

By Craig Love, Associate Director, Climate Impact at Scottish National Investment Bank



# How to Solve a Problem Like Scope 3 Emissions?

Measuring and accounting for Scope 3 emissions is a challenge facing organisations across all sectors, and is even more challenging for those starting out on their journey. As many of you are aware, there is a myriad of information online! If not, take one second out of your day to type Scope 3 emissions into your favourite search engine. You are immediately hit with definitions, guidance and good practice articles, as well as companies offering services, tools and thought pieces, all aimed at providing information and more importantly examples of what a complete footprint will look like across the three scopes.

Having worked in the environment, sustainability and climate change sector since 2012, I have undertaken countless footprinting exercises, and have found that ultimately the secret to understanding your total

impact across all three scopes is good carbon management practices and data.

The importance of carbon

management and accounting is sometimes a lost or forgotten element when we consider our impact on the climate. We live in a target led society driven by government policies and legislation, therefore, it is understandable that this is the focus of many senior leaders within organisations. This need for a target, and therefore a “number” to reduce, can drive decision making and skew the development of a boundary and what will be included in each scope. Embedding good carbon management practices across an organisation to inform decision making should ensure the clarity of your emissions, transparency of the approach being taken, as well as a clear sense of direction towards developing an appropriate target.

While the inclusion of Scope 3 emissions may seem like a different beast than measuring and reporting Scope 1 and 2, it is ultimately the same process, just a different data set. The importance of starting to think about the inclusion of these sources as part of your overall impact is vital, as in reality for most, these combined sources are likely to be far greater than those included in Scope 1 and 2.

The availability of good data is probably the biggest barrier for many organisations when it comes to an expanded carbon footprint, with many Scope 3 sources readily scoped out on this basis. However, as noted previously, the implementation and embedding of carbon management practices across your own organisation, and ensuring that these practices become the “norm” should lead to your value chain also using these principles.

## Where to Start?

The truth is, there is no right or wrong way to start your Scope 3 calculations (a heavily caveated statement!). While it may seem like a daunting task, particularly when considering what should be scoped in or out of a boundary which includes Scope 3, an often-missing factor is that you don’t immediately need to have all the answers or even the datasets, as long as you are transparent in your decision making.

Once again this aligns to good carbon management practices. If you have outlined in your plans and strategies why particular decisions have been made in a transparent way, it provides a sound footing for

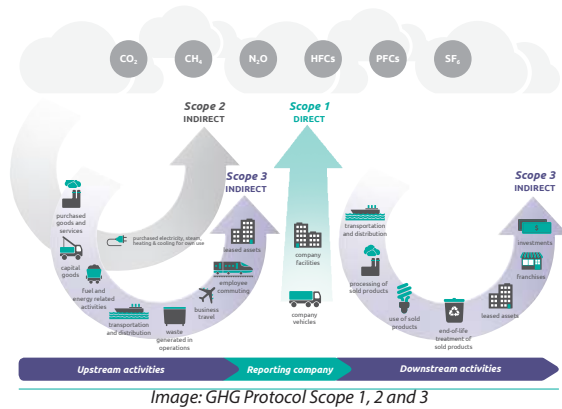
**“You cannot manage what you cannot measure”**  
**Peter Drucker**

anyone working in this space.

That said, trying to measure Scope 3 emissions across a whole value chain is an intricate and complex process. While shooting for the stars might align with wider goals, it is unlikely that a complete dataset will appear overnight. The quality of data is also likely to vary across the different categories of Scope 3 and will require information from both primary and secondary sources for both upstream and downstream emissions.

### Categories and Measurement

The image below provides a great visual representation of the 15



categories of Scope 3 and it is one we will all be familiar with. There are multiple variations online and I wouldn't be surprised if it guides initial decision making for those at the start of their measurement journey, or even those looking to expand their boundary to incorporate elements of Scope 3, and just purely based on the small images themselves.

Studies have shown that humans process visual data 60,000 times faster than any other type of data, and based on the image above, those tasked with defining a boundary are going to be drawn to the images which are most relevant to a company's day to day operations.

While this type of decision making might seem strange, it is probably the best way to start measuring or expanding Scope 3. Prioritisation should always be given to sources where data is more readily available, essentially capturing sources within your direct business control, such as business travel and waste. Each of these sources can be measured using the same methodology as measuring Scope 1 and 2, with data collected from primary sources such as utility meters or monitoring activities established in your strategy, plan or even bills you have paid.

