

Business & Carbon Measurement

on the island of Ireland



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Overview

Driven by increasing concern and awareness of climate change, regulators, procurers and consumers of goods and services now expect businesses and suppliers to demonstrably and transparently reduce and communicate the greenhouse gas (GHG) impacts of their operations and products.

In recognition of these trends, this study into carbon measurement by businesses was commissioned by InterTradeIreland to assess the risks and opportunities for businesses in Ireland and Northern Ireland arising from increasing stakeholder and market requirements for business-related GHG information. Invest Northern Ireland and Enterprise Ireland provided their expertise on the steering group.

The study was undertaken through direct engagement with businesses in Ireland and Northern Ireland, underpinned by a comprehensive and international review of methodological and market developments in carbon measurement.

The outcomes of the study show that some businesses – particularly larger business in Ireland and Northern Ireland - are responding to market pressure to measure and report organisational carbon footprint. However, there are significant gaps in the application and understanding of product carbon measurement amongst all businesses.

Small businesses are unique in that they face challenges both with organisational and product carbon measurement.

Notably, many companies that are under direct market pressure to measure their carbon impacts do not currently do so.

This puts these companies at risk of non-compliance with the requirements of their supply chain partners and customers.

Generally, small enterprises are least equipped to measure and report their carbon impacts, and are therefore at greatest risk of non-compliance. The majority of these companies indicated that the lack of internal skills and resources combined with a lack of systems to collect the requisite data presented challenges and barriers to carbon measurement.

The rates of application and understanding of product carbon measurement methodologies were low amongst businesses of all sizes and from all sectors. Participating companies indicated they face challenges arising from inadequate internal capacity and skills and inadequate systems for collecting life cycle data. Only a minority of respondents cited the lack of accessible and easy to use guidance as a barrier, which is likely to be due to the fact that many companies were unaware that product carbon measurement is done on a life cycle basis and is therefore more complex than organisational carbon measurement.

Methodological and market trends in carbon measurement

The measurement of greenhouse gas emissions, commonly referred to as 'carbon footprinting', can be undertaken both at the organisational level - to assess emissions associated with management, business and operational activities; and at the product level - to assess greenhouse gas emissions over the life cycle of a product or service.

Organisational carbon footprinting is relatively well established methodologically and in practice.

This is largely due to the pioneering work of the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), who published the Greenhouse Gas Protocol (Corporate) Standard in 2001.

The maturity of organisational carbon measurement is also reflected in the fact that an international standard for corporate carbon measurement - ISO 14064-1, was published in 2006. ISO 14064-1 is fundamentally based on the GHG Protocol Corporate Standard, but is more stringent in its requirements.

The methodologies for product carbon measurement, on the other hand, have only been recently developed and indeed, are still being refined.

PAS 2050, developed in 2008 by BSI British Standards and co-sponsored by the Carbon Trust and the UK Department for the Environment, Food and Rural Affairs (Defra), was the first (and is still the only) fully developed methodology for measuring and reporting greenhouse emissions over the life cycle of a product or service.

Building on PAS 2050, two standards for measuring product emissions are currently in development. The GHG Protocol (Product) Standard, which is being developed by WRI and WBCSD, is due for publication in December 2010. ISO 14067, which is being developed by the International Organisation for Standardisation, is due for publication in March 2011.

Also associated with product carbon measurement is the growing interest in product carbon labelling. A carbon label depicts the life cycle GHG impacts of a product or service, which a customer can then consider in making a purchasing decision.

Some retailers, e.g., Tesco, Groupe Casino, Walmart and Migros, and other providers of goods and services have made varying public commitments to adopting product carbon labels. Also worthy of note is the fact that with passage of the 'Grenelle 2' Act in June 2010, France became the first country to introduce legislation mandating the carbon labelling of both domestic and imported products.

Carbon measurement activities amongst businesses in Ireland and Northern Ireland

The response of businesses in Ireland and Northern Ireland to the growing requirements for business-related GHG information has been varied. Many (although not all) larger business are measuring their organisational carbon footprint.

There are however, significant gaps in product carbon measurement amongst all businesses. Small enterprises are unique in that they face particular challenges and barriers in measuring both organisational and product carbon footprint.

Organisational carbon measurement activity amongst participating businesses

32% of all companies that participated in the study indicated that they currently measure the carbon footprint of their organisations. The vast majority of these companies, i.e., 85%, were medium sized and large enterprises.

Indeed, 58% of medium sized and large enterprises that participated in the study currently measure their organisational carbon footprint; compared to only 15% of small and micro enterprises.

The current lack of organisational carbon measurement activity amongst smaller businesses presents some risks. In particular, 27% of small and micro enterprises that participated in the study indicated that they

are coming under direct pressure from their customers and supply chain partners to measure and report organisational carbon footprint. Therefore, at least 12% of these companies are not currently meeting the requirements of their customers and supply chain partners.

Product carbon measurement activity amongst participating businesses

Whilst aware of the existence of product carbon footprinting as a business practice, many businesses were unaware that product carbon measurement considers life cycle emissions.

As such, 13% of all respondents initially indicated that they measure the carbon footprint of products and services.

Of these, 12% stated that they use no formal methods at all to measure their product carbon footprint. A further 48% indicated that they use 'other' approaches. However, none of the 'other' approaches listed were recognised as being published or formal approaches for the measurement of product life cycle GHG emissions.

Given the complexity of product carbon footprinting and the importance of robustness for benchmarking products' carbon performance, the lack of an underpinning methodology is a serious shortcoming.

In follow-up engagement, many of these respondents indicated that they had responded positively to the question about product carbon measurement because they measure the emissions arising from on-site production processes. In fact, the additional engagement revealed that those respondents who indicated that they measure product carbon footprint, but did not use any formal methods or used 'other' methods, had not considered product life cycle emissions.

When these companies are excluded from the proportion of participants that measure product carbon emissions, the percentage (as a proportion of all respondents) falls from 13% to 4%.

Notably, 34% of all respondents indicated that they are facing market pressure from retailers, supply chain partners and customers to provide product carbon metrics. At the moment therefore, 30% of the participating companies are at risk of non-compliance with the requirements of their key stakeholders.

Challenges and barriers to carbon measurement

As the rate of corporate carbon measurement is significantly lower amongst small enterprises, the specific challenges and barriers that they face are of particular concern.

The majority of these enterprises indicated that they face challenges in measuring their organisational carbon impacts due to a lack of internal capacity and skills to undertake organisational carbon footprinting (31%) and the lack of internal systems to collect the requisite data (24%).

A further 8% cited the lack of easily accessible guidance, whilst 11% indicated that they do not measure organisational carbon footprint because they believe that the cost of doing so would be too high.

Product carbon measurement, on the other hand, presents challenges to companies of all sizes and from all sectors.

The majority of companies, i.e. 24%, highlighted the lack of internal capacity and skills as a barrier to product carbon footprinting. Similarly, 21% of those respondents who do not currently measure product carbon footprint highlighted a lack of systems for collecting life cycle data as a barrier to doing so.

Interestingly, only 10% of respondents identified the lack of accessible and easy to use guidance as a barrier. Given the relative methodological complexity in measuring life cycle GHG emissions, the low proportion of respondents requiring guidance is likely to have resulted from an inadequate understanding amongst respondents of the life cycle dimension to product carbon measurement.

Whilst product carbon footprinting presents challenges to all companies of all sizes, small enterprises are likely to have more difficulties in overcoming them due to a lack of capacity, resources and skills.

Action Plan

The research has identified a series of potential actions which can be grouped to reflect differing timeframes and methods of implementation.

The quick wins, to be implemented quickly and using existing resources, include the development of easy-to-use guidance and carbon measurement tools. The intermediate actions, which could be developed through agency collaboration across the island, include provision of training, mentoring and other carbon measurement supports to smaller businesses. The initiatives for exploration, which present resourcing challenges and the need for further discussion over implementation, will include the potential development of online databases of life cycle carbon data and a cross-border demonstrator pilot to show best practice in carbon measurement.

1.1 Introduction

Increasing concern and awareness of climate change has put the issue of greenhouse gas (GHG) emissions firmly on the agenda of government, retailers, procurers and consumers of goods and services, and even the public at large.

Notably, Governments around the world – including those in Ireland¹ and the United Kingdom², have committed themselves to reducing greenhouse gas emissions. Similarly, some retailers and buyers of goods and services have made public commitments to reduce GHG emissions, arising both from their direct operations and indirectly from their supply chain.

These developments have significant implications for businesses – who, as both consumers and producers of goods and services, are major contributors to GHG emissions.

In Ireland for example, businesses are responsible for 44.4% of national GHG emissions (EPA 2009)³. In Northern Ireland, businesses account for 41.9% of all GHG emissions (AEA 2009)⁴.

The importance of businesses to reducing GHG emissions is recognised by national government and other stakeholders. In recent years therefore, there have been increasing regulatory and market demands on businesses to demonstrably and transparently reduce their GHG impacts.

1.2 Measurement as a tool for reducing greenhouse gas emissions

The robust measurement of GHG emissions can provide businesses with a valuable tool for transparently managing climate change impacts, engaging stakeholders, realising market benefits and achieving regulatory compliance.

Furthermore, the information and insight derived from the GHG measurement process, i.e., the specific impacts of activities and products, can improve awareness amongst both internal and external stakeholders, thus facilitating more informed consumption and purchasing decisions.

In practice, the measurement of greenhouse gas emissions is commonly referred to as carbon measurement or carbon footprinting.

This emanates from the fact that as part of the calculations, the various greenhouse gases⁵ are typically normalised to Carbon Dioxide equivalents (CO₂e)⁶ based on their global warming potential.

This normalisation process enables overall greenhouse gas emissions to be reported as a single CO₂e figure, i.e. the carbon footprint, as opposed to providing a separate metric for each GHG.

¹ Department of Environment, Heritage and Local Government (2007) *Ireland's National Climate Change Strategy 2007 – 2012*.

² Department of Energy and Climate Change (2009): *The UK Low Carbon Transition Plan – National Strategy for Climate Change*.

³ Environmental Protection Agency (2009): *Ireland's Greenhouse Gas Emissions in 2007*.

⁴ AEA (2009): *End User GHG Inventories for England, Scotland, Wales and Northern Ireland:1990, 2003 to 2007*.

⁵ At the Kyoto agreement, 37 Industrialised Countries (including the United Kingdom) and the European Community (including Ireland) committed to reducing emissions of six greenhouse gases (i.e., carbon dioxide, methane, nitrous oxide, sulphur hexafluoride, hydrofluorocarbons and perfluorocarbons). Greenhouse gas measurement methods therefore tend to focus on these gases.

⁶ Carbon Dioxide has a GWP of exactly 1 (since it is the baseline unit to which all other GHGs are compared).

At its most basic therefore, a carbon footprint is a measure of the exclusive total GHG emissions caused directly or indirectly by an activity, or which are accumulated over the life cycle of a product.

Carbon footprinting can be undertaken both within and outside the business context. Amongst other things, carbon footprinting can be applied to assess the greenhouse gas emissions resulting from individuals, populations, governments, companies, organisations, processes, products, services, industry sectors, etc.

In the specific business context, carbon footprinting typically takes two forms.

- **Organisational (or 'corporate') carbon footprinting:** This is the measurement of GHG emissions arising at the organisational level, i.e. arising from management, business and operational processes.
- **Product carbon footprinting:** This is the measurement of life cycle greenhouse gas emissions associated with a service or a product.

The output of the product carbon footprinting process can form the basis for a Carbon label. This is an informative label that can be attached to a product or service at the point of sale, to help consumers assess its total life cycle GHG emissions. Some retailers and governments have advocated carbon labels as a means of encouraging sustainable consumption and enabling consumers to consider climate change impacts in their purchasing decisions.

1.3 The All Island Carbon Measurement Study

InterTradeIreland's vision is for a globally competitive enterprise environment in which Ireland and Northern Ireland co-operate to ensure the optimal utilisation of economic resources, particularly knowledge resources, to drive additional trade and wealth creation.

