



CARBON NEUTRAL WATCH – CORPORATES, CONSULTANTS AND CREDIBILITY

DISCUSSION PAPER



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EXECUTIVE SUMMARY

The idea of carbon neutrality is gaining popularity. In the first three quarters of 2006 the carbon offset industry boasted global sales of US\$120 million, up 300 per cent from the same period in 2005, and the market is predicted to grow to US\$600 million within three years.¹ Recent years have also seen the rapid growth in the Australian carbon offset market as growing concerns about climate change have come to permeate all levels of government, business, and the community.

However at the same time there has been a blurring of the difference between carbon offsets and carbon neutrality. The former can offer partial and often delayed offsets to today's emissions; while the latter is more about a comprehensive program involving a number of strategies to achieve the broader goal of carbon neutrality.

In Total Environment Centre (TEC's) view there needs to be a clear distinction between carbon neutrality and offsets. Carbon neutrality does not mean emissions have been negated entirely by off-site measures; it represents a higher quality of action by changing business-as-usual behaviour as the bulk of the response to global warming. There are a range of companies in the marketplace offering one or both paths.

TEC believes the absence of industry oversight and review in Australia is a significant problem. It leaves consumers unable to differentiate between good and bad carbon neutrality and offset products and, as frequently observed, wherever information asymmetries arise, opportunism will rear its ugly head and desired outcomes will be distorted. There exists the possibility that the genuine concerns of society will be capitalised upon in a manner that

yields little environmental benefit leading to allegations of 'greenwash'. In such situations a monitor will be called upon to correct the breakdown of information flows and in this space one or more governance structures, industry standards, NGO monitors, and/or government oversight, can emerge.

TEC is a non-government organisation that undertakes research and campaigns to protect the natural environment; improve the urban quality of life; and reform environmental laws and practices at national and state levels. In recent years it has worked on economic issues and with business in an effort to encourage and improve the delivery of environmental sustainability. In light of the success of Green Electricity Watch (GEW) 2006,² TEC regards a similar audit and ranking of carbon neutrality and carbon offset products and services as a necessity.

Similar to GEW, the aim would be twofold. The first is to provide consumers (individual and corporate) with a simple guide to all the carbon neutrality and offset products and services available and rank them according to the efficacy of their contribution to greenhouse gas emission (GHG) reductions. The second is to improve the current practices of carbon neutrality and offset companies.

The purpose of this report is to develop the basis for criteria to measure and compare the variety of carbon neutrality and offset schemes currently offered by companies operating in the Australian market, and to inform participants of the benchmarks considered essential.

¹ Adam 2006; cited in CTW, 2007, p.6

² See www.greenelectricitywatch.org.au - an independent audited and ranking of GreenPower electricity products offered by Australian electricity retailers.

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The survey will be undertaken in the near future, after discussions about the issues with the various stakeholders, including at a major *Green Capital* event.

This report takes into account the current UK public inquiry into the industry, former NGO reviews, and existing and emerging accreditation schemes. While there exists a certain degree of overlap between the various assessment methodologies, accepted views of what constitutes a good carbon neutrality or offset product will be reviewed as well as different approaches and notable omissions. TEC notes and welcomes associated movement within government circles with support being offered by all state governments for the strengthening of standards for the industry, including a possible national registry of carbon offsets.³

Ultimately a combined NGO, government and independent expert approach to the rating of products may be necessary. However the experience of GEW has demonstrated that NGOs can effectively act to push the envelope towards better standards, where a government body may be less able to do so in an appropriate timeframe.

³ Council for the Australian Federation. 9 February 2007.

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The Carbon Trust claims that the UK market for carbon offsets is growing at 60% per year. A similar proliferation of offset programs has been experienced in the US where over 30 companies operate in the retail market alone, offering households the opportunity to voluntarily offset the emissions of their electricity use, land based transport as well as flights. Internationally, in the first three quarters of 2006, about US\$120 million of carbon offsets were sold to companies and individuals all over the world, up 300 per cent from 2005, and it is predicted that the voluntary offsets market will be worth US\$600 million within three years.⁴ The rise of climate change to the top of public and business concern suggests that we will also continue to witness rapid growth in the Australian offset market.

There are now over 17 carbon neutrality and offset providers in Australia. The relative veterans of the