

CHARTING A SUSTAINABLE COURSE: A GUIDE TO MASTERING GHG REGULATIONS FOR BUSINESS LEADERS





Introduction

Climate change is a pressing global concern, and greenhouse gases (GHGs) play a significant role. According to the International Energy Agency (IEA) World Energy Outlook 2022 Survey Report, global energy-related CO₂ emissions will reach 37 billion tonnes in 2030.

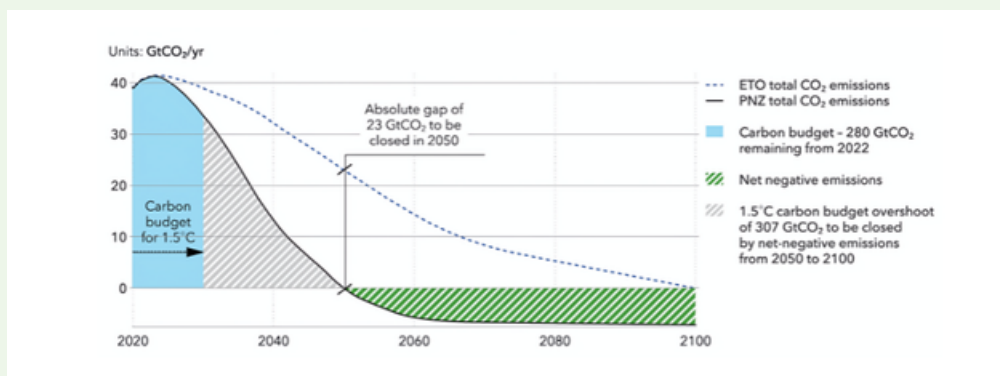
Governments and organizations worldwide are implementing stricter GHG regulations to mitigate its impact and curb GHG emissions from various industries, including healthcare, automotive, food & beverage (F&B), and chemicals.

This whitepaper is designed to help C-level executives and other industry professionals in large and mid-sized enterprises better understand GHG regulations and the associated GHG protocols.

What are GHG Regulations?

Greenhouse gas (GHG) regulations are rules established by governments worldwide to limit emissions of gases that contribute to global warming. These regulations are becoming increasingly stringent as the urgency to address climate change intensifies.

According to the DNV Pathway to Net Zero Emissions 2023 Survey Report, the current carbon budget of 280 GtCO₂ will be exhausted by 2030, and an absolute gap of 23 GtCO₂ will have to be closed by 2050. The report also indicates global greenhouse gas emissions must peak by 2025 and decline rapidly to achieve net-zero emissions by 2050. This ambitious target necessitates significant changes in how enterprises operate across various industries.

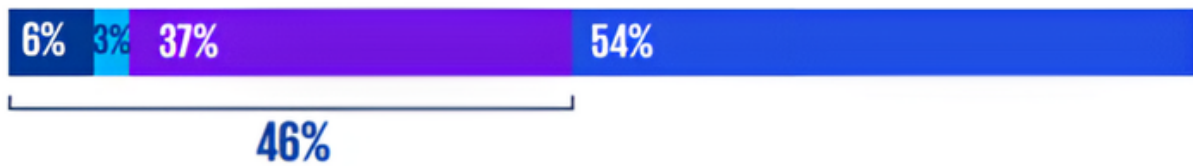


In general, GHG regulations can encompass a wide range of a company's operations, including:

- **Energy consumption:** Many regulations target energy efficiency in buildings, industrial facilities, and transportation. For instance, the European Union's Energy Efficiency Directive mandates member states to implement energy-saving measures, aiming for a 32.5% improvement in energy efficiency by 2030 compared to 2007.
- **Manufacturing processes:** Regulations may dictate specific emission limits for various industrial processes, encouraging the adoption of cleaner technologies and production methods.

According to the KPMG Survey of Sustainability Reporting 2022, 64% of global executives from G250 companies and 46% from N100 companies believe climate change regulations will significantly impact their businesses in the next five years.

N100



G250



- Reporting includes modeling of the potential impacts using scenario analysis
- Reporting provides financial quantification of the potential impacts
- Reporting includes a narrative description of the potential impacts
- Not reporting on climate change as a risk

Base: 5,800 N100 companies and 250 G250 companies

Source: KPMG Survey of Sustainability Reporting 2022, KPMG International, September 2022

Supply chain activities: An increasing number of GHG regulations hold companies accountable for the environmental footprint of their entire supply chain, pushing for sustainable sourcing practices and collaboration with suppliers to reduce emissions.

The Net Zero Now: A Call to Action for Business Leaders 2023 Report by EY underscores the growing trend of mandatory greenhouse gas reporting for supply chains, urging companies to map their emissions across their entire value chain.

