Climate change represents one of the greatest environmental, social and economic threats to the planet. The emission of carbon dioxide (CO2), the main greenhouse gas (GHG), derived from activities such as the use of fossil fuels, agriculture and deforestation has a very important impact on climate change.

The European Union, conscious of the magnitude of the problem and the need to minimize emissions, has responded to this challenge through the definition of ambitious reduction goals, and by establishing a series of plans in order to achieve this. In the publication "Limiting Global Climate Change to 2 degrees Celsius: The way ahead for 2020 and beyond", the EU committed to reducing GHG emissions at least 20% by 2020, independently of the reductions that may be reached by other countries.

One of the principal means of reaching this goal is through the creation of the EU Emissions Trading Scheme (EU ETS). The companies included in this scheme are obliged to monitor the GHG emissions generated in their facilities and report these emissions to the Member States. This scheme includes more than 11,000 facilities from diverse areas including the energy sector, mining, steel and paper industries.

The need for analyzing inventory and reporting methods
As well as the EU ETS, there are numerous methods and initiatives for measuring and reporting GHGs, developed both in the public sector and by non-governmental organizations (NGOs), and which are used by private companies in the drawing up of their emission inventories and subsequent reports.
Similarly, several Member States (such as France with the Grenelle 2 Law and the UK with the Climate Change Act) are independently developing obligatory systems for GHG reporting.

In such a heterogeneous context, the European Commission considered it necessary to analyze the most utilized initiatives and methodologies, both in Europe and globally, in order to establish general guidelines for the reporting of emissions by companies.

The study encompasses the methods of reporting GHG emissions most commonly used by private companies as well as other initiatives developed in the public sector and NGOs.

Although the EU ETS remains the main policy instrument for reducing industrial CO₂ emissions in Europe (covering approximately 40% of direct CO₂ emissions from the EU-27), this analysis focuses on other reporting methodologies and initiatives existing outside this instrument, and which generally cover all six GHGs included in the Kyoto protocol and direct and indirect emissions, as well as emission sources, business sectors and types of companies not subject to the EU ETS.

The analysis takes the EU ETS as a reference point, and clarifies the fundamental differences between this instrument and other reporting initiatives, helping to define the any areas in which special attention should be paid, in order to ensure compatibility of methods and comparability of results.

To analyze all the existing initiatives, extensive research has been undertaken based on various sources (a search of methodologies and initiatives, an analysis of the information from companies and public reports, a review of key international publications etc.), as well as meetings with regulatory agencies, industry associations and NGOs, telephone interviews with a wide range of private sector companies and surveys of the managers of the analyzed initiatives and experts in the field.

**Current reporting methods and initiatives**

The study included an analysis of the systems used for drawing up emission inventories and reporting in 80 companies based on key criteria and characteristics that enable a comparison. On a global level, a total of 30 commonly employed methods were identified, generally adapted to specific business sectors to ensure their applicability.

The analysis highlighted the problems and difficulties faced by companies, investors, politicians and other stakeholders when employing and comparing the many GHG reporting methods. In general, it was found that there are flaws in the definition of minimum standards, meaning the different schemes are not compatible (neither between each other nor with respect to EU policies) nor comparable (it is not possible to compare the data included in the reports of the companies). In particular, aspects such as the definition of
the boundaries of reporting, the choice of emission factors used in the calculation, the treatment of compensation measures, the definition of material limits and the inclusion (or not) of scope 3 emissions, are open to a wide degree of interpretation by the user. Additionally, although most standards recommend external verification and assurance of GHG emissions data and reports, this third party verification is not required. However, about half of the most commonly used methods utilize the principles of the GHG Protocol of the WBCSD / WRI to ensure that the reported information is consistent.

Another of the conclusions drawn refers to the applicability of the different methods in very diverse sectors. While the general methods define a set of global principles for the reporting of GHGs (in terms of defining the borders of the reporting systems, selection of emission factors, calculation of emissions, verification and assurance, etc.), these methods do not address the needs of certain sectors. This deficiency has been made up for by the development of standards specific to those sectors. Likewise, there are also some methods and initiatives that include direct and specific guidelines for small and medium enterprises (SMEs).

On the other hand, only some of the most widely-used methods consider the definition of targets for reducing GHG emissions as part of their implementation (for example, the UK Carbon Reduction Commitment league table or the CDP Leadership index), but most initiatives do not ask for information about company policy on GHG emissions, measures to reduce emissions, or the management systems applied to control them.

Thus, it can be seen from the analysis that each existing method and initiative has different strengths and weaknesses that must be taken into account when choosing which system to use. The good practices identified should be considered for the definition of a possible new European standard.

**Risks and costs associated with reporting GHGs**
The most common risks faced by companies reporting GHG emissions data are directly related to the failure of their strategy of making this information publically available. Impacts related to public presentation, market value, brand value, and reputation as well as potential repercussions for the relationship with investors, are identified as the most frequent when communicating emission levels.

