



# **QSI.PRO.14**

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# **Greenhouse Gas Verification Procedure**

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## 1. PURPOSE

The purpose of this procedure is to define thoroughly the processes, responsible persons and records to be kept, from the bidding stage to report submission and thereafter for greenhouse gas verification.

## 2. SCOPE

This procedure, prepared on the basis of ISO 14065 Standard, EA and IAF documents, covers greenhouse gas verification activities.

## 3. DEFINITIONS

**EF** : Emission Factor

**NKD** : Net Calorific Value **YF** : Oxidation Factor

**Verification risk:** As a function of internal risk, control risk and detection risk, the risk that the verifier will present an inappropriate verification opinion where the greenhouse gas emission report contains material misstatements,

**Internal risk:** The sensitivity of a parameter in the greenhouse gas emission report to significant errors, which may occur alone or in combination with other misstatements, before the effect of any control activity is taken into account,

**Detection risk:** The risk of the verifier not being able to detect a material misstatement,

**Control risk:** The sensitivity of a parameter in the greenhouse gas emission report to significant errors that were not prevented or detected and corrected by the control system at a certain time, which may occur alone or in combination with other misstatements,

**Effect:** The size of the error that will be caused on the Greenhouse Gas Emission Report at the time of the activities related to greenhouse gas emissions,

**Confidence level:** The degree of confidence it gives for the verification report according to the requirements of the verification task in order to reduce the verification risk,

**Control environment:** The environment in which the internal control system operates and the activities carried out by the facility management to raise awareness about this internal control system,

**Control activities:** Actions or measures taken by the business to reduce internal risks,

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**Control system:** The risk assessment established, documented, implemented and maintained by the enterprise within the scope of the Monitoring and Reporting Communiqué, and all control activities and their management,

**Probability:** The frequency of occurrence of dimensions resulting from activities that may interact with the calculation of greenhouse gas emissions,

**Significance level:** Threshold value that ensures that misstatements, alone or together with other misstatements, are considered significant by the verifier,

**Significant misstatement:** Misstatement that exceeds the significance level alone or together with other misstatements,

**Reasonable confidence:** A high but imprecise level of confidence, evaluated positively, that the greenhouse gas emission report that has been verified does not contain significant misstatements,

**Site:** Where relevant data and information is controlled and stored, and the monitoring process is defined and managed,

## 4. REFERENCE DOCUMENTS

### 4.1. Forms

- Question List Form QSI-PRO.14/F01
- Significance Assessment Form QSI-PRO.14/F02
- Feedback Form QSI-PRO.14/F03
- Independent Review Form QSI-PRO.14/F05
- Additional Information and Document Request Form QSI-PRO.14/F06
- Opening Meeting and Final Sitting and Interviewee List QSI-PRO.14/F08
- Visit Notification Form QSI-PRO.14/F11
- Information and Document Request Form QSI-PRO.14/F17
- Strategic Analysis Report QSI-PRO.14/F20
- Data Flow Diagram Form QSI-PRO.14/F21
- Strategic Analysis Site Visit Form QSI-PRO.14/F22
- Verification Plan QSI-PRO.14/F24
- Verification Program QSI-PRO.14/F25
- Sampling Plan QSI-PRO.14/F26
- Risk Analysis & Test Plan QSI-PRO.14/F27
- Verification Application Form QSI-PRO.14/F28
- Verification Contract QSI-PRO.14/F31

### 4.2. Other Documents

- Instructions for Using Logo, Certificate and Report QSI-TL.05
- Instruction on Calculation of Verification Period and Fee QSI-TL.07

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- Measuring Instruments Control Instruction QSI-TL.08
- SG Risk Analysis Instruction QSI-TL.10
- SG Data Sampling Instruction QSI-TL.11
- SGD Sampling Table TBL.04
- Regulation on the Monitoring of Greenhouse Gas Emissions
- Communiqué on Verification of Greenhouse Gas Emission Reports and Authorization of Verifiers

### 5. IMPLEMENTATION

#### 5.1. Contract Process

##### *5.1.1. Activities to be Carried Out Before Bidding*

Verification requests are received by the Planning Officer with the **Verification Application Form**. Completion of the **Verification Application Form** is not required if the Approved Monitoring Plan is issued and if the previous year's verification was performed by QSI. **Verification Application Form** is not requested for tender applications. However, if the technical information in the **Verification Application Form** is not included in the tender specifications, it is provided from the contracting authority by the Planning Officer.

Additional information and documents can be requested from the facility before the proposal or a site visit can be performed to the facility if deemed necessary due to factors such as the field of activity, category, source flows, and size of the business.

##### *5.1.2. Assessment of Application;*

All applications are assessed using QSIPRO software by the Planning Officer and/or the chief verifier(s) assigned within the relevant scope.

- a- **Eligibility of Accreditation Scope;** For the applications received, first of all, whether the business is within the scope of our accreditation is checked through the QSIPRO software. In case the business has more than one scope of activity, accreditation control is carried out for all scopes. Applications that are not within the scope of our authority are not accepted as they cannot be entered into the QSIPRO software.
- b- **Pre-Contract Risk Analysis;** Possible risks that the verification activity may bring (such as language, regional conditions, security conditions, customer's financial risk, etc.) are determined and the identified risks are taken into account while bidding.
- c- **Confirmation of Impartiality;** A bidding is not made to an enterprise in which situations inconsistent with the principles of impartiality and independence occur. According to the Impartiality Procedure, whether there is any conflict of interest that threatens impartiality and confidentiality, and the status of all topics listed below in terms of impartiality and independence are reviewed with

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the interests entered into the QSIPRO software by all full and part-time personnel within the QSIPRO software.

- ✓ QSI must be independent and impartial in carrying out verification activities.
- ✓ A business that is part of QSI or its legal entity cannot own or be owned by a facility. The verifier cannot carry out verification activities for the facility with which it is affiliated through joint ownership, joint management, joint administration, joint personnel, resource sharing, joint accounting, joint contracts and marketing.
- ✓ If QSI partners, managers and personnel working within the scope of the communiqué have entered into a commercial relationship with a business or facility within the last **3 (three) years**, the verifier cannot carry out verification activities for that business or facility. *(Any third-party certification, inspection, surveillance, calibration, conformity assessment, laboratory services, and public education activities carried out impartially and independently according to the conformity assessment conditions and principles determined by national and international standards and accredited by TURKAK or by accreditation bodies that have signed multilateral recognition agreements with the International Accreditation Forum, the International Laboratory Accreditation Union and the European Accreditation Union are not considered as a commercial relationship contrary to the principle of impartiality and independence within the scope of the third paragraph.)*
- ✓ QSI cannot assign personnel who have an actual or potential conflict of interest and who work within the scope of the communiqué to verify the greenhouse gas emission report of the enterprise or facility in which this situation is in question.

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*In the event that any personnel is found to be harming impartiality, the situation is reported to TURKAK by the Planning Officer within 5 business days.*

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- d- **Confirmation of the Need for Strategic Analysis;** If the verification processes have not been carried out by QSI in the last 2 (two) years with the facility, a strategic analysis site visit is mandatory. If verification has been carried out with the facility in the last 2 (two) years, it is decided whether the strategic analysis will be carried out on site, according to the information received from the facility (facility category, activity limits, monitoring methods, changes in large source flows) with the **Approved Monitoring Plan**.
- e- **Calculation of Verification Periods;** Verification periods are calculated according to the **Instruction on Calculation of Verification Period and Fee**. However, these periods may be extended at any stage of the verification process, taking into account the following situations.

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Verification periods can never be less than the periods specified in the communiqués of the Ministry of Environment and Urbanization.

- ✓ The nature of the facility and the complexity of its activities,
- ✓ Number of emission sources and source flows,
- ✓ Information in the Ministry-approved monitoring plan and the complexity of the plan,
- ✓ Significance level,
- ✓ The scope and complexity of the facility's data flow activities and control system,
- ✓ Location of information and data about greenhouse gas emissions,

- f- **Confirmation of Competence and Capacity;** From the QSIPRO software Application Review tab, whether there is a chief verifier/verifier assigned within the relevant scope, a Technical Expert with technical competence assigned within the relevant scope, and an independent reviewer separate from the verification team, the occupancy rates of these personnel, if any, and the day capacity of the chief verifiers are checked.

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*Within a year, a chief verifier performs a 120 man-day verification job, with a maximum total of verification periods. This period is determined by adding up the periods written in column (1) of the minimum verification periods table given in APPENDIX-3 of the Verification and Authorization Communiqué of each verification job for which the person is responsible with the role of the chief verifier. These days are checked by the QSIPRO software.*

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Sampling is not performed in enterprises with more than one facility, each facility is assessed separately and the calculation of the days is made separately.

QSI does not undertake any verification service that it believes cannot be concluded with its organization, personnel or professional expertise.

After the application assessment process, the application is either accepted or rejected. When the application is rejected, the reasons for the rejection are clearly communicated to the customer by e-mail.

### **5.1.3. Bidding**

The following steps are followed for accepted applications.

- a- **Pricing;** All fees related to verification are calculated by the Planning Officer in accordance with the **Instruction on Calculation of Verification Period and Fee**, provided that they are not less than the minimum wage tariff determined by the Ministry of Environment and Urbanization.
- b- **Bid Preparation;** The **Verification Contract**, which includes the details of all steps (duration, price...), is prepared by the Planning Officer in the QSIPRO software and sent

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to the customer in written or electronic form. In tender projects, bids are submitted in accordance with the bid format provided by the customer.

- c- **Bid Follow-Up;** The bids are followed up by the Sales and Marketing Coordinator through QSIPRO. The approval status of the bids is kept up-to-date in the program.

#### **5.1.4. Signing the Contract**

The signing of the bid by the enterprise means that there is a full agreement between the parties on the scope and content of the verification activity to be performed and it serves as a contract.

