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Corporate Greenhouse Gas Standard: GHG Protocol

In the fight against global climate change, it is critical for businesses to accurately and transparently measure, report, and manage their greenhouse gas emissions. To meet this need, the Greenhouse Gas (GHG) Protocol, published in 2001, has become the most widely accepted global standard for companies to report their emissions. The GHG Protocol enables companies to understand their environmental impacts, develop strategies to reduce these impacts, and establish sustainable business models. Moreover, by providing reliable, transparent, and comparable data for investors and stakeholders, it enhances corporate responsibility and accountability. Adopted by global reporting standards, the GHG Protocol is one of the key building blocks of sustainability reporting and environmental accountability. Developed with contributions from companies, industry associations, NGOs, governments, and other key stakeholders in a multi-stakeholder initiative, its mission is to reduce international greenhouse gas emissions.



What is the GHG Protocol?

The Greenhouse Gas Protocol (GHG Protocol) is an internationally recognized standard for businesses and organizations to monitor, report, and manage their greenhouse gas emissions. One of its main advantages is that it allows companies to strengthen their sustainability strategies based on concrete data. The protocol covers not only direct emissions from a company's own operations but also indirect emissions occurring across supply chains. Thus, companies can collaborate with their suppliers to promote sustainable practices throughout their supply chains and manage broader environmental impacts. By defining best practices in greenhouse gas emissions management, the GHG Protocol enables organizations to reduce their environmental impacts more effectively. Supporting companies in achieving their sustainability goals across various sectors, it plays an important role in the fight against climate change. Additionally, the GHG Protocol enhances transparency and accountability, helping organizations gain stakeholder trust. As an internationally recognized standard, it allows companies not only to monitor their emissions but also to set industry standards. In this context, the GHG Protocol has become a global reference point in sustainability and environmental management and has gained widespread acceptance. Its widespread adoption represents a significant step in combating climate change and contributes to global efforts toward a more sustainable future.

History of the GHG Protocol

The Greenhouse Gas Protocol began development in the late 1990s, when the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) recognized the need for an international standard for greenhouse gas accounting and reporting. In 1998, WRI, together with major companies such as BP and General Motors, published a report entitled "Safe Climate, Sound Business," which created an action plan emphasizing the need for standardized measurement of greenhouse gas emissions to address climate change.

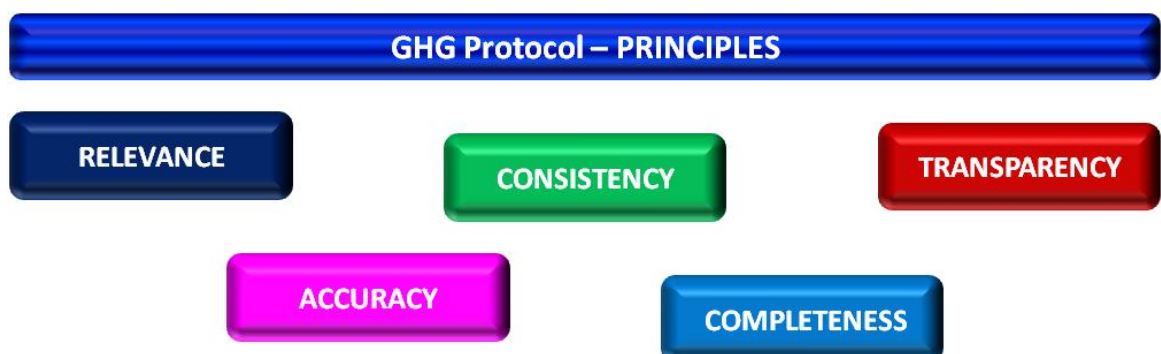
During this period, collaboration with WBCSD led to the establishment of a working group composed of industry and environmental representatives, taking significant steps toward developing standard methods for greenhouse gas accounting. As a result of this work, the first Corporate Standard was published in 2001. The standard was updated with guidelines to help companies measure emissions from energy purchases and calculate emissions across their value chains.