In light of this vision, InterTradeIreland commissioned this study into carbon measurement by businesses to assess ongoing carbon measurement activities amongst business in Ireland and Northern Ireland, any associated challenges and barriers, and risks and opportunities to competitiveness arising from current approaches. Invest Northern Ireland and Enterprise Ireland provided their expertise on the steering group.

The specific objectives of the study are:

- To undertake a global review of trends in GHG measurement that may have implications for businesses in Ireland and Northern Ireland.
- To assess current awareness of GHG measurement as well as GHG measurement activities amongst businesses in Ireland and Northern Ireland.

- To highlight the challenges and barriers to GHG measurement faced by businesses in Ireland and Northern Ireland.
- To identify the competitive and business opportunities that businesses in Ireland and Northern Ireland can achieve from improved carbon measurement.

1.4 Structure of this report

This report summarises the key findings from the research. The remaining sections are set out as follows:

- Chapter 2 provides further context for the study by summarising the key market drivers for GHG measurement amongst businesses.
- Chapter 3 builds on this by providing an overview of the international methodological developments in GHG measurement.
- Chapter 4 details the outcomes of the engagement with businesses in Ireland and Northern Ireland, and discusses their carbon measurement activities, the challenges they face, market pressures, etc.
- Chapter 5 summarises the key findings and outcomes of the study.

2.1 Introduction

Businesses across the globe now measure and report the greenhouse gas emissions emanating both at the organisational level, and from the products and services they provide.

This is reflected for example, by the fact that 3,000 organisations from 60 countries currently measure and disclose their greenhouse gas emissions through the Carbon Disclosure Project⁷ - an independent not-for-profit initiative that maintains a database of primary corporate carbon metrics. Similarly, a recent study by the Carbon Trust⁸ showed that 24% of businesses in the UK currently measure their organisational carbon footprint.

This interest in carbon measurement has been driven by recognition that it can realise business benefits. Some of the key ones are discussed below.

2.2 An indicator of resource efficiency

There is a direct correlation between volume of emissions of greenhouse gases and resource consumption, particularly the consumption of energy. In that regard, greenhouse gas emissions can serve as useful indicator of overall business efficiency.

In recent years, resource efficiency has become of significant interest to businesses, as they have sought to minimise the higher operating costs and uncertainty that have been driven by increasing energy prices and continuing volatility in commodity markets. In addition to providing a summary overview of efficiency, the carbon measurement and monitoring process can highlight 'carbon hotspots' or efficiency gaps, and thus identify where corrective action is required.

⁷ www.cdproject.net

⁸ Carbon Trust (2009): *We'll all have to pay for carbon say business finance heads.* Carbon Trust Press release (18th August 2010).

2.3 Demonstrating compliance with carbon-related regulations

Governments around the globe – including the UK and Ireland, have set national targets for reducing greenhouse gas emissions. In order to achieve these targets, these governments have implemented a range of new GHG-related policies and regulations – with implications for businesses.

The UK Climate Change Act (2008) for example, binds the government to achieving an 80% reduction in carbon emissions by 2050 (relative to 1990 levels).

One of the initiatives that the UK government has implemented to meet this target is the Carbon Reduction Commitment (CRC) - a mandatory carbon trading scheme for medium sized UK organisations. The CRC commenced on 1st April 2010, and participating organisations are required to monitor and report greenhouse gas emissions and to purchase allowances to



"Tesco will develop a carbon footprint labelling measure for all products sold in store" - Speech by Sir Terry Leahy, Tesco Chairman (2007)

"We now have 500 Carbon-footprinted products in the UK and South Korea" – Tesco 2009 Corporate Responsibility Report Tesco



"Our new environmental label, the Casino Carbon Index ... debuted in June 2008 on some 100 products."

"The index represents the quantity of greenhouse gas emissions at the most important stages in the product life cycle. Expressed in grams of CO2 equivalent per 100 grams of finished product, the index allows consumers to compare products."

– Groupe Casino 2009 Annual Sustainability Report
Groupe Casino (France)



"We will lead the creation of a Sustainability Index. The Index will bring about a more transparent supply chain, drive product innovation and, ultimately, provide consumers the information they need to assess the sustainability of products. It will mean more innovative products that lower carbon output."

– Speech by Mike Duke, President and CEO of Walmart (2009)
Wal-Mart (USA)

¹¹ Bearing Points (2011): *Green Supply Chain Monitor 2010-11.*

cover each tonne of CO₂e they emit. The CRC therefore provides a clear and direct financial incentive for organisations to reduce their emissions, or risk having to purchase emission allowances to cover any shortfall.

Furthermore, both Ireland and the UK are signatories to EU ETS Directive 2003/87/EC, which established the EU Emissions Trading Scheme (EU ETS) – a Europe-wide ‘cap-and trade’ system for allocating and trading greenhouse gas allowances. The scheme covers all the biggest ‘point source’ CO₂ emissions across the EU25, including power stations, cement manufacturing, iron and steel, pulp and paper, oil refining, glass and ceramics, and all other industrial facilities with thermal capacity greater than 20MW.

Notably, in order to comply with the CRC and EU ETS and minimise the associated risks, participating organisations have to robustly measure, monitor and manage carbon emissions.

At least one country, France, has also passed regulations for product carbon measurement and labelling. With the passage of ‘Grenelle 2’ (a bill on the national commitment to the environment) in June 2010, France became the first country in the world to require the carbon labelling of both domestic and imported products.

This clearly has implications for any company that currently supplies goods to the French market, or which plans to do so in the future.

2.4 Reputational improvement and differentiation in the marketplace

In a number of studies, consumers have consistently indicated that they would consider the climate change impacts both of products and of the companies that produce them, when making purchasing decisions.

In a survey of UK shoppers conducted by GfK NOP⁹ for example, 67% of respondents indicated that they would be more likely to buy a product with a low carbon footprint. Similarly, in a survey of consumers in Ireland conducted by Business in The Community (BITC)¹⁰, 86% of respondents indicated that they would be more willing to buy a product with demonstrable low carbon attributes.

Recognising this growing awareness, some companies therefore view the measurement and reporting of corporate and product carbon metrics as a way of differentiating and strengthening their brand in the market place.

2.5 Meeting requirements of retailers and procurers of goods and services

Retailers and other procurers of goods and services are now aware of the market, regulatory and wider business benefits that can be achieved through the reduction and measurement of greenhouse gas emissions.

Many of these organisations – who are also influential buyers, have therefore committed themselves not only to reducing their direct greenhouse gas emissions, but also to reducing carbon emissions throughout their supply chains.

To enable this, many retailers and major procurers of goods and services have developed ‘sustainable procurement’ strategies, in which they commit to work with suppliers and service providers to demonstrably improve low carbon performance across the supply chain¹¹.

In addition, some retailers (including Tesco in the UK, Walmart in the USA, Groupe Casino of France and Migros of Switzerland) have made varying commitments to attach *carbon labels* to their products. This will have implications for companies who supply these organisations, who will now be obligated to provide the input metrics to facilitate the carbon measurement process.

⁹ GfK NOP (2006): *Consumer perspectives on the carbon impacts of their purchases*.

¹⁰ Department of Energy and Climate Change (2009): *The UK Low Carbon Transition Plan – National Strategy for Climate Change*.

2.6 Trend towards 'green' procurement in the public sector

Globally, public authorities are major consumers and procurers of goods and services. In Europe, public authorities spend approximately €2 trillion annually on procuring goods and services, equivalent to some 17% of the EU's gross domestic product.

In Ireland, the annual procurement budget of the public sector in 2010 was estimated to be €16 billion¹². In 2010 the Northern Ireland Executive spends £2.4bn on goods and services, in addition to £300m per annum on local Government purchasing¹³. In the wider UK, total spend on public sector procurement is in excess of £220 billion per annum¹⁴.

There has been an active shift towards 'green' public sector procurement across Europe. The foundations for this trend was established by the EU Sustainable Development Strategy adopted in June 2006, which set a policy objective to bring the average level of EU green public procurement (GPP) up to the standard achieved by the best performing Member States by 2010¹⁵.

A further EU communication in 2008, confirmed that target as 50% of all tendering procedures. This communication also provided a definition for GPP as "a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured."¹⁶

In order to achieve the specified EU target, member states have sought to develop their own GPP plans. Consultation is currently ongoing in Ireland for example, on a national action plan for GPP. Part of this consultation involves assessing whether the target of 50% is 'sufficiently ambitious'.

The Northern Ireland Executive published its Sustainable Procurement Action Plan in 2008. As part of this plan all public procurement exercises in Northern Ireland, must integrate sustainable development considerations. Furthermore, all public contracts awarded after 1 October 2008 that exceed the EU thresholds must, where appropriate, include provision to develop a strategy which will achieve relevant social, economic or environmental outcomes.

In light of this shift towards green and sustainable procurement, suppliers and companies that measure and demonstrably minimise greenhouse gas emissions, can be better positioned to sell to the public sector now and in the future.

¹² Department of the Environment, Heritage and Local Government (2010): *Discussion Paper – Towards a National Action Plan on Green Public Procurement*.

¹³ Committee for Finance and Personnel (2010): *Report on the Inquiry into Public Procurement in Northern Ireland*.

¹⁴ OGC (2010): *Collaborative Procurement - Progress against uptake of endorsed deals*.

¹⁵ Council of the European Union (2006): DOC 10917/06 - *Review of the EU Sustainable Development Strategy (EU SDS)*.

¹⁶ Commission of the European Communities (2008): COM(2008)400 - *Public procurement for a better environment*.

2.7 Consideration of carbon reduction in public sector project appraisal

The UK Government now considers forecasted carbon reduction in its appraisal of public sector projects. A similar approach has been recommended by the Comhar Sustainable Development Council for adoption in Ireland. Contractors and suppliers that can demonstrably deliver the forecasted reductions and the pre-defined targets for cost effectiveness, may therefore be better positioned when tendering and bidding for public sector contracts.

Resultant reductions in greenhouse gas emissions have been considered in the appraisal of public sector policies and projects in the UK since 2002. (For background of early approaches for valuing and including carbon impacts in UK public sector appraisal, please see government guidance published in 2002¹⁷ and 2007¹⁸ respectively).

In 2009 the UK Government implemented a new approach for valuing and integrating carbon reductions in public sector appraisal, moving from a system based on the shadow price of carbon to a 'target-consistent' approach¹⁹. As per this new approach, the forecasted EU ETS market traded price of carbon is now used to value the carbon impacts of projects in sectors covered by the EU ETS. Where the project is in a non-EU ETS sector, a 'non-traded price of carbon' is now used, based on estimates of the marginal abatement cost (MAC), i.e. the incremental investment in low carbon processes and technologies required to meet the UK's emissions reduction targets.

As the business case (i.e. the cost effectiveness) for any project will become stronger as the reductions in carbon increase per given level of costs, suppliers that can demonstrably deliver these reductions are likely to be viewed more favourably in tenders for public sector contracts.

A paper published in 2008²⁰ by the Comhar Sustainable Development Council - the forum for national consultation and dialogue on sustainable development in Ireland, suggested a framework that could be implemented in Ireland for valuing and integrating carbon reductions in the appraisal of Central Government capital projects. Comhar recommended that the value of carbon should be based on forward and average EU ETS market prices up to 2020 and on marginal abatement costs thereafter.

¹⁷ HM Treasury (2002): *Estimating the social cost of carbon emissions*.

¹⁸ Department for Environment, Food and Rural Affairs (2007): *The Social Cost Of Carbon And The Shadow Price Of Carbon: What They Are, And How To Use Them In Economic Appraisal In The UK*.

¹⁹ Department of Energy and Climate Change (2009): *Carbon Valuation in UK Policy Appraisal: A Revised Approach*.

²⁰ Comhar SDC (2008): *Carbon Pricing for Central Government Cost Benefit Analysis in Ireland*.

Again, this was strongly correlated with previous responses around external market pressure for carbon measurement. Indeed, those respondents who indicated that product carbon measurement is not of current importance to their business, accounted for 92% of those respondents who had previously stated that they are not under any market pressure to provide product carbon metrics.

A further 24% of respondents who do not currently measure product carbon footprint indicated that they do not do so because they do not have the relevant capacity and skills.