The Planning Officer reviews whether the conditions specified in the bid are still valid, and whether the resources required to carry out the verification are still eligible. After the reviews, if a situation arises between the **Verification Application Form/Monitoring Plan** and the approved bid, which requires a change in the bid, the bid is renewed and submitted to the customer's approval again.

At least 1 (one) of the original copies of the Greenhouse Gas Verification Contract with wet signatures approved by the customer and the QSI General Manager is kept as a quality record by the Planning Officer.

In tender projects initiated by Public Institutions, the technical and administrative conditions of the tender are valid and the printed contracts of the contracting authority are used. However, pricing cannot be made contrary to the minimum prices and deadlines for these projects.

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*Verification contracts are not signed with facilities that do not have a monitoring plan approved by the Ministry. The verification contract is concluded by considering the facility category in the monitoring plan valid at the date of the contract and approved by the Ministry.*

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#### **5.1.5. Notification to Ministry**

Following the approval of the contracts, the following information is recorded in the online system of the Ministry of Environment and Urbanization by the Planning Officer until November 15 each year.

- a) Date and place for planned verification activities,
- b) Information on the addresses and contact details of the facilities subject to verification,
- c) Names of team members responsible for verification processes,

In case of a change in the above information, the Planning Officer has to update these changes on the online system within **5 (five) business days**.

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**5.1.6. Provision of Information and Documents**

Following the approval of the contract, at least the following information and documents are requested by the Planning Officer via the **Information and Document Request Form** over the QSIPRO software.

- a) The latest approved version of the monitoring plan, other versions approved by the Ministry, if any, and documents proving that the Ministry's approval has been obtained,
- b) Description of the data flow activities of the enterprise,
- c) Issues regarding the risk assessment and total control system specified in the Monitoring and Reporting Communiqué of the enterprise,
- d) Procedures in the monitoring plan, including procedures for data flow activities and control activities,
- e) Greenhouse gas emission report of the facility, if any,
- f) If any, sampling plan prepared in accordance with the Monitoring and Reporting Communiqué and approved by the Ministry,
- g) If changes have been made in the monitoring plan during the reporting period, records of all these changes in accordance with the Monitoring and Reporting Communiqué,
- h) Improvement reports for previous years,
- i) If verification activity was carried out with a different verifier in the previous year, the verification report for that year,
- j) All relevant correspondence with the Ministry, especially information and documents related to notification of changes to the monitoring plan,
- k) Information about databases and data sources used for monitoring and reporting,
- l) Information of at least one principal and one substitute project manager to be contacted during the project,
- m) Any other relevant information and documents that may be required for planning and executing the verification.

The Planning Officer places the information and documents coming from the facility electronically in the relevant directory in the file of the facility and records the necessary information in the relevant fields of the QSIPRO software.

**5.2. Strategic Analysis Process**

The strategic analysis must be completed within the year of the greenhouse gas emission report to be verified.

**5.2.1. Assignment of Verification Team**

The verification team consists of a minimum of one chief verifier and, if necessary, a sufficient number of verifiers and technical experts. The total competence of the verification team must cover all the scopes of the relevant facility. The team must include a Chief Verifier or verifier assigned to the facility activity group and a technically competent person assigned within the scope of the facility. An additional technical expert is not required to be included in the team if the chief verifier or verifier is also appointed as a technical competent person in the relevant scope. The person appointed as the Technical Competent person must be on site during the strategic analysis or process analysis site visit for the duration specified in the **Instruction on Calculation of Verification Period and Fee**.

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When the team is appointed, the criteria such as the chief verifier who will manage the verification activities, the number of days remaining as the chief verifier, the verification experience in similar scopes, and the status of impartiality are assessed by the Planning Officer through the QSIPRO software. For part-time chief verifiers, before the appointment, the Planning Officer contacts the relevant Chief Verifier and verbally confirms the appointment. After the confirmation, the relevant chief verifier is assigned to the project as the Chief Verifier by the Planning Officer via QSIPRO. With the appointment, the Chief Verifier can access all records, information and documents, including past verification records of the facility, through QSIPRO.

In the second step, the person who will perform the strategic analysis (could be the appointed chief verifier) is determined under the coordination of the Planning Officer and the Chief Verifier. The personnel who will carry out the strategic analysis must be a Chief Verifier or Verifier assigned within the relevant scope.

In case the person designated for strategic analysis is a part-time verifier other than the Chief Verifier assigned for the facility, the Planning Officer contacts the relevant Verifier before the appointment process and verbally confirms the appointment. After the confirmation, Strategic Analysis planning is made via QSIPRO by the Planning Officer and the strategic analysis dates are recorded in the QSIPRO software as Strategic Analysis Site or Strategic Analysis Office. With the recording, the Verifier can access all records, information and documents, including past verification records of the facility, through QSIPRO.

After the strategic analysis, changes can be made in the verification team before the process analysis, provided that the team's competence is maintained, depending on the following criteria;

- a) Verification objectives, scope, criteria and estimated verification period,
- b) Terms of Greenhouse Gas Verification Program,
- c) The overall competence of the verification team necessary to achieve the verification objectives,
- d) Language and culture;
- e) Whether the verification team members have previously verified on the customer's site under the same program.

In case the previously appointed verification team changes, information about the new team is sent to the facility with the **Visit Notification Form** prepared on QSIPRO before the site visit, and approval is received for the team.

The verification team can be supported by translators and interpreters. Where translators or interpreters are used, it is ensured that they are selected in such a way that they do not have an undue influence on verification.

Trainee verifiers can be participants in the verification team, provided that a chief verifier is appointed as assessor. The assessor is entitled to take over the ultimate responsibility and duties for training findings and activities.

The facility is asked in writing by the Planning Officer whether the verification team appointed with the Visit Notification Forms has a conflict of interest with the facility and its confirmation is taken. Whether the verification team members have any conflict of interest with the facility is asked by the Planning Officer verbally before

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the appointment and confirmed from the existing inspector records. In addition, since all verifiers can instantly see the facilities assigned to them in the QSIPRO software, they have to declare whether they have a conflict of interest with the facility in accordance with the contract they have concluded with QSI.

### **5.2.2. Execution of Strategic Analysis**

Strategic analysis is carried out under the supervision of the Chief Verifier, including office work and site visit to understand the activities carried out by the facility, evaluate the competence of the verification team, assess the appropriateness of the verification period specified in the contract, and collect and review the information and documents necessary to conduct the risk analysis.

If the strategic analysis site visits of the facilities that have been verified in the last 2 years will not be carried out but only the office work will be performed;

- Approved monitoring plan of the facility is reviewed
- If necessary, additional information is collected with the Additional Information and Documents Form
- The compliance of the current plan with the current communiqué is analyzed
- Details about the facility are recorded by filling out the Question List
- The facility is informed by providing feedback with the Feedback Form, if any
- S/he examines the pictures of the source, emission point and measurement devices in the Monitoring Plan from the QSIPRO software. If there is a need for additional information and documents related to the previous year's information, s/he contacts the previous year's BD and obtains the necessary information.
- Strategic Analysis Report is prepared
- Data Flow Diagram, Risk Analysis and Test Plan, Sampling Plan and Verification Plan are prepared in accordance with this procedure.

In the verifications where the strategic analyzes will be carried out in the office, it will be ensured that 1 person from the previous year's verification team is included in the current strategic analysis verification team, if possible.

The Planning Officer makes the planning of the site visit by communicating with the person/team and the facility that will conduct the strategic analysis site visit. For the finalized visit date, s/he prepares the **Visit Notification Form** via QSIPRO and sends an e-mail to the facility for approval. This notice includes visit dates, as well as information on whether the client organization has objected to the appointment of a particular verifier or technical expert, or whether there is a conflict of interest with any of the team members that could affect impartiality. It is carried out in such a way as to allow sufficient time for the verifier to rebuild the team in response to the valid objection. This notification also includes granting the verification team access to all sites related to the verification process.

If the facility does not approve the verification team, it presents the reason for not approving in writing. The objection is examined by the Verification Manager and if the reason is found appropriate, the verification team / member is replaced.

The information and findings obtained during the strategic analysis by the person/team who performed the strategic analysis site visit are recorded in the **Strategic Analysis Report**, and the persons interviewed during the visit are recorded in the **Strategic Analysis Site Visit Form**.

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During the visit and office work, at least the following issues are assessed;

- a) The facility category determined in accordance with the Monitoring and Reporting Communiqué and the activities carried out in the facility
- b) Details of the monitoring plan approved by the Ministry and the monitoring method specified in such monitoring plan
- c) The nature, scale and complexity of emission sources, source flows, equipment and processes causing emissions, including measuring instruments, sources and application of calculation factors, and other primary data sources described in the monitoring plan
- d) Data flow activities, control system and control environment

In this regard, the recording method for the data used by the enterprise for each source flow while creating the report, the information of the personnel who performed this recording, and the output of the activity are recorded in the **Data Flow Diagram Form** by making use of the document showing the data flow obtained from the enterprise.

During strategic analysis, it is checked;

- a) Whether the monitoring plan is the most up-to-date version approved by the Ministry,
- b) Whether there is any change in the monitoring plan during the reporting period,
- c) If there is a change, whether it is notified to the Ministry in accordance with the Monitoring and Reporting Communiqué and whether it is approved by the Ministry

In the strategic analysis report, information about other visited sites is also collected. In this way, the team can broadly consider the limits of verification.

In the strategic analysis, it is checked whether the activity/activities carried out by the enterprise coincide with the activity/activities specified in the monitoring plan.

The information and documents to be collected in order to complete the strategic analysis include at least the following:

- a) Information and documents requested from the facility after signing the contract
- b) Significance level
- c) If verification was carried out by QSI for the same facility in previous years, information obtained from such verifications

The Chief Verifier and the site visit team share information via the QSIPRO software throughout the entire process.