Expanding a boundary beyond this "operational reach" is where measurement will become difficult, especially if you are seeking to meet certain reporting or disclosure requirements. It will require input from both primary

and secondary sources and might even entail input from experts in these areas to ensure that your measurement reflects current thinking or climate science.

Accessing the relevant GHG protocol provides a good foundation for those looking to measure Scope 3 emissions. However, trying to measure across all 15 categories and using the guidance can be really time consuming and lead to more questions rather than answers, particularly if you are unsure where to start.

The approach on the right provides a step by step process for the incorporation of Scope 3 emissions into your wider boundary.

- ### 1. Identify your Sources

*Plan*  
Identify and confirm your relevant Scope 3 sources, establish a data hierarchy and review the availability of information. Consider the control/influence you have over these source.
- ### 2. Gather the Data

*Who to engage with?*  
Identify relevant stakeholders from whom you can gather relevant data for each source of carbon emissions you have identified in your boundary (e.g., electricity supplier).
- ### 3. Calculate the Emissions

Use the specific methodology outlined by the GHG Protocol.
- ### 4. Incorporate Emissions into your Baseline

Combine Scope 3 emissions with the rest/the total of all sources, which provides a carbon footprint baseline.
- ### 5. Identify Reduction Actions

*Which projects to focus on?* Once you have measured your emissions, it is important to select areas of focus for reduction. Typically focus would be on the largest emissions sources, based on measurement. However, consideration should also be given to whether these sources are under direct control or influence.
- ### 6. Set a Target

Following the identification of areas of focus for emissions reduction, it is important to set a target which is realistic, measurable, achievable, relevant and time-bound ('SMART').
- ### 7. Monitoring Progress

Emissions data in subsequent years should follow the same process as the first four stages. However, instead of setting a baseline, you are providing information on progress following the development of the baseline. Performance towards the target should be reported annually.

## Reach your Target!!!

The tables below show the upstream and downstream sources which set out each of the GHG Protocol's 15 Scope 3 emissions sources with an overview description of what would be included, and more helpfully, a small summary of what you would be required to measure. While there is more detail involved, showing a small summary like this can really inform initial decision making by assessing your areas of focus.



**SCOPE 3 CATEGORY AND CALCULATION SUMMARY - UPSTREAM ACTIVITIES**  
(Scope 3 Calculation Guidance | GHG Protocol)

CATEGORY & DESCRIPTION	SUMMARY OF METHODS FOR CALCULATING EMISSIONS
<p><b>CATEGORY 1</b> <b>Purchased goods and services:</b> All upstream (cradle-to-gate) emissions of purchased goods and services.</p>	<ul style="list-style-type: none"> <li>• <b>Supplier-specific method</b> – collects product-level cradle-to-gate GHG inventory data from goods or services' suppliers.</li> <li>• <b>Hybrid method</b> – uses a combination of supplier-specific activity data (where available) and secondary data to fill the gaps. This method involves:                     <ul style="list-style-type: none"> <li>- collecting allocated Scope 1 and Scope 2 emission data directly from suppliers;</li> <li>- calculating upstream emissions of goods and services from suppliers' activity data on the amount of materials, fuel, electricity, used, distance transported and waste generated from the production of goods and services, and applying appropriate emission factors; and</li> <li>- using secondary data to calculate upstream emissions wherever supplier-specific data is not available.</li> </ul> </li> <li>• <b>Average-data method</b> – estimates emissions for goods and services by collecting data on the mass (e.g., kilograms or pounds) or other relevant units of goods or services purchased, and multiplying by the relevant secondary (e.g., industry average) emission factors (e.g., average emissions per unit of good or service).</li> <li>• <b>Spend-based method</b> – estimates emissions for goods and services by collecting data on the economic value of goods and services purchased, and multiplying it by relevant secondary (e.g., industry average) emission factors (e.g., average emissions per monetary value of goods).</li> </ul>
<p><b>CATEGORY 2</b> <b>Capital goods:</b> Extraction, production and transportation of capital goods purchased or acquired.</p>	<ul style="list-style-type: none"> <li>• <b>Supplier-specific method</b> - collecting product-level cradle-to-gate GHG inventory data from goods' suppliers.</li> <li>• <b>Hybrid method</b> - a combination of supplier-specific activity data (as available) and using secondary data to fill the gaps. This method involves:                     <ul style="list-style-type: none"> <li>- collecting allocated Scope 1 and Scope 2 emissions from suppliers;</li> <li>- calculating upstream emissions of goods by collecting available data from suppliers on the amount of materials, fuel, electricity used, distance transported and waste generated from the production of goods, and applying appropriate emission factors;</li> <li>- using secondary data to calculate upstream emissions wherever supplier-specific data is not available.</li> </ul> </li> <li>• <b>Average-product method</b> - estimating emissions for goods by collecting data on the mass or other relevant units of goods purchased and multiplying by relevant secondary (e.g., industry average) emission factors (e.g., average emissions per unit of good).</li> <li>• <b>Average spend-based method</b> - estimating emissions for goods by collecting data on the economic value of goods purchased and multiplying it by relevant secondary (e.g., industry average) emission factors (e.g., average emissions per monetary value of goods).</li> </ul>

