Getting Started in Carbon Accounting

impact sustainability

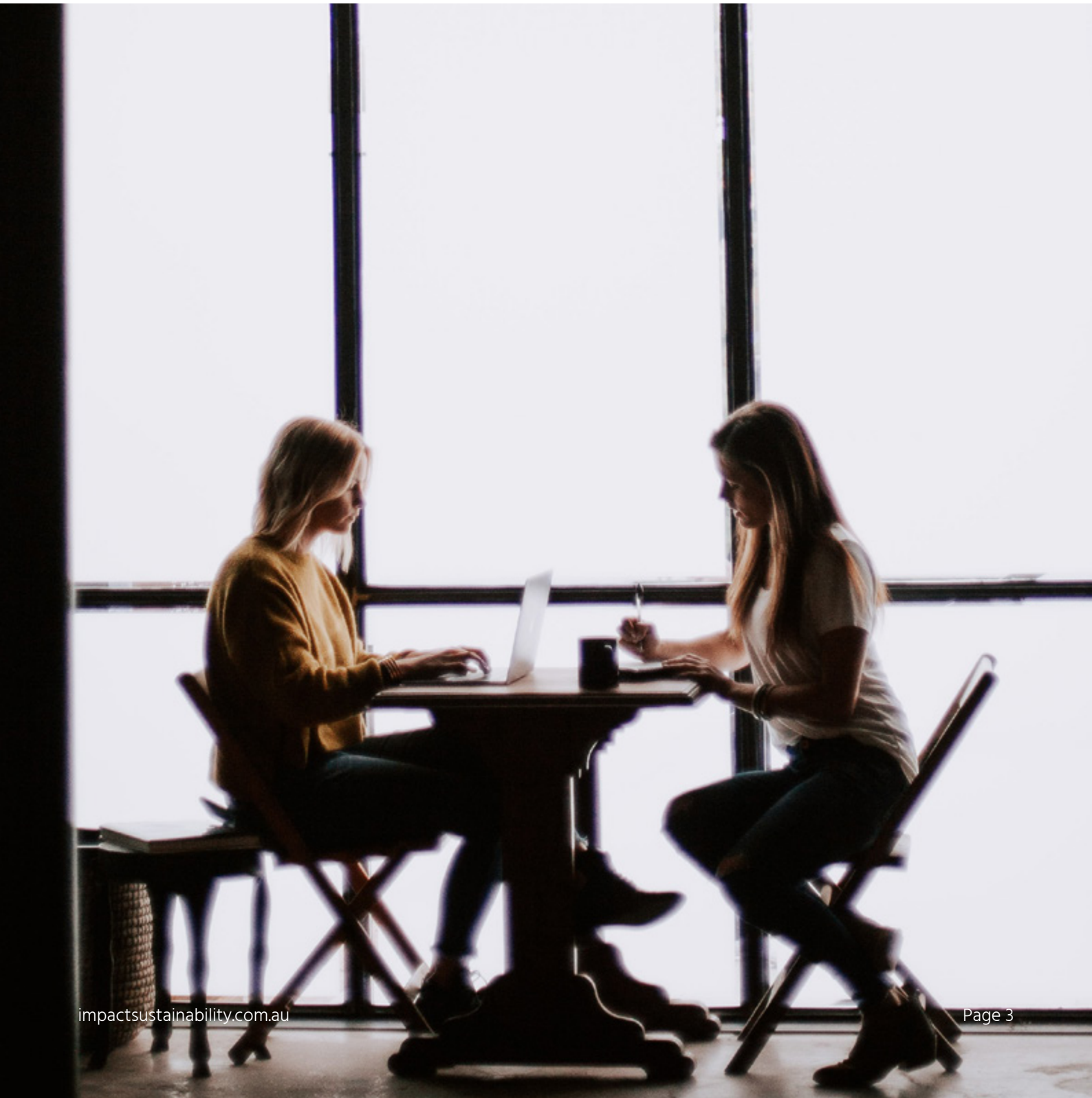
In the same way that you manage your finances to understand how your business is tracking in terms of profit and loss, mastering the art of carbon accounting will be key to understanding your progress with your sustainability goals.

This guide is designed to cover all the basics you need before you get started with monitoring and reporting your business' carbon emissions, so you can be in control of the process.

What is carbon accounting?

Just like financial accounting, there is a global standard for measuring your emissions which is known as Carbon Accounting. The standard is created by the Greenhouse Gas (GHG) Protocol, a partnership between the World Resources Institute and the World Business Council for Sustainable Development. The GHG Protocol is the most widely used GHG accounting standard in the world, and the standard used by Impact Sustainability in our software.