As previously indicated, derivation of product carbon footprint requires the identification and integration of GHG emissions across the life cycle of the product. The application of life cycle based techniques for this purpose can provide challenges to most companies, especially where there are significant geographical and time lags between the different stages of the life cycle.

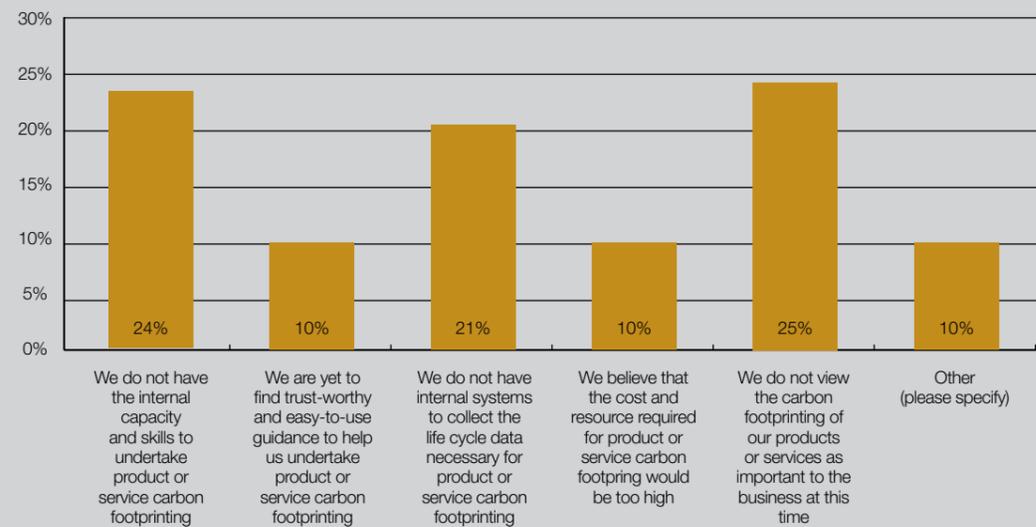
This challenge is further exacerbated by the current unavailability of sector specific guidance for product carbon measurement. This associated difficulty was highlighted by 10% of respondents indicated as a key barrier to product carbon measurement.

In addition to the methodological challenges, there is also the difficulty of obtaining the life cycle data required for calculation of the product carbon footprint. 21% of respondents who currently do not measure product carbon footprint indicated that this is a key reason for not measuring product GHG emissions.

Amongst the 10% of respondents who completed the 'Other' text field, were a number of companies that provided services, who indicated that because they provide 'services', product carbon measurement is therefore irrelevant to them.

This reflects some obvious confusion and poor awareness of the principles of product carbon footprinting methodologies, and in particular, the fact that they are also applicable to services as well as physical products.

Figure 22: Reasons for not measuring product carbon footprint



**Greiner Packaging Ltd.
(Co. Tyrone, Northern Ireland)**

Staffed by 185 employees, Greiner Packaging (NI) produces and supplies a range of packaging products to the food and drink sector.

The company is part of the wider Greiner Packaging Group, which with a workforce of 2,584 employees at 21 production sites throughout Europe, is one of the largest European packaging companies.

Greiner Packaging (NI) is a participant in the CRC Energy Efficiency Scheme, the UK's mandatory emissions trading scheme. They have also entered into a Climate Change Agreement (CCA) with the UK Government, which enables them to achieve discounts on the Climate Change Levy, providing they meet targets for carbon reduction.

As part of its participation in these schemes, the company has been measuring its organisational carbon footprint. Furthermore, Greiner Packaging has also been investing in a range of carbon reduction schemes.

Having made these investments and recognising the increasing market need, the company is keen to communicate the low carbon attributes of its products to customers.

The company has been unable to do this to date, due to the challenges in sourcing the life cycle data required.

“We have invested heavily in initiatives to reduce our GHG emissions, and are keen to communicate our progress to stakeholders. We have been able to do so by measuring our organisational carbon footprint. The difficulty of sourcing life-cycle emissions data for all our inputs however, has prevented us from measuring product carbon footprint to date.”

**Jarek Zasadzinski
CEO, Greiner Packaging Ltd)**

4.9 Respondents views on improving carbon measurement uptake

In line with the objectives of the study, respondents' views were sought on what would reduce the challenges and barriers to carbon measurement.

In particular, respondents were asked about improvements that would increase the likelihood that they would to continue to measure their carbon emissions (if they already do so), or start to measure their carbon emissions (if they do not currently do so).

Organisational carbon measurement

As shown in Figure 23 below, 30% of all respondents indicated that accessible and easy-to-use guidance would reduce the challenges and barriers to organisational carbon measurement.

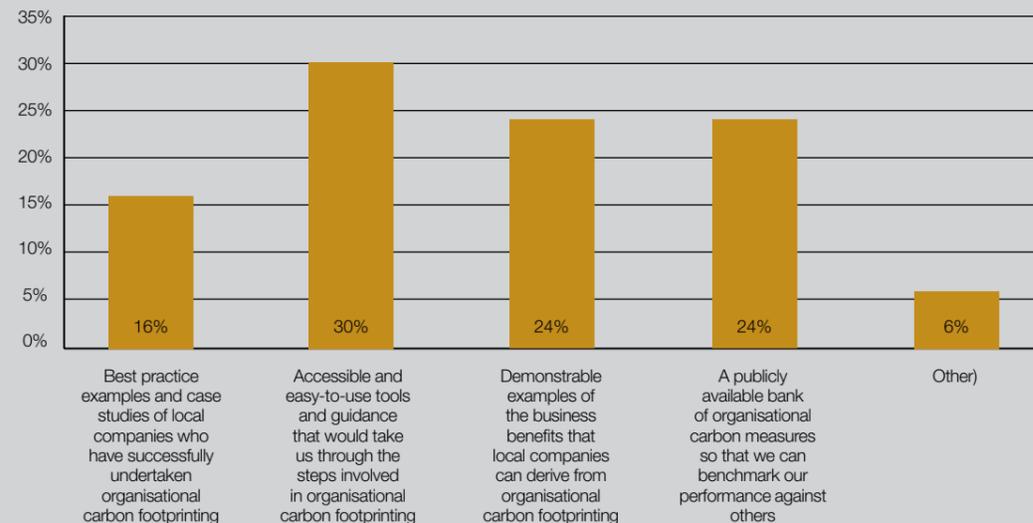
This aligns with the importance attributed to trust worthy guidance in previous questions.

A further 24% indicated that demonstrable application and examples of benefits that can be derived by local companies, would encourage them to adopt carbon measurement.

A similar proportion (i.e. 24%) of all respondents, would undertake organisational carbon measurement if they had access to a publicly available bank of carbon metrics and data that would enable benchmarking.

16% of respondents indicated that they would be encouraged to measure organisational carbon footprint if best practice examples and case studies existed from local companies who had derived benefits from organisational carbon measurement. Amongst other things, best practice examples would provide lessons from which companies would learn, but may also be provide guidance in terms of tools.

Figure 23: Views on how rates of organisational carbon measurement could be increased



Of the 6% who listed "Other" potential drivers that would make them more inclined to measure organisational carbon footprint, many referred to customer demand and requirements, i.e. if customers asked for it. Others also referred to a legal obligation to measure or report carbon footprint.

Product carbon measurement

When product carbon measurement is considered, 25% of respondents indicated that they would be more likely to measure their footprint if accessible and easy-to-use guidance existed that could help them that could take them through the process of measuring life cycle product GHG emissions.

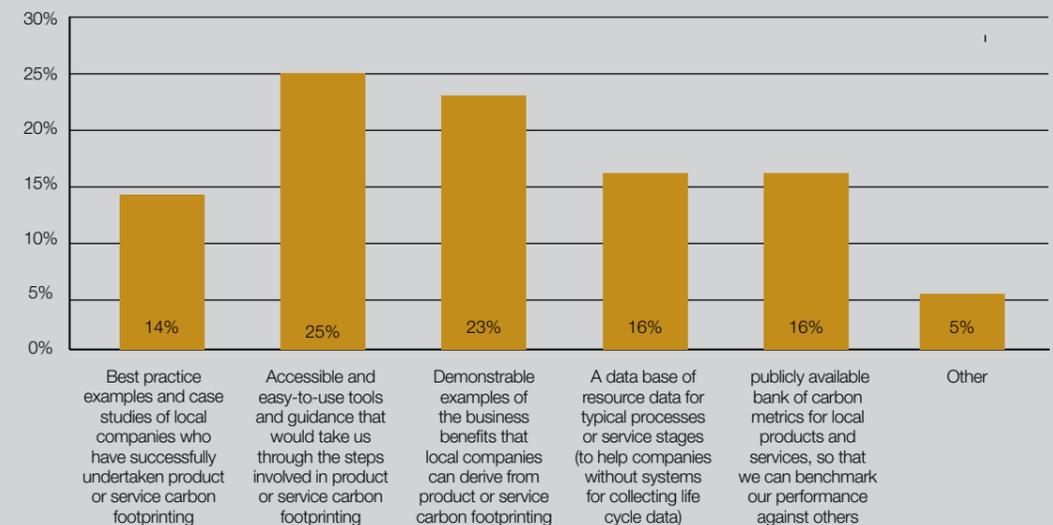
A similar proportion (i.e. 23%), stated that demonstrable examples of the benefits that local companies can derive from product carbon measurement would make them more likely to measure their impacts.

Furthermore, 16% indicated that would be more inclined to measure product carbon footprint if a data base of typical life cycle data exist, and a further 16% highlighted a publicly available bank of product carbon information so that they can benchmark performance against other products.

A similar proportion (i.e. 14%), indicated that best practice examples of successful applications of product carbon measurement methods would make them likely to measure their product carbon footprint.

The 5% who listed 'Other' potential drivers that would make them more inclined to measure product carbon footprint, again made references to customer demand and requirements, i.e. if customers asked for it. Others also referred to a legal obligation to measure or report carbon footprint.

Figure 24: Views on how rates of priduct carbon measurement could be increased



4.10 Comparative assessment of headline trends by sector

This section compares the headline trends and responses by sector with a view to assessing which sectors are most active in carbon measurement, which are most under external pressure to measure their carbon impacts etc.

For the purposes of simplification, the sectors were split into four high-level categories, Manufacturing, Agri-Food, Services and Construction. This classification system was thought to be broad enough to capture most companies in Northern Ireland and Ireland, and also reflected the companies most likely to be impacted by carbon measurement.

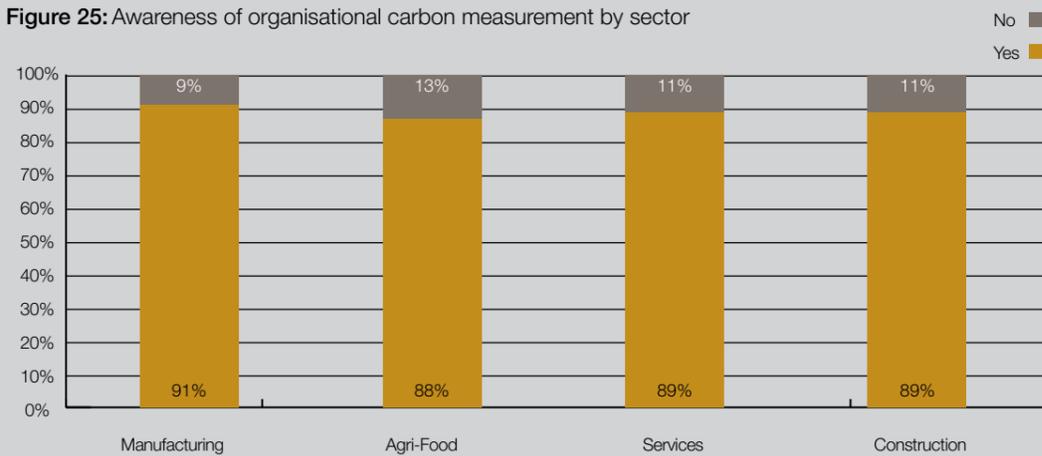
Awareness of organisational carbon measurement by sector

Figure 25 shows that awareness was reasonably well spread out across the four sectors.

It was marginally higher in the Manufacturing sector, where 91% of respondents were aware that some companies now undertake organisational carbon measurement. At the other end, only 88% of respondents from the Agri-Food sector were aware.

