

## **1. Overview of greenhouse gas**

Greenhouse gas is a phrase that is no longer strange to us, especially in today's life, when environmental pollution is becoming more and more serious, the Ministry of Natural Resources and Environment also gives a more accurate analysis on the causes leading to the greenhouse gas affecting the earth, thereby helping us to define greenhouse gas and identify sources of greenhouse gas emissions.

### **Sources of greenhouse gas emissions**

Based on the origin, trend and absolute level as well as the degree of influence on the total potential of greenhouse gas emissions of countries, emission sources are divided into 4 main groups:

- Energy: As one of the largest sources of greenhouse gas emissions today. This sector typically contributes over 90 percent of CO<sub>2</sub> and 75 percent of other greenhouse gas emissions in developing countries, 95 percent of the gases from the energy sector is CO<sub>2</sub> while the rest are CH<sub>4</sub> and NO with equivalent levels.
- Industrial Process and Product Use (IPPU);
- Industry, Forestry and Land Use (AFOLU);
- Waste.

As such, GHG emissions are statistically calculated as the effect of the energy released from the carbon emitted from the energy originated from the agricultural sector, land use change, forestry and also in waste into the environment. Each of the emission groups that accounts for the weight of carbon causes an equivalent effect but in different proportions.

## **2. Why we need to conduct a greenhouse gas inventory?**

Some of the benefits of implementing a greenhouse gas inventory can be listed as follows:

- Public and voluntary reporting:
  - o Voluntary reporting by stakeholders;
  - o Reporting on government programs and NGOs;
  - o Eco-labelling and greenhouse gas certification.
- Managing greenhouse gas risks and identifying mitigation opportunities:
  - o Risks associated with greenhouse gas restrictions;
  - o Opportunity to reduce costs effectively;
  - o Setting goals for greenhouse gas, measuring and reporting progress.
- Mandatory reporting:
  - o To comply with legal regulations;
  - o To comply with customer and stakeholder requirements.
- Recognition of early voluntary action:
  - o Building a sustainable business image;

- Credits and incentives for early voluntary action.
- Joining the greenhouse gas market
  - Supporting internal greenhouse gas transactions;
  - Participating in external trade subsidies and capitalization transactions;
  - Calculating the greenhouse gas carbon tax.

### **When should a greenhouse gas inventory be carried out?**

Since January 1<sup>st</sup>, 2022, the Law on Environmental Protection 2020 (Law No. 72/2020/QH14) comes into force, businesses on the List of GHG-emitting facilities must carry out an inventory of greenhouse gas. Listed facilities emitting greenhouse gases that must carry out a greenhouse gas inventory have the following responsibilities:

- Conduct the GHG inventory, build and maintain the GHG emission database system, and send the results of the GHG inventory to the Ministry of Natural Resources and Environment every 2 years and before the date December 1<sup>st</sup>, which is the deadline of the GHG inventory reporting period, in order to summarize and report to the Prime Minister;
- Formulate and implement the annual plan to reduce greenhouse gas emissions; integrate greenhouse gas emissions mitigation activities with the quality management program, cleaner production program, and environmental protection program of the establishment;
- Annually, conduct a report on the reduction level of greenhouse gas emissions to implement the facility's greenhouse gas emissions mitigation plan according to the measurement, reporting and appraisal system and send it to the Ministry of Natural Resources and Environment and other ministries, relevant ministerial-level agencies and provincial-level People's Committees before the date December 31<sup>st</sup> of the reporting period.

In addition, according to Section 2, Article 10, Circular 96/2020/TT-BCT Guidance on the information disclosure on the stock market that came into force from February 1<sup>st</sup>, 2021, mentioning the content of the report on greenhouse gas emissions in the Annual Report applicable to public companies as follows:

- A public company must conduct an annual report according to the form specified in Appendix IV issued with Circular 01/2022/TT-BTNMT and publish this report within 20 days from the publication date of the audited annual financial statement but not exceeding a period of 110 days from the end of the financial year;
- The financial information in the annual report must be consistent with the audited annual financial statements.

### **3. Process of appraising greenhouse gas inventory results**

### **Definition of a greenhouse gas inventory**

Greenhouse gas inventory is the activity of collecting information and data on sources of greenhouse gas emissions, calculating greenhouse gas emissions, and greenhouse gases absorption level in a defined range and within a specific year. according to the methods and procedures promulgated by the competent authority.

*Mitigation of greenhouse gas emissions* is an activity to reduce the level or intensity of greenhouse gas emissions, and to increase the absorption of greenhouse gases.