### ***5.2.3. Performing Risk Analysis***

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One of the purposes of risk analysis is to manage the effort and time QSI will spend during verification processes. Another purpose of the risk analysis is to evaluate the possibility that the emissions report contains material misstatements.

QSI determines the nature, timing and scope of risk analysis and verification activities against the risk of not detecting misstatements.

The Chief Verifier appointed for the project identifies the following for each source flow, taking into account at least the findings from the strategic analysis in order to design, plan and implement an effective verification process;

- ✓ Internal risks,
- ✓ Control activities,
- ✓ Control risks related to the effectiveness of implemented control activities

according to the **SG Risk Analysis Instruction** and evaluates them using the **Risk Analysis**

**Form.** During the analysis, at least;

- ✓ Findings obtained from the strategic analysis carried out,
- ✓ Information obtained from verification results of previous years, if any,
  
- ✓ Significance level are considered.

If the chief verifier determines that the enterprise has not identified internal risks and control risks in its risk assessment, it notifies the enterprise and requests a correction.

When necessary, the risk analysis can be revised according to the information obtained during the verification and the verification activities to be carried out can be changed or repeated if necessary.

If a new risk is identified during the verification activities, the risk analysis may need to be renewed. In case the risk analysis is renewed, the verification activities after the risk analysis are also renewed.

The documents/information obtained from the enterprise during the risk analysis, the office work carried out during the strategic analysis, the observations and interviews in the site visit during the strategic analysis and the results of the strategic analysis form the basis of the risk analysis.

The Chief Verifier uses the risk assessment provided with the enterprise's monitoring plan for the internal risks and control risks on which s/he bases his/her risk analysis. However, the risk assessment prepared by the enterprise is not the only source for internal risks and control risks. The internal risk and control risk of the enterprise is assessed by the Chief Verifier through the monitoring plan presented.

During the risk analysis, the Chief Verifier aims to reduce the verification risk to an acceptable level in order to be able to form a reasonably reliable verification opinion. The Chief Verifier takes care to

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keep the detection risk at the necessary level in order to achieve a verification risk that can be achieved with a reasonable level of confidence.

After performing the risk analysis, the strategic analysis process is completed.

### **5.3. Verification Plan Preparation Process**

The chief verifier prepares a **Verification Plan**, which includes all steps of verification according to the risks identified and the information obtained during the pre-verification, strategic analysis and risk analysis for each verification related to the execution and programming of verification activities. The **Verification Plan** includes at least the following:

- a. A **Verification Program** that describes the nature and scope of verification activities, how and when they will be carried out.
- b. A **Risk Analysis and Test Plan** that sets out the scope and methods of testing control activities and related procedures.
- c. A **Data Sampling Plan** that sets out the scope and methods of data sampling associated with the data points that make up the total emissions in the greenhouse gas emissions report.

If it is determined during the verification that there is additional risk that needs to be reduced or that there is less risk than previously envisaged, the risk analysis and verification plan is renewed by the Chief Verifier in accordance with these determinations and verification activities are carried out accordingly.

The Chief Verifier establishes and implements the verification plan in such a way that the verification risk is reduced to an acceptable level to obtain reasonable confidence that the greenhouse gas emissions report is free of material misstatements.

#### **5.3.1. Verification Program**

The **Verification Program**, which shows the nature and scope of the verification activities and the method and by whom and in which part of the verification the activities will be carried out, is prepared by the Chief Verifier.

If observers will participate in a verification activity, the existence and justification for the observers is stated in the **Verification Program**. The presence of observers must be acknowledged by QSI and the client before the verification. The verification team ensures that observers do not interfere with verification processes or affect verification results. The verification team and the client must allow unscheduled inspections by the Ministry and TURKAK.

Note - Observers may be members and consultants of the client organization, witness personnel of the accreditation body, officials of Greenhouse Gas Program Owner, regulators or other required persons.

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While preparing the **Verification Program**, changes can be made about the verification period by considering the following:

- Location of the facility,
- Number of emission sources and source flows
- The information in the Ministry-approved monitoring plan and the complexity of the greenhouse gas monitoring methodology
- Significance level
- Complexity of the facility's data management system and control system
- Methods used to calculate and evaluate greenhouse gas emissions
- Fuel and raw material types that cause CO2 emissions
- All of the information and documents that need to be checked, including information that has not yet been submitted to the verification team during the planning stage
- Determination of emission factors, net calorific value, oxidation factor and conversion factors
- Competencies of facility employees
- Results of previous verification activities, if any.
- The internal procedures and systems of the facility that are directly or indirectly related to Greenhouse Gas Emissions
- Risk Analysis and Strategic Analysis assessments.
- Extra time to be determined by the Chief Verifier due to the fact that the information and data about the facility are located in a different location will be added to the site visit.
- In case verification is more complicated than anticipated or errors are detected

### ***5.3.2. Test Plan***

In the light of the assessments made after the Strategic Analysis and Risk Analysis, a **Risk Analysis and Test Plan** is prepared by the Chief Verifier in order to assess;

- a. The greenhouse gas emission report is complete and complies with the provisions of the Monitoring and Reporting Communiqué,
- b. The enterprise has carried out its activities and fulfilled its obligations in accordance with the Monitoring and Reporting Communiqué and the monitoring plan approved by the Ministry,
- c. The data in the greenhouse gas emission report does not contain material misstatements,
- d. Whether supporting information can be provided to data flow activities, control system and related procedures in order to improve the monitoring and reporting performance of the enterprise

In the test plan, besides the adequacy and accuracy of the control activities, it is also planned to control the records and adequacy of the procedures declared to be implemented by the enterprise.

### ***5.3.3. Sampling Plan***

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While determining the sampling size and sampling activities for data sampling;

- a. Internal risks and control risks,
- b. Results of analytical procedures,
- c. Obligation to present a verification opinion with reasonable confidence;
- d. Significance level,
- e. Significance of the error contribution of a single data element to the overall dataset,

are considered, and **Sampling Plan** is prepared according to the **SG Data Sampling Instruction** and **SG Sampling Table** by the Chief Verifier.

As part of the preparation of the verification opinion, the data submitted by the enterprise should be examined in accordance with a plan. At this step, misstatement, irregularity or non-compliance is detected in the data reported by the enterprise.

In order for the sampling process to be effective, the recording method of the data is investigated and all recording methods performed on the data are assessed separately. At this assessment stage, planning is made by considering the existence of errors due to people.

If the data gaps are homogeneous or coincided with a certain time, detailed information about the subject is obtained from the enterprise and necessary information is entered in the QSIPRO Questions screen. The number of sampling is determined by taking into account the **Strategic Analysis Report** outputs related to this stage.

All measuring instruments on the activity data are taken into account while performing the sampling activity.

The classification made according to the emission values of the enterprises plays an active role on the number of sampling to be carried out. In the **Sampling Table**, there is a guiding table regarding the data grouping to be sampled. As can be seen in the **Sampling Table**, the number of sampling, the category information of the enterprise, the number of data in the data set and the detection risk obtained as a result of the risk analysis are used as parameters. Separate tables are defined for A, B, C and low emission facilities.

While determining the data group to be sampled, the following factors related to the relevant data are taken into consideration:

- Internal risk,
- Control risk,
- Control Environment,
- Control Activities,
- Eligibility of the analytical method used to obtain the data,
- Contribution of the data set to the emission value
- Achieving Reasonable Confidence

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*In case of electronic automation data, no sampling is performed. However, the reliability of the data transferred from the main data source to the automation system is checked by sampling method.*

#### **5.4. Verification Process**

Verification activities are carried out according to the verification plan, and during the verification process, whether the enterprise fulfills its obligations in the monitoring plan approved by the Ministry and in the legislation is checked depending on the risk analysis.

The verification team performs verification activities to check, at least, necessary tests covering analytical procedures, data verification and checking method of monitoring;

- a. Data flow activities and systems used in data flow, including information technology systems,
- b. The control activities of the enterprise are appropriately documented, implemented, maintained and effective to mitigate internal risks,
- c. Whether the procedures listed in the monitoring plan are effective to reduce internal risks and control risks, that these procedures are implemented, adequately documented and properly maintained

The verification team monitors the data flow following the sequence and interaction of all data flow activities from primary source data to compiling the greenhouse gas emission report. The primary purpose of these activities is to check the procedures performed in tracing the data in the emission report to the primary data source.

While performing these checks,

- The signals of all types of counters, invoices or receipts, the log books for counts and laboratory reports are examined in order to record raw data reliably. All steps showing how each data reported in the emissions report was obtained are reviewed. At this point, how the first data signal is formed and how the units used are obtained are also examined.
- During the processing of the data, the procedures applied during the transition from analog to digital, standardization, software algorithms and record keeping/archiving activities are assessed.

##### **5.4.1. Site Visit Planning**

During the verification process, a site visit is performed to evaluate the operation of one or more measurement instruments and monitoring systems, to conduct interviews, to carry out the activities

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required by the communiqué, and to assess the facility's boundaries and the resource flows and the completeness of the emission sources, in order to gather sufficient data, information and documents to allow the greenhouse gas emission report to be concluded that it does not contain material misstatements.

The Planning Officer makes the planning of the site visit by communicating with the person/team and the facility that will conduct the site visit. For the finalized visit date, s/he prepares the **Visit Notification Form** via QSIPRO and sends an e-mail to the facility for approval.

In order to verify the greenhouse gas emission report, based on the risk analysis, it is decided whether additional visits are required regarding the relevant data flow activities and control activities carried out at other locations such as company headquarters and other off-site offices, if any.

Site visits include the opening meeting at the beginning of the visit and the final sitting at the end of the visit.

Verifications performed on site are carried out with the **Verification Program** prepared in accordance with the **Verification Plan**. The organization for the verification is performed by the Chief Verifier.

Site visits are conducted to collect and evaluate sufficient data and evidence to provide a verification opinion with reasonable confidence that the emissions report prepared by enterprises is free of misstatements.

