issues relating to verification, in particular those associated with the materiality of reported data and conformance with the monitoring plan
- Compile the internal verification documentation
- Write the verification report

The criteria and examples related to the technical competence of the auditors in the assessment team which is assigned by the Verification Body and which carries out the Verification Activity pursuant to the EU ETS/relevant Country National Legislation are given in Table 5.

Table 5: Knowledge and Skills Required for Verifiers

Knowledge of the EU ETS/Related Country National legislation, specific legislation and relevant guidance Greenhouse Gas Emissions Specific Programme Knowledge
<p>The expertise and knowledge of the verifier comprise the following:</p> <ul style="list-style-type: none"> – Annexes on activities of the EU ETS/Relevant Country National Legislation and the parts of this legislation related to monitoring and verification – AVR/Communiqué on the Authorisation of Verifiers and guidance material developed by the European Commission/relevant Country Ministry to support the interpretation of the legislation – MRR/Communiqué on the Monitoring and Reporting and guidance material developed by the European Commission/ relevant Country Ministry to support the interpretation of the legislation – Standards ISO 14064-3 and ISO 14065 – Other relevant legislation: e.g. European Commission Decision on the detailed interpretation of the aviation activities – Other relevant guidance; EA 6/03 and IAF MD6 – Templates – Other relevant relevant Country National Legislation and guidance material published in Country
Competence Related to Data and Information Auditing
<p>Data and Information Auditing Methodologies:</p> <ul style="list-style-type: none"> – To check the initial effectiveness of control activities as an input to strategic and risk analysis – To determine the extent of substantive testing in the process analysis – To notice whether the verification plan needs updating because of findings and to communicate that to the lead auditor – To determine corrective action and its impact on the data and information assessment – To make decisions on the data and information reported based on findings from the data and information assessment – To collate appropriate evidence and information to support decisions – To identify situations and factors that may affect the materiality of misstatements (including typical and atypical installation conditions) – To analyse the material impact of misstatements and non-conformities on the reported data – To identify risks that could result in material misstatements and decide on the need to gather additional evidence or to extend the depth and detail of verification activities – To use information obtained from a variety of sources and form conclusions based on that analysis – To use the materiality level in the verification process – To evaluate the sufficiency and significance of the evidence and analysis – To identify inconsistencies, unexpected circumstances and findings by carrying out for example analytical procedures – To evaluate the overall adequacy of documentation

Competence related to sampling techniques (knowledge and experience)

- To manage complex data collection and recording interfaces
- To deal with data manipulation processes and their challenges
- To identify actual data system problems and failures, and take appropriate action (i.e. increasing the sampling size in the data sampling plan and reporting potential non-conformities and misstatements)
- To use audit processes to identify information, statements and facts that contradict the data in the emission report
- To challenge assumptions and statements in the emission report
- Competence in assessing Data and Information Systems, Data Flows, Control Activities and Procedures:
- To understand statistics, financial and economic accounting tools and practices
- To assess computer information system environments
- To assess the Greenhouse Gas information system (to determine whether the installation has identified, collected, analysed and reported on the data in a way that is necessary to compile an accurate emissions report; and has taken corrective action to address misstatements and non-conformities)
- To use appropriate methods for obtaining or developing the information needed (document review, observation, cross checking with external sources, interviews, inspection of whether the control activities are functioning, etc.)
- To integrate information from various sources comparing information from internal and external sources
- To evaluate data, errors in data, data sources, applicable processes and data management systems
- To evaluate the functioning of control activities and correct implementation of procedures for control activities (e.g. how the installation manages IT systems and new technologies)
- To remain alert to the possibility of false information
- To understand the implications of misstatements and non-conformities and recommended improvements in robustness and controls

The ability to perform the verification activities listed in Chapter 2 of the AVR

- The competence related to this includes, for example, the ability
- To carry out data verification and analytical procedures, e.g. comparing projected emissions with actual results, making logical inferences
- To retrieve relevant information and apply knowledge in a manner appropriate for the verification activities
- To understand the meaning, translation and interpretation of information
- To think critically and analyse multiple inputs
- To distinguish between facts and inferences, and to exercise professional scepticism
- To carry out independent research and challenge assumptions and evidence asserted by the operator
- To strike a balance between attention to detail and a high level assessment of the anticipated outcome during the verification process
- To manage detail, particularly at the level of ensuring that required checks are performed, e.g. checking between the emission report and the approved monitoring plan