The GHG Protocol has continued to evolve, becoming a key tool in combating climate change. Following the adoption of the Paris Agreement in 2015, which required all countries to limit global temperature rise and adapt to climate change, the GHG Protocol has supported companies in achieving climate goals through its standards, tools, and training programs.

GHG Protocol Principles

Greenhouse gas accounting and reporting are based on the following principles:

- **Relevance:** The inventory should appropriately reflect the company's emissions and support decision-making.
- **Completeness:** All emission sources within the chosen boundaries should be reported; exclusions must be disclosed.
- **Consistency:** Methods should be consistent, and any changes should be transparently documented.
- **Transparency:** Methods and assumptions used should be disclosed clearly and understandably.
- **Accuracy:** Emissions calculations should be as accurate as possible, and uncertainties should be minimized.



<https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>

Who Can Use the GHG Protocol?

➤ Companies and the Private Sector

Any private sector organization can use the GHG Protocol to measure and manage emissions from their operations. Especially in energy-intensive industries, companies can develop environmental impact reduction strategies using this protocol.

➤ Public Institutions

From local governments to central administrations, all public institutions can strengthen climate change policies and develop effective actions to reduce emissions from public services and infrastructure projects.

➤ Non-Governmental Organizations (NGOs)

Environmental NGOs can use the GHG Protocol to monitor their own operational impacts and serve as examples to society regarding emission reduction strategies.

➤ Financial Institutions

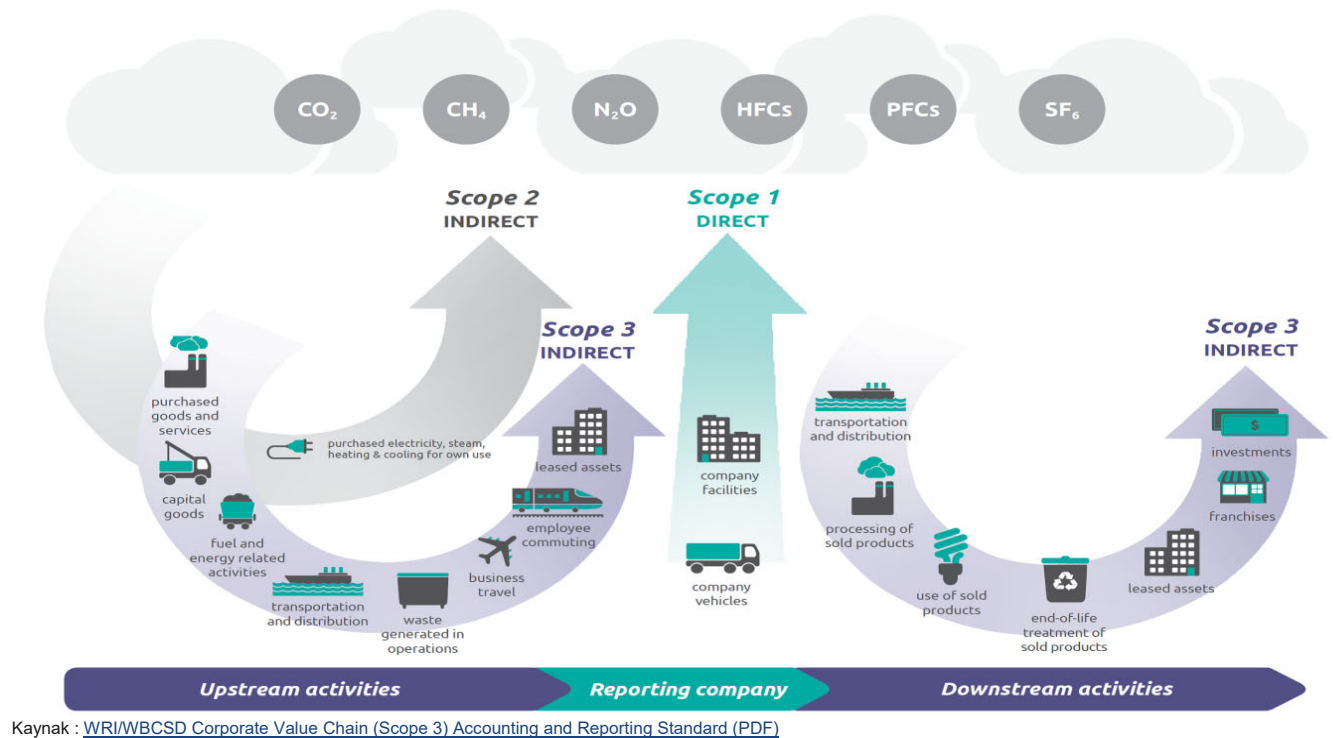
Investment banks, lending institutions, and other financial organizations can assess the carbon footprint of projects within their portfolios using the GHG Protocol, thereby financing low-carbon projects that combat climate change.