Although most companies recognize the risks of not making their emissions data publicly available, the pressure on SMEs is significantly less than that on large companies.

As for the costs associated with GHG reporting, the evaluation focuses on providing an overview of the levels of data available. In particular, a comparison of cost data from obligatory systems such as the EU ETS versus voluntary

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ii World Business Council for Sustainable Development / World Resources Institute, www.ghgprotocol.org
systems should be undertaken with caution, as the scope and purpose of these systems may be completely different, the data examined being limited. In this respect, the costs declared by private sector companies associated with GHG reporting are highly variable, ranging from 1,000 € per year for small businesses using the "UK Carbon Reduction Commitment – CRC", up to 800,000 € per year for large FTSE500 corporations reporting within the "Carbon Disclosure Project-CDP". Likewise, the cost of voluntary verification and assurance of emission data may range between 5,000 and 500,000 € per year.

Moreover, the study shows that the cost of publication and reporting is not directly related to the size of a company or the magnitude of its GHG emissions, even though the largest and most complex corporations generally have higher costs than the SMEs with fewer sources of emissions.

Another notable aspect is the lack of estimates regarding labor costs for both the company's own personnel and external staff for the time spent preparing and defining the GHG emissions reports. Often, companies find it difficult to separate these costs from other environmental expenditure. The development of methods to break down investment and expense by reporting type, size and company sector, and including differentiation by task (e.g., data collection, reporting, verification, etc.), is considered necessary.

**Benefits of GHG reporting:**

Part of the benefit of making information on GHG emissions publicly available arises, specifically, from addressing the risks associated with not reporting them. These benefits range from increased market value, increased brand value and an improvement in the reputation of the company regarding consumers and stakeholders, to a reduction in risk premiums and credit rating improvement.

Likewise, the use of leading methods in GHG reporting by companies allows greater understanding of their impact and management of their risks, as well as increasing the credibility of the results published. The benefits listed vary depending on the size and sector of the company, the number of sources and magnitude of the emissions and the reporting scheme, and are linked to the company's overall position with respect to climate change.

In addition, based on information provided by both companies and the analysis of the different methodologies, GHG reporting is considered a crucial step in the companies benefitting from the management process, allowing internal GHG reduction goals to be met, and clearly demonstrating this progress to stakeholders.

In monetary terms, the information available to quantify the benefits of GHG reporting is limited, and relates mainly to the potential energy savings and positive impact on the value of the business. In this regard, studies estimate that participation in the CDP has created, globally, 2100 million Euros of added market value for the participants. However, in the case of small companies the benefits of GHG reporting are often lower than those for large companies: for example, the real benefit in terms of the reputation of a company is considerably less tangible.
Therefore, the balance of risks, costs and benefits of GHG reporting may depend greatly on the size of the company, the sector that it is in, and the relative magnitude of its emissions.

Thus, an evaluation of the benefits associated with GHG reporting requires further analysis by the promoters of the various initiatives (those who wish to promote their use), the companies (who wish to develop a business case for GHG reporting) and governments (who need to evaluate the cost-effectiveness of the various climate change to promote).

Hypothetical framework for the relationship between GHG reporting and emissions

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KEY DRIVERS
- COST
- REGULATIONS
- REPUTATION
  Eg: investor risk, brand value,
- INNOVATION

GHG MANAGEMENT CYCLE

GHG Assessment
- setting the boundary
- collecting data
- conducting assessment

GHG Reporting
- corporate sustainability reporting
- response to reporting schemes
- data assurance / verification

GHG Management
- business case development
- policy and target setting
- capital programs
- capacity to deliver reductions
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“Company GHG Emissions Reporting – a Study on Methods and Initiatives”, October 2010
Possible future scenarios in Europe

It seems clear that any future scenario should be complementary to the European Union Emissions Trading System, it remaining the main instrument for reducing CO₂ emissions in Europe. However, given that the EU ETS covers about 40% of EU-27 emissions, any new policies should focus on reporting systems that would cover the remaining non-EU ETS emissions, as well as emissions of greenhouse gases other than CO₂ from EU ETS installations.

Moreover, the study has confirmed the importance of the link between the measurement and reporting of GHG emissions and the wider cycle of managing these gases. The most advanced reporting methods provide tools which enable companies to connect the different emission reduction factors such as operating costs, reputation, innovation and so on.

The study also pulls out a number of key factors which must be considered in the development of any possible future policies for measurement and reporting. To this end, it highlights the importance of considering the point of view of different stakeholders (companies, investors, NGOs, legislators, governments and consumers), not forgetting why the European Commission intervenes, that is, in order to gain a large reduction in GHG emissions going beyond traditional management.

Finally, it is considered necessary that the decision to adopt the policies and methods of reporting GHG emissions consider all of the possible variables and alternatives in this area, including other initiatives to reduce GHG emissions such as the establishment of a carbon tax or energy efficiency agreements. This would allow the best option for a future common reporting policy in Europe to be refined, taking into account the European Union reduction targets as well as the legal aspects, economic impact assessments and advice from technical experts.