- To evaluate the information, data and assumptions and make professional judgements
- To apply verification methods in expected and unanticipated situation
- To communicate the verification process and the results with the operator
- To be aware that the verification plan needs to support the nature, timing and extent of the verification, (This case is directly related to the competence and experience of the lead auditor.)
- To ensure that the internal verification documentation contains sufficient information to support the verification report and meets the requirements of the AVR

Knowledge of and experience in sector specific technical monitoring and reporting aspects that are relevant of the scope of activities referred to in Table 1 in which the EU ETS/Relevant Country National Legislation auditor is carrying out verification. Examples of the competence criteria related to the relevant activities are provided below:

Combustion of Fuels

- Potential sources related to combustion activities
- The applicable default values for calculation factors
- Application of the requirements for commercial standard fuels
- Flaring sources
- Co-generation (simultaneous generation of electricity and thermal energy)
- Emissions resulting from the production of energy and heat, and from scrubbing
- Methods used to determine the process emissions from the use of carbonate for acid gas scrubbing from the flue gas stream

Refining mineral oil

- Catalyst regeneration from catalytic cracking and regeneration from other catalytic processes
- Flexi-coking, delayed coking and other coking or cracking processes and their emissions
- Mass balance methodology to determine the Greenhouse Gas emissions for the whole refinery or individual processes or the Greenhouse Gas emissions from catalytic cracking regeneration or other processes

Production of coke, production of metal ore, production of pig iron or steel

- Potential sources for the production of coke, metal ore and pig iron or steel
- Process gases and waste gas scrubbing
- Input material used in the production of these substances
- Mass balance methodology or standard methodology used to determine Greenhouse Gas emissions
- Reducing agents
- How to derive the carbon content of the input and output stream in the case of production of pig iron and steel

Production or processing of ferrous metals (including ferro-alloys)

- Potential sources for the production of ferrous and non-ferrous metals such as conventional fuels, alternative fuels, reducing agents, raw materials including limestone and dolomite, secondary feed materials

Production of secondary aluminium, production or processing of non-ferrous metals, including production of alloys

- The specific monitoring methodology used such as mass balance where carbon stemming from fuels or input materials at the installation remain in the products or other outputs of the production.

Production of secondary aluminium (CO₂ and PFC emissions)

- Potential sources for the production of primary aluminium such as fuels for the production of heat or steam, electrode production, reduction of AL₂O₃ during electrolysis which is related to electrode consumption and use of soda ash or other carbonates for waste gas scrubbing
- Mass balance methodology used to determine the CO₂ emissions as well as the factors to be taken into account in the mass balance (e.g. the inputs and outputs)
- Common mass balance for soderberg cells
- Method A and B used to determine the PFC emissions
- Technology specific emission factors applicable for PFC emission determination (related to activity data for the slope method and related to the overvoltage activity data)
- Tier 3 of section 4.4.2.4 of the 2006 IPCC guidelines on emission factors
- How to include global warming potentials in the determination of CO₂(e) emissions from CF₄ and C₂F₆

Production of cement clinker, production of lime or calcination of dolomite or magnesite, production of glass including glass fibre, production of ceramic products by firing, production of mineral wool insulation material, drying or calcination of gypsum or production of plaster boards and other gypsum products

- Potential sources for the production of substances such as calcinations of limestone in raw materials, conventional kiln fuels, dolomite or magnesite in raw materials, alternative fossil-based kiln fuels, decomposition of alkali- and alkali earth carbonates, biomass fuels in the glass industry
- Calculation method A to determine the Greenhouse Gas emissions resulting from the production of cement clinker and the underlying calculation factors based on the carbonate content of the process input
- Calculation method B to determine the Greenhouse Gas emissions resulting from the production of cement clinker and the underlying calculation factors based on the amount of clinker produced
- How to adjust the carbonate content values for the respective moisture and gangue content of the material in the case of the input based methodology (production of lime)
- Methodology used to determine emissions from combustion and process materials for the manufacture of glass including applicable stoichiometric ratios
- Method A for defining tier definitions of the emission factor for the ceramics industry, including the values and determination of emission factors (input-based)
- Method B for defining tier definitions for emission factors for the ceramics industry (output based), including the values and determination of emission factors
- How to monitor emissions from combustion activities