### **Requirements when performing appraisal**

According to the provisions of Decree 06/2022/ND-CP, the unit performing the assessment of greenhouse gas emissions mitigation needs to be recognized as a competent organization by the United Nations Convention Framework on Climate Change. ; or to be certified with the ISO 14065 standard on requirements for greenhouse gas verification and validation bodies to use in accreditation or other forms of accreditation; or to have a certified technician who has completed a course in greenhouse gas inventory as required by the United Nations Convention Framework on Climate Change for the respective field.

The requirements for performing the appraisal are as follows:

- Ensure objectivity and scientific basis when evaluating results of greenhouse gas inventory and results of GHG emission reduction at sector and base level;
- Strictly follow the process and fully reflect the appraisal contents as prescribed in Circular 01/2022/TT-BTNMT.

### **Appraisal process**

#### ***Process of verifying results of sector-level greenhouse gas inventory***

The Sector Management Ministry shall establish and organize a Council meeting to appraise the results of the sector-level greenhouse gas inventory. Members of the Appraisal Council include: representatives of the Sector Management Ministry, the Ministry of Natural Resources and Environment, relevant Ministries and experts with appropriate expertise.

The members of the Appraisal Council evaluated the results of the greenhouse gas inventory according to the following main contents:

- The completeness of the content, information and data of greenhouse gas inventories;
- Conformity in determining emission sources, greenhouse gas absorption sinks;
- Conformity of GHG inventory method, applied emission factor, quality control method, quality assurance and GHG emission data and information system of the Sector Management Ministry ;
- Evaluation of the level of accuracy and reliability of the greenhouse gas inventory result.

Within 05 working days, the Appraisal Council approves and sends the Ministries of Sector Management the meeting minutes with the following main contents:

- Evaluation of the implementation process and results of the greenhouse gas inventory;
- The shortcomings and limitations of the results of the greenhouse gas inventory;
- Requirements and recommendations related to the finalization of the results of the greenhouse gas inventory based on the opinions of the council members;
- Conclusion of the Appraisal Council.

The Sector Management Ministry shall organize adjustment of the greenhouse gas inventory results according to the conclusions of the Appraisal Council, which will serve as the basis for building the report of the Sector Management Ministry in service of the national greenhouse gas inventory.

***Appraisal process for mitigating greenhouse gas emissions at sector level***

The Ministries in charge of the field management shall establish and organize a meeting of the appraisal council for mitigation of greenhouse gas emissions at the sector level. Members of the Appraisal Council include: representatives of the field management ministry, the Ministry of Natural Resources and Environment, relevant ministries and experts with appropriate expertise.

The members of the Appraisal Council evaluate the report on GHG emission reduction according to the following main contents:

- The conformity of policies and management measures aimed at mitigating greenhouse gas emissions of the sector with the field's development strategies, master plans and plans;
- Reliability and completeness of information and data on greenhouse gas inventories and development normal scenarios in the planning period;
- The appropriateness of quantitative methods to reduce greenhouse gas emissions of policies and management measures to reduce greenhouse gas emissions;
- Accuracy and reliability of GHG emission reduction results and comparison with the normal development scenario in the planning period;
- Possibility of double calculation for GHG emission reduction results.

Within 05 working days, the Appraisal Council approves and sends the Ministries of field management the meeting minutes with the following main contents:

- Evaluation of the implementation process and results of GHG emission reduction;
- The shortcomings and limitations of the report on mitigation of greenhouse gas emissions;
- Requirements and recommendations related to the finalization of the report on mitigation of greenhouse gas emissions based on the opinions of the council members;
- Conclusion of the Appraisal Council.

The sector management ministry prepares a report on appraisal and mitigation of greenhouse gas emissions at the sector level according to the form specified in Appendix II.1 issued together with Circular 01/2022/TT-BTNMT, enclosed with the reduction report. The mitigation of greenhouse gas emissions at the sector level has been completed according to the conclusions of the Appraisal Council to the Ministry of Natural Resources and Environment.

The sector management ministry is responsible for managing and keeping the appraisal dossier and appraisal report on mitigation of greenhouse gas emissions at the sector level.

***The process of appraising the results of base-level greenhouse gas inventory***

Within 05 working days from the date of receipt of the grassroots GHG inventory report, the People's Committee of the province shall assign the attached specialized agency (hereinafter referred to as the appraisal agency) to conduct the appraisal. GHG inventory information and results provided by the establishment.

The appraisal agency evaluates the results of the base greenhouse gas inventory according to the following main contents:

- The completeness of the content, information and data of the greenhouse gas inventory report;
- Conformity with the identification of emission sources and absorption sinks of greenhouse gases presented in the base GHG inventory report;
- The appropriateness of the GHG inventory method, the applicable emission factor, the quality control method, the quality assurance of the GHG inventory and the GHG emission data and information system of the company;
- Accuracy of baseline GHG inventory results.

