

Climate change is at the forefront of political and business agendas; through the weight of political uncertainty, businesses have taken it upon themselves to act.

Encouragingly organisations throughout Australia are more regularly announcing; they have or will become Carbon Neutral. In some cases these announcements are made with little or no understanding of financial impacts. Concern lie that organisations may denounce their commitment if the financial impacts are too great.

Before any organisation undertakes a commitment to become Carbon Neutral they should understand their carbon footprint. Creating a verifiable carbon footprint calculation will allow an organisation to understand the financial impacts of being Carbon Neutral, reduction opportunities available and make valid their claims.

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“Action against climate change starts with understanding your impact’

Although calculating your footprint may seem a daunting task, there is now much information available and many organisations that can help you with the calculations.

Following the GHG Protocol, companies are required to report all direct emissions from the burning of fossil fuels and various fugitive releases referred to as scope 1, and all indirect emissions from the use of electricity, referred to as scope 2.

Calculation for these particular emissions sources is simple and all information regarding Australia can be sourced from the AGO factors and methods workbook.
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Beyond scope 1 & 2 lies scope 3 emissions, Scope 3 emissions are an optional category for reporting under the GHG protocol, but no claim of Carbon neutrality is valid without the inclusion of all controllable scope 3 emissions sources
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Defining boundaries for Environmental liabilities:

So, it is time to start calculating your footprint, to do this you will need to start by determining the boundaries for environmental liabilities.

To decide on the boundaries for liability you will need to understand the three emission scopes under the GHG Protocol, life cycle assessments and have a basic understanding financial / accounting practices. These skills will empower you to determine the boundaries of liabilities, and calculate an accurate footprint.

To start with you will need to account for your scope 1 & 2 emissions. To collect scope 1 information you will need to examine the use of company vehicles and the direct burning of any fossil fuels. For scope 2 you will need to collect all electricity bills.

Before defining the boundaries, ask yourself why you are calculating your footprint and what you want to achieve through becoming carbon neutral. This will allow you to understand the level of detail required in your assessment. The more detail the greater the understanding of reduction opportunities and their viability.

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Calculating your Carbon Footprint

The aim is to include all emissions that occur as a consequence of your business existing; that the business can financially control, and that would not have occurred without the existence of the business.

For example, without including scope 3 emissions many organisations would be leaving out the most significant proportion of their footprint.

Two particularly good examples are DHL Express Nordic, and IKEA.

DHL operates its own fleet of trains, trucks, ships, and planes, but most of its deliveries are made by third-party contractors, and the resulting emissions are scope 3 for the company. These services are essential to DHL Nordic's business and account for 94 percent of its total GHG

When gathering data for its GHG inventory, IKEA included scope 3 emissions from its customers' trips to and from its stores because it perceived this activity as important to its business and expected these emissions to be large relative to its scope 1 and scope 2 emissions. IKEA's GHG inventory did confirm that this activity was a large source of emissions, accounting for 56 percent of its total emissions. IKEA's entire scope 3 emissions including customer travel accounted for 82 percent of its total emissions (see table). IKEA also found it could have significant influence over this source of scope 3 emissions when selecting sites for new stores.

To determine your footprint we recommend the use of financial control rationale. Aligning your footprint to financial data allows for easy verification and monitoring of GHG emissions (SLIDE CLICK). An operational control view would allow for companies such as DHL to leave out the emissions produced from their contractor operations, which as shown, constitutes the majority of their footprint.

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Although dollar spends will not always exist for staff commuting and waste, we include these items as an organisation can provide financial incentives, or can spend money on systems to reduce emissions from these sources. For example, IBM in America were able to reduce 63,000 Tonnes of CO2 last year by making better use of teleconferencing providing better 'work from home' and carpooling systems to employees.

A simple paper recycling program, According to the NSW Government can cut 60% of a Sydney CBD's office waste impact.

How to calculate and monitor scope 3 emissions

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The process we undertake to calculate scope 3 emissions begins by looking at an organisation's chart of accounts, with an understanding of the products and services they provide and consume. Examining the financial accounts allows us to easily identify major emissions sources.

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From the chart of accounts we remove expenses covered under scope 1, 2, such as fuel, electricity, and waste. Expense accounts where high spending has

occurred on materials and services, like aluminum products, transport, and waste collection are separated for a life cycle assessment.

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Undertaking a life cycle assessment involves a full cradle to grave study of a product or services' emissions impact. The study involves collection of various data including transport, energy for production and embedded emissions in materials. There are a number of published industry backed LCA studies and databases that we rely on when analyzing specific products and materials.

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In cases where industry specific data is unavailable, we rely on our database of CO2 per \$ created from input output analysis of 135 industry sectors of the Australian economy. We take all remaining expenses and apply them to the appropriate category. The CO2 per \$ GDP from 2005 is 0.7kgs of CO2/\$ and can be used for service based industries where other data sources are unavailable.

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The real cost of carbon intensive purchases

Australia's economy has much to lose without quick action; the high emissions intensity of our electricity grid, large transport distances and lack of international commitment have placed Australia at risk of international tariffs on carbon intensive products. Products exported from Australia have some of the highest embodied emissions and therefore could carry a significant carbon costs.