➤ Educational and Research Institutions

Universities and research institutes can benefit from the GHG Protocol when conducting greenhouse gas emission projects and research, developing new solutions through analysis of sectoral or regional emission data.

What Are the Emission Scopes in the GHG Protocol?

The GHG Protocol classifies an organization's greenhouse gas emissions into three different scopes based on their sources. These scopes help organizations better understand emissions from their operations and supply chains. After revisions to the protocol, tracking of seven greenhouse gases under the Kyoto Protocol is recommended: Carbon dioxide (CO₂), Methane (CH₄), Nitrous oxide (N₂O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulfur hexafluoride (SF₆), and Nitrogen trifluoride (NF₃).



1. Scope 1: Direct Emissions

Scope 1 includes direct greenhouse gas emissions from sources owned or controlled by the organization. These emissions are released directly into the atmosphere during the organization's activities.

2. Scope 2: Indirect Emissions from Purchased Energy

Scope 2 includes indirect emissions resulting from the consumption of purchased energy produced elsewhere, usually in the form of electricity, heating, cooling, or steam.

3. Scope 3: Other Indirect Emissions

Scope 3 includes all other indirect emissions in the organization's value chain. These emissions are not directly under the organization's control but arise indirectly from its activities. Scope 3 emissions are typically the broadest and most complex category and are divided into two main groups: upstream (supply chain) and downstream (product lifecycle). In total, there are 15 subcategories.

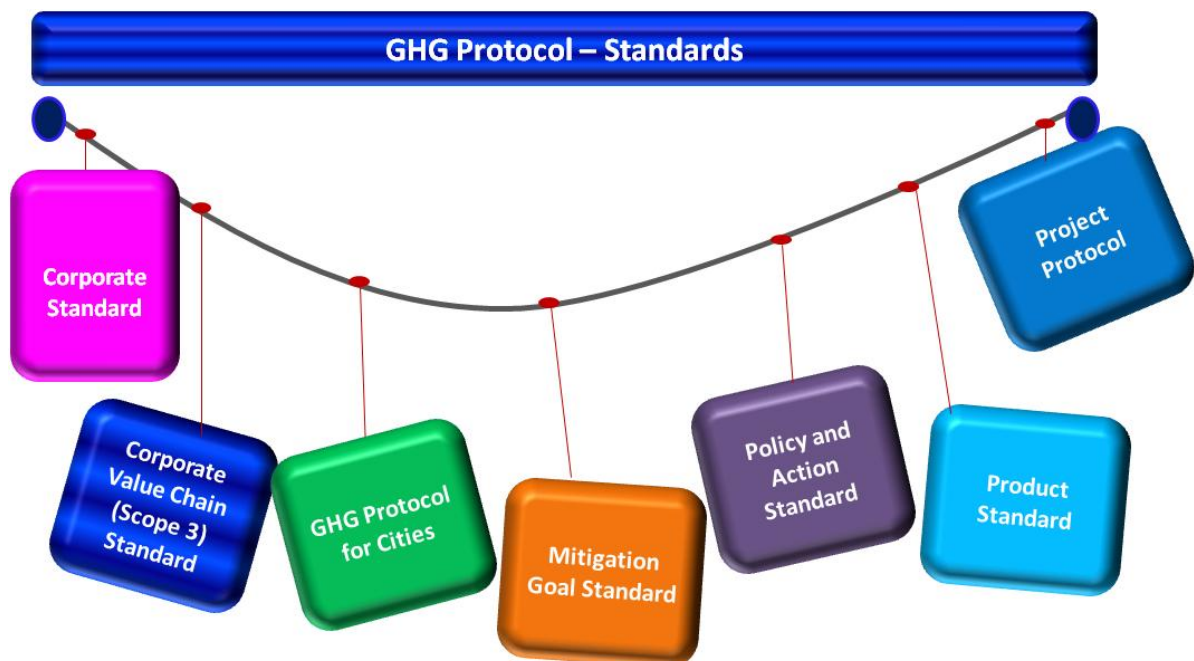
Upstream Activities:

1. Purchased goods and services
2. Capital goods (machinery, equipment, etc.)
3. Fuel- and energy-related activities (not included in Scope 1 and 2)
4. Upstream transportation and distribution
5. Waste generated in operations
6. Business travel
7. Employee commuting
8. Upstream leased assets

Downstream Activities:

9. Downstream transportation and distribution
10. Processing of sold products
11. Use of sold products
12. End-of-life treatment of sold products
13. Downstream leased assets
14. Franchises
15. Investments

Standards and Guidelines Applied Within the Scope of the GHG Protocol



The GHG Protocol offers a set of standards for organizations to measure, manage, and report their greenhouse gas emissions, developed to address different needs. The core standards of the GHG Protocol include:

1. **Corporate Standard**

Provides requirements and guidance for preparing a corporate-level greenhouse gas (GHG) emissions inventory for companies and other organizations. This standard covers the accounting and reporting of seven greenhouse gases under the Kyoto Protocol. The 2015 update added Scope 2 Guidance, enabling companies to measure and report emissions from purchased or acquired electricity, steam, heating, and cooling more reliably.

This standard was developed to achieve the following main objectives:

- Enable companies to prepare a fair and accurate GHG inventory using standardized approaches.
- Reduce the cost and simplify the process of preparing a GHG inventory.
- Provide companies with the necessary information to reduce and manage their emissions.
- Harmonize and increase the transparency of GHG accounting and reporting among companies and programs.

It is not recommended to use the Corporate Standard to quantify reductions for offset or crediting purposes; instead, Project Accounting standards are suggested. The standard focuses on reporting emissions and does not mandate reporting data to WRI or WBCSD. Although it aims to develop a verifiable inventory, it does not provide specific guidance for verification processes.

2. **Corporate Value Chain (Scope 3) Standard**

Helps companies focus on reduction activities by assessing emissions impacts across their entire value chains. Published in 2011, this standard targets emissions reporting not limited to a company's own operations and electricity consumption but covering processes from purchased goods to product disposal. It is the only internationally recognized method for calculating value chain emissions and encourages collaboration with suppliers and customers to manage climate impacts throughout the value chain.

3. **GHG Protocol for Cities**

Helps cities accurately measure their emissions and create greenhouse gas inventories, enabling the development of effective emission reduction strategies. It provides consistent data to highlight the role of cities in combating climate change.

4. **Mitigation Goal Standard**

Assists in designing emissions reduction targets at national, state, or regional levels and provides a framework for assessing and reporting progress toward these targets. Companies and research institutions can also use this standard to evaluate emissions impacts.

5. **Policy and Action Standard**

Offers a standardized method for estimating the greenhouse gas impacts of policies. Used by national and local analysts to evaluate policy effectiveness in emissions reduction. This standard, developed alongside the Mitigation Goal Standard, was tested in 20 countries with over 270 participants and is also utilized by donor agencies, financial institutions, and businesses.