Examples of activities carried out during the site visit are listed below:

- Making interviews with the employees of the enterprise, examining the documents, evaluating the procedures of the enterprise on site during its implementation,
- Checking facility boundaries, and asses the integrity of data flow, source flow and emission sources,
- Testing control activities, and evaluating the implementation of procedures in the approved monitoring plan,
- Evaluating measuring instruments and monitoring systems,
- Carrying out the activities required by the communiqué,
- Recording the documents examined and the people interviewed.

Depending on the results and conditions of the risk analysis, it is decided which facilities of the verified enterprise will be visited. In case of multiple facilities, all emissions-related facilities are included in the site visit. If it is determined during the site visit that the objectives determined by strategic analysis and risk analysis are not met, re-examination of documents, sampling and renewal of site visits can be carried out.

Based on the risk analysis, it is decided whether additional visits are required for relevant data flow activities and control activities, if any, carried out at other locations such as company headquarters and off-site offices, in order to verify the greenhouse gas emission report.

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During the site visit, all sites where the activities are carried out should be visited. For example: If the place where the data used in the emission report is located is outside the facility (for example: head office), a site visit should also be performed to the places where this data is obtained.

Activities carried out during the site visit, which are usually also mentioned in the verification plan:

- Performing sampling at the facility to check the authenticity of the monitoring plan and thus examining the integrity of the source flow and emission sources and that all requirements are met,
- Performing sampling at the head offices and local offices of the facilities,
- Perform sampling at other relevant facilities where verification activities need to take place. For example: Performing sampling at the facility supplying fuel in order to evaluate the accuracy of the reported data, and perform sampling for control activities that are not within the boundaries of the facility but are related to the data flow and monitoring methods of the enterprise.

If a single error is detected in a sample, the enterprise reviews the entire data set, corrects it and resubmits it for a new sampling activity. The sampling plan and the verification plan are also revised within this framework.

Finally, documents reviewed and information about interviewees during the site visit is included in the verification records.

### ***5.4.2. Opening Meeting***

A formal opening meeting is held where participants are registered with the **Opening Meeting and Final Sitting and Interviewee List** and, where appropriate, those responsible for the organization's processes and functions, including the client's managing authority. The opening meeting is led by the Chief Verifier, with a brief explanation of how the verification activities to be performed will be carried out, and includes the following elements. The degree of detail is performed consistent with the client's familiarity with the verification process:

- a) QSI & Verification Team Introduction, participants introducing themselves, explaining their roles (Including the accreditation organization, Ministry, etc.)
- b) Informing about the purpose and scope of the visit, confirming the scope of the facility, confirming the visit plan
- c) Briefing on the verification process (from strategic analysis to providing verification opinion.). Indicating the meaning of verification opinion Confirmation that the customer will be notified of the progress of the verification and of any concerns
- d) Explanation of the notification and follow-up method of the detected findings

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- e) Explaining what is expected from the enterprise during the execution of the verification, confirming the permissions to enter the sites and access the data Requesting guides to accompany the verification team and explaining their duties
- f) Confirmation of issues related to confidentiality and impartiality Confirmation of whether there are people with conflicts of interest in the team
- g) Confirmation of work environment and resources, relevant occupational safety, emergency and security procedures for the verification team
- h) Confirmation of the language to be used during verification
- i) Giving the client an opportunity to ask questions

Each verifier performs verification on site, accompanied by a guide, unless agreed otherwise by the verification team leader and the client. Guides are included in the verification team to facilitate verification. The verification team ensures that guides do not interfere with verification processes or affect verification results.

The responsibilities of the guides are:

- a) Scheduling and making contact for interviews,
- b) Providing access to activity data,
- c) Organizing visits to certain parts of the site or organization,
- d) Ensuring known rules regarding site safety and security procedures addressed by members of the verification team,
- e) Presence of a verification witness on behalf of the client,
- f) Providing clarification or information when requested by an inspector.

### ***5.4.3. Collection of Information***

During verification, information on verification objectives, scope and criteria (including activity data, test and calibration reports, information on interfaces between functions, activities and processes) is collected with the help of the **Question List Form** prepared for sampling and verification in accordance with the **Sampling Plan** as proof of verification. Compliance of the non-accredited laboratories used within the framework of the regulation with the relevant requirements of ISO/IEC 17025 is checked with the **Question List Form**.

The adequacy of the evidence varies depending on the risk of QSI presenting a false verification opinion. The higher the risk of misstatement, the greater the amount of evidence to be gathered and the greater the effort required. The quality of the evidence obtained is also very important at this point. If the evidence gathered is of sufficient quality, the importance of the multiplicity of evidence is reduced to this extent.

The reliability of an evidence, information or document is affected by the nature and source of the evidence. Reliability also depends on the circumstances of how the evidence was obtained. For example, if evidence is obtained from independent and knowledgeable external sources (such as results from accredited laboratory analysis), it is more reliable than internal evidence. However, internal evidence is safer if the

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relevant control activities are effective or if the verification team has obtained the evidence directly (Like observing on site how the operator cross-checks).

Information collection methods include, but are not limited to:

- a) Interviews;
- b) Observing processes and activities,
- c) Review of documentation and records,
- d) Collection of Activity Data

All interviews are recorded with the **Opening Meeting and Final Sitting and Interviewee List**.

In the event of non-achieved verification objectives, inability to access data to be verified, or existing verification evidence that indicates the presence of an urgent and significant risk (e.g. security), the verification team leader determines the appropriate action and reports it to the client and, if possible, to QSI. Such action may include changing or terminating the verification objectives or scope of verification, or changing or reaffirming the verification plan. The verification team leader reports the result of the action taken to QSI.

The verification team leader reviews with the client any change to the scope of verification that occurs in the progress of the verification activities on site and reports it to QSI.

QSI can make recommendations to the enterprise regarding the monitoring and reporting process while carrying out verifications. However, these recommendations can never be made in the form of consultancy.

During the visit, the verification team periodically assesses the progress of verification and exchange of information with interim meetings. The verification team leader periodically communicates the progress of the verification and in case of any concerns of the client, reorganizing the business situation needed among the members of the verification team.

### ***5.4.3.1. Checking Data Flows***

Data flow activities include all necessary steps and activities from primary data to preparation of the company's emissions report. Data flow activities mainly consist of data analysis, measurement, record keeping, sending samples to the laboratory for analysis and collecting the data in the emission report.

Data may be obtained from the enterprise's own measuring instruments, literature or other references, laboratory analysis, or suppliers.

If the data is obtained by means of a signal from a measuring instrument, the formulas and procedures used during the conversion of the signal to the calculated emission data should be clearly stated. In addition, an additional uncertainty assessment may be required during the conversion

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of the initial data signal obtained from the measuring instruments. In this case, the controls should start from the point where the signal was generated.

Whether the data flow activities are in line with the approved monitoring plan is assessed by data follow-up. The consistency and validity of the data is questioned by following the data to its primary source. In addition, the competence of the persons responsible for each step in the data flow and the control mechanisms applied by the enterprise for the competence of the personnel are evaluated. It is checked whether these persons are sufficient to handle the activities and whether they pose any risk.

#### ***5.4.3.2. Testing Control Activities***

The control activities necessary to prevent or minimize the internal risks arising from data flow activities are determined through risk assessment. Enterprises implement control activities to minimize or prevent risks that may occur.

In order to minimize or prevent the risks that may occur, enterprises can change the steps of data flow activities, apart from just implementing control activities. For example: in order to narrow the impact range of the risk, the frequency of analysis can be increased.

Examples of control activities are as follows:

- Quality control and quality assurance of measuring instruments (calibration, checking the required standards and procedures)
- Quality assurance of information technologies used for data flow activities
- Internal audits and data verification of reported data
- Checking data sources related to activities performed with service procurement (for example, checking accredited laboratory where analysis is performed outside the enterprise)
- Corrections and corrective actions
- Examining records and documents
- Separation of duties (Review of a data by another person who was not involved in the acquisition of this data)

The verifier tests the effectiveness of these control activities. Examples of issues considered in these tests are as follows:

- Have control activities been established to function properly and effectively?
- What is the frequency of control activities?
- Are control activities performed electronically or manually?
- Does the person responsible for control activities have the necessary knowledge and competence and is different from the person who created the data? Is the 4-eyes principle including the checking of data by the personnel applicable?
- Are there procedures in place by the enterprise when carrying out personnel competency assessments?

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Various methods can be used for these tests. Some of these methods are as follows:

- Searching for necessary information (for example, necessary information is searched through mutual interviews)
- Observation (Observation of the procedures applied by the enterprise)
- Inspection (On-site inspection of manual control activities)

Renewal of the performance test (Cross-checking of the data by the verifier)

These tests are carried out according to the **Risk Analysis and Test Plan** and are recorded with the Question List Form.

### ***5.4.3.3. Evaluating the Eligibility of the Procedures Included in the Monitoring Plan***

The enterprise should establish, document, implement and maintain written procedures in accordance with the I&R Communiqué. The purpose of these procedures is to confirm the effectiveness of control activities and to minimize and prevent the risks that may arise from misstatements, non-compliances and irregularities that may arise from limited control activities. Some of the procedures are as follows:

- Data flow activities and control activities
- Management of duties and responsibilities and personnel competency
- Procedures for control systems
- Quality assurance of measuring instruments
- Regular review of the eligibility of the monitoring plan
- (If any) Sampling plan and updating this plan
- (If any) Analysis methods, laboratory procedures
- Handling of data gaps (eligibility of methods applied for this)

The application status of the procedures that should be included in the monitoring plan is recorded with the Process Analysis Form.

The following controls are performed regarding these procedures.

- Are written procedures in place, is the operation of the procedure properly documented and maintained?
- Does it contain information summarized in the approved monitoring plan?
- Is it properly implemented and up to date?
- Is it effective in preventing or reducing internal risks and control risks?