Product Lifecycle: GHG regulations may address the environmental impact of products throughout their lifecycle, from design and manufacturing to use and disposal. This can include restrictions on certain materials or requirements for product recyclability.

Experts state that the scope and stringency of GHG regulations vary depending on several factors, including:

- The specific industry sector
- The size and location of the company
- International agreements and treaties a country has ratified

Staying informed about evolving regulations is crucial for enterprises to ensure compliance and navigate the increasingly complex regulatory landscape.

What are GHG Standards?

Greenhouse gas (GHG) standards are specific emission limits or reduction targets established within regulations. Governments or industry bodies set these standards, and can vary depending on several factors:

- **Industry:** Due to their processes and materials, different industries have varying levels of inherent emissions. For instance, regulations for the steel industry will differ from those for the software development sector.
- **Company size:** Larger companies may have stricter standards due to their higher potential environmental impact.
- **Location:** Countries or regions may have varying regulations based on environmental priorities and economic development.

Here's an example:

The US Environmental Protection Agency (EPA) recently announced stricter standards for light-duty vehicles. The agency targets a 5% annual reduction in greenhouse gas emissions for model years 2024 through 2026, reaching a 30% reduction by 2030 compared to 2020. This is a significant step towards cleaner transportation and aligns with global efforts to reduce carbon emissions.

GHG standards also define specific methods for measuring and reporting greenhouse gas emissions. These standardized methods ensure consistency and transparency, allowing for:

Benchmarking: Companies can compare their emissions performance against industry averages or best practices.

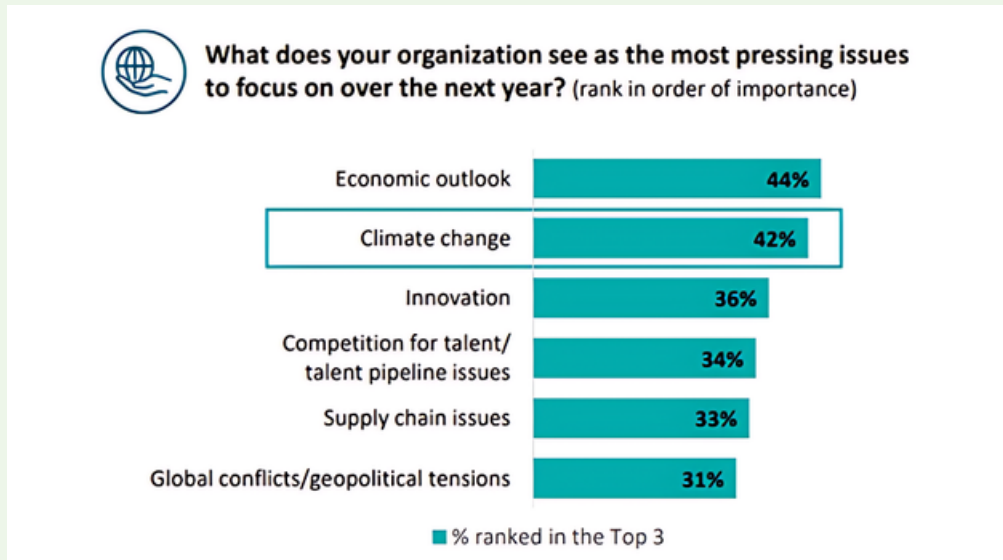
Verification: Third-party emissions data verification helps ensure its accuracy and credibility.

Emissions trading schemes: Standardized reporting allows companies to participate in emissions trading programs, where they can buy or sell emission allowances.

Few Industry Statistics on GHG Standards:

According to The Net-Zero Transition Survey 2022 Report by McKinsey & Company, achieving net-zero emissions by 2050 will require a 70% reduction in global greenhouse gas emissions from 2020 levels. This necessitates stricter GHG standards across various industries.

According to Deloitte's 2023 CxO Sustainability Report, almost 42% of C-level executives see climate change as the top priority. Meanwhile, 2022's Sustainability Reporting Trends report found that 87% of the world's largest 250 companies now report greenhouse gas emissions, demonstrating the growing importance of transparency driven by regulations and stakeholder pressure.



These statistics highlight the increasing stringency of GHG standards and the growing focus on corporate accountability for greenhouse gas emissions. Companies that proactively implement strategies to reduce emissions and comply with evolving regulations will be better positioned to navigate the changing business landscape and meet investor expectations for environmental responsibility.



Business leaders of today and the future need to be able to navigate disruption with much less information. ESG and environmental sustainability are important elements of creating a strong, resilient business that can be adaptable to change.