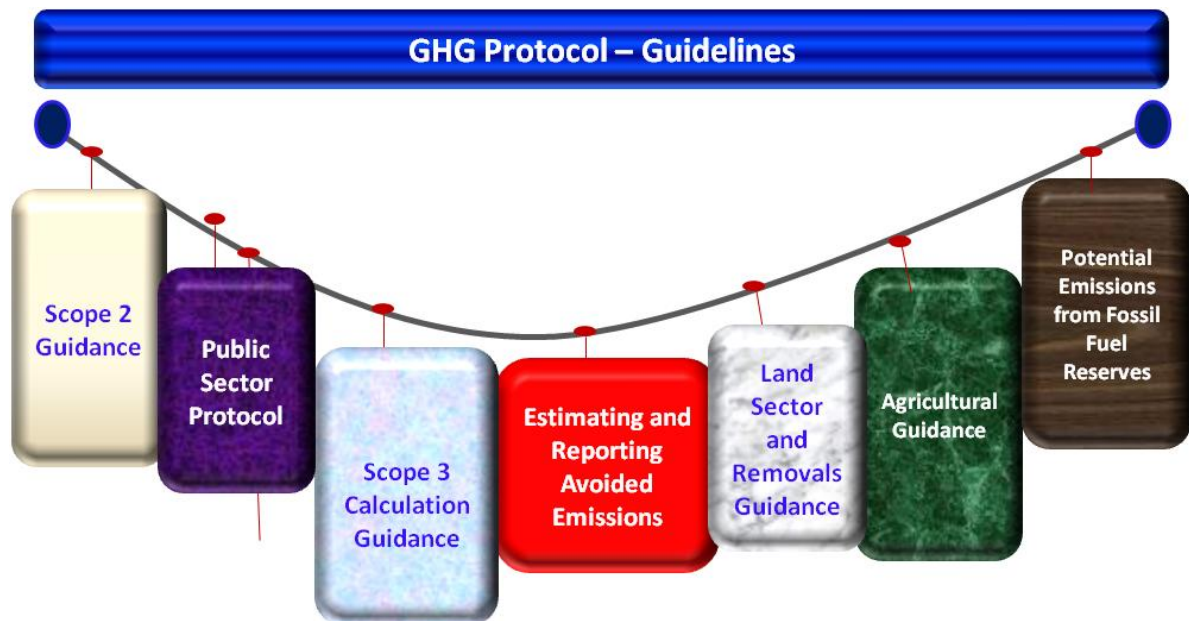
6. **Product Standard**

The Product Life Cycle Accounting and Reporting Standard assesses the full lifecycle emissions of a product, focusing on the greatest opportunities for GHG reductions. Supported by user-friendly guidelines and tools, it covers raw materials, production, transportation, storage, usage, and disposal stages.

7. **Project Protocol**

The most comprehensive accounting tool for quantifying the greenhouse gas benefits of climate change projects. It provides specific principles and methods for measuring reductions from these projects, forming the basis for internationally harmonized standards in the greenhouse gas market. While project developers and system designers can use this protocol, the Corporate Standard should be used for measuring corporate-level reductions.

Guidelines



The GHG Protocol provides various guidelines to help organizations effectively manage their environmental impacts, offering specific methods and approaches across areas like energy consumption, supply chain emissions, land use, and agriculture. These guidelines ensure that emissions data remain consistent and comparable, supporting both public and private sector organizations in taking more effective steps against climate change.

Global Reporting Collaboration: Official Partnership Between GHG Protocol and IFRS Foundation

In July 2024, the GHG Protocol announced on its official website that it had established a formal partnership with the IFRS Foundation, marking a significant step in sustainability reporting. This collaboration will enable the standards for measuring and reporting greenhouse gas emissions to be used within the IFRS S2 Climate-related Disclosures.