With only a 3% range in difference however, there is not much variation in awareness amongst the sectors.

Figure 25: Awareness of organisational carbon measurement by sector



Awareness of product carbon measurement by sector

Compared with awareness of organisational carbon measurement, there was greater variation of awareness of product carbon measurement. Indeed, there was a difference of 15% between awareness in the Agri-Food sector – where awareness was highest at 93%, and in the Services sector - where awareness was lowest at 75%.

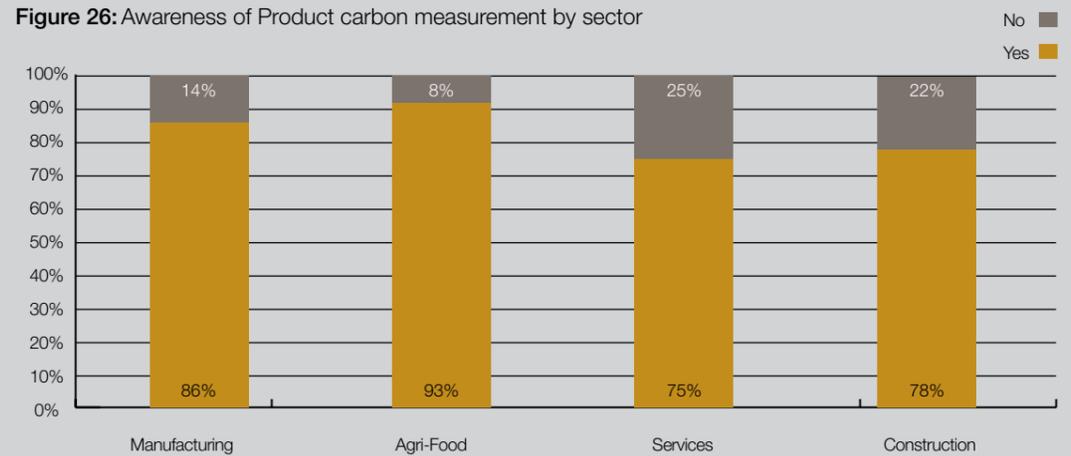
As mentioned previously, retailers have been particularly interested in product carbon measurement as a means of facilitating product carbon labelling. Many Agri-Food companies would directly or indirectly supply some of these retailers, and as such, may therefore be aware of the practice and application of product carbon measurement.

Organisational carbon measurement by sector

Only a minority of companies in each of the four sectors measured their organisational carbon footprint. The highest rate of measurement was in the Services sector, where 46% of respondents measured organisational carbon footprint.

The lowest level of carbon footprinting was amongst Agri-Food companies, where only 28% of respondent measured organisational carbon footprint.

Figure 26: Awareness of Product carbon measurement by sector



Product carbon measurement by sector

As per previously discussed results, only a few respondents in the overall sample currently measure the carbon footprint of their products. This was also reflected at sector level.

Notably, the Agri-Food sector had the highest rate of product carbon measurement with 13%. This was followed by the Services sector with 12%, the construction sector with 10% and manufacturing with 5%.

Market pressure for organisational carbon measurement by sector

As can be seen in Figure 29 below, the trends in market pressure for organisational carbon measurement varied significantly across the sectors.

Whilst for example, the majority of respondents in the Manufacturing, Agri-Food and Services sectors indicated that they are not coming under any market pressure to measure organisational carbon footprint, the majority of respondents from Construction sector indicated that they are.

Figure 27: Organisational carbon measurement by sector

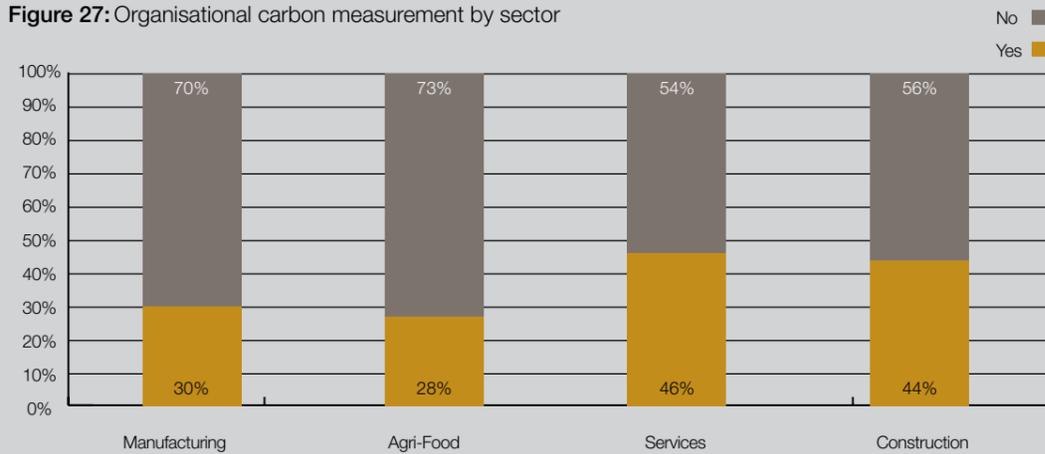


Figure 28: Product carbon measurement by sector

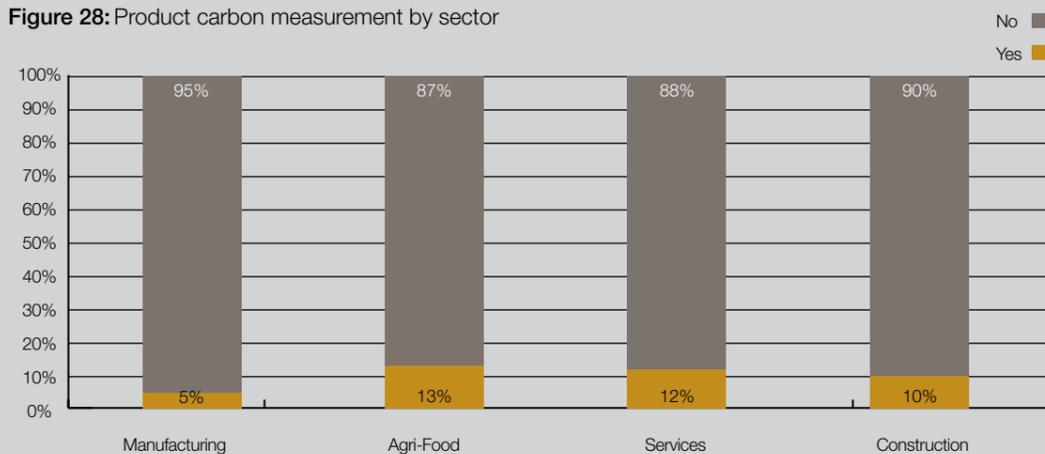
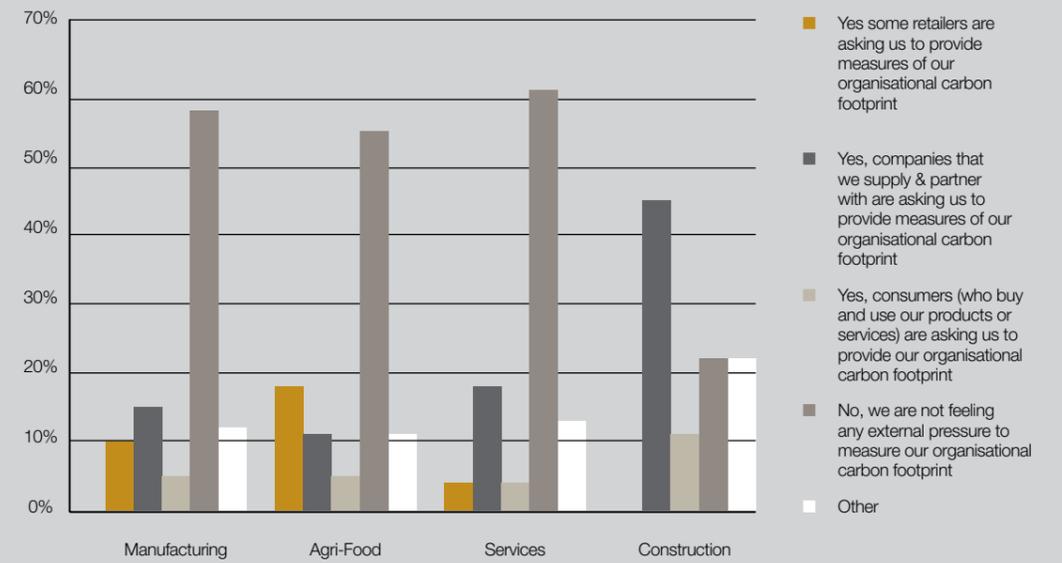


Figure 29: Market pressure for organisational carbon measurement by sector

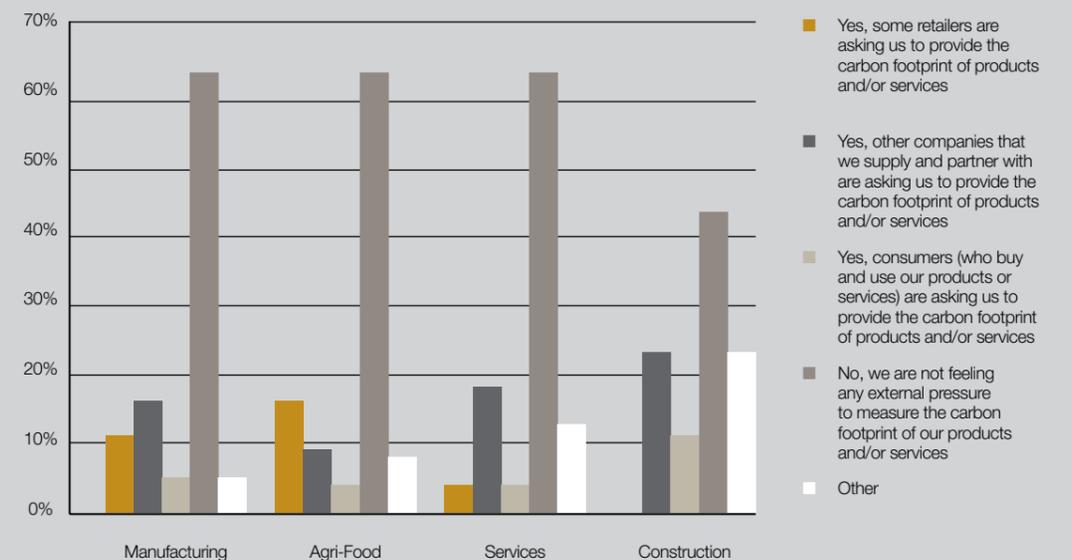


Notably, 56% of respondents from the Construction sector indicated that they are coming under pressure from supply chain partners and consumers, to measure their organisational carbon footprint, whereas only 22% indicated that they are coming under no pressure at all.

Market pressure for product carbon measurement footprint

A high proportion of respondents in all four sectors indicated that they are not currently under any market pressure to undertake product carbon measurement.

Figure 30: Market pressure for Product carbon measurement by sector



Some respondents indicated that they are under some pressure however. This included 33% of respondents from the Manufacturing sector and Construction sectors, and 30% of respondents from the Agri-food sector.

In the Manufacturing and Construction sectors, the external market pressure was mainly driven by supply chain partners and business customers. 21% of Manufacturing companies and 33% of Construction companies indicated that they are coming under some pressure from supply chain partners.

In the Agri-food sector, Retailers accounted for the highest level of external market pressure. 16% of respondents from the Agri-food sector indicated that they are coming under some pressure from retailers.

4.11 Comparative analysis of headline trends by region

This section compares the headline trends by the region where the participating company operates, i.e. Ireland, Northern Ireland or on a cross border basis.

Awareness of organisational carbon measurement

Awareness of organisational carbon footprinting was highest amongst those companies who operate on a cross-border basis. Notably, all respondents in this category indicated that they are aware that some businesses do measure organisational carbon footprint.