Sunya Norman,
Vice President of ESG Strategy, Salesforce

Understanding GHG Protocol & Its Principles

The GHG Protocol is a globally recognized framework for measuring and reporting greenhouse gas emissions. Developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), it provides companies with a standardized approach to assessing their environmental impact.

The GHG Protocol provides a framework for companies to quantify and report their greenhouse gas emissions across their entire value chain (Scope 1, 2, and 3 emissions). It establishes five core principles to ensure transparency, credibility, and consistency in emissions reporting.

The GHG Protocol is built on the following five core principles:



1 **Relevance: Choose the Right Fit**

Select the accounting and reporting standard that best aligns with your organization's size and industry complexity. The GHG Protocol offers different standards for various needs, ensuring the reported data reflects your company's specific context.

Industry Example: A small manufacturing company might choose a simpler reporting standard like the GHG Protocol Corporate Standard, while a multinational corporation with a complex global supply chain might opt for the more comprehensive GHG Protocol for Scope 3 Emissions.

2 **Completeness: Capture All Emissions**

Account for and report on all significant greenhouse gas emissions from your operations. Leaving out relevant sources can misrepresent your environmental footprint.

Industry Example: A company in the oil and gas sector needs to account for emissions from its facilities (Scope 1) and those generated when its products are used (Scope 3), such as burning fossil fuels.

According to the PwC's 2023 Global Investor Survey Report, almost 76% of investors believe reporting Scope 3 emissions is vital to achieving sustainability commitments, demonstrating a growing focus on comprehensive emissions accounting.

3 Consistency: Maintain Consistency Over Time

Use the same methodologies to calculate and report emissions year after year. This allows for meaningful comparisons of your emissions performance over time and helps stakeholders track your progress toward sustainability goals.

Industry Example: A power generation company that consistently uses the latest emission factors from the International Energy Agency (IEA) for electricity production ensures that its reported emissions reflect evolving industry standards.

4 Transparency: Be Open and Clear

Document the methodologies, assumptions, and data sources used in your emissions calculations. Transparency builds trust with stakeholders and allows for verification of your reported data.

Industry Example: A company in the food and beverage sector might disclose the specific emission factors used to calculate emissions from agricultural practices within their supply chain, demonstrating transparency in their Scope 3 accounting.

5 Accuracy: Ensure Reliable Data

Implement robust measurement and calculation methods to ensure the accuracy of your reported emissions data. This might involve investing in emission monitoring technologies or engaging qualified professionals for calculations.

According to the KPMG's Survey of Sustainability 2022 Report, 63% of global executives consider data quality a significant challenge in their sustainability reporting, highlighting the importance of robust data management practices.

By adhering to these core principles, companies can ensure the credibility and effectiveness of their GHG protocol standards, enabling them to effectively manage their environmental footprint, comply with regulations, and communicate their sustainability efforts to stakeholders.



How Industry Leaders are Tackling New GHG Regulations

Unilever Case Study

Challenges

- **Environmental Impact:** Like many large corporations, Unilever's extensive manufacturing and supply chain operations contributed significantly to greenhouse gas emissions.
- **Consumer Preferences:** Growing consumer awareness of environmental issues led to increased demand for sustainable products from eco-conscious customers.
- **Investor Pressures:** Investors increasingly focused on a company's environmental, social, and governance (ESG) practices, placing pressure on Unilever to demonstrate sustainability leadership.

Solutions

- **Energy Efficiency:** Unilever implemented energy-saving technologies across its manufacturing facilities, significantly reducing energy consumption.
- **Sustainable Sourcing:** The company adopted sustainable sourcing practices to reduce the environmental footprint of its raw materials and packaging.
- **Transparency and Reporting:** Unilever embraced transparent reporting of its sustainability efforts, aligning with the Greenhouse Gas Protocol (GHG Protocol) framework.

Outcome/Value Realized

- 75% Reduction in Greenhouse Gas Emissions from manufacturing operation
- Significant cost savings due to energy-efficient practices and streamlined operations
- Enhanced brand reputation attracted environmentally conscious stakeholders
- Positioned them as a leader in the consumer goods industry

Key Outcomes of Unilever's Sustainability Initiatives

Initiative	Outcome
Energy-efficient technologies	78% reduction in greenhouse gas emissions from manufacturing since 2008
Sustainable sourcing	Reduced environmental footprint of raw materials and packaging
Transparent reporting	Increased stakeholder confidence and trust
Cost savings	Improved operational efficiency
Enhanced brand reputation	Attracted environmentally conscious consumers and investors
Market leadership	Inspired other companies to adopt sustainable practices

By prioritizing sustainability, Unilever has addressed environmental challenges, achieved cost savings, and solidified its position as a leader in the consumer goods industry. This case study demonstrates the tangible benefits companies can achieve by integrating sustainability into their core business strategies.