**CATEGORY 3  
Fuel and energy related activities (not included in Scope 1 or Scope 2):**

Extraction, production and transportation of fuels, and energy purchased or acquired.

- **Supplier-specific method** - collecting data from fuel providers on upstream emissions (extraction, production and transportation) of fuel consumed by the reporting company.
- **Average-data method** - estimating emissions by using secondary (e.g., industry average) emission factors for upstream emissions per unit of consumption (e.g., kg CO<sub>2</sub>e/kWh).

**CATEGORY 4  
Upstream transportation and distribution:**

Transportation and distribution of products purchased between a company's tier 1 suppliers and its own operations (in vehicles and facilities not owned or controlled by the reporting company). Transportation and distribution services purchased, including inbound logistics, outbound logistics (e.g., of sold products), and transportation and distribution between a company's own facilities (in vehicles and facilities not owned or controlled by the reporting company).

- **Fuel-based method** - determining the amount of fuel consumed (i.e., Scope 1 and Scope 2 emissions of transport providers) and applying the appropriate emission factor for that fuel.
- **Distance-based method** - determining the mass, distance and mode of each shipment, then applying the appropriate mass-distance emission factor for the vehicle used.
- **Spend-based method** - determining the amount of money spent on each mode of business travel transport and applying secondary (EEIO) emission factors.

**CATEGORY 5  
Waste generated in operations:**

Disposal and treatment of waste generated in operations (in facilities not owned or controlled by the reporting company).

- **Supplier-specific method** - collecting waste-specific Scope 1 and Scope 2 emissions data directly from waste treatment companies (e.g., for incineration, recovery for recycling).
- **Waste-type-specific method** - using emission factors for specific waste types and waste treatment methods.
- **Average-data method** - estimating emissions based on total waste going to each disposal method (e.g., landfill) and average emission factors for each disposal method.

**CATEGORY 6  
Business travel:**

Transportation of employees for business-related activities (in vehicles not owned or operated by the reporting company).

- **Fuel-based method** - determining the amount of fuel consumed during business travel (i.e., Scope 1 and Scope 2 emissions of transport providers) and applying the appropriate emission factor for that fuel.
- **Distance-based method** - determining the distance and mode of business trips, then applying the appropriate emission factor for the mode used.
- **Spend-based method** - determining the amount of money spent on each mode of business travel transport and applying secondary (EEIO) emission factors.

**CATEGORY 7  
Employee commuting:**

Transportation of employees between their homes and their worksites (in vehicles not owned or operated by the reporting company).

- **Fuel-based method** - determining the amount of fuel consumed during commuting and applying the appropriate emission factor for that fuel.
- **Distance-based method** - collecting data from employees on commuting patterns (e.g., distance travelled and mode used for commuting) and applying appropriate emission factors for the modes used.
- **Average-data method** - estimating emissions from employee commuting based on average (e.g., national) data on commuting patterns.

**CATEGORY 8  
Upstream leased assets:**

Operation of assets leased by the reporting company (lessee) and not included in Scope 1 and Scope 2 – reported by lease holder.

- **Asset-specific method** - collecting asset-specific (e.g., site-specific) fuel and energy use data and process, and fugitive emissions data or Scope 1 and Scope 2 emissions data from individual leased assets.
- **Lessor-specific method** - collecting the Scope 1 and Scope 2 emissions from lessor(s) and allocating emissions to the relevant leased asset(s).
- **Average data method** - estimating emissions for each leased asset or groups of leased assets based on average data, such as average emissions per asset type or floor space.