Your business can reduce its exposure to these risks through understanding and reducing its footprint.

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After calculating your carbon footprint, you have the ability to calculate and publish your own CO2 per dollar; to produce this simply divide your organisation's yearly footprint by that same year's revenue; you can further fine tune this to products and services you supply. This will allow organisations who purchase from you, to fine tune their own footprint calculation, and take advantage of any reductions you make.

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Encourage your supply chain to do the same, this will help you fine tune your own footprint and allow you to easily monitor emissions through your financial accounts.

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In order to effectively monitor emission through your financial accounts you will need to make some modifications, you will need to be able to store the CO2 in inventory items and CO2 per \$ for various suppliers and accounts. In some cases it may be beneficial to create carbon neutral purchasing accounts.

With your financial accounts adjusted to suite your footprint you can effectively monitor your supply chains emissions and understand the real costs of carbon intensive purchases.

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We encourage all businesses to help drive a low carbon economy by supporting businesses that are taking action against climate change.

Using your footprint calculation to determine a reduction action plan:

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Understanding your footprint will allow you to easily identify reduction opportunities. While calculating your footprint you will be exposed to information

relating to the use of electricity, waste and other emission sources. Each of these will present various opportunities for reductions.

Start by looking for reductions that occur with little costs and provide immediate savings; these examples include changing to a low carbon or carbon neutral supplier, changing staff behaviors, and reducing transport requirements through technology like video conferencing.

Your footprint calculation will also show you where your most significant emissions occur. Start determining your reduction investment opportunities from the largest sources down. The largest sources will generally relate to your industry, and making reductions in this will help your industry further develop emission reducing technologies; for service business this will likely be electricity, and for the transport companies it will be fuel use.

Financially justifiable footprint reduction Opportunities

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Many reduction opportunities cost very little and payback almost immediately and some have paybacks that would be considered as a business decision even without consideration to the carbon price.

At the end of this conference we have packs available with promotions from various NoCO₂ and LowCO₂ certified organisations, a recycling policy, and behavioral reminder posters and stickers. To implement any of these reductions will cost you nothing, yet can have a notable impact on your footprint.

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For many organisations a decision involving return on investments within 3 years is without need for much thought. Reductions through energy efficiency, fuel switching and communication technologies often pay themselves back in time frames far shorter than this. Good examples are the use of video conferencing instead of flying, the change to energy efficient lighting, and the change to part bio-fuels.

All these opportunities should be considered as they are the lowest hanging fruit.

Now that you are paying for carbon you can include it in your return on investment models. To start you will need to select a carbon price; selecting a price that is slightly higher than the listed carbon prices will encourage reductions over offsetting. Decide on an acceptable payback timeframe and with your total budget and start implementing the technologies with the quickest financial payback. The quicker the return on investment the quicker you will be able to take advantage on your savings by investing in more reduction opportunities.

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Purchasing offsets that relate to your footprint.

You have calculated your footprint, you have reduced your emissions, and now you are left with your unavoidable emissions. As is now commonly understood, to negate the impact of these you will need to offset using carbon credits.

Carbon credits are a mechanism to drive investment into technologies and techniques that reduce carbon emissions. If the reduction would not have occurred as standard business practice then carbon credits can be generated to help the reduction technology or technique get over financial barriers.

When deciding on what offsets to purchase you should look into technologies that help reduce emissions for your industry and relate to your footprint.

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Examine your carbon footprint to determine the highest emissions sources, for the most significant components choose offsets that relate. If you use a significant amount of transport purchase offsets generated from reductions in the transport sector like bio-fuels, for high electricity users, energy efficiency and renewables, and for land use some may choose trees.

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Investment into credits from technologies that relate to your footprint and industry will ultimately benefit organisations by bettering the technology and reducing the price.

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Ethical Investors – Case Study:

To ensure the accuracy of calculations for this conference we choose to include every item with an associated financial transaction, including venue, catering, hired labour services, freight, stationary & gifts, in addition we included factors that did not involve a financial transaction but are controllable by the organizers including attendees transport to and from the venue, waste, and electricity.

As most of the conference is provided through 3rd party organisations, we have used a combination of life cycle assessments, and CO2 per \$ from our database to calculate the footprint.

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Where an emissions source was significant and the data readily available we have undertaken an LCA; for all else we have used CO2 per \$ related to that industry sector. To understand the impact from transport we undertook a survey of as many attendees as would respond, collecting the method and distance or location.

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The average emissions for transport for each attendee were determined to be 0.27 tonnes per head; this will be corrected when the final numbers are determined.

Most significant was the emissions generated from attendees traveling to and from the conference, this equated to 89 %.

For the Sydney conference we established footprint calculation of 52.8 tonnes of CO2, with the approximate breakdowns

Another significant area of emissions was from print and publishing, although too small to separate for carbon credits the raw materials use can be offset through the plantation of trees. To replace the paper used in this conference we have planted a single tree for every attendee through men of the trees in Western Australia.

To justify our tree purchase please pickup a pack from the desk at the end of the conference, and support businesses taking action toward climate change.