Figure 31: Awareness of organisation carbon measurement by region of operation

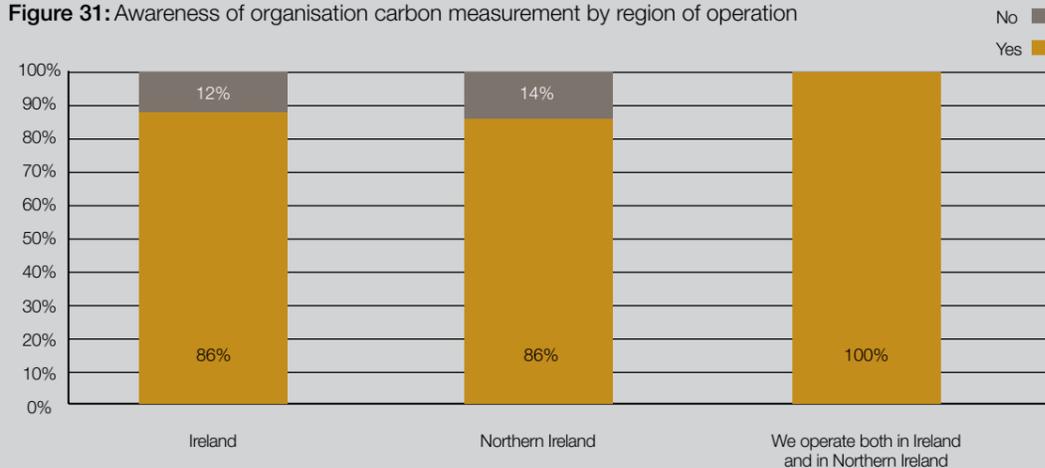
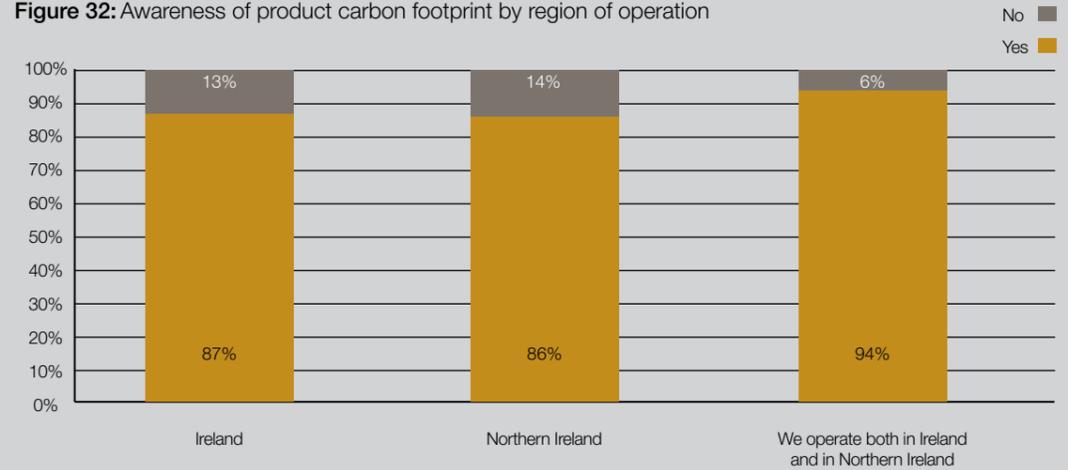


Figure 32: Awareness of product carbon footprint by region of operation



Notably, there was not much variance in the awareness of those respondents who operate solely in Ireland or Northern Ireland, with awareness levels of 88% and 86% respectively.

Awareness of product carbon measurement At 94%, those respondents who operated on a cross-border basis again demonstrated greatest awareness of product carbon measurement.

As with organisational carbon measurement, there no significant difference in the rate of awareness between companies who operate in Ireland and those who operate in Northern Ireland.

As illustrated below, 87% of respondents from Ireland indicated that they are aware of the practice and application of product carbon measurement, whilst an almost

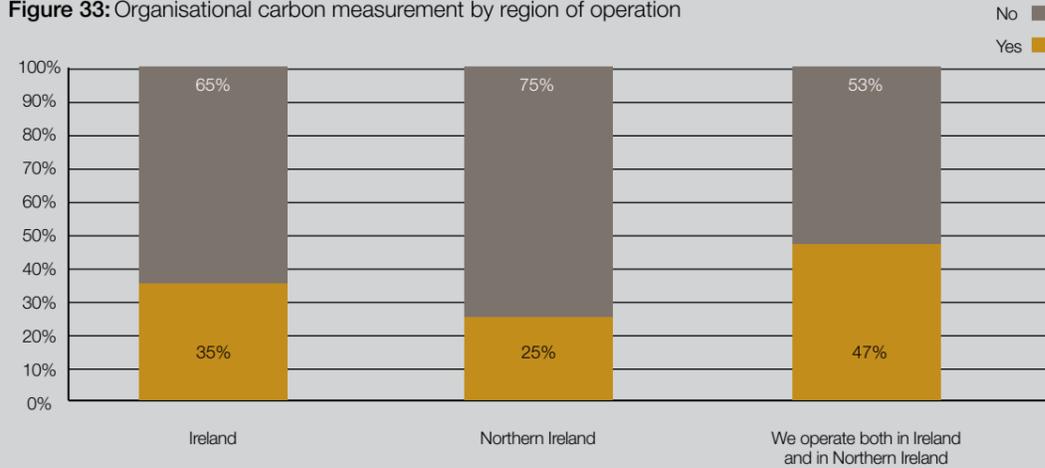
identical proportion, 86% of companies from Northern Ireland indicated similar awareness.

Current levels of organisational carbon measurement amongst respondents

The survey results showed that respondents who operate on a cross-border basis are more likely to measure their organisational carbon footprint. At 47%, almost half of respondents in this category of companies currently undertake organisational carbon measurement.

This was higher than current level of measurement amongst companies who operate solely in Ireland, of whom only 35% currently measure organisational carbon footprint. It was also higher than measurement rates in Northern Ireland, where only 25% of respondents currently measure organisational carbon footprint.

Figure 33: Organisational carbon measurement by region of operation



Product Carbon measurement

At 13%, Ireland had a higher proportion of respondents who stated that they currently measure the product carbon footprint of products and services. Measurement rates amongst respondents who operate on a cross-border basis was slightly less, at 12%; whilst 7% of respondents from Northern Ireland indicated that they currently measure product carbon footprint.

Market pressure for organisational carbon measurement

Of the three groupings, companies who operate on a cross-border basis were more likely to perceive themselves as being under market pressure to measure organisational carbon footprint. Indeed, 44% of these companies indicated that they are facing pressure from retailers, supply chain partners and customers to measure and report the carbon footprint of the organisation.

Figure 34: Product carbon measurement by region of operation

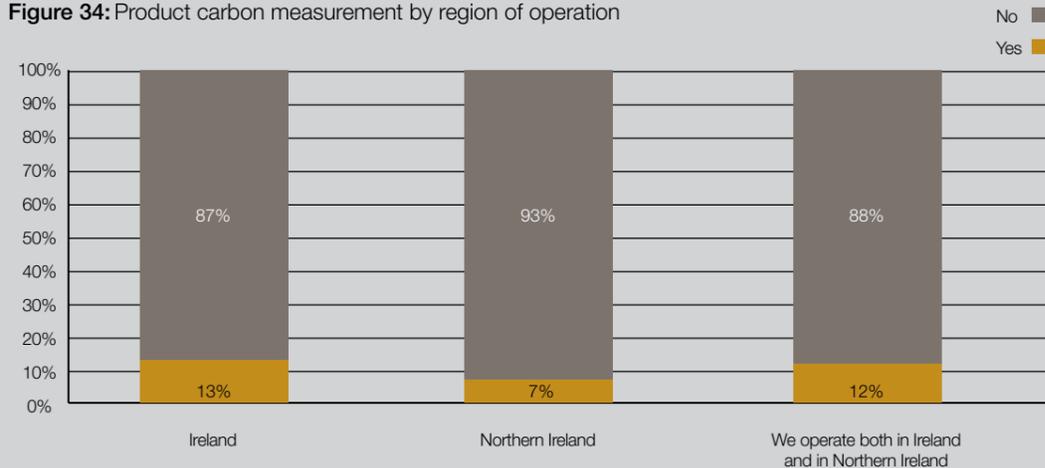
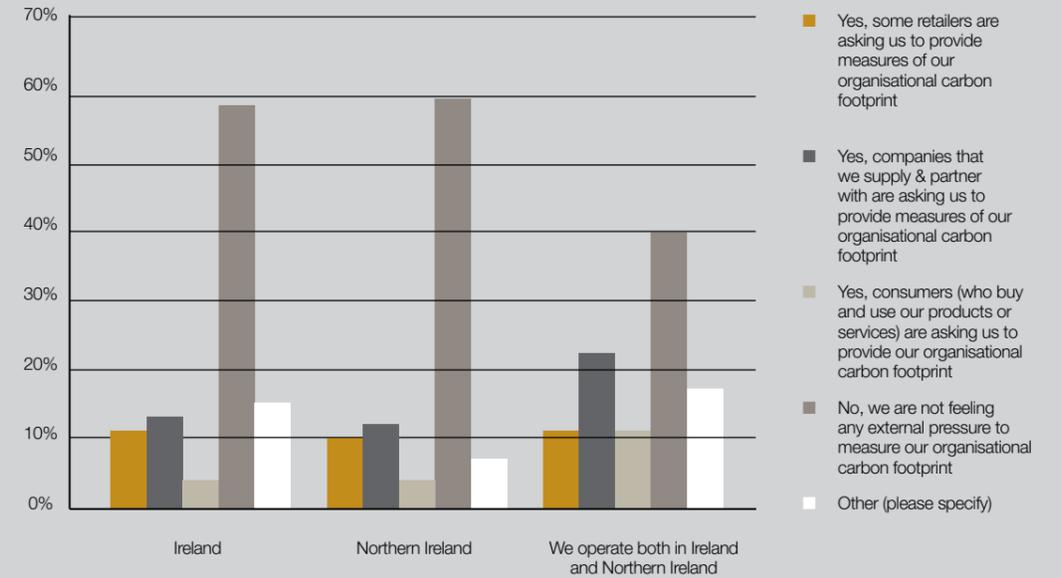


Figure 35: Market pressure for organisational carbon measurement



Market pressure for Product carbon measurement

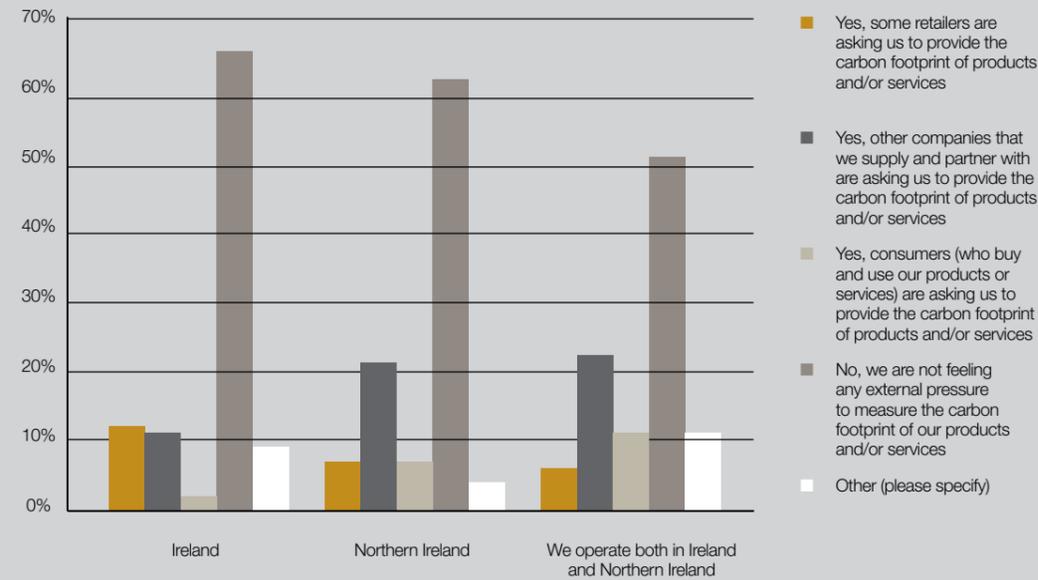
39% of respondents who operate on a cross-border basis perceive themselves to be under some form of market pressure to provide the carbon footprint of products and services. This represented the highest level of market pressure amongst the three groupings.