Production of pulp from timber or other fibrous materials, production of paper or cardboard

- Potential emission sources such as gas turbines, recovery boilers, fuel fired dryers
- How to monitor emissions from combustion activities including flue gas scrubbing
- Methodology used to determine the process emissions from raw materials used as make-up

chemicals, including limestone and soda ash

- How to include CO₂ emissions from the recovery of limestone sludge in pulp production
- Tier definitions for the emission factor for emissions from make-up chemicals

Production of carbon black, production of ammonia, production of bulk organic chemicals by cracking, reforming, partial or full oxidation or by similar processes, production of hydrogen (H₂) and synthesis gas by reforming or partial oxidation, production of soda ash (Na₂CO₃) and sodium bicarbonate (NaHCO₃)

- Potential sources for the production of substances such as combustion of fuels supplying the heat for reforming or partial oxidation, fuels as process input to the ammonia production process, fuels used in the hydrogen or synthesis gas process, fuels used for combustion processes including fuels used for the production of hot water or steam, raw materials including vent gas from calcinations of limestone to the extent it is not used for carbonation, waste gases from washing or filtration steps after carbonation to the extent it is not used for carbonation
- How to monitor emissions from combustion activities including flue gas scrubbing
- Methodology used to determine the emissions resulting from the production of ammonia and the inclusion of CO₂ from ammonia production used as feedstock for the production of urea or other chemicals, or transferred out of the installation and not covered by Article 49(1) of the MRR
- The methodology used to determine emissions from bulk organic chemicals, including the emission factors applicable and the calculation of the carbon content from the stoichiometric carbon content in the pure substance and the concentration of the substance in the input or output stream
- The methodology used to determine emissions from hydrogen (standard methodology) and synthesis gas (mass balance)
- The methodology used to determine the emissions from the production of soda ash and sodium bicarbonate (mass balance) and for determining the combustion emissions (the standard or mass balance methodology)

Production of nitric acid (CO₂ and N₂O emissions), production of adipic acid (CO₂ and N₂O emissions), production of glyoxal and glyoxylic acid (CO₂ and N₂O emissions), production of caprolactam

- Potential emission sources of the production of substances such as N₂O emissions from the catalytic oxidation of ammonia and NO_x/ N₂O abatement units, N₂O emissions from adipic acid production, glyoxal and glyoxylic acid production and caprolactam production, including from the oxidation reaction, any direct process venting and any emissions control equipment
- Continuous measurement-based methodology used to determine the abated N₂O emissions, including how to calculate the annual hourly average of N₂O emissions and the determination of the hourly N₂O concentration in the flue gas from each emission source
- Techniques capable of measuring N₂O concentrations during abated and unabated conditions
- Methodology used to determine the flue gas flow and the parameters in that methodology such as primary input air flow
- Calculation based methodology for temporary occurrences of unabated emissions
- Calculation of production rates
- Determination of annual CO₂ equivalent

6.1.2 Competence of Lead Verifiers

Verification team members have different roles during the verification. First of all the verification is carried out under the responsibility and direction of the EU ETS/Relevant Country National Legislation lead verifier. In that capacity the EU ETS/Relevant Country National Legislation lead verifier shall have the competence in the following in addition to the competence criteria in Table 5:

- To lead and manage the verification process,

- To identify any additional competencies the verification team needs to possess, and based on that identification to confirm the appropriate competence of the verification team,
- To allocate and brief the verification team members on their specific tasks,
- To conduct the strategic and risk analysis,
- To develop and implement the verification plan (e.g. drafting the verification programme, the data sampling plan and the control test plan, and establishing how the elements mentioned in the verification plan will be carried out during the verification),
- To direct the compilation of the internal verification documentation, the drafting of the verification report and to maintain communication with the independent reviewer,
- To conduct the on-site assessment of the task he/she is responsible for with the other team members. To decide which team member joins the Lead Auditor in the on-site assessment and whether he/she needs a technical expert during the on-site assessment. In the on-site assessment to manage the planning of process and communication related to the client,
- To ensure that all internal verification documentation, including supporting evidence, and the draft verification report is complete and ready for the independent review,
- To collaborate with independent reviewers in order to complete the verification
- To assign the verification team members to analyse the competence of specific cases during the verification process,
- To understand the rigour of verification activities needed for obtaining reasonable assurance,
- To be able to communicate on the progress, concerns and findings to the client,
- To evaluate findings from team members and manage the team,
- To manage the verification process and manage the drafting of the verification report.

6.1.3 Competence of the Technical Expert

If the EU ETS Legislation auditor or lead auditor or independent reviewer needs support on a specific subject matter, a technical expert who has the relevant detailed knowledge may be assigned to consult. This may concern technical sector specific knowledge, IT expertise, language needs, technical expertise on specific standards or calibration equipment etc. The technical expert undertakes the activities for which his or her support is needed, under the direction and full responsibility of the lead auditor of the verification team. If the technical expert is providing support to the independent reviewer, the he/she undertakes the activities under the responsibility of the independent reviewer. The lead auditor or independent reviewer determines the activities for which the technical expert will provide support and for how long the technical expert is needed. When the technical expert identifies specific issues, he/she shall report this to the lead auditor or independent reviewer for follow up. The primary function of the technical expert is to provide information to the verification team. The technical expert must have:

- the competence and expertise required to effectively support the EU ETS/Relevant Country National Legislation auditor or lead auditor or independent reviewer on the subject matter for which

his knowledge and expertise is requested,

- sufficient understanding of EU ETS/Relevant Country National Legislation specific legislation and guidance, auditing data, knowledge and activities needed to carry out assigned tasks. The technical expert does not have to possess full competence on all these issues but he/she must understand it sufficiently to be able to support the lead auditor or the auditor.

6.1.4 Competence of Independent Reviewers

The independent reviewer shall have the competence in the following in addition to the competence requirements of an EU ETS/relevant Country National Legislation lead auditor:

- To analyse the information provided to confirm the completeness and integrity of the information,
- To challenge missing or contradictory information,
- To check data trails to be able to assess whether the internal verification documentation is complete and provide sufficient information to support the draft verification report.

An independent reviewer shall have appropriate authority to objectively review the draft verification report and internal verification documentation and reject them as unsound if necessary. In the communications between the independent reviewer and the lead verifier care must be taken that the reviewer's objectivity is maintained. If this objectivity is compromised or the authority of the independent reviewer is threatened, another independent reviewer shall be appointed.

6.2 Monitoring of the Performance of the Personnel of Verifiers

The performances of all the personnel involved in the verification processes shall be monitored for the purpose of checking the competence. The performance of the personnel shall be monitored annually. The Verification Body is obliged to establish a monitoring system which can be applied to the verification activities undertaken and which takes into account the risks arising from insufficient results which may impact the final verification decision. This monitoring system must comprise the initial site monitoring of the Lead Verifier, Verifier and the Technical Experts as a part of the authorization process.

The duration to be determined for the site monitoring may not exceed 3 years.

6.3 Impartiality and Independence of Verifiers

While assessing the impartiality and independence of the Verification Bodies, requirements laid down in the legal legislation (EU ETS and/or Communiqué on the Verification of Greenhouse Gas Emission Reports and the Accreditation of Verifiers) in addition to the requirements in the relevant standards and normative documents shall be taken into consideration.

7 INFORMATION EXCHANGE

The Verification Body communicates to the NBE the information on the following matters regarding the verification activities to be performed by 15 November each year.

- Information of the Installation where the verification activity has been performed,
- Name, address, city, postal code, country information of the facility of the Installation
- Date of the start of the verification
- Date of the first site visit
- In case of more than one site visit, the dates of these site visits

In case of any change in these statements (for example in the dates of site assessments), the changes as revised are communicated to the NBE within the next five days. The NBE prepares the work plan by using this information.