



Carbon Currency

Caps, Credits, Conscience and the Corporation

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NetBalance
MANAGEMENT GROUP

NetBalance
FOUNDATION

Carbon Currency

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Introduction

*'Money has value not on the account of what it is, but on the account of the ends that it serves; and although an original intrinsic value of money made possible its later functions, it acquires its value subsequently from these functions, and gains at a higher level what it had given up at an earlier stage. It is true that the functional value of money still needs to be represented. The decisive point, however, is that this value no longer arises from what represents it; on the contrary, the latter is quite secondary, and its nature has no importance except on technical grounds, which have nothing to do with the sense of value.....money is an entirely sociological phenomenon, a form of human interaction. Its character stands out all the more clearly the more concentrated, dependable and agreeable social relations are.'*¹ (Simmel, G 1978)

Simmel articulates an important point in relation to how broader economic and financial issues are related to sustainability – that is, the value, whether it is environmental or social, is determined by social interactions – ie the economic functionality that is commonly referred to as trade.

Now, in 2007, we have an entirely new phenomenon of trade – Carbon. Like money, it is starting to gather value on the account of the ends that it serves. It is starting to exhibit properties of becoming a common currency. Like gold, silver and the US\$, it may well become the next global currency. But, unlike the others, it is dissociative from society. Hence, the need to turn it into positive currency – carbon credits.

Why Carbon?

Climate change. Global warming. There has been significant and growing press coverage around this issue which in turn has created growing community awareness. This is driving responses from politicians in a way that has rarely been seen before. Well, over 90% of the Australian community now believes that there should be more done towards the environment - a percentage that no astute politician can ignore.

Why the sudden change? The Stern Report? Sir. Nicholas Stern recently headed a review of the climate change issue for the UK government, and concluded that there was need for urgent and immediate action to avoid significant costs climate change may bring about - over 15 to 20 percent of global gross domestic product. Or, was it caused by a recent documentary film, produced by Al Gore, who was the next president of the United States, as he calls himself. The film is called "An Inconvenient Truth", and if you haven't seen it yet, it's a must.

The film is a documentary of his power point presentation on climate change that he has presented over a thousand times, trying to convince governments, business and community around the world that what was once an inconvenient truth is indeed fact. One of the points covered, amongst an immense array of information, is the analysis of over 928 scientific papers by Dr. Naomi Oreskes from the University of California that had been published in peer reviewed journals from 1993 to 2003. The percentage that disagreed with the consensus position that climate change was as a result of the human induced greenhouse effect was zero.



¹ Simmel, G, The Philosophy of Money, Routledge & Kegan, London, 1978 (translation of the second edition of the original, Berlin, 1907, by Tom Bittomore and David Frisby)



