

The GHG Protocol – what it is and what it means to the printing industry

The Greenhouse Gas (or GHG) Protocol is the grandfather of almost all the various greenhouse gas or carbon reporting standards, labels, carbon calculators and other measuring guidance you are likely to come across. So even if you are not familiar with it, it's very likely that your business is affected by it.

Its story started way back in the 1990s. The World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI) had both been involved in work that made them see the need for a common way of accounting for and reporting greenhouse gas emissions. They launched the GHG Protocol Initiative in 1998 as a partnership between business and Non-Governmental Organisations (NGOs).

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The first edition of The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard was published in 2001, and has been developing ever since, both through revising the main Standard and adding new documents to support it. Other standards have been developed using it as their basis: the international Standard ISO 14064-1 Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals being just one.

The GHG Protocol summarised

The main aim of the GHG Protocol is to simplify the complicated process of gathering information about greenhouse gas emissions, carrying out the necessary calculations and reporting. It's a tool that companies or other organisations can use to put together the information they need to manage and reduce emissions.

And by using a standardised approach, it helps with consistency.

There is the main standard – giving all the guidance of what you need to do – and a set of tools to help you do it. And all of this is free, on the Internet at www.ghgprotocol.org, for anyone to download and use.



Wind turbines such as these represent cleaner power from renewable sources.

The Protocol documents cover the main six 'Kyoto' greenhouse gases - carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF₆), although you can include others if they're relevant to you.

Although we tend to talk about 'carbon reporting' and 'carbon footprinting', this is a bit misleading as all six gases are usually involved, but 'normalised' to carbon dioxide. This means that, to keep the sums simple, the global warming potential of carbon dioxide is taken as 1, and other gases are multiplied up to match so that they can be reported as 'carbon dioxide equivalents'. For

example, 1 tonne of methane is counted as 21 tonnes of CO₂-e (where e stands for equivalent), because it has a global warming potential roughly 21 times higher than carbon dioxide.



Electricity generating is one of the key sources of greenhouse gases.

The first step in working out greenhouse gas emissions is deciding where to set your boundaries – what you will count and what you will exclude. The Protocol offers help on this for both organisational and operational boundaries. Setting the organisational boundary defines which parts of a group of companies are included – you may have a number of subsidiaries, some of which are wholly owned, and some partly owned, or there may be joint ventures, or franchises.

The operational boundary defines the depth to which you analyse your emissions: there are three boundary levels within the Protocol, referred to as ‘Scopes’. Scope 1 just measures emissions from your direct activities – equipment you own or control. So for a printer, for example, this could be the emissions from a gas boiler,

or from the delivery vehicles. Scope 2 accounts for the emissions from the production of purchased electricity.

Scope 3 involves the most detailed and complex calculations – looking beyond your own operations to those emissions that result from your activities, but are not from sources owned or controlled by you, such as fulfilment. This also includes the emissions created in making the goods, materials and services you buy, so-called ‘embodied emissions’. If reporting Scope 3 emissions, you don’t have to include absolutely everything – but you do have to be clear about what you do include or exclude and why, and say where estimates are used. The Protocol includes help on how to decide all this.

So now you know what you are going to report. But you still have to work it all out. This is where the tools provided by the GHG Protocol come in – providing step-by-step guidance and electronic worksheets to help calculate emissions.

Some of these are sector-specific – such as those for pulp and paper. Others are generic, containing information useful to almost everyone. Say, for example, you want to work out the emissions from employees commuting to work – a Scope 3 activity. The spreadsheet on employee commuting gives you the average emissions per passenger mile, or kilometre, for the various forms of public transport. This includes buses, coaches, trams, light railways, national rail and even ferries, as well as short and long haul flights. The data for vehicles, which is very useful if you don’t know the actual emissions for the specific car being used, gives averages for petrol, diesel, hybrid and LPG, broken down into bands according to engine size. So all you need to research is the distance travelled. There is even a guidance document specifically for small, office-based companies.

Of course, when gathering information for all this, data quality becomes an issue – so the Protocol also includes advice on creating an inventory quality management system.

Finally, there is guidance for reporting – how to ensure your report is credible and transparent – and for setting

targets for reduction. This can be more complicated than at first appears. Although measuring against a set base line can seem quite simple, once you think about how to account for selling or buying companies within a group, for larger companies, in such a way that your targets remain meaningful both to your and your shareholders, it requires a lot of consideration. Even for small companies, changes in product type, recessions or increases in production will all affect your emissions, and the guide to understanding this helps you choose the target and baseline type.

What's new with the GHG Protocol?

Most of us know we need to reduce greenhouse gas emissions. What is now growing is pressure to report on them. There are already various carbon trading schemes around the world, for which you need to calculate emissions and in addition there are any number of voluntary projects.

The GHG Protocol is a common basis for reporting criteria, with a large majority using it. Current reporting requirements are mainly based around Scopes 1 and 2, but for many companies the emissions from their operations are only a small part of the picture. The embodied emissions in their supply chain or the emissions from their manufactured products during use are far greater. Focus is therefore moving towards measuring these emissions, whether in the form of carbon labelling or as part of overall reporting.

Whereas many printers are too small to come within mandatory reporting requirements as yet, supply chain footprinting and labelling is already having an impact. From publishers wanting to measure and reduce the footprint of their books or magazines, to corporates wanting the same for their marketing literature, transactional materials or direct mail, and supermarkets needing to measure the emissions related to packaging their goods so that they can carbon label them – it all goes back down the chain.

So this affects the wider industry too. Quite apart from their reporting requirements, printers will need to know the embodied emissions in their paper, plates and other

consumables. To reduce their footprints, printers need to understand what that footprint is made up of, and what can be changed – whether materials or processes.

Supply chains are international – and so internationally accepted guidelines are needed. The GHG Protocol is developing two new standards in response to this – Product life cycle accounting and reporting, and Corporate-level value chain (scope 3) accounting and reporting – to be produced as drafts by the end of 2009. These will be based on the existing work, and what is being learnt through its use.



Proposed plans for multifuel sources at the Ferrybridge power station in the UK will help to reduce CO2 emissions.

There are already systems based on the GHG Protocol's Scope 3 reporting: the UK's PAS 2050 is one, and an ISO standard is in development using that as its basis. Many carbon calculators also use it. The new standards will build on what is being learnt and add to the support available.

Why you need to know this

So, in summary, why is the GHG Protocol important to our industry? It is a common, internationally recognised accounting and reporting tool. Whereas there are others, the majority of companies reporting use this protocol and its guidelines. Many other national or sector-based guidelines or standards use it as their basis. As yet, there is no direct comparability, as emissions are not reported consistently: some report absolute emissions and others report emissions intensity – emissions relative to production, sales or some other metric.

But shareholder pressure, and that of non-governmental organisations and others is building for increased transparency – reporting along the lines of financial reporting, freely available and allowing comparisons. This is likely to involve the whole value chain, and the GHG Protocol again offers an internationally agreed standard to work across international chains. And there is also the financial driver – reducing energy consumption to save costs – for which your starting point is being able to measure and analyse.

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