There are several greenhouse gasses with the most common being carbon dioxide, methane and nitrous oxide. Each gas has a different impact on the atmosphere in regard to level of warming and length of time they survive. To support the standard all, gasses have been classified with a global warming potential and given a 'carbon dioxide equivalents' or CO2-e. CO2-e is generally calculated in tonnes.



Why should I measure my impact?

Apart from the obvious benefits of knowing if the actions you're taking to reduce your impact are being effective, there are many other reasons why a business might measure their greenhouse gases emissions. Some of those might be:

Business goals

- Setting greenhouse gas targets, and measuring and reporting progress
- Identifying cost-effective reduction opportunities
- Managing greenhouse gas risks and identifying reduction opportunities
- Identifying potential risks associated with carbon pricing in the future

Stakeholder engagement

- Demonstrating to current and prospective employees your targets and progress
- Responding to tenders and requests for information that require emissions data
- Reporting to investors and shareholders about your sustainability activities

Participating in mandatory or voluntary reporting programs

- Government reporting programs at the national, regional, or local level
- Participating in carbon markets
- Participating in external cap and trade allowance trading programs
- Calculating carbon or greenhouse gas taxes

Public reporting and participation in voluntary greenhouse gas programs

- Voluntary stakeholder reporting of greenhouse gas emissions and progress towards targets
- Reporting to government and non-government reporting programs, including greenhouse gas registries
- Eco-labelling and certification

How should I report my emissions?

There are two approaches to carbon accounting: the equity share approach and the control approach. Deciding which approach suits your company will depend on the size and structure of your business.

1. Equity share approach

Generally, the equity share approach applies to large multinational companies that have joint partnership operating facilities.

Under the equity share approach, the company will account for the emissions created by their operations according to its share of equity in that particular operation. In other words, they'll report on a portion of the emissions, equal to their economic stake in that activity.

So, if my company is a 50/50 owner of a clothing factory, under the equity share approach we would include 50 percent of the emissions created by that facility in our overall emissions report.

2. Control approach

The control approach is the most common form of measurement. Under this approach a company will account for 100 percent of the greenhouse gas emissions from any operations over which it has control.

The types of emissions or “scopes”

Before you start measuring your own emissions you need to understand the different types of emissions that exist. Different types of emissions will be treated differently when it comes to taking action to reduce your carbon footprint.

Scope 1: Direct emissions

Scope 1 emissions occur from sources that are owned or controlled by the company – i.e. the emissions that have been created as a direct result of your activity. They can include things like combustion from boilers, furnaces, and vehicles; or emissions from chemical production in your process equipment.

Scope 2: Electricity emissions

Scope 2 emissions are the emissions generated by the electricity your company purchases and consumes. They’re classed as “indirect” because there’s a separation between the actual burning of the fossil fuels that creates the emission (which happens at the power plant) and the business who physically turns the lights on at their facility.

The company has some level of control over this because the amount of demand from users will drive the supply, but it doesn’t have direct control over what energy mix is in the grid for the day.

Scope 3: Other indirect emissions

Scope 3 refers to all other indirect emissions that are not related to electricity use. These are emissions that are generated as a consequence of the company’s activities, but come from sources that are not directly owned or controlled by the company. For the most part, they’re related to the business’ value chain.

Scope 3 emissions are categorised into upstream and downstream emissions. Upstream emissions are all the raw materials, products, services and transport used by your business and the waste created in your operations to the point that you are ready to sell your product or service. Downstream emissions broadly categories the impact of your product or service once it leaves your business including transport, customer use of the product and it’s end of life.

What emissions should I report on?

Essentially, deciding what emissions to report on will depend on your business and what it does, the biggest areas of impact, the size of your business and the availability of data.

The first step is identifying your scope 1 and 2 impacts and data sources. This is a generally straight forward process that will include looking at things like:

- The electricity you purchase from the grid
- Natural gas or LPG you use in your operations
- Transport fuel you use in company vehicles
- Fuel you use to power generators or equipment

To assist you in this process, Impact Sustainability's specialists can help you identify these sources and what data you need to capture. The GHG Protocol also has some great resources for specific sectors.

Scope 3 emissions are more difficult to track. These require input from your suppliers or research into the "embodied carbon" in specific products. This means pulling data from other companies who have done a life cycle assessment (cradle-to-gate) on the impact of producing a particular good or service, such as paper, electricals, courier services, shipping, food and beverage production. The GHG Protocol has more great guidance on value chain reporting, and Impact Sustainability can help you navigate this process.

But as a general rule, all businesses can reduce their carbon footprint by making improvements along every stage of the value chain. So accounting for your greenhouse gas emissions throughout the chain will present you with more opportunities for reductions, as well as increased efficiencies and lower costs.