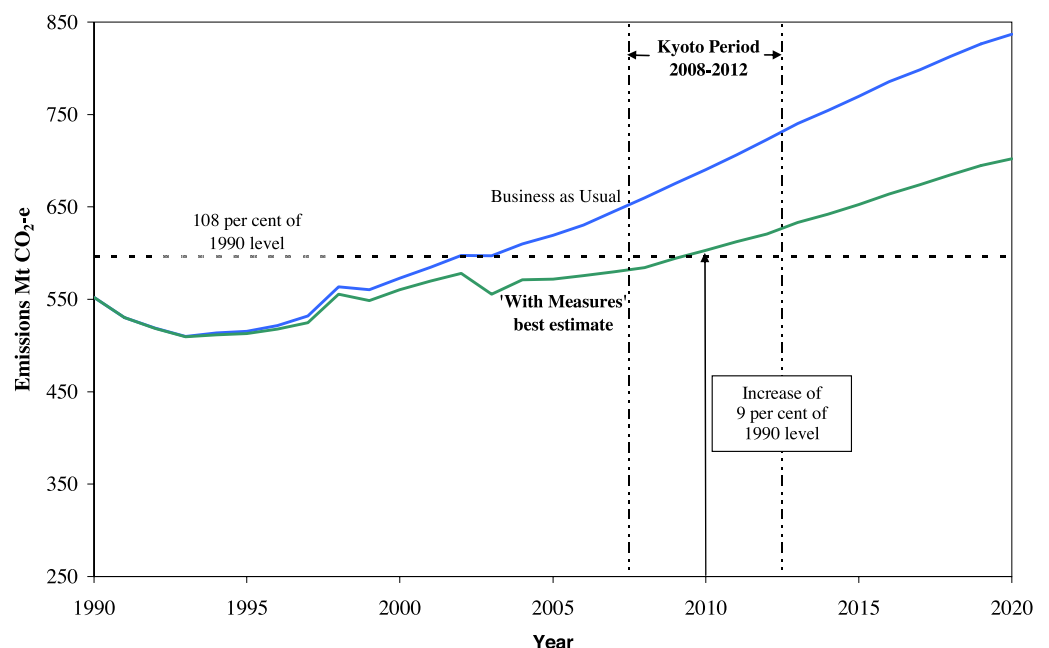
Why Carbon? continued

On February 2nd, 2007 the Intergovernmental Panel on Climate Change (IPCC) released a summary report on the science of climate change. Thousands of scientists from the world's leading research bodies, such as the CSIRO, wrote and reviewed the IPCC reports. The conclusion of increasing scientific evidence² indicates that there is significant and damaging growth in the level of greenhouse gases arising from human activity. This will have a detrimental effect on the global environment and inflict economic losses arising from adverse impacts on infrastructure covering a range of industries, negative impacts on human amenity, and degradation of ecosystems.

The National Greenhouse Accounts show that Australia produced around 565 million tonnes of greenhouse gases in 2004. Whilst industry contributes the bulk of the emissions, domestic emissions also play a significant role. Experts estimate that each average Australian is responsible for around 13 tonnes of carbon dioxide emissions per year which is also growing.

Over the past decade Australia's national greenhouse emissions have increased by 10%, with a further 17% increase projected by 2020. Scientists conclude that Australia and other developed countries need to reduce emissions by significantly more than 60% by 2050 to avoid dangerous adverse impacts caused by climate change. Australia's actions compare very unfavourably with countries who are leading international action on climate change. For example, the UK is the world's 9th largest emitter and by 2010, based on current and new programs the UK's emissions are projected to be between 23-25% below 1990 levels by 2010. On the other hand, Australia's emissions are projected to increase by 9%³.

Australian Projected Emissions



Source:
2006 Greenhouse Gas
Emission Projections,
Australian Greenhouse
Office.

² See, for example, the first volume of the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report "Climate Change 2007: The Physical Science Basis", published in February 2007. The IPCC is recognised by the Australian Government and other governments around the world as an authoritative source of scientific advice on climate change.

³ The Climate Institute Intergovernmental Panel on Climate Change Report: Implications for Australia, January 2007



Why Carbon? continued

The CSIRO suggests that Australia is one of the many global regions experiencing significant climate change as a result of global emissions of greenhouse gases (GHGs) generated from human activities. The average surface air temperature of Australia increased by 0.7 °C over the past century – warming that has been accompanied by marked declines in regional precipitation, particularly along the east and west coasts of the continent. These seemingly small changes have already had widespread consequences for Australia. Unfortunately, even if all GHG emissions ceased today, the Earth would still be committed to an additional warming of 0.2–1.0 °C by the end of the century. Analysis of future emissions trajectories indicate that if left unchecked, human GHG emissions will increase several fold over the 21st century. As a consequence, Australia’s annual average temperatures are projected to increase 0.4–2.0 °C above 1990 levels by the year 2030, and 1–6 °C by 2070. Such changes may have significant consequences, including⁴:

- Declining flows in the Murray-Darling river of around 10-25%
- 10-100% increase in extreme heat days (above 35°C)
- Significant loss of coral reefs
- Significant species extinction in Australia’s internationally significant habitats in north Queensland and Western Australia
- Tropical cyclone rainfall increases 20-30%, as wind speed increases 5-10%
- 80% of Kakadu wetlands lost to sea level rise

This is a small sample of the potential impacts from 1-3 degree rises, modelled by CSIRO and other research bodies.

The Stern Report⁵ suggests that climate change is the greatest market failure the world has ever seen, and it interacts with other market imperfections. Three elements of policy are required for an effective global response. The first is the pricing of carbon, implemented through tax, trading or regulation. The second is policy to support innovation and the deployment of low-carbon technologies. And the third is action to remove barriers to energy efficiency, and to inform, educate and persuade individuals about what they can do to respond to climate change.

Neutralising Carbon

The rapidly increasing concern about global warming will make 2006 forever etched as the year that the tipping point on the issue was reached. As a consequence, people are becoming more conscious about their own carbon footprints, which is being led by celebrities, politicians and industry leaders.