This memorandum of understanding emphasizes the parties' commitment to meeting the information needs of capital markets and aims to strengthen cooperation between the GHG Protocol and the International Sustainability Standards Board (ISSB). The partnership sets out general principles for developing new standards and guidelines to meet information needs and reduce costs for standard users and reporting organizations.

According to the announcement, the ISSB has appointed an observer representative to the GHG Protocol's independent standards board,

establishing governance arrangements to actively participate in standard updates and decision-making processes. This development will help companies measure greenhouse gas emissions consistently and comparably, while also enhancing the transparency of financial reporting.

Founded in 2001, the IFRS Foundation is a non-profit organization that aims to develop high-quality, understandable, applicable, and globally accepted financial accounting standards. Its International Accounting Standards Board (IASB) promotes financial accounting standards used in over 140 jurisdictions, including the European Union. The IFRS Foundation, through bodies like IASB and ISSB, works to develop financial and sustainability reporting standards and collaborates with organizations like TCFD, IR, SASB, and CDSB to create a comprehensive reporting framework. Its partnerships with global standard setters such as GRI, CDP, and ESRS enable companies to better measure and report their ESG performance and increase sustainable financial flows.

In this context, the collaboration between the GHG Protocol Initiative and the IFRS Foundation stands out as a global step. The official partnership between the IFRS Foundation and the GHG Protocol represents a global force in combating climate change and accelerates the evolution of sustainability reporting.

What Are the Differences Between the GHG Protocol and ISO 14064 Standards?

GHG Protocol & ISO 14064 DIFFERENCES		
CRITERION	GHG Protocol	ISO 14064
Flexibility	More flexible, can be adapted sectorally	Stricter, includes specific rules
Purpose of Use	In-house emission management and reporting	Certification, verification, and official reporting
International Acceptance	Commonly used among businesses and governments	International official standard, suitable for certification
Standard Structure	Flexible, broad in scope	Divided as 14064-1, 14064-2, 14064-3
Certification Focus	Voluntary reporting and management	Certification and verification processes

The GHG Protocol focuses on the corporate level, offering sectoral guidance and classifying emissions into three main scopes (Scope 1, 2, 3). This approach provides companies with flexibility to develop methodologies tailored to their activities for managing emissions. Widely accepted among businesses and governments, the GHG Protocol does not require a specific certification process, making it an ideal framework for voluntary reporting.

ISO 14064, on the other hand, offers a broader management framework covering both organizational and project-level greenhouse gas calculations. ISO 14064 adopts a stricter approach with its rules and standards, dividing them into 14064-1, 14064-2, and 14064-3, creating a systematic structure. Due to its formal certification and verification processes, ISO 14064 is more suitable for organizations aiming for official reporting and certification.

In conclusion, while the GHG Protocol and ISO 14064 provide different approaches to managing and reporting greenhouse gas emissions, the GHG Protocol stands out for its flexibility and sectoral adaptability, whereas ISO 14064 is characterized by its strict standards and certification options. Which framework organizations choose will be a strategic decision based on their specific needs.

Conclusion

The GHG Protocol stands out as an indispensable tool in the fight against global climate change. In addition to measuring greenhouse gas emissions, it ensures that this data is reported in line with international standards, enhancing the transparency of financial reporting. The partnership established with the IFRS Foundation marks an important step in sustainability reporting, enabling investors and stakeholders to make more informed decisions.

By fostering a multi-stakeholder collaborative environment, the GHG Protocol promotes emission reductions as a common goal among governments, companies, and civil society organizations; thereby corporate sustainability efforts create a broader impact for the benefit of society as a whole.

The international recognition of the GHG Protocol contributes to accelerating global climate action, while companies leverage this framework to enhance environmental responsibility and explore opportunities to minimize costs. Governments adopting this protocol support the more effective implementation of climate policies and facilitate the growth of sustainable financial flows.

Through collective efforts to reduce greenhouse gas emissions, guided and standardized by the GHG Protocol, supported by global cooperation and knowledge sharing, effective results in combating climate change can be achieved, contributing to building a more sustainable future.



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