If it is decided that the procedures are insufficient, feedback is made to the enterprise via the **Feedback Form** over QSIPRO and the deficiencies are requested to be corrected. If corrections are not made, clarifications and improvements related to these are clearly stated in the verification report.

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***5.4.3.4. Assessment of the Control System***

During the process analysis, the existence of the control system in the enterprise and the efficiency of the system are assessed. In addition, by assessing the quality of the accuracy of the internal assessments, it is checked that the activities are properly documented and that the activities are carried out before verification.

These controls are carried out according to the **Risk Analysis and Test Plan** and are recorded with the Process Analysis Form.

***5.4.3.5. Implementation of Analytical Procedures***

Analytical procedures refer to the analysis of fluctuations and trends in data, including analysis of values that deviate from predicted quantities that are not consistent with other relevant information.

If there is doubt about the internal risk, control risk, control activities and adequacy of procedures, more comprehensive data control is required. Analytical procedures are used to conclude that the data is complete and credible as a result of the assessments.

Analytical procedures are usually horizontal and vertical comparisons of emissions data and activity data.

The reported data is assessed to identify potential risks and perform scheduled verification activities. At least the following practices are carried out within the framework of Appendix-1 Chapter 6 of the Verification Communiqué.

- Assessing the reasonability of data fluctuations over time and the trend of the data
- Detection of outliers, unexpected data and data gaps Examples of checks performed

accordingly are as follows:

- Comparison of emissions of the same facility for different years
- Comparison of activity data in terms of source flow that has a share in emissions
- Comparison of the weighted average of the emission factor analysis values for a source flow with the current literature values, checking for serious deviations
- Comparison of calculation factors analysis results for the same source flows used in similar facilities

If inconsistent data, serious inconsistencies or data that deviate significantly from the expectations are detected, the enterprise is requested to provide explanations supported by additional evidence Their impacts on the verification plan and other verification activities carried out within this framework are evaluated.

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**5.4.3.6. Assessment of the Accuracy of the Monitoring Method**

It is checked whether the enterprise correctly applies the monitoring methods declared in the approved monitoring plan. The following should be noted during this process.

- Does the Ministry-approved monitoring plan comply with the legislation? (Even if the Ministry has approved the monitoring plan, if there is anything inappropriate, it should be reported).
- Has the monitoring method specified in the approved monitoring plan been implemented? (E.g.: Is there a metering-based method in a facility that states that it will monitor its emissions with a computational method?)
- Has an instrument been determined for the emission calculation and is this instrument appropriate? (E.g.: Emission calculation excel file)
- Are the parameters used in the calculations, correct?
- Have the stages specified in the approved monitoring plan been implemented and have stage requirements been met? (E.g.: Have uncertainty thresholds been used appropriate to the stage specified in the monitoring plan?)
- According to the Verification Communiqué, are the operating conditions suitable for higher stage implementation?
- Have the units been used correctly?
- Are the meters as defined in the monitoring plan? (E.g.: Do the location of meters, serial numbers and calibration documents match the data specified in the monitoring plan?) These controls are applied separately for the following parameters.
  - Activity Data
  - Calculation Factors
  - Accredited Laboratories
  - Non-Accredited Laboratories
  - Sampling
  - Measurement-Based Method
  - Transferred CO2

**5.4.3.7. Data Verification**

Within the framework of the approved monitoring plan, the accuracy of the facility boundaries, the source flow and the integrity of the emission sources are assessed.

- It is checked whether the facility boundaries, emission sources and source flows are defined according to the approved monitoring plan and reflect the current status of the facility,
- The accuracy of the facility category,
- Accurate determination of the emission source flow category,
- The absence of emission sources or source flows, or their incorrect expression in the monitoring plan, causing data gaps and duplicate counting.

In addition to the reported data, the data that forms the basis of the report are also checked. The most important activity is to check the accuracy and reliability of the data and to check the compatibility of the

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obtained data with the primary source data. These controls mainly include the following:

- Following the data up to its primary sources (example: following the reported CO2 emission up to the activity data and then to the primary source where the activity data is generated, following the invoices of the fuel used, following the laboratory analysis results, following the signals of the measuring instruments),
- Checking whether data flow activities reflect all steps from primary data to final reporting data,
- Performing cross-checking of production data and reported internal data,
- Performing cross-checking of external data,
- Checking the readings from the measuring instruments,
- Checking the calculation methods and the accuracy of the calculations.

Calculations are performed again in order to check the calculations of the enterprise. The consistency of the two calculations is checked. Calculation results and comparisons are recorded in the **Question List Form**.

During verification, other issues related to follow-up methods are also assessed. Assessment of other issues includes uncertainty assessment, methods applied for data substitution in case of data gap, level of activity and operation of the facility.

### ***5.4.3.8. Uncertainty Assessment***

The validity and accuracy of the sources and information used to determine the level of uncertainty in the approved monitoring plan is checked with the **QSIPRO** software.

The uncertainty assessment is carried out as an assessment of the total emissions in the minimum method. Uncertainty assessment other than the minimum method applies only to activity data. The maximum uncertainty thresholds allowed in the determination of activity data are determined in accordance with the I&R Communiqué through stages. The enterprise presents the uncertainty value applied within the framework of the stage requirement and the relevant evidence document (e.g.: device specifications, uncertainty assessment of the enterprise) in the monitoring plan.

There are some points to be noted. First of all, it is checked whether the stage specified in the monitoring plan has been implemented in the facility during the reporting year. In addition, it is assessed whether the applied stage complies with the requirement of the I&R Communiqué. The compliance of the uncertainty value declared in the monitoring plan with the required threshold value is checked. After that, it is discussed how the determined uncertainty value is obtained.

Uncertainty may arise from a single source or from more than one source.

In the computational method, if the activity data is determined by measurement systems under the control of the enterprise, the uncertainty can be determined by various methods. Examples of these methods and the controls performed when these methods are used are as follows.

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- Measuring instruments subject to legal metrological control: Evidence documents indicating that the measuring instrument used complies with the relevant legislation is checked. The maximum permissible error values in the legislation are checked.
- Using the maximum permissible error information within the framework of the manufacturer's installation conditions or using the uncertainty value obtained by multiplying the uncertainty value from the calibration by a prudent factor: The conformity of the technical specifications and operating conditions determined by the manufacturer with the measuring instrument, the accuracy of the device installation, the records of the calibrations and the appropriateness of the prudent factor selection are checked.
- Performing a specific uncertainty assessment: All information used during the uncertainty assessment is checked. Calculations are also made by the verifier to ensure the accuracy of the calculations.

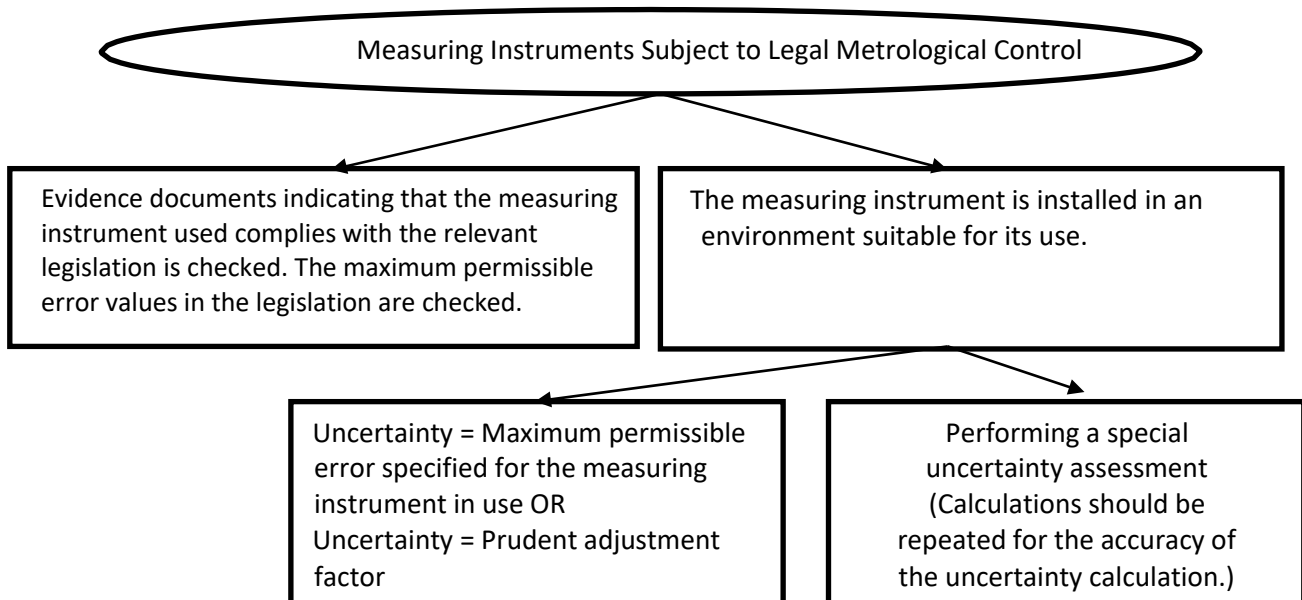


Figure 1: Uncertainty analysis control steps

When assessing the uncertainty of measuring instruments, in addition to the uncertainty of the instrument during calibration provided by the manufacturer, sources of uncertainty from the enterprise itself are also included in the uncertainty assessment.

In cases where measurement systems specific to commercial partnerships are used outside the control of the enterprise, the validity of the information should be ensured. Records such as device specifications and calibration results should be obtained from the supplier by the enterprise.

Although low-emission facilities are not obliged to submit their uncertainty assessments to the Ministry, all data used in calculating the uncertainty limit should be examined.

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**5.4.3.9. Assessment of Data Gaps**

A data gap, together with missing data, is considered as data for which objective evidence cannot be presented during validation. Data gap may be determined by the enterprise itself during the reporting period or may be detected during verification (during the execution of analytical procedure tests or detailed data verification).