**SCOPE 3 CATEGORY AND CALCULATION SUMMARY - DOWNSTREAM ACTIVITIES**

(Scope 3 Calculation Guidance | GHG Protocol)

CATEGORY & DESCRIPTION	SUMMARY OF METHODS FOR CALCULATING EMISSIONS
<p><b>CATEGORY 9</b>  <b>Downstream transportation and distribution:</b>                      Transportation and distribution of products sold by the reporting company in the reporting year between the reporting company's operations and the end consumer (if not paid for by the reporting company), including retail and storage (in vehicles and facilities not owned or controlled by the reporting company).</p>	<p>The emissions from downstream transportation should follow the calculation methods described in Category 4 (<u>Upstream transportation and distribution</u>). Companies may use either the fuel-based, distance-based or spend based method.</p>
<p><b>CATEGORY 10</b>  <b>Processing of sold products:</b>                      Processing of intermediate products sold by downstream companies (e.g., manufacturers).</p>	<ul style="list-style-type: none"> <li>• <b>Site-specific method</b> - determining the amount of fuel and electricity used and the amount of waste generated from processing of sold intermediate products by the third party, and applying the appropriate emission factors.</li> <li>• <b>Average-data method</b> - estimating emissions for processing of sold intermediate products based on average secondary data, such as average emissions per process or per product.</li> </ul>
<p><b>CATEGORY 11</b>  <b>Use of sold product:</b>                      End use of goods and services sold by the reporting company.</p>	<p>Calculation methods for direct use-phase emissions. Companies should first determine in which categories their products belong. The following products have direct-use phase emissions:</p> <ul style="list-style-type: none"> <li>• Products that directly consume energy (fuels or electricity) during use - involves breaking down the use phase, measuring emissions per product and aggregating emissions.</li> <li>• Fuels and feedstocks involves collecting fuel use data and multiplying them by representative fuel emission factors.</li> <li>• Greenhouse gases and products that contain or form greenhouse gases that are emitted during use - involves collecting data on the GHG contained in the product and multiplying them by the percent of GHGs released and GHG emission factors.</li> </ul> <p>Calculation method for indirect use-phase emissions from products that indirectly consume energy (fuels or electricity) during use or products that indirectly consume energy or emit GHGs, the reporting company should calculate emissions by creating or obtaining a typical use-phase profile over the lifetime of the product and multiplying by relevant emission factors.</p>
<p><b>CATEGORY 12</b>  <b>End-of-life treatment of sold products:</b>                      Waste disposal and treatment of products sold by the reporting company at the end of their life.</p>	<p>The emissions from downstream end-of-life treatment of sold products should follow the calculation methods in Category 5 (<u>Waste generated in operations</u>), with the difference that instead of collecting data on total mass of waste generated in operations, companies should collect data on total mass of sold products (and packaging) from the point of sale by the reporting company through the end of life after use by consumers.</p>
<p><b>CATEGORY 13</b>  <b>Downstream leased assets:</b>                      Operation of assets owned by the reporting company (lessor) and leased to other entities, not included in Scope 1 and Scope 2 – reported by lessor.</p>	<p>Downstream leased assets differ from upstream leased assets in that the leased assets are owned by the reporting company. The availability and access to information depends on the type of asset leased. For example, a company that leases vehicles may need to request fuel or mileage data from lessees in order to calculate emissions.</p>

### CATEGORY 14

#### Franchises:

Operation of franchises, not included in Scope 1 and Scope 2 – reported by franchisor.

Companies may use either of the two methods to calculate emissions from franchises:

- **Franchise-specific method** - collecting site-specific activity data or Scope 1 and Scope 2 emissions data from franchisees.
- **Average-data method** - estimating emissions for each franchise or groups of franchises based on average statistics, such as average emissions per franchise type or floor space.

### CATEGORY 15

#### Investments:

Operation of investments (including equity and debt investments and project finance), not included in Scope 1 or Scope 2.

#### Equity investments:

- **Investment-specific method** - collecting Scope 1 and Scope 2 emissions from the investee company and allocating the emissions based upon the share of investment; or
- **Average-data method** - using revenue data combined with EEIO data to estimate the Scope 1 and Scope 2 emissions from the investee company and allocating emissions based upon share of investment.