At 34%, just over a third of respondents from Northern Ireland perceived themselves to be coming under market pressure for product carbon measurement, whilst 25% of respondents who operate in Ireland indicated likewise.

In Ireland, product carbon footprinting appears to be driven primarily by retailers, from whom 13% of respondents indicated that they are feeling some pressure. There was also a reasonable level of pressure from supply chain partners, from whom 11% of respondents operating in Ireland indicated they were feeling some pressure.

Supply chain partners were consistently highlighted as sources of pressure for product carbon footprinting. In Northern Ireland, 21% of respondents indicated that they were under pressure from supply chain partners, whereas the proportion was 22% for respondents who operate both in Ireland and Northern Ireland.

Figure 36: Market pressure for Product Carbon Measurement



4.12 Comparison of headline trends by company sizes

It is likely that businesses' ability to respond to carbon measurement requirements may be determined by their size. This section therefore compares some of the high level trends and responses by company size.

To guide this process, companies were classified into four groups in accordance with the European Commission's definition³⁵ of micro, small and medium-sized enterprise, which classifies companies as follows.

Type of enterprise	Headcount
Large	Greater than 250
Medium	50 to 249 employees
Small	10 to 49 employees
Micro	Less than 10 employees

As per the European Commission's guidance, Micro, Small and Medium sized enterprises are collectively referred to as Small and Medium Sized Enterprises (SMEs).

³⁵ See EC 'Recommendation 2003/361/EC: SME Definition' which was formally adopted on 1st January 2005.

Awareness of organisational carbon measurement

The results show that there is a strong correlation in companies' awareness of organisational carbon measurement and their sizes. This is illustrated in Figure 37 below which shows the lowest level of awareness amongst Micro-enterprises at only 75%, compared to 82% for smaller companies, 97% for medium-sized companies and 100% awareness amongst large firms.

4.12.1 The Awareness of product carbon measurement

The correlation between awareness and company size was similarly evident in awareness of product carbon measurement.

Again, the lowest level of awareness was amongst Micro-enterprises at 75%; improving progressively to 79% for small firms, 95% for medium-sized companies and 97% for large businesses.

4.12.2 Current levels of organisational carbon measurement amongst respondents

Continuing the trends above, there was also a clear correlation between organisational carbon measurement activities and company size.

As shown below, the rate of organisational carbon measurement is lowest amongst micro-enterprises at only 4%, gradually increasing to 57% amongst large firms.

Figure 37: Awareness of organisational carbon measurement by company size

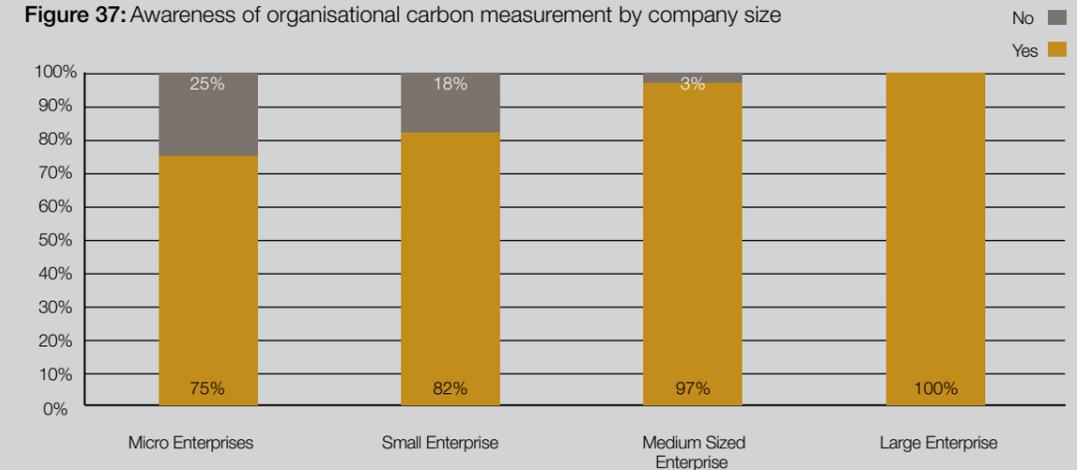


Figure 38: Awareness of product carbon measurement by company size

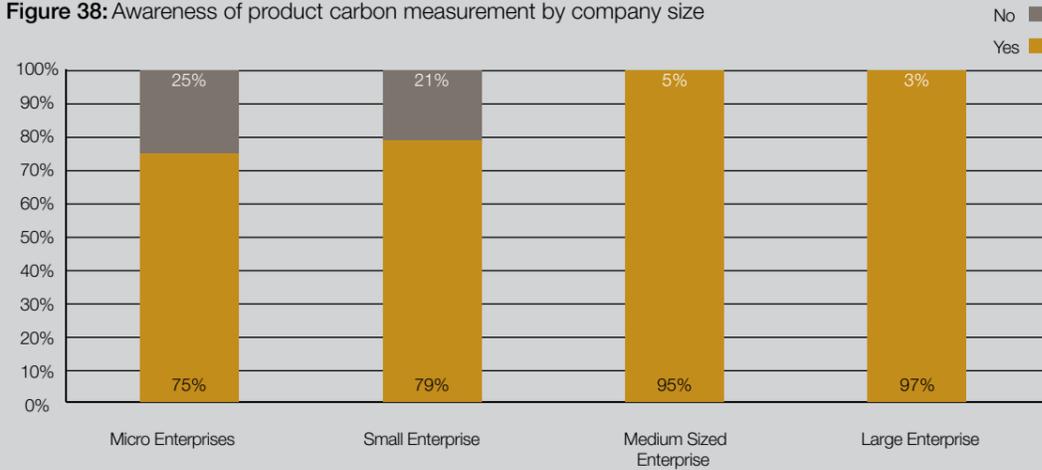
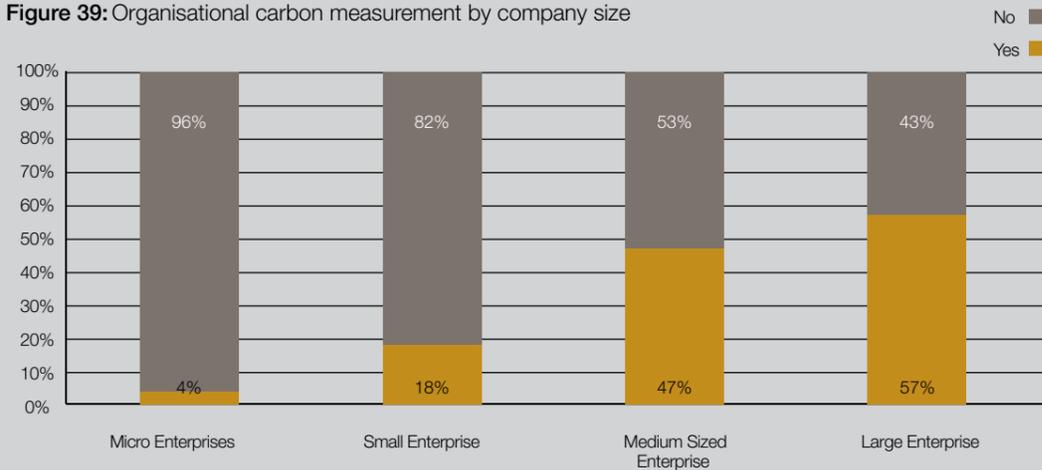


Figure 39: Organisational carbon measurement by company size



4.12.3 Product carbon measurement amongst respondents

The survey showed that none of the micro-enterprises currently measure carbon footprint of their products and services. As with previous responses, the highest rate of product carbon measurement was amongst large firms at 17%, followed by medium-sized enterprises at 13%.

4.12.4 Market pressure for organisational carbon footprinting

Large firms are more likely to perceive themselves as facing some market pressure to measure the carbon footprint of the organisation. 47% of respondents in this category indicated that they are under pressure from retailers, supply chain partners and customers to do so.

Figure 40: Product carbon measurement by company size

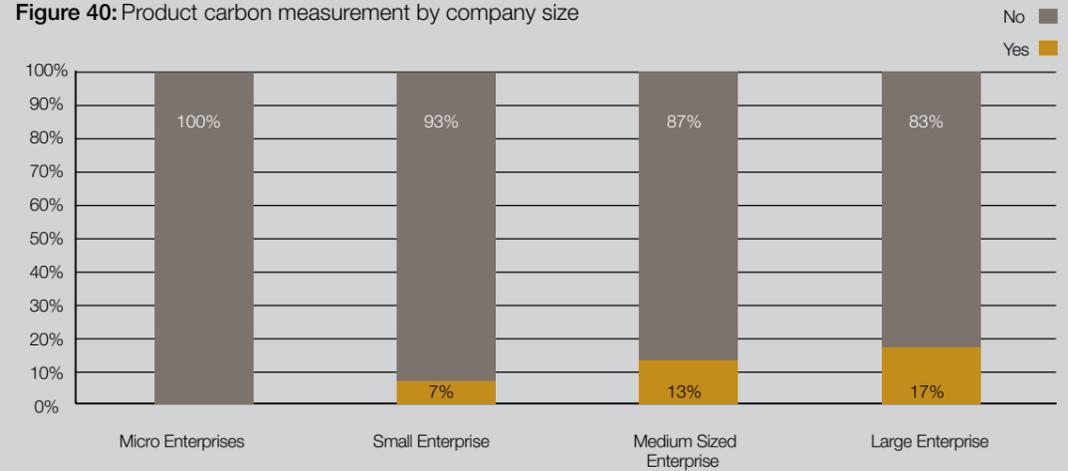
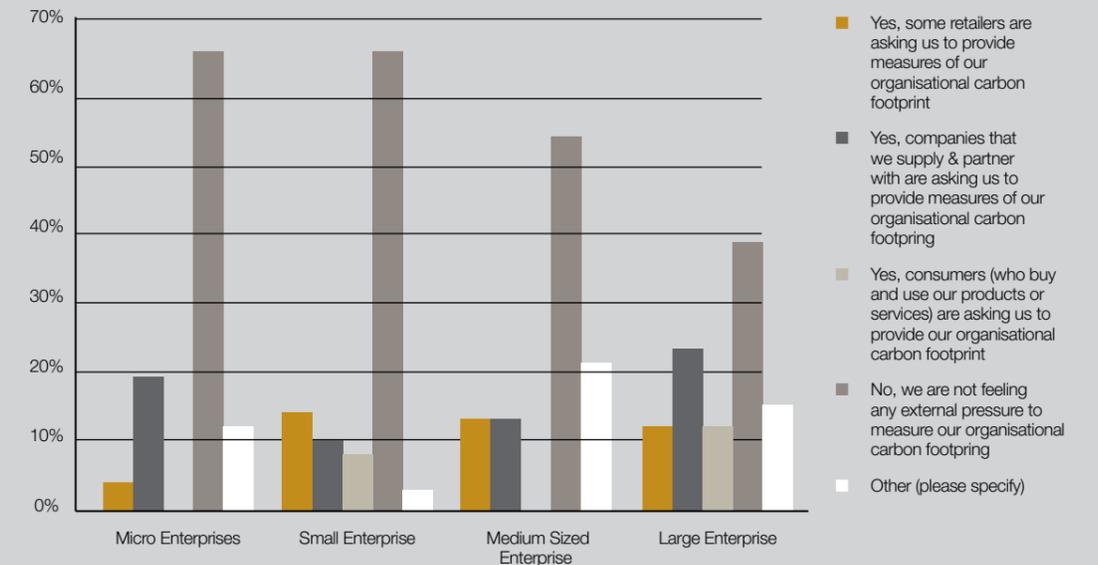


Figure 41: Market pressure for organisational carbon measurement



Amongst medium-sized enterprises, 26% indicated they are facing a push from the market to measure their organisational carbon footprint, which was slightly lower than the 30% of small firms that indicated likewise.

Notably, 23% of micro-enterprises also indicated that they are facing some sort of pressure.