If there is a data gap, the suitability of the substitute data is assessed. When assessing the suitability of substitute data;

- Is there an approved procedure for the data gap in the monitoring plan? If available, the suitability of the procedure is checked and it is checked whether the procedure has been applied.
- Regarding the data gap, if there is no approved procedure in the monitoring plan, but if the enterprise has implemented a procedure for the data gap, the suitability of this procedure and the eligibility of the prepared data are checked.
- It is checked whether the substitute data has been chosen prudently to provide reasonable confidence.

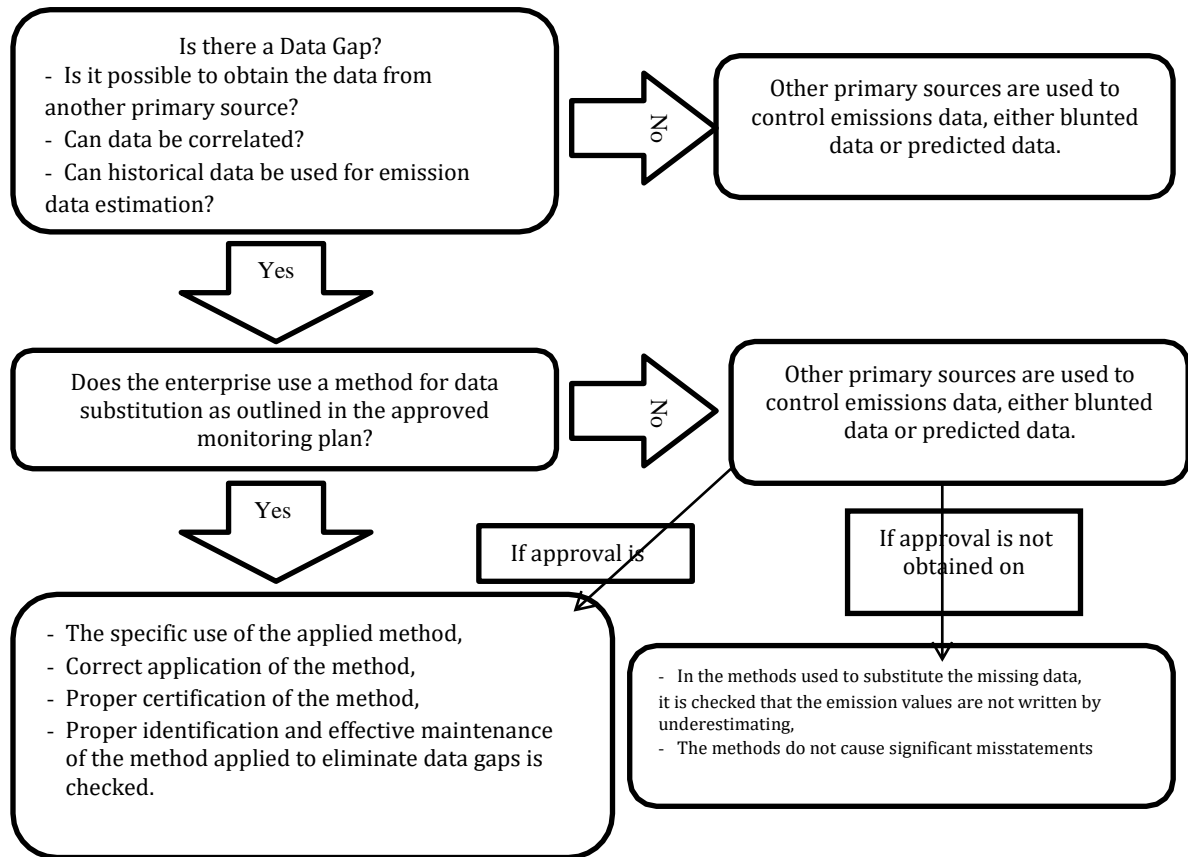
When demonstrating public interest work, it is checked that substitute data is multiplied by a prudent factor; however, the enterprise is also prevented from performing excessive emission calculations.

If it is determined that there is a data gap in the enterprise, factors such as the realization time of the data gap, how long it lasts, whether data substitution is made, how prudent the method used in data substitution is, and the suitability of the substitute data are handled. It is checked that this information is also reported in the emission report.

The following steps are followed to fill in the data gaps:

- The location of the data gap is determined by plotting the data stack.
- Missing data is treated as a data gap, and incorrect records are treated as data gaps (sudden peaks, negative values, etc.).
- Data gaps are removed from the data stack and the remaining calculations are made on this stack.
- A graph of the data stack is plotted.
- The correlation coefficient (R) of the drawn graph is calculated in excel.
- According to Pearson's product-moment correlation theorem, if the R value is greater than or equal to 0.71, the formula of the graph is created by excel and this formula can be used to fill in the data gaps. However, in order for the value found to be prudent, the result obtained from the formula is multiplied by 1.1 and used to fill in the data gap.
- If the R value is less than 0.71, the formula  $X = \mu + 2\sigma$  is used to fill in the data gaps.  
(*X: Substitute data,  $\mu$  Average of the data stack,  $\sigma$ : Standard deviation*)

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**Figure 2:** Data gap checking steps

The occurrence of a data gap several times or over a long period of time is an indication that the control activities of the enterprise are not functioning properly. For this reason, the frequency of occurrence of data gaps and the effectiveness of control activities implemented by the enterprise in order to prevent data gaps are also assessed. The case of too long or too frequent data gaps is also taken into account. It is assessed whether the enterprise has manual controls to avoid data gaps.

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**5.4.4. Final Sitting**

Prior to the final sitting, the verification team, with its interim and final meetings:

- a) Reviews verification findings and other appropriate information collected during verification that meet verification objectives,
- b) Agrees on the results of the site verification considering the uncertainty inherent in the verification process,
- c) Determines any necessary follow-up actions,
- d) Confirms the suitability of the verification program, or describes any desired changes. A formal final sitting is held where participants are registered with the **Opening Meeting and Final Sitting and Interviewee List** and, where appropriate, those responsible for the relevant processes and functions, including the client's managing authority. The purpose of the final sitting, normally conducted by the verification team leader, is to inform the enterprise about the next steps of the verification process.

The final sitting also includes the following elements. The degree of detail is performed in line with the verification process and the client's awareness:

- a) Acknowledgments and reminder of confidentiality/impartiality
- b) Disclosure of detected findings reporting and follow-up (for all findings, facility must respond before verification opinion is formed)
- c) Repeating the meaning of verification opinion
- d) Giving information on the Ministry online system regarding the process until the verification opinion is given and the submission of the verification report
- e) Handling complaints and providing information on objection processes
- f) Providing information on post-verification facility obligations (improvement reports, monitoring plan revision requirements...)
- g) Confirmation of the supply of information and documents that will be needed for office work
- h) Giving the client an opportunity to ask questions

An opportunity is provided for the client to ask questions. Different opinions that are not resolved are managed according to the **Client Complaint and Objection Procedure**.

**5.4.5. Assessment of Misrepresentations, Non-Conformities and Irregularities**

When QSI detects misstatements or non-compliances while carrying out the verification processes, it immediately informs the enterprise via the **Feedback Form** over QSIPRO and requests that necessary corrections be made. The enterprise is obliged to correct any misstatements or non-compliances reported to it.

QSI checks and records in the verification records as corrected any misstatements or non-compliances corrected by the enterprise during verification.

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If the enterprise does not correct the misstatements or non-compliances reported to it, the QSI requests the enterprise to disclose the root causes of the non-compliance or misstatement on the **Feedback Form** to assess the impact of such non-compliances or misstatements on the reported data before concluding the QSI verification report.

The QSI determines whether uncorrected misstatements, alone or in combination with other misstatements, have a significant impact on the overall reported emissions. When assessing the severity of misstatements, QSI considers the size, nature and causes of the misstatements.

QSI determines whether the uncorrected non-compliance, alone or in combination with other non-compliances, has a material impact on the reported data and whether it results in material misstatements.

QSI considers misstatements to be material, even if they are below the significance level, alone or in combination with other misstatements, if necessary based on their size and the nature of the particular circumstances in which they occur.

***5.4.6. Assessment of Misstatements, Non-compliances and Irregularities not Remedied by the Enterprise***

The enterprise should eliminate the detected misstatements, non-compliances or irregularities. If uncorrected findings remain before the verification report is concluded, the impact of these conditions on the total reported emissions data is assessed by the Chief Verifier. In order to make this assessment, information on the reasons for not correcting the findings is requested from the enterprise. In determining the impact of uncorrected findings on reported emissions and the level of significance of this impact, the size, nature and causes of the finding are taken into account.

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*An affirmative verification opinion is not given in cases of misstatements, non-compliances or irregularities that are not corrected by the enterprise even though they are correctable.*

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Examples of issues to be considered in determining whether a misstatement, non-compliance or irregularity is material are as follows.

- Is the misstatement, non-compliance or irregularity correctable?
- Does the enterprise object to correcting the identified misstatement, non-compliance or irregularity?
- What is the probability that the misstatement, non-compliance or irregularity will occur again?
- What is the duration of the misstatement, non-compliance or irregularity?

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- Are misstatement, non-compliance or irregularity caused by an intentional/unintentional action?
- Are misstatements, non-compliances or irregularities in conflict with the legislation?

Uncorrected findings are assessed by the Chief Verifier, in the light of controls and information obtained from the enterprise. In order for QSI to give an appropriate verification opinion, the effect of errors in the emissions report on the total reported emissions is observed. It is assessed whether the findings, alone or in combination with other findings, have a significant impact on the emissions data or whether these findings lead to other material misstatements, non-compliances or irregularities. However, even if a misstatement is below the significance level specified in the legislation, it may be considered as a significant misstatement as a result of the review by the Chief Verifier. The size of the misstatement and the nature of the particular case in which it occurs play an important role here.

