CARBON FOOTPRINTING:

CRITICAL TO UNDERSTANDING MAN'S CONTRIBUTION TO CLIMATE CHANGE

Reporting trend looks set to continue

Alex Hetherington

With the Intergovernmental Panel on Climate Change (IPCC) continuing to produce updated and scientifically robust detail on the causes and impacts of climate change, there is little doubting that the issue of man-made carbon emissions will continue to be a hot topic.

The IPCC says there is 95 per cent certainty that global warming is being exacerbated by emissions from the anthropogenic (human induced) burning of fossil fuels such coal, oil and natural gas.

In its most recent report on the impacts of climate change, the IPCC predicts increased temperatures over much of the world and decreased global production of maize, rice and wheat of 25 per cent by 2050. Much of this will happen in sub-Saharan Africa.

With such attention on climate change, there is going to be increased scrutiny on those who are responsible for the emissions that cause it.

As corporate sustainability reporting matures, so too does the issue of carbon emissions and the measurement of companies' carbon footprints (the volume of greenhouse gases emitted by a company).

So prolific has the carbon footprint become, that it can now be considered a "charismatic specie" of sustainability reporting, with international and national awards being offered for completeness and performance of companies' carbon accounting activities.

In years gone by the measurement of carbon footprints were the preserve of the major accounting firms. Excessive pricing, however, opened up the market to specialist carbon footprint and carbon management companies. In recent years there have even been a number of small one-man bands offering carbon accounting services in South Africa. Newly designed software solutions are also being introduced to the market. Of course, the levels of service, delivery and budgets vary and companies must decide on the best type of service for their needs.

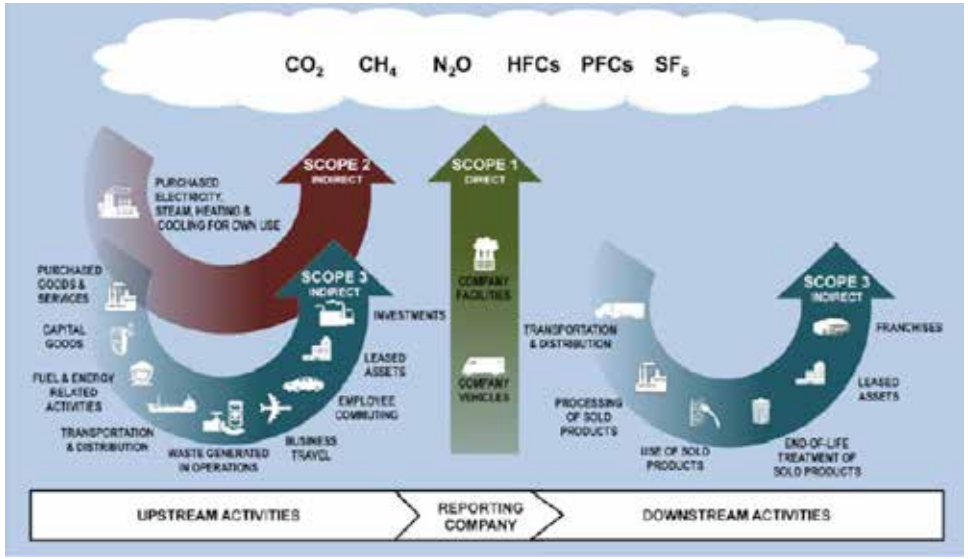
What is of paramount importance in choosing a carbon footprinting firm is to ensure that the correct accounting methodologies are being deployed and that the practitioners are professionally qualified to carry out the task. At present there are two accepted methodologies.

The most widely used, internationally, is the Greenhouse Protocol that was developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). This was launched in 2001, and was shortly followed by an almost identical derivative produced by the International Standards Organisation (ISO 14064-3).

Both methodologies categorise a company's greenhouse gas emissions into three scopes, according to whether the emissions are generated by equipment that is owned by the reporting company (referred to as "direct" emissions) or whether the emissions are generated by the company's electricity usage or other areas of its supply chain (both referred to as "indirect emissions").

Emissions from owned equipment (Scope 1) and electricity usage (Scope 2) are mandatory reporting under both footprinting methodologies, while

those emissions emanating from a company's supply chain (Scope 3) are voluntarily reported, although it is good practice to do so.



Greenhouse Gas Protocol, Scopes of Carbon Emissions

All companies that we deal with in South Africa measure their Scope 1 and 2 emissions, as well as a certain number of categories from Scope 3.

These indirect emissions captured in the supply chain typically include business travel activities, paper usage, employee commuting, waste generation and courier services.

Ironically Scope 3 emissions often take the longest to measure, due to their complexity and data-heavy nature. Equally ironic is that most companies are able to report on business travel, which usually accounts for a small percentage of supply chain emissions.

Prudent practice would be to focus on employee commuting, or other large emitting activities in the supply chain that account for a significant portion of Scope 3 emissions.

See Nampak's publically available carbon footprint that follows.