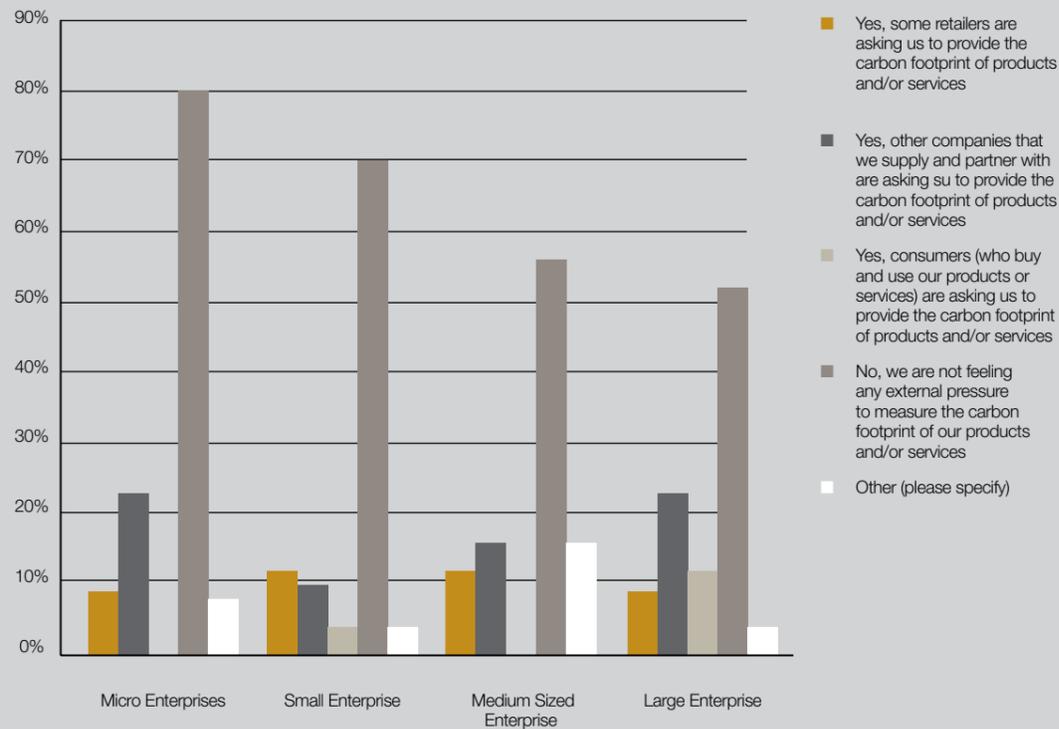
In all categories of companies, the greatest pressure for organisational carbon measurement was from supply chain partners. Indeed, the latter were highlighted by 24% of large firms as sources of pressure. Similar responses were received from 13% of medium-sized enterprises, 10% of small firms and 19% of micro-enterprises.

4.12.5 Market Pressure for product carbon measurement

Respondents' perception of market pressure also increased progressively with company sizes. Only 12% of micro-enterprises for example, perceived themselves to be under some market pressure to measure product carbon footprint. Amongst small firms, the proportion increased to 27%, whilst amongst medium-sized and large businesses, the related proportion were 29% and 45% respectively.

As with organisational carbon measurement, the greatest push for product carbon measurement appears to be coming from supply chain partners. They were identified as the main source of market pressure by 8% of micro-enterprises, 10% of small firms, 16% of medium-sized businesses and 24% of large enterprises. This reflected the single highest source of market pressure for most categories of companies. The exception were small firms, where at 13%, retailers were identified as providing the greatest push for product carbon measurement.

Figure 42: Market pressure for Product carbon Measurement



5.1 Introduction

Many businesses in Ireland and Northern Ireland are facing direct market demand to measure their organisational carbon footprint. Larger businesses are responding to these market requirements, but smaller companies have more difficulties in doing so.

There is similar pressure on businesses to measure and report the carbon footprint of products and services. In this case however, companies of all sizes and from all sectors are failing to respond to these market requirements, with only a very small number of companies in Ireland and Northern Ireland currently undertaking product carbon measurement.

These results suggest that smaller companies especially could benefit from easy-to-use guidance, accessible tools and support to facilitate organisational carbon measurement. Furthermore, all companies could benefit from an improved understanding of product carbon measurement, combined with accessible guidance, tools to help them source the requisite data and undertake the requisite analysis.

The main findings of the study are summarised in the sub-sections below.

5.2 Business in Ireland and Northern Ireland

Businesses know of carbon measurement but not necessarily how it is undertaken in practice. The vast majority of businesses that participated in this study are aware that companies globally now measure the GHG impacts both of the organisation and of their products.

Notably, 91% of respondents indicated that they are aware that businesses now measure GHG impacts at the organisational level. A similar proportion (i.e. 90%), indicated that they are aware that companies now measure the carbon footprint of products and services.

Further analyses showed however, that whilst participants are aware of product carbon measurement, many are unclear as to how it is undertaken in practice.

In particular, a significant proportion of respondents who indicated that they currently measure product carbon footprint, had wrongly taken this view based on the fact that they currently measure emissions arising from on-site production processes. In subsequent engagement, it became clear that these respondents were unaware that product carbon measurement is based on emissions over the life cycle of the product.

5.3 Organisational carbon measurement presents unique challenges and barriers to smaller enterprises

There are gaps in organisational carbon measurement in all sectors and company sizes. However, these gaps are more evident amongst small and micro-enterprises.

32% of all companies that participated in the study indicated that they currently measure the carbon footprint of their organisations. This is comprised mainly of medium-sized and large enterprises, who accounted for 85% of these respondents. Only 15% of the organisations who currently measure their organisational carbon footprint were small firms and micro-enterprises.

The results also showed that smaller companies are less likely to use, or be familiar with, formal approaches for corporate carbon measurement. Notably, 36% of all respondents who measure their organisational carbon footprint use the GHG Protocol Corporate Standard to do so. Further analyses showed that all the companies using the GHG Protocol were medium sized or large organisations. No participating micro or small enterprise used the GHG Protocol, which is the best known framework for organisational carbon measurement.

On the other hand, small firms and micro-enterprises are more likely to measure organisational carbon footprint without drawing on any formal framework or guidance. Notably, 22% of the small firms and micro-enterprises who indicated that they measure their organisational carbon footprint, do not use any formal approach.

This raises fundamental questions about the robustness of the measurement process and the credibility that stakeholders would lend to its outcomes.

The key challenges and barriers to carbon measurement faced by businesses are as follows.

- ***Inadequate internal capacity and skills to undertake organisational carbon footprinting***
- ***Difficulty in finding trust-worthy and easy-to-use guidance***

26% of all businesses who do not measure their organisational carbon footprint attributed this to a lack of internal capacity and skills. Amongst small and micro-enterprises the proportion facing this challenge was higher, with 31% indicating that this is a key challenge.

12% of those businesses who do not measure their organisational carbon footprint indicated that this is due to the unavailability of guidance.

- ***Lack of internal systems to collect the requisite data***

18% of those businesses who do not measure their organisational carbon footprint indicated that this was due to a lack of systems to collect the requisite data. This was a particular issue for small and micro-enterprises, of whom 20% pointed to this as a barrier, compared to 15% of medium-sized and large enterprises.

- ***The high financial costs of organisational carbon measurement***

Notably, 11% of businesses who do not measure organisational carbon footprint were of the view that the costs would be too high. There was no difference in perception amongst smaller or larger organisations. 11% of small and micro-enterprises who currently do not measure organisational carbon footprint took this view; as did 11% of medium and large enterprises who do not currently measure their organisational carbon footprint.

5.4 Product carbon measurement presents challenges to the wide cross-section of companies

Unlike organisational carbon measurement, there are significant gaps in product carbon measurement activity amongst all sectors and company sizes.

Initially, 13% of the participants in this study indicated that they measure the carbon footprint of products and services.

Of those, 12% stated that they use no formal methods at all to measure their product carbon footprint. Furthermore, a significant proportion, i.e. 48%, indicated that they use 'other' approaches. Notably, none of these 'other' approaches were recognised as being published or formal approaches to product carbon measurement.

Given the complexity of product carbon footprinting and importance of robustness subsequent comparison of products, the lack of a robust underpinning methodology is a serious shortcoming.

In follow-up engagement, many of these respondents indicated that they had responded positively to the question about product carbon footprinting, because they measure the emissions arising from their on-site production process. In fact, none of the respondents who either use no formal methods or who used 'other' methods, had taken a life cycle view of the emissions.

Indeed, only 12% of companies who indicated that they measure the carbon footprint of products and services stated that they use a robust methodology, i.e. PAS 2050 – which is the only publicly available methodology for product carbon measurement at this time.

There were differences in the responses highlighted by smaller and larger organisations, particularly around their internal capacity and skills. However, as the rate of product carbon measurement is relatively low amongst all respondents, it is clear that all the challenges need to be addressed³⁶.

The key challenges and barriers are as follows.

- **Inadequate internal capacity and skills to undertake product carbon footprinting**

24% of businesses who do not currently measure product carbon footprint indicated that inadequate capacity and skills is a key barrier. Amongst medium and large companies the proportion was 19%; whilst amongst small and micro-enterprises the proportion was 30%.

- **No access to trust-worthy and easy-to-use guidance**

10% of businesses who do not currently measure product carbon footprint indicated that an issue is the lack of trust-worthy and easy to use

guidance. In light of the complexity of product carbon measurement and the need to consider life cycle emissions, there is likely to be a greater need for guidance. The relatively low percentage who indicated such a need may be due to customers underestimating the complexity of product carbon measurement – arising from the lack of awareness that life cycle emissions need to be considered.

- **Inadequate systems for collecting life cycle data**

22% of respondents who do not measure product carbon footprint attributed this to a lack of systems for collecting life cycle data. There were no clear differences arising from the size of companies. 22% of small and micro-enterprises took this view, as did 22% of medium-sized and large enterprises.

- **The cost and resource for product carbon measurement would be too high**

Only 10% of respondents who do not measure product carbon footprint took this view. Amongst micro-enterprises and small firms, the proportion was 8%. Again, this is likely to be associated with poor awareness of the life cycle dimension to product carbon measurement and the associated complexity arising as a result.

³⁶ The approach differs to that for Organisational Carbon Measurement where there was a clear gap amongst Small and Micro enterprises, thus necessitating special attention to these companies.

5.5 Some businesses in Ireland and Northern Ireland are at risk of failing to meet supply chain requirement for carbon metrics

More than a third of participants in this study (i.e. 36%) indicated that they are coming under some market pressure, i.e., from retailers, supply chain partners or customers, to measure and report their organisational carbon footprint.

Further analysis showed, however, that 45% of these respondents who indicated that they are facing some market pressure to measure organisational carbon footprinting, do not currently measure their organisational carbon footprint.

This poses obvious risks. In particular, if retailers and big buyers were to start enforcing the requirements for organisational carbon measurement, many suppliers in Ireland and Northern Ireland would currently be non-compliant.

The risks to businesses in Ireland and Northern Ireland are even greater when product carbon measurement is considered.

34% of survey respondents indicated that they are facing market pressure to provide carbon metrics relating to products and services.

Further analysis showed that of these companies under some form of market pressure, 71% of these companies do not currently measure their product carbon footprint, and therefore are not meeting the requirements of their customers and supply chain partners.

This is of particular concern, as some of the world's biggest retailers, including Tesco in the UK, Migros in Switzerland and Groupe Casino in France, have made varying public commitments to put carbon labels on the products that they sell.

5.6 Businesses only view carbon measurement as relevant if they are under direct pressure to from their customers

The responses provided by companies to the survey questions suggest that many would only view carbon measurement as important if they came under direct pressure from their customers to provide carbon metrics related to the organisation and products.

For example, 28% of those respondents who do not measure their organisational carbon footprint indicated that this is because they do not currently view organisational carbon measurement as important to their business.

Further analysis showed however, that this view is more likely to be taken by respondents who do not perceive themselves to be under any market pressure to provide organisational carbon metrics. Indeed, those respondents who do not view organisational carbon measurement as important accounted for 95% of those respondents who indicated that they are not feeling any external pressure to measure their organisational carbon footprint.

A similar pattern was identified in the context of product carbon measurement.