Assessments are made both qualitatively and quantitatively. Quantitative assessments are more quantitative and are usually based on the significance level. Here, the misstatements are assessed individually and jointly whether they exceed the significance level. While the impact of one source flow alone on emissions is above the significance level, the total difference from all source flows may be below the threshold. The Chief Verifier takes all of these situations into account when making the assessment.

In cases that cannot be assessed quantitatively, qualitative assessments are carried out within the framework of competence. For example, qualitative assessments are also made to decide whether a misstatement also constitutes a non-compliance. One of the main points to be taken into account in this assessment is the evaluation of whether the opinion on the misstatement or the non-compliance will affect the decisions of the Ministry in the future.

The difference between the Chief Verifier's calculations and the enterprise's calculation is used to determine the significance level. A negative difference between the value reported by the enterprise and the value calculated by the Chief Verifier indicates that emissions are underreported. If the difference is positive, it indicates that the reporting is higher than it is.

All assessment records are kept on QSIPRO or in the Client's File.

### ***5.4.7. Finalization of Verification Results***

Before generating the QSI verification report and delivering it to the enterprise, the enterprise must submit the final emission report to QSI. As a result of the changes in the verification process, the enterprise audits the emission report internally and submits it to QSI, confirming that it is the final version of the report. Verification results are also finalized based on the final emissions report, taking into account client records and unclosed feedback. All verification decisions are based on objective evidence and the results are concluded in the light of this evidence.

As a result of the quantitative analyzes and qualitative assessments made according to the significance level, the Chief Verifier compiles and concludes its results to create a verification report. Findings resolved

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by the enterprise during the process are added to the client records. Uncorrected findings are reviewed for indication in both the verification report and the verification records.

The Lead Verifier acts within the framework of the Verification Communiqué when finalizing the process and findings and evaluating the information obtained. These are;

- ✓ The final data obtained from the enterprise, including the corrected data based on the information obtained during the verification is checked,
- ✓ The reasons notified by the enterprise for differences between final data and previously provided data are reviewed,
- ✓ The results of the assessment made to determine whether the monitoring plan approved by the Ministry and the procedures described in this plan are implemented correctly are reviewed,
- ✓ Verification risk is checked to be at an acceptably low level enough to obtain reasonable confidence,
- ✓ It is ensured that sufficient information and documents have been collected to provide a verification opinion with reasonable confidence that the report does not contain significant misstatements,
- ✓ It is ensured that the verification process is fully recorded in the verification records and that a final judgment can be made in the verification report.
- ✓ Approved monitoring plan and controls on whether the procedures contained in this plan are implemented correctly are reviewed.

The QSI verification findings are finally reviewed and finalized by the Chief Verifier.

While reviewing the findings, the significance level is taken as maximum 5% of the emissions realized in the reporting period for category A and category B facilities specified in the Monitoring and Reporting Communiqué, and maximum 2% of the emissions realized in the reporting period for category C facilities.

A Verification Report is submitted to the enterprise in line with the information obtained during the verification processes. The verification report is prepared separately for each greenhouse gas emission report.

After gathering evidence and examining the final data, QSI evaluates whether a verification opinion with a reasonable confidence level can be presented. For this, it is checked whether the verification risk related to verification activities is at an acceptably low level.

The Chief Verifier, who is satisfied that s/he can present a final verification opinion, forms the affirmative or negative verification opinion of the enterprise's emissions report. The entire process is recorded by QSI.

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In case of an uncorrected misstatement, non-compliance or irregularity within the period until the verification report is signed and submitted to the enterprise, QSI expresses its opinion within the framework of the controls it has been able to carry out and the corrections made until that time.

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*Reports containing significant misstatements are not satisfactory or justified by comments.*

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### 5.5. Preparation of Verification Report

Verification reports are prepared for each emission report in accordance with the Online System User Manual. The **Verification Report** contains at least one of the following findings:

- a) The report has been satisfactorily verified,
- b) Before the verification report is submitted, the greenhouse gas emission report contains uncorrected significant misstatements,
- c) In the following cases, the scope of verification is too limited and the verifier is unable to obtain sufficient information and documents to give a reasonably confident verification opinion that the greenhouse gas emission report does not contain significant misstatements,
  - Incomplete data that prevents him/her from collecting the evidence s/he needs to reduce the verification risk to a level that achieves a reasonable level of confidence,
  - The monitoring plan has not been approved by the Ministry,
  - The monitoring plan does not offer sufficient scope and clarity to form an opinion on verification,
  - The enterprise did not provide the verifier with sufficient information and documents to enable it to verify and did not allow access to the sites,
- ç) The non-compliances, alone or in combination with other non-compliances, do not provide sufficient clarity and prevent the verifier from stating with reasonable confidence that the greenhouse gas emission report does not contain significant misstatements.

The greenhouse gas emission report can only be verified with reasonable confidence if it does not contain significant misstatements.

The Verification Report includes at least the following elements:

- a. The name of the facility subject to verification,
- b. Objectives of verification,
- c. Scope of the verification,

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- d. Reference to the verified greenhouse gas emission report,
- e. The version of the monitoring plan approved by the Ministry, the period in which each monitoring plan is valid, the criteria used to verify the greenhouse gas emission report,
- f. Total emissions of each activity and facility included in Appendix-1 of the Regulation,
- g. The reporting period subject to verification,
- h. Responsibilities of the enterprise, the Ministry and the verifier,
- i. Verification opinion statement,
- j. Description of misstatements or non-compliances that were not corrected before the verification report was submitted,
- k. Dates of site visits and by whom,
- l. Non-compliances detected within the framework of the Monitoring and Reporting Communiqué during the verification,
- m. Confirmation that the method used to close data gaps is prudent and does not cause significant misstatements,
- n. In cases where it is determined that changes that will have an impact on greenhouse gas emissions have been made in the capacity, activity level or operation of the facility until December 31 of the reporting period and have not been notified to the Ministry, the description of these changes and relevant opinions,
- o. Recommendations for improvements, if any,
- p. Names of the chief verifier, independent inspector and verifier and technical experts, if any, who took part in the verification of the greenhouse gas emission report,
- q. Name and signature of the authorized person certifying verification on behalf of the verifier, and the date,
- r. Name and signature of the independent inspector who has conducted the independent review process, and the date.

In its report, the QSI describes;

- The size and nature of the misstatement or non-compliance,
- The reasons for the misstatement having or not having a significant impact,
- Which element of the greenhouse gas emission report or which element of the non-compliance monitoring plan the misstatement relates to, in sufficient detail in the verification report for the misstatements and non-compliances, to enable him/her to understand.

If the Ministry requests additional information about the verification process, the enterprise sends such additional information to the Ministry within thirty days. For this reason, QSI shares the necessary information and documents with the enterprise on issues that the enterprise may need.

#### ***5.5.1.1. Level***

If the enterprise already has the data, measuring instruments, laboratories, calculation factors and other information that will meet the requirements of a higher level than the one it applies, QSI indicates in the verification report which level requirements the enterprise can meet as an improvement.

Findings obtained within the scope of this article are recorded in the verification records.

#### ***5.5.1.2. Improving the Monitoring and Reporting Process***

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When QSI identifies areas where improvement can be made in the performance of the enterprise regarding;

- a) Risk assessment,
- b) Development, documentation, implementation and maintenance of data flow activities and control activities, assessment of the control system,
- c) Development, documentation, implementation and maintenance of procedures related to data flow activities and control activities and other procedures that the enterprise must establish in accordance with the Monitoring and Reporting Communiqué,
- ç) The monitoring and reporting of emissions, including those related to achieving higher levels, reducing risks, increasing monitoring and reporting efficiency, it indicates its improvement recommendations regarding these issues in the verification report. If improvement recommendations are included in the previous year's verification report, QSI checks whether and how the enterprise has implemented such improvement recommendations

If the enterprise has not followed or properly implemented such recommendations, QSI assesses the impact of this on the risk of misstatement and non-compliance.

### **5.6. Independent Review Process**

The purpose of independent review controls includes, but is not limited to:

- ✓ Reviewing the quality of the activities carried out and checking the presence of technical errors or omissions,
- ✓ Final re-checking whether appropriate professional due diligence and consideration has been applied (such as checking that the scope of the activity is consistent with the activities carried out in the enterprise, achieving a reasonable level of confidence),
- ✓ Confirming that the verification team carries out the activities within the framework of the legislation and that the procedures for verification are carried out properly,
- ✓ Assessing the adequacy of the evidence gathered to support the verification opinion,
- ✓ Making a final general review (such as correcting minor errors, correcting typos).

Before submitting the verification report to the enterprise, QSI submits the verification records and verification report to an independent and competent inspector who was not involved in the verification process.

The independent inspector must be an appointed chief verifier.

The independent inspector cannot review the verification activities in which s/he is involved.

The independent review covers the entire verification process described in the communiqué and is added to the verification records.

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The independent inspector performs the review to confirm that the verification process has been carried out in accordance with the communiqué and QSI procedures, that the procedures for verification activities have been correctly applied, that due professional care has been exercised, and that decisions have been made appropriately.

The independent inspector also assesses whether the information and documents compiled are sufficient to allow the verifier to present the verification report with reasonable confidence.

If, after the review process, situations that require changes in the verification report arise, the independent inspector also reviews the changes made and their reasons.

If the independent inspector performing the independent review activity is not appointed from the relevant scopes, s/he gets support from the technical expert who was not involved in the verification process in order to carry out this activity effectively.

The independent inspector, who carries out the independent review, presents his/her decision to QSI with the **Independent Review Form**.

The verification report prepared based on the independent inspector's findings and the information and documents in the verification records is approved by the General Manager.

Only QSI is responsible for approving the report and never assigns its authority.