#### Project finance and debt investments with known use of proceeds:

- **Project-specific method** - collecting Scope 1 and Scope 2 emissions for the relevant project(s) and allocating these emissions based on the investor's proportional share of total project costs (total equity plus debt).
- **Average-data method** - using EEIO data to estimate the Scope 1 and Scope 2 emissions from the investee company and allocating emissions based on share of total project costs (total equity plus debt).

The tables above only provide a rough outline for the assessment of Scope 3 across the wide range of categories. Should this table or the earlier visualisation aid in your decision making for a new or expanded boundary, consideration should always be given to the GHG Protocol: Scope 3 Calculation Guidance to ensure that you have a full understanding of the measurements you are undertaking.

### Plans, Strategies and Wider Scope 3 in Practice

As part of my role at the Scottish National Investment Bank, I engage and work with our portfolio companies to enable a collective and collaborative effort to limit any negative impacts on the climate.

Within our recently published [Carbon Management Plan](#) we made a commitment that as a result of our investment, investees are required to establish and embed carbon management and accounting processes, and ultimately develop carbon management plans and net

zero strategies. We believe that this requirement will help future-proof portfolio companies as they grow, enhancing their own processes. This in turn leads to improved datasets with increased accuracy and ultimately allows them to consider Scope 3 emissions as part of their own boundary.

So, the question is, where does this fit in with Scope 3 in practice for the Bank? Well, the truth is, we don't directly control our investee companies and we apply an operational control consolidation approach to our own emissions boundary, which means we attribute our portfolio emissions under 'Scope 3, Category 15: Investments'. This means we account for a proportion of investee emissions in the reporting year, consolidating this to give our own Scope 3 emissions for reporting.

Using the Category 15 methodology

for an equity investment, we are required to collect Scope 1 and Scope 2 emissions directly from investees (which is where the establishment of good carbon management and accounting across your value chain is vital), and take the percentage share of those emissions in relation to the total value of the company.

This is only one example of how we calculate Scope 3 in relation to

Emissions from equity investments = sum across equity investments



our investments and again more information can be found in our Carbon Management Plan.

### The Importance of Understanding your Wider Climate Impact

While companies and individuals

can overcome a lot of obstacles and climate related issues themselves, the reality is that siloed thinking in relation to climate change will only hinder progress and ultimately lead to failure across all sectors.

As I said within the Bank's carbon management plan: ***"The challenge presented by climate change - both today and in the future – emphasises that we must not only better understand the impact the climate is having on us, the way we work and live, but also the impact that we are having on the climate"***.

Collaboration with all stakeholders across value chains or within sectors is needed to ensure that the minimisation of emissions and ultimately net zero goals are met, particularly as there is an urgent need to address climate change, its impacts and risks. This is not only through mitigation, but also adaptation and resilience activities.

Scope 3 measurement within your organisational boundary should be seen as a minimum approach. Areas such as investments to meet regulatory developments

***"Whether starting out or expanding your Scope 3 boundary, it is important to stress that these things are a journey."***

and product-level footprints are becoming increasingly required. Therefore, the importance of understanding the full climate change impact of a business through value chain assessment and the development of more effective GHG reduction strategies is to the benefit of organisations who embed these practices.

Whether starting out or expanding your Scope 3 boundary, it is important to stress that these things are a journey. You won't necessarily have all the answers or information and that's ok. Build in good practices and this will allow you to expand and grow your boundary over time, with a view to understanding your full impact in the future. This will allow you or your organisation to set appropriate targets and ultimately support the transition to net zero.

#### **Author's profile:**

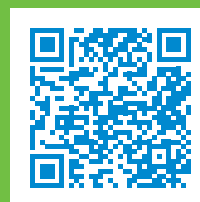
Craig is an internationally recognised climate change practitioner, with experience across the public, transport and investment sectors. He is a graduate of the University of Edinburgh, with an MSc in Carbon Management, a Member of the EMA and was named 2023 Sustainability Manager of the Year. He is also, Chartered Environmentalist and Fellow of the Institution of Environmental Sciences (IES), a Member of the College of Experts at the Office of Environmental Protection, Member of the Sustainable Scotland Network Steering Group and a Member of the Policy Committee at the IES.




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