Tesla Case Study

Electric Vehicle (EV) Manufacturer: Tesla (TSLA) has revolutionized the automotive industry by focusing on electric vehicles.

Challenges

- The transportation sector significantly contributes to greenhouse gas emissions, primarily from tailpipe emissions of gasoline-powered vehicles.
- Traditional manufacturing processes rely heavily on fossil fuels, further increasing the environmental footprint of the automotive industry.

Solutions

- **Focus on Electric Vehicles (EVs):**
Tesla prioritized developing and producing a comprehensive line of electric cars and trucks. This shift from internal combustion engine (ICE) vehicles directly reduces tailpipe emissions associated with their products.
- **Renewable Energy Integration:**
Tesla actively integrates renewable energy sources, particularly solar power, into their manufacturing facilities. This reduces reliance on traditional electricity generation and associated greenhouse gas emissions.

Outcome/Value Realized

- Production of 13.4 MMT (million metric tons) of CO2e (carbon dioxide equivalent) emissions avoided compared to gasoline-powered vehicles.
- 30% decrease in greenhouse gas emissions per vehicle produced from 2017 to 2022

Key Outcomes of Tesla's Sustainability Initiatives

Initiative	Description	Impact
Focus on Electric Vehicles	Developing and manufacturing a complete range of electric cars and trucks.	Reduced reliance on fossil fuels and tailpipe emissions.
Renewable Energy Integration	Utilizing solar power for manufacturing facilities.	Minimized reliance on traditional energy sources and associated carbon emissions.

Tesla's dedication to electric vehicles and renewable energy showcases a comprehensive approach to emissions reduction. This strategy positions them as a sustainable transportation leader and demonstrates the potential for significant environmental impact within the automotive industry.

Lythouse: Your Partner in Sustainability

Lythouse (A Zycus Initiative) is a leading provider of cloud-based procurement solutions and empowers businesses to navigate the complexities of GHG regulations and GHG protocols with features supporting GHG compliance, including:

1

GHG Emissions Management Software: Streamline data collection to gain real-time insights into your carbon footprint, facilitate emission calculations, and generate standardized reports across the procurement lifecycle.

2

Supply Chain Sustainability Management: Assess and optimize the environmental footprint of your suppliers, encouraging sustainable practices throughout the supply chain.

3

Sustainability Consulting: Leverage our expertise to develop a robust sustainability strategy aligned with regulations and market trends.

4

Data-driven Decision Making: Utilize data analytics to identify opportunities for emissions reduction within your procurement practices.

By partnering with Lythouse, you gain access to the expertise and technology needed to navigate the evolving landscape of GHG regulations and build a sustainable future for your organization.

Conclusion: Shaping a Sustainable Future Together

New GHG regulations challenge enterprises but also present exciting opportunities. Companies that proactively comply and embrace sustainable practices can:

- Innovate and gain a competitive edge by developing cleaner technologies and eco-friendly products.
- Save money through resource efficiency by reducing energy consumption and waste.
- Build brand loyalty and access new markets by demonstrating environmental responsibility.

The future of sustainability hinges on these evolving regulations. We expect a stronger focus on a company's environmental footprint and carbon pricing mechanisms incentivizing emission reductions. Additionally, standardized reporting will bring transparency, empowering stakeholders to make informed decisions.

Lythouse is here to guide you on this journey. Our solutions can help you navigate regulations, achieve your sustainability goals, and become a leader in the race towards a greener future.

Understanding the Framework: Key Concepts

What are GHG Standards?

GHG standards are specific limits or reduction targets for greenhouse gas emissions established within regulations. These standards can vary depending on industry, company size, and location. They define the level of emission reduction required by law.

What are Greenhouse Gas Regulations?

Greenhouse gas regulations are rules governments establish to limit gas emissions that contribute to global warming. These regulations are becoming increasingly stringent as the urgency to address climate change intensifies. They often incorporate GHG standards as emission reduction targets.

What are the 5 principles of the GHG Protocol?

The GHG Protocol outlines five core principles for credible and transparent greenhouse gas accounting and reporting:

- **Relevance:** Select the most appropriate accounting method for your organization's size and industry.
- **Completeness:** Account for all significant emission sources from your operations.
- **Consistency:** Use consistent methodologies to calculate and report emissions year after year.
- **Transparency:** Document your accounting methods and assumptions used in emission calculations.
- **Accuracy:** Ensure data quality through reliable measurement and calculation methods.

What does the GHG Protocol stand for?

GHG Protocol stands for Greenhouse Gas Protocol. It's a widely used international accounting tool developed by the World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI) to help companies quantify and report their greenhouse gas emissions.