### 5.7. Invoicing and Archiving

After the completion of the Verification Report, a detailed invoice is prepared in accordance with the terms of the contract between the Enterprise and QSI. All activity items are written in detail on the invoice and any subject outside the verification process is not combined with the verification invoice.

All records created during and after the verification process are kept in accordance with the Document and Record Control Procedure.

### 5.8. Obtaining Additional Evidence After Submitting the Verification Report

Errors can be detected in the verified report for the following reasons.

- After in-house internal audits
- After external audit results
- In the light of additional information from the client
- After complaints to the QSI related to the client
- In line with the results of the verification made in the next year
- After the controls made by the Ministry
- For other reasons.

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After the verification process is completed, if it is determined by the Ministry that the verified greenhouse gas emission reports do not comply with the provisions of the communiqué, the report is returned to the enterprise. The enterprises to which the verified greenhouse gas emission report is returned correct, have it verified and submit the report to the Ministry within **30 days**.

If it is determined that the report returned by the Ministry contains significant misstatements or that the verification process is carried out in violation of the provisions of this Communiqué in a way that prevents the verifier from forming a verification opinion at a reasonable confidence level, the relevant verified greenhouse gas emission report shall be deemed invalid. Within **90 days**, the enterprise renews the verification with another verification team that was not involved in the verification process of the returned report and submits the verified greenhouse gas emission report to the Ministry.

The enterprises must comply with the minimum man-days and minimum verification fees, as well as the rules of impartiality and independence, specified in this Communiqué, in the contracts and verification processes to be made. If it is determined that there is a violation of these principles during the verification processes, the greenhouse gas emission reports of the enterprise that have been subjected to the relevant verification process are not considered reliable and such reports are returned to the enterprise by the Ministry. In this framework, the entire verification process is renewed with another verifier and the verified greenhouse gas emission report is resubmitted to the Ministry within ninety days by the enterprise.

### 5.9. Verification Records

QSI prepares, compiles and stores verification records containing at least;

- a) The results of the verification processes carried out,
- b) Strategic analysis, risk analysis and verification plan,
- c) Sufficient information to support the verification opinion, including the rationale for the judgments as to whether the detected misstatements have a significant impact on the reported emissions,
- d) Administrative and financial documents that prove that site visits have been made,

on QSIPRO and in the Client file.

The chief verifier and the verifiers compile all documents and record them within QSI so that the assessment of verification activities and the decisions that enable to present a verification opinion with reasonable confidence can be followed properly and completely. Verification records contain at least the following elements:

- Total verification and site visit time,

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- Strategic analysis, results of this analysis, updates (if any) and reasons for these updates
- Risk analysis, results of this analysis, updates (if any) and reasons for these updates
- Verification plan, updates (if any) and reasons for these updates
- Results of checking verification activities, analytical procedures, data verification and monitoring method verification and information on additional samples
- Checking and recording the disclosures and findings as “corrected” regarding all misstatements or non-compliances corrected by the enterprise,
- If there are unresolved non-compliances from the previous verification report, details of whether they were resolved (when and how, etc.),
- If the enterprise already has the data, measuring instruments, laboratories, calculation factors and other information that will meet the requirements of a higher level than the level it applies, the findings regarding which level requirements the enterprise can meet,
- Sufficient information to support the verification opinion, including the rationale for the judgments as to whether the detected misstatements have a significant impact on the reported emissions,
- Records of the independent review process,
- The results of the verification processes carried out,

In addition to those listed above, the items listed below must also be included in the verification records.

- Assessment of risks for carrying out verification activities made during the pre-contractual assessment stage and the results of this assessment
- Changes to the verification period and the reasons for these changes
- Contract with the enterprise and other relevant information used to prepare for verification
- Information about the validation team and how the team is formed (names of chief verifier, verifier and other members of the team, information on verification competency, duties and responsibilities of each team member, number of man-days spent by each team member, etc.)

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- Results of controls for impartiality and independence assessment and records clearly demonstrating the independence required to carry out verification
- Scope of verification
- Verification criteria of the emissions report
- Remarks/comments on the follow-up of issues related to past inspections
- Business information used for cross-checking data and other verification activities
- Emissions report of the enterprise
- Process analysis, results of this analysis and updates (if any)
- Relevant evidence obtained during verification
- Explanations on activities carried out on and off the site
- Remarks on changes that occurred during the verification process
- Information on the sampling method used and evidence of samples taken
- Explanations on the reasons for reducing or increasing the sample size
- Information on clarifying issues that require further investigation, and evidence and explanations for the conclusions drawn from these investigations
- Comments on the quality and significance of the data
- In case of limited scope, explanations regarding this situation
- Financial (invoices, accommodation documents) and administrative (Expenditure Forms...) records to prove that site visits were made.

QSI prepares the verification records in such a way that the compliance of the verification processes made by the Ministry, TURKAK and the independent inspector can be assessed with the Communiqué.

QSI adds the results of the independent review to the verification records after the verification report is approved.

Verification records are kept for five years. QSI is obliged to submit verification records during inspections or, if requested, to the Ministry within five business days.

It is obligatory to submit the verification records to the relevant authorities during the inspections. In addition, if the Ministry requests access to these records, the records are submitted to the Ministry within 5 business days.

### **5.10. Verification processes of facilities that have been closed, will be closed or have ceased their operations**

If the contracted enterprise is closed, and if QSI cannot form an opinion at a reasonable confidence level that the relevant greenhouse gas emission report does not contain

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significant misstatements, the reasons for the failure to verify the greenhouse gas emission report and a prudent emission estimate made by QSI are indicated in the verification report. The Ministry may accept the unconfirmed greenhouse gas emission report of the closed enterprises, if it assesses the information in the verification report and finds it appropriate. If the relevant greenhouse gas emission report is accepted by the Ministry, the enterprise is deemed to have fulfilled its obligations under the Regulation.

For the enterprises to be closed, QSI is responsible for planning verification activities before the enterprise ceases its operations and performing site visits before the enterprise is shut down.

Apart from the provisions above, regardless of whether the enterprise has ceased its operations for whatever reason, verification activities are carried out based on the approved monitoring plan and the provisions of this Communiqué.

### 5.11. Communication with Related Parties

Communication with the related parties (TURKAK, Ministry) is managed by the Responsible Manager. In case the Ministry or TURKAK requests additional information and documents, the Responsible Manager sends the requested information and documents within **15 (fifteen days)**.

In addition, all reporting and assignments are performed through the Ministry's online system.

After each contract period, the list of companies with which contracts have been signed is sent to TURKAK's file officer by the Planning Officer via e-mail in the format requested by TURKAK.

### 5.12. Public Information

QSI provides the following information to the clients and third parties via its website and updates it in case of any revisions. During the internal audits, the up-to-dateness of the website is checked.

- a) A detailed description of the application and verification activity,
- b) Scope of Authority
- c) Conditions that are mandatory for verification,
- d) Information about verification fees,
- e) Conditions for Facilities to be Verified:
  - Complying with verification requirements,
  - Making all necessary arrangements for verification to take place, including reviewing documentation and accessing all processes and areas, records and personnel and records for verification and grievance resolution,
  - Taking action to ensure that observers (such as accreditation inspectors or candidate verifiers) are present, where applicable.
- f) Information on procedures for handling complaints and objections.

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## GREENHOUSE GAS VERIFICATION PROCEDURE

### 5.13. Use of Logo and Report

QSI customers can use TURKAK and QSI logos in accordance with the Logo Usage Instructions. This is stated in the contracts concluded between QSI and the customer.

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0	01.05.2016	First Issue
1	10.11.2016	An article regarding the provision of information and documents from the enterprise, Verification Team Assignment and Client Approval, Strategic Analysis, Risk Analysis and Verification Plan Preparation Processes, and recommendations to be made to the enterprise was added.
2	10.01.2017	The application related to QSISOFT Software was added to the procedure.
3	20.01.2017	Forms used in parallel to QSISOFT Software were added.
4	10.06.2017	The name of the procedure was amended from Process Analysis Procedure to Greenhouse Gas Verification Procedure
5	04.12.2017	PRO07 Signing the Contract, PRO09 Greenhouse Gas Risk Analysis Procedure, PRO11 Strategic Analysis Procedure, and PRO14 Greenhouse Gas Verification Procedures were combined. A general revision was made after TURKAK Initial certification inspection and the Verification and Authorization Communiqué Revision.
6	02.03.2018	The sections on how risk analyzes will be made on the basis of source flow and how to confirm the conflict of interest were updated.
7	06.03.2018	Verification Proposal was removed from the System. The Verification Contract will also be used as a proposal.
8	15.03.2018	It was added that there is no need to fill in the Application Form in cases where the previous year's verification is performed. With the introduction of QSIPRO software, some forms were abolished.
9	20.04.2019	A procedure was added on how the Strategic Analysis Office Work will be carried out for the clients verified in the last 2 years, the up-to-dateness of the website will be checked during internal audits, and the use of logos and reports must be in accordance with client agreements and logo usage instructions.
10	10.05.2020	The forms that were revised but not entered in the procedure were arranged. Process Analysis Form (Question List), Interview Form (combined with Opening Meeting and Final Sitting), Monitoring Plan Analysis Form were Canceled, Application Review Form was canceled. The QSIPRO BGG Module was put into use.
11	17.02.2021	In the light of TURKAK Findings, the phrases "5.2.2 Str Analysis Office examines the pictures of the source, emission point and measurement instruments in the Monitoring Plan from the QSIPRO software. If there is a need for additional information and documents related to the previous year's information, s/he contacts the previous year's BD and obtains the necessary information. In the verifications where the strategic analyzes will be carried out in the office, it will be ensured that 1 person from the previous year's verification team must be included in the current strategic analysis verification team." were added. The phrase "After each contract period, the list of companies with which contracts have been signed is sent to TURKAK's file officer by the Planning Officer via e-mail in the format requested by TURKAK." was added to Article 5.11.

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# GREENHOUSE GAS VERIFICATION

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