Nampak 2012 carbon footprint

	2012
Total nampak employees covered by report	9 446
Percentage Nampak employees covered by report	100
Total square meterage of offices reported	1 491 816
Group revenue in million rand	17 639.1
Scope 1 direct emissions	metric tonnes of CO_2e
Equipment owned or controlled (eg: generators)	185 112.08
Fuel used in forklifts	4 162.76
Vehicle fleet	7 421.61
Air-conditioning and refigeration gas refills and nitrous oxide	3 597.25
Total scope 1 emissions	200 293.69
Scope 2 indirect emissions	
Purchased electricity	549 607.20
Total scope 1 and 2 emissions	749 900.95
Scope 3 indirect emissions	190.06
Business travel in rental cars	7 552.12
Business travel in commercial airlines	81.55
Business travel in overnight accommodation	5 746.24
Outsourced transport[1]	255.60
Consumption of office paper	13 825.57
Total scope 3 emissions	
Total scope 1,2 and 3 emissions (GHG Protocol)	763 726.52
Non-Kyoto protocol GHG emissions[2]	235.30
Total Nampak 2011 emissions CO_2e (metric tonnes)	763 961.82
Emissions per full-time employeee at (t/FTE)	80.88
Emissions per metre squareed of office space (t/m^2)	0.51
Tonnes of CO_2e per million rand revenue	43.31

In absolute terms, South Africa is the 12th largest greenhouse gas emitter in the world – considering the size of our economy that is an ignominious record. Driving this reality is the fact that we are heavily dependent on the use of low-grade, high emitting, dirty coal for 95 per cent of our electricity generation.

These figures are neatly reflected in how our carbon emissions are apportioned by business and industry.

As the generator of electricity, Eskom is by far the largest emitter at 228 million tonnes of carbon dioxide equivalent (the de facto measure of greenhouse gas emissions), out of a national total of 560 million tonnes per year.

South Africa cannot, however, lay the blame only on Eskom. It is, afterall, everyone's (business and individuals) demand for electricity that forces Eskom to generate it. If any pressure is to be placed on Eskom it should be encouragement to adopt cleaner energy sources (renewables and gas), and wean itself from the dependence on coal. Following Eskom, Sasol and ArcelorMittal are the next largest culprits of emissions at sixty and 11 million tonnes respectively.

For most companies, the majority of their emissions come from their electricity usage. In many cases it is as much as eighty per cent. Hence, we are witnessing an increased focus on reducing electricity consumption as a sure way of reducing carbon emissions.

In fact, many companies have introduced targets to reduce carbon emissions that are based on a determined effort to reduce electricity consumption.

Sample of carbon reduction targets as reported in CDP South Africa 100 Climate Change Report 2013

Company	Target Activity	Target
Clicks	Scope 2 emissions	10% reduction per m2 2008-15
Illovo Sugar	Scope 1&2 emissions	10,7% absolute reduction 2010-20
Exxaro Resources	Scope 1,2 & 3 emissions	34% absolute reduction 2008-2020

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Dr. Elizabeth Farrelly- Sydney, Australia

Elizabeth Farrelly is a Sydney-based columnist and author who trained in architecture and philosophy, practiced in Auckland, London and Bristol, holds a PhD in urbanism from the University of Sydney and is currently Associate Professor (Practice) at the University of NSW Graduate School of Urbanism. As a longtime advocate of conscious urbanism, she was a keynote speaker at the 2011 Ecobuild in London and in 2012 delivered the Margaret Hendry lecture to the Australian Institute of Landscape Architects on links between feminism, urbanism and eco-consciousness.

Alberto Kalach- Mexico City, Mexico

Alberto Kalach was born in Mexico City, studied architecture at the Universidad Iberoamericana, Mexico City, and completed graduate studies later at Cornell University in Ithaca. In 1981 he founded the firm "Taller de Arquitectura X" with Daniel Álvarez. While he continues to direct TAX, in 2002 his interests also turned to the urban planning problems of his home town, and founded the community "México: future city" (Spanish: México: ciudad futura). His lake concepts were significant in solving existing water supply problems in Mexico City.

Gaetan Siew- Port Louis, Mauritius

World citizen, Gaetan Siew's leadership and his vision of a world of sharing allows him to mobilize and inspire world leaders around a creative consensus unleashing the full potential of our resources. Past President of the International Union of Architects UIA, he travelled the world to meet international institutions and governments promoting greater solidarity. With his in-depth understanding of men, cities and global issues, he continues his mission as CEO of the Global Creative Leadership Initiative focusing on transforming traditional knowledge into new technology.

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The transparency with which companies are reporting their carbon emissions and reduction targets are largely a result of the Top 100 listed companies on the Johannesburg Stock Exchange (by market capitalisation) being requested for information from by the Carbon Disclosure Project (CDP). The CDP represents 700 over number of global investment houses that request this carbon specific information from major listed companies.

The trend will continue in South Africa as the King III Codes of Corporate Citizenship demand all listed companies to report on their non-financial performance in addition to their financial. This will place responsibility on companies to report their environmental impact and, as described earlier, this will invariably include carbon (if not all scopes, at least Scope 1 and 2).

In addition to the investor demand for measurement, so too will the introduction of any potential carbon tax regime. While it was expected that such a tax would be announced in South Africa in February this year, it is still very much on the radar screen of Treasury. The Department of Environmental Affairs developing a national greenhouse gas registry to which major emitters, at least, will have to report is supporting this.

It can be confidently claimed that, as the world becomes increasingly conscientised to the causes and effects of climate change, so the demand for carbon reporting will grow. There is much detail held in a carbon footprint. It is imperative that reporters employ the services of bona fide carbon footprint analysts who can assist them in understanding the challenges of compiling the correct data and adopting the correct methodologies.

When properly understood, companies can use this information to their advantage by focussing on their high emitting areas of business and deploying appropriate targets to reduce the consumption causing the emissions, thereby invariably cutting costs and wastage.