Of the respondents who do not undertake product carbon measurement, 25% indicated that that this is because they do not view product carbon footprinting as important to the business. Again, this was strongly correlated with respondents' perception that they are not currently facing external market pressure for product carbon measurement. Indeed, those respondents who indicated that product carbon measurement is not of current importance to their business, accounted for 92% of those respondents who had previously stated that they are not under any market pressure to provide product carbon metrics.

This singular view of business benefit suggests that respondents are unaware of the other benefits that proactive carbon measurement can provide, in terms of cost reduction, regulatory compliance.

5.7 Senior management support is key to carbon measurement

Those participating companies who undertake carbon measurement were asked what challenges, if any they faced in doing so.

Only 11% of respondents who currently measure their organisational carbon footprint indicated that convincing senior management was a key challenge.

Similarly, of those companies that currently measure their product carbon footprint, only 8% indicated that convincing senior management was a key challenge in doing so.

This suggests that the support of senior managers has been key to the adoption of carbon measurement amongst those companies in Ireland and Northern Ireland who currently measure their carbon impacts.

Engagement of senior managers in those companies who do not currently measure their carbon impacts, may be key to encouraging carbon measurement amongst businesses in Ireland and Northern Ireland.

6.1 Summary overview of the proposed options

The research shows that there are significant gaps in the measurement and reporting of GHG emissions amongst businesses in Ireland and Northern Ireland. This presents risks to their competitiveness and reputations in the marketplace, and to their positioning for grasping the opportunities presented by increasing trends towards sustainable procurement and consumption.

Given that businesses are a key source of GHG emissions, these trends also present risks to the achievement of targets for reducing GHG emissions in the two jurisdictions, i.e. by 20% relative to 1990 levels by 2020 in Ireland, and 80% relative to 1990 levels by 2050 in Northern Ireland.

The study showed that the low rates of carbon measurement arise from the fact that businesses in Ireland and Northern Ireland face a number of challenges in measuring and reporting their greenhouse gas emissions. These are particularly more pronounced amongst smaller companies in all sectors.

This Action Plan recommends initiatives that can be implemented by InterTradelreland, Enterprise Ireland and Invest Northern Ireland, in partnership with trade associations, sector bodies, delivery partners and other stakeholders, to address these challenges and minimise the associated risks. The initiatives are summarised below and are grouped into three categories reflecting the planned timeframes and mode for implementation for each, namely:

- **Quick Wins:** Initiatives that can be implemented quickly using existing expertise and resources
- **Intermediate Initiatives:** Initiatives that can be implemented in the medium term, by the agencies in collaboration with delivery partners
- **Initiatives for exploration:** Initiatives that may present resourcing challenges. It is therefore recommended that the agencies explore how these initiatives could be implemented and resourced, and identify the most effective mode for implementing them.

QUICK WINS

INTERMEDIATE ACTION

INITIATIVE	BRIEF DESCRIPTION
Develop and disseminate easy-to-follow guidance for carbon measurement by SMEs	The study showed that small and micro-enterprises especially, are less likely to undertake carbon measurement. Furthermore, where they do attempt to do so, small and micro-enterprises are less likely to use formal or recognised approaches. Many SMEs indicated that the absence of appropriate guidance is a key barrier to carbon measurement.
Develop and disseminate simple and easy-to-use tools to facilitate carbon measurement and monitoring by SMEs	<p>Given the unique challenges faced by smaller organisations, it is recommended that the agencies supplement the guidance (above) with practical and easy-to-use tools that will facilitate carbon measurement amongst SMEs.</p> <p>In particular, these tools should enable SMEs to track emissions over time, and not just provide a snapshot at a point in time.</p> <p>These tools could include, for example, downloadable and ready-to-use templates and spreadsheets, that will enable SMEs to monitor and track carbon impacts, and report them in accordance with internationally recognised guidance. Where possible, these tools should be pre-populated with formulae and emission factors specific to Ireland or Northern Ireland as appropriate.</p>
Provide carbon measurement training and mentoring for SMEs	<p>Many SMEs indicated that they do not have the skills and capacity to undertake carbon measurement. There is therefore a need to build the competencies and confidence of SMEs where carbon measurement is concerned.</p> <p>It is therefore recommended that the agencies explore options for providing practical, focussed and customised training to help SMEs understand how to apply the guidance and tools for carbon measurement. In particular, it is important that the training is provided in a way that meets the specific needs of small and micro organisations. This may take the form for example, of practical on-site training, or mentoring arrangements that enable participants to seek advice after the formal training sessions.</p> <p>In looking at options, the agencies may wish to consider whether it is possible to provide the training as part of programmes that they currently provide, or through external delivery partners who may be able to provide such training and mentoring on an all-island basis</p>

INITIATIVES FOR EXPLORATION

Provide hands-on support to SMEs in undertaking carbon measurement	<p>A significant proportion of smaller companies that participated in the study indicated that they do not have the resources or capacity to track, measure and report their carbon emissions. Many SMEs also perceived carbon measurement as requiring specialist skills, and may therefore not have the confidence to attempt it themselves.</p> <p>It is therefore recommended that the agencies explore options for providing direct hands-on support to SMEs, to help them undertake carbon measurement. This may, for example, take the form of 1 or 2 day support from an external advisor who can work closely with staff from the company. Notably, the emphasis should be on co-working to ensure that knowledge is imparted.</p> <p>In looking at options, the agencies may wish to consider whether it is possible to provide such support as part of ongoing programmes, or through delivery partners who may be able to provide such support on an all-island basis.</p>
Implement a cross-border demonstrator project to showcase best practice in product carbon measurement	<p>The study showed that product carbon measurement presents particular challenges to companies in all sectors and of all sizes. These challenges typically arise from inadequate understanding of what product carbon measurement means in practice, and poor awareness of the associated methods, rules and inputs.</p> <p>In this regard, a cross-border and cross-sector demonstrator project that showcases best practice product carbon measurement could provide a number of benefits. In particular, it could help companies in Ireland and Northern Ireland understand the process and methods, showcase the benefits, and provide local exemplars and case studies from which other companies can draw lessons.</p> <p>Managing and supporting such a scheme could present resourcing challenges however. It is therefore recommended that the Agencies explore options for implementing the demonstrator project. In doing so, the agencies should engage sector bodies and trade associations to assess opportunities for pooling resources, etc.</p>

<p>Provide a platform/mechanism to facilitate the public disclosure and benchmarking of corporate carbon footprint by companies (particularly SMEs) in Ireland and Northern Ireland</p>	<p>The disclosure of carbon performance can help businesses realise the reputational benefits of carbon measurement. It can also facilitate the benchmarking and incentivise the improvement of carbon performance.</p> <p>At present, there are no carbon disclosure schemes available for participation by smaller companies in Ireland and Northern Ireland. The carbon disclosure project and the league tables that will form part of the CRC efficiency scheme in the UK, for example, are both targeted at large companies.</p> <p>Recognising the potential benefits of easy disclosure for benchmarking amongst small companies, it is recommended that the agencies explore options for implementing a mechanism to facilitate the disclosure of organisational carbon metrics by businesses in Ireland and Northern Ireland. In doing so, the agencies should engage sector bodies and trade associations to assess and discuss the most suitable mode of implementation.</p>
<p>Develop a platform that will enable the sharing of life cycle carbon data for product carbon measurement</p>	<p>The study showed that one of the fundamental barriers to product carbon measurement is the difficulty in obtaining the life cycle emissions data that is required for the measurement process.</p> <p>Many companies, especially those within the same sector, are likely to have similar inputs into the production process. This provides an opportunity to share life cycle data and values, thus minimising any replication of effort.</p> <p>It is likely however, that such sharing of data will be more feasible in some sectors than others. It is therefore recommended that the agencies approach relevant trade associations and sector bodies, to assess the willingness of those bodies to lead and implement schemes to share life cycle data within their sectors.</p>

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- Bord Bia
- Ulster Farmers Union
- Engineers Ireland
- Northern Ireland Plastics Association
- Plastics Ireland
- Northern Ireland Hotels Federation
- Momentum Northern Ireland
- ICT Ireland
- Irish Timber Frame Manufacturers Association

APPENDIX 2: ABOUT THE STEERING GROUP

Business & Carbon Measurement on the island of Ireland

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InterTradelreland

Established under the 1998 Belfast Agreement, InterTradelreland aims to boost North/South economic co-operation to the mutual benefit of Northern Ireland and Ireland.

InterTradelreland's vision is for a globally competitive enterprise environment in which Ireland and Northern Ireland co-operate to ensure the optimal utilisation of economic resources, particularly knowledge resources, to drive additional trade and wealth creation.

To achieve this vision, InterTradelreland undertakes and supports an ongoing process of research, analysis, project design, pilots, implementation, evaluation and review. Through these activities, InterTradelreland deliver benefits in Ireland and Northern Ireland in the key areas of competitive advantage – sales and marketing, science, technology and innovation, enterprise capability development and business networks.

Enterprise Ireland

Enterprise Ireland is the government organisation responsible for the development and growth of Irish enterprises in world markets. The mission of Enterprise Ireland is to accelerate the development of world-class Irish companies to achieve strong positions in global markets resulting in increased national and regional prosperity.

Recognising the invaluable role that export sales growth can play in increasing the flow of income into the Irish economy and for job creation, Enterprise Ireland's priority is the achievement of export sales growth from Irish-owned companies.

In this regard, Enterprise Ireland works in partnership with Irish enterprises to help them start, grow, innovate and win export sales on global markets. These include a wide spectrum of businesses - from early-stage entrepreneurs, to established business owners and Irish multinational companies.

The Environment & Green Technologies department of Enterprise Ireland can help companies with managing their carbon emissions. GreenTech Support was designed to help companies with specific environmental issues including carbon management and reduction. Support is provided to put a carbon management strategy in place, measure a baseline carbon footprint and set about seeking reductions in emissions over time. Enterprise Ireland clients should contact Declan White at 01-7272480 or Tom Lowry at 061-718315, email: greentech@enterprise-ireland.com

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Invest NI

Invest Northern Ireland is Northern Ireland's economic development agency.

Invest NI's overall goal is to help create wealth for the benefit of the whole community by strengthening the economy, helping it grow, increasing business productivity and boosting Northern Ireland's Gross Value.

Towards this end, Invest NI actively supports business development, thus helping to increase export levels, attract high quality inward investment, and stimulate a culture of entrepreneurship and innovation.

Invest NI focuses on three priority actions for economic growth, namely (i) Realising Client Potential, i.e., helping clients to become better at growing profitably; (ii) Shifting the Sectoral Focus, i.e., promoting a sectoral mix that incorporates higher value-added activities; and (iii) Encouraging Frontier Technologies, i.e., technologies at the leading edge of research and development.

Invest NI funds Carbon Trust (www.carbontrust.co.uk) to improve the competitiveness and productivity of Northern Ireland businesses by reducing operational costs through energy efficiency. Carbon Trust provides SME's with free guidance, advice and hosts an online tool to help businesses measure the Carbon Footprint of products and services, or organisations.

Carbon Footprinting of Products or Services based on PAS2050 methodology is supported

<http://www.carbontrust.co.uk/cut-carbon-reduce-costs/calculate/carbon-footprinting/pages/product-carbon-footprint.aspx>

<http://www.carbon-label.com> and <http://www.footprintexpert.com/Pages/default.aspx>

Carbon Footprinting of Organisations to the Carbon Trust Standard is also supported

<http://www.carbontrust.co.uk/cut-carbon-reduce-costs/calculate/carbon-footprinting/pages/organisation-carbon-footprint.aspx>

About us

InterTradeIreland is the only organisation which has been given responsibility by both Governments to boost North/South economic co-operation to the mutual benefit of Northern Ireland and Ireland. By encouraging better use of our collective resources we help to expedite trade and business growth across the island and create an environment where it is easier to do business.

We support SMEs across the island to identify and develop North/South trade and innovation opportunities. We do this through:

- **Business programmes**
- **Research and statistics**
- **Networks and partnerships**

InterTradeIreland will endeavour to facilitate requests for alternative formats of this publication including Irish Language, Ulster Scots, Braille, disk and audio cassette.

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