Terms such as carbon friendly, and carbon neutral are also becoming common terms in the modern day vernacular. To be Carbon Neutral is to achieve a net balance of zero greenhouse gas emissions by reducing consumption, increasing utilisation efficiency, and offsetting the remaining emissions by purchasing carbon credits. Some major institutions such as HSBC, Swiss Re, Vancity and Insurance Australia Group have committed to becoming carbon neutral as have the World Bank. Major global sporting events have also committed to going carbon neutral including The Olympics, The Soccer World Cup and the Super Bowl. Even the Australian Football League (AFL) is aspiring for games to be carbon neutral. On top of this there are now carbon neutral feature films, documentaries, books, conventions, taxi rides, air travel, rock bands, schools and churches. Even carbon neutral weddings are becoming commonplace. The estimated cost of offsetting the average Australian’s carbon emissions is somewhere in the order of around a \$1 to \$2 per day.

⁴ The Climate Institute, Intergovernmental Panel on Climate Change Report: Implications for Australia, January 2007

⁵ Stern Review on the economics of climate change, HM Treasury, October 2006

Neutralising Carbon continued

The easiest and often costliest approach to be carbon neutral is to buy offsets. This approach involves calculating the emissions profile of individuals or organizations and then purchasing offsets from a variety of sources to neutralize these emissions. Carbon credits may come from planting trees, methane capture, clean development mechanism (CDM) projects and tradable emissions reductions available under schemes such as the NSW Greenhouse Gas Abatement Scheme (GGAS). But, there needs to be a conscious effort to follow a hierarchical process towards neutrality. This must begin with demand management and improved efficiency that result in reduced GHG emissions that won't require the purchase of any offsets. In other words, reducing wastage through changes in behaviour. There are substantial gains to be made in these critical areas, which have fast payoff periods, that benefit the "bottom line". Those emissions that cannot be reduced by behavioral changes can be offset through a range of mechanisms, including green energy purchases. There are a number of emissions calculators available on the Internet that allow calculation of both companies and individuals carbon footprints.

The Net Balance Management Group recently assured the 2005-06 GHG inventory of the Environmental Protection Authority (EPA) of Victoria in their quest to become carbon neutral (see <http://www.epa.vic.gov.au/greenhouse/default.asp>). The EPA became one of the first Australian government agencies to become carbon neutral.

Role of Caps and Credits

Emissions trading, as set out in Article 17 of the Kyoto Protocol, provides for Annex I Parties (forty industrialised countries) to acquire units from other Annex I Parties and use them towards meeting their emissions targets under the Kyoto Protocol. This enables Parties to make use of lower cost opportunities to reduce emissions.

Emissions trading⁶ schemes may be established as climate policy instruments at the national level (e.g. in the United Kingdom) and the regional level (e.g. in the European Union). Under such schemes, governments set emissions obligations to be reached by the participating entities.

The European Union Emissions Trading Scheme (EU ETS) is one of the policies being introduced across the EU 25 to reduce emissions of carbon dioxide and other greenhouse gases to combat the serious threat of climate change. The "Cap and Trade" based scheme commenced on January 1, 2005 with the first phase to run from 2005-2007. The second phase will run from 2008-2012 to coincide with the first Kyoto commitment period. It is well documented that an initial over-allocation of credits meant that companies met their caps easily which created a surplus of credits and a resulting plunge in the price of credits.

The U.S state of California is another sovereign entity that has enacted legislation aimed at making deep cuts to that state's greenhouse gas emissions. The legislation known as AB 32, establishes a world-first comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of greenhouse gases. AB 32 requires the California Air Resources Board (CARB) to develop regulations and market mechanisms that will ultimately reduce California's greenhouse gas emissions by 25 percent by 2020 and 80% by 2050. Mandatory caps will begin in 2012 for significant sources which will become increasingly stringent thereafter to allow the 2020 goal to be met.

In Australia, state and territory leaders recently announced they will proceed with introducing a national carbon emissions trading scheme by 2010 even without the involvement of the Federal Government (there was a recent announcement on this by the Labour premiers see <http://www.smh.com.au/news/environment/states-sign-on-to-carbon-tradingscheme/2007/02/09/1170524303964.html>). The current Government has also recently established a separate Taskforce to report back on the feasibility of introducing a national emissions trading scheme in May 2007.