Emissions factors

An emissions factor is published for each emissions source. It is the factor that is used to multiply against activity data (the unit of activity such as kWh for electricity or MJs for gas) to calculate the greenhouse gas emissions from a particular activity.

For example: X litres of petrol X emissions factor for petrol in Australia during the activity year = y tonnes of carbon dioxide equivalent (CO2-e).

Emissions factors will differ depending on the source of the emissions and how it is burned. This includes things like stationary or mobile combustion of fuels, or different sources for an electricity grid (brown coal, black coal, gas, solar).

They're important in the carbon accounting process because they provide a set of benchmarks for measuring emissions so that everyone is using the same values in reporting.

Emissions factors are released by every country that is signatory to the Paris Agreement and are updated every year. Australia's National Greenhouse Accounts Factors are available through the Department of Industry, Science, Energy and Resources.

Carbon offsets

A carbon offset is an activity that results in the reduction of carbon dioxide being emitted in the atmosphere. This could be achieved by either stopping an emission from being made (avoided emissions), or physically removing, capturing or "sequestering" carbon dioxide that's already been emitted (sequestered emissions).

The types of activities that could be considered a carbon offset (avoided emissions) are things like wind and solar power replacing fossil fuels, gas capture at landfills, methane capture from abandoned coal mines, organic waste management, bio digesters, and energy or water efficiency technologies.

Offsets generated from sequestration activities includes reforestation and soil carbon capture from regenerative farming.

In practice, carbon offsets function as a kind of tradable "right' or "certificate" linked to these carbon reduction activities. So your business can buy certificates or fund projects as a way to balance out any negative impacts you can't avoid or reduce right now, with the goal to achieve an overall carbon footprint of net zero emissions.

It's important to note that carbon offsets are never going to be the 100% solution to any business' carbon reduction mission. Your primary goal should always be to directly eliminate and reduce your emissions wherever that's possible and practical for your business. But that doesn't mean offsets aren't still important in achieving your overall sustainability targets along the way. For example, you might choose to use offsets while you wait for the cost of new green technologies to come down, or during the time while renewable energy infrastructure is being installed.

Offsets should be seen as a lever that can be pulled as a temporary fix for a problem you need more time to resolve. Without offsetting these emissions, you're going to struggle to hit your targets as you continue working on your long-term solution.

There are some additional advantages of offsets that go beyond just carbon emissions reduction. These are known as co-benefits. Co-benefits include other positive outcomes that come about as a result of a carbon offset project, and can include things like community development, water and air quality improvement, soil health, biodiversity and conservation, and more.

Carbon credits and offset markets

A “carbon credit” allows us to put a simple numerical value on carbon offsets. They’re a financial product that is regulated and issued by the Australian Government to companies undertaking carbon offset projects.

Essentially they’re the mechanism we use to verify and quantify how much of a reduction is actually being made by the project. They give us a consistent national benchmark, allowing offsets to be verified and reported accurately. So, for every tonne of carbon dioxide removed or avoided by a carbon offset project, the company will earn one carbon credit.

The market for carbon offsetting is made up of two types of demand: compliance and voluntary.

The compliance market is where companies or other entities are legally required to offset carbon in order to comply with caps on the total amount of carbon dioxide they allowed to emit as mandated by government. Failure to comply with these mandatory caps within compliance markets results in fines or other legal penalties.

The voluntary market is where individuals and companies purchase offsets to compensate for their greenhouse gas emissions as part of their own sustainability targets, without being legally obliged to do so.

Although some countries or states have regulated or compliance markets like cap-and-trade schemes, most businesses are operating in voluntary carbon offset markets. In order to be considered a legitimate offset for reporting purposes, carbon offsets are verified by either governments or by independent organisations.

The main verification programs for carbon offsets are Australian Carbon Credit Units (ACCUs), Gold Standard, Plan Vivo, the Verified Carbon Standard (VERs), Clean Development Mechanism (CDM), EU Emissions Trading Scheme, and the American Carbon Registry.

In order to be classified as offsets, projects need to be protected for between 35 and 100 years. It also must be considered ‘additional’ to normal activities (i.e. you can’t count tree planting that would have happened anyway). This is known as ‘additionality’.

Buying offsets

Your strategy for purchasing offsets will depend on a few factors such as:

- Your intention (or not) to be carbon neutral
- Your intention to be verified
- The volume you are intending to buy
- The type of offset you wish to buy
- The price you are willing to pay

Impact Sustainability can assist you develop an offset strategy to suit your specific business needs.

Get in touch

If you want to learn more about how we can support you through the next steps of your developing your sustainability action plan, contact us at info@impactsustainability.com.au

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