Within 20 working days, the appraisal agency shall notify the appraisal results, including the request for correction and supplementation (if any) to the greenhouse gas inventory report to the facilities. In case of correction or addition, the establishment shall complete the report on the results of the greenhouse gas inventory according to the notification of appraisal results.

The establishment sends the completed GHG inventory report to the appraisal agency and the Ministry of Natural Resources and Environment.

During the appraisal, the appraising agency has the right to:

- Invite organizations and individuals with appropriate expertise, capacity and experience to participate in the appraisal;
- Request the establishment owner to provide operational data and relevant information for the establishment's greenhouse gas inventory (if necessary);
- Request to carry out physical inspection, take representative samples at the establishment (if necessary);

- The appraising agency is responsible for managing, keeping the appraisal file and sending the report on the results of the greenhouse gas inventory that has been completed by the establishment to the field management ministry for updating in the online database on greenhouse gas inventory within the area of management.

***Appraisal process for mitigation of greenhouse gas emissions at base level***

The appraisal unit organizes the assessment of GHG emission reduction when it receives the facility's GHG emission reduction report.

The appraisal unit assesses the mitigation of greenhouse gas emissions at base level according to the following main contents:

- Reliability, completeness of information and data in GHG emission reduction reports;
- The appropriateness of GHG emission mitigation measures, GHG emission mitigation quantification methods and information system, data of the establishment are presented in the GHG emission mitigation report. ;
- The results of implementation of GHG emission reduction in accordance with the establishment's GHG emission reduction plan and the GHG emission quota issued to the establishment.

The appraisal unit prepares and sends the assessment report on mitigation of greenhouse gas emissions to the establishment according to the form specified in Appendix II.2 issued together with Circular 01/2022/TT-BTNMT.

After receiving the assessment report on mitigation of greenhouse gas emissions, the establishment sends the mitigation report when the greenhouse gas has been completed together with the assessment report on mitigation of greenhouse gas emissions to the Ministry of Natural Resources and Environment, Ministry of field management.

***The process of appraising GHG emission reduction summary report***

The Ministry of Natural Resources and Environment established a Council to appraise the report on GHG emission reduction. The appraisal council has at least 09 members, including the chairman of the council, the vice chairman of the council, the secretary, two reviewers and at least four council members. The Council members are representatives of relevant state management agencies under the Ministries of Industry and Trade, Transport, Agriculture and Rural Development, Natural Resources and Environment, and Construction, and other relevant experts with suitable expertises.

The members of the Appraisal Council study the summary report on GHG emission reduction and evaluate according to the following main contents:

- The adequacy of the content, information and data of the general report on mitigation of greenhouse gas emissions;

- The conformity of policies and management measures to mitigate greenhouse gas emissions in the fields with the national development strategy, master plan and detail plan;
- The appropriateness of quantitative methods to reduce greenhouse gas emissions of policies and management measures to reduce greenhouse gas emissions;
- Greenhouse gas emission reduction results and comparison with the country's normal development scenario in the planning period;
- Possibility of double calculation for GHG emission reduction results.

Within 10 working days from the date of holding the appraisal meeting, the Appraisal Council is responsible for approving and sending to the Ministry of Natural Resources and Environment the meeting minutes with the following main contents:

- General assessment of the general report on mitigation of greenhouse gas emissions and results of mitigation of greenhouse gas emissions of the sector management ministry;
- The shortcomings and limitations of the general report on mitigation of greenhouse gas emissions;
- Requirements and recommendations related to the completion of the summary report on mitigation of greenhouse gas emissions based on the opinions of the appraisal council members;
- Conclusion of the Appraisal Council.

The Ministry of Natural Resources and Environment organizes to finalize the summary report on mitigation of greenhouse gas emissions according to the conclusions of the Appraisal Council.

The Appraisal Council holds a meeting when there is participation (either in person at the meeting or online) from two-thirds or more of the number of members of the Appraisal Council, of which the Chairman is required. Council or its Vice Chairman, Secretary and at least 01 Reviewer.

The Chairman of the Board is responsible for:

- Conduct Board meetings or authorize the Vice-Chairman of the Council;
- Handle the opinions raised in the meeting of the Council, conclude the meeting of the Council and take responsibility for the conclusions of the Council;
- Sign the minutes of the Board meetings and take responsibility for the completeness and truthfulness of the contents recorded in the minutes of the Board meetings.