⁶ the cap and trade approach was first developed to address acid rain in the US in the 1990s and this is the role model for most trading schemes



Role of Caps and Credits continued

A discussion paper was also released by the State and Territory Governments in August 2006 on the Possible Design of a National Greenhouse Gas Emissions Trading Scheme that is proposed to commence in 2010. The current suggested design is for a "cap and trade" scheme that will apply to the stationary electricity generation sector. These generators will have to pay to emit each tonne of carbon dioxide and if they exceed their capped emissions they can either purchase additional credits from other power generators who have come underneath their cap or alternatively purchase credits generated from certified offset projects. Penalties apply if they emit more than their capped greenhouse gas targets.

The NSW Greenhouse Gas Abatement Scheme (GGAS), which commenced in October 2003 is aimed at reducing the greenhouse gas intensity of electricity purchased by consumers based on a per capita emissions target. It has recently been expanded until 2020, but it is proposed that it will be dissolved following the introduction of a National Emissions Trading Scheme. Under this scheme, improvements in electricity efficiency are able to create what are known as NSW Greenhouse Gas Abatement Certificates (NGACs) under the Demand Side Abatement Rule. One NGAC is equivalent to one tonne of carbon dioxide equivalent with recent spot prices for NGACs at \$14-\$15.

In the absence of a national emissions trading scheme established at the federal level, there have been many recent announcements by the states on local schemes that is likely to result in increases in both wholesale and retail electricity prices.

Victoria has recently enacted legislation to ensure that electricity retailers acquire a given quantity of electricity from renewable energy sources, expected to be 10% by 2016. Known as the Victorian Renewable Energy Target (VRET), the scheme is likely to have projects eligible to create certificates for a maximum of 15 years. The VRET began on 1 January 2007 and will end on 31 December 2030.



Globally, there have been several other recent significant developments, including:

- The trial involving the Massachusetts v. Environmental Protection Agency will decide whether the Clean Air Act requires the federal government to regulate greenhouse gas emissions from automobile tailpipes.;
- Californian electric utilities will be prohibited starting Feb. 1 2007 from investing in traditional coal-fired plants or signing new long-term contracts with such plants in an effort to combat global warming;
- Australia became the first nation to ban traditional light bulbs, requiring that consumers and businesses install high efficiency lighting to cut greenhouse gas emissions; and
- Sir Richard Branson has pledged £1.6 billion to help tackle global warming.



Role of Caps and Credits continued

- Chicago Climate Exchange (CCX) is the world's first and North America's only voluntary, legally binding greenhouse gas (GHG) reduction and trading system for emission sources and offset projects in North America and Brazil. CCX employs independent verification, includes all six greenhouse gases, and has been trading greenhouse gas emission allowances since 2003. CCX was launched prior to the commencement of trading in the European Union through the ETS system. To date, more than 120 CCX Members range from corporations like Ford and Motorola, to state and municipalities such as Oakland and Chicago, to educational institutions such as Tufts University and University of Minnesota, to farmers and the Iowa Farm Bureau. CCX has an aggregate baseline of 226 million metric tons of CO₂ equivalent, which is equal to the United Kingdom's annual allocation under the EU ETS. This would make CCX one of the largest "countries" in the EU CO₂ market, or 4% of U.S. annual GHG emissions.
- A discussion paper has recently been released by the UK government to investigate the feasibility of issuing citizens with a carbon card that they must hand over when purchasing electricity, fuel and air flights. Citizens who emit more than their allocation must purchase permits off those that manage to live low carbon lifestyles.⁷
- The chief executives of 10 major U.S. corporations are saying that voluntary efforts to combat climate change are inadequate and want Congress to require limits on greenhouse gases this year. Members of the group include chief executives of Alcoa Inc., BP America Inc., DuPont Co., Caterpillar Inc., General Electric Co., and Duke Energy Corp. In the letter the executives urged Congress "to significantly reduce greenhouse gas emissions" urging cuts in emissions of 10 percent below today's levels within a decade and at least 60 percent by 2050. Carbon dioxide emissions, the principal heat-trapping gas, have been increasing an average of 1 percent a year in the U.S.
- The Clinton Climate Initiative⁸ is a partnership with the existing Large Cities Climate Leadership Group, comprising the largest cities in the world. According to the CCI, 75% of the world's carbon emissions are from cities. The Large Cities are committed to reducing greenhouse gas emissions. The Clinton Climate Initiative intends to support the participating cities by: (i) pooling purchasing power in order to accelerate the development and deployment of new energy saving and greenhouse gas reducing technologies and products; (ii) mobilizing experts to provide technical assistance; and (iii) delivering improved access to common measurement tools and relevant internet based communications.

⁷ <http://www.defra.gov.uk/environment/climatechange/uk/individual/pca/index.htm>

⁶ Source: <http://www.clintonfoundation.org/cf-pgm-cci-home.htm>



Carbon Reporting

The key instruments for compiling a carbon inventory are the “Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition” (2004) published by the World Resources Institute/World Business Council for Sustainable Development (WRI/WBCSD); and, in Australia, the Australian Greenhouse Office Greenhouse Gas Factors and Methods Workbook.

The World Economic Forum (WEF) recently announced the formation of a new international partnership to create a framework for the standardised reporting of climate risk-related issues by corporations. Members of the partnership, the Climate Disclosure Standards Board (CDSB), will align their core requests for information from companies to ensure that the companies report climate change-related information uniformly in annual reports. This will mean investors, managers and the public can compare and analyse information more easily. Key information on climate change that is likely to be a regular feature of future company annual reports will be the assessment of physical and regulatory risks of climate change, and the strategic analysis of climate risk and emissions management. The CDSB members will initially be comprised of the California Climate Action Registry, Carbon Disclosure Project, Ceres, The Climate Group, International Emissions Trading Association, World Economic Forum Global Greenhouse Gas Register, and the World Resources Institute.

The G3 guidelines for sustainability reporting produced by the Global Reporting Initiative (GRI) also includes a core indicator stipulating that companies should report on Financial implications and other risks and opportunities for the organisation’s activities due to climate change (EC2).

Carbon Consciousness

Carbon consciousness has become a new paradigm for individuals, organisations, and Governments all around the world and will be an essential feature for adapting and responding to the carbon constrained world of the future.

However, being carbon conscious will not by itself be the complete solution to the climate change crisis. It is merely the prerequisite for driving appropriate policy, investment, and the market in the same direction to allow deep cuts in greenhouse gas emissions needed to stabilise and later reduce their concentration in the atmosphere.

Carbon consciousness will also play a vital role in selecting and dealing with the concept of offsets. The question of value-based offsets will be one that organisations and individuals will increasingly address. For example, an organisation that has a strong connection to land (such as one that deals with road or telecommunication infrastructure) may feel that offsets that address habitat restoration may be the most suitable and fitting given their value set and operational landscape.

Deciding on the appropriateness and/or value of offsets will also require companies and/or individuals to be aware of a number of important issues. For example, an organisation may feel uncomfortable buying offsets that may lose additionality due to future legislation (eg. NSW NGACS from energy efficient light globes, when incandescent globes are gradually being phased out).

A value-laden carbon economy will need value-led businesses to make conscious decisions.



Implications for Corporations

Resource cost estimates suggest that an upper bound for the expected annual cost of emissions reductions consistent with a trajectory leading to stabilisation at 550ppm CO₂-e is likely to be around 1% of GDP by 2050⁹.

There are also significant new opportunities across a wide range of industries and services. Markets for low-carbon energy products are likely to be worth at least \$500bn per year by 2050, and perhaps much more. Individual companies and countries should position themselves to take advantage of these opportunities. Climate-change policy can help to root out existing inefficiencies. At the company level, implementing climate policies may draw attention to money-saving opportunities¹⁰. Our impression is as follows:

- Companies would prefer more certainty around issues such as carbon trading so as to make future investment decisions that are better informed.
- Companies that know their carbon emissions and are moving to reduce them would be better placed in a carbon constrained future that is unfolding.
- Industries that are carbon intensive will have the greatest challenges, and some may not survive the next two decades.
- Companies that are innovators in addressing carbon will have competitive advantage, and be reputationally superior.
- Carbon offset industries will boom, especially those that are built on firm defensible foundations.
- Private sector will always be ahead of regulatory action, both to manage risk as well as to create opportunities in this new carbon market.
- Carbon consumer choices will become common place.
- Carbon litigation will become a major industry.
- Climate change sceptics will disappear by the end of this decade.
- Terms like carbon currency, carbon caps and credits will become corporate jargon.

⁹ Stern Review on the economics of climate change, HM Treasury, October 2006

¹⁰ ibid

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Our most recent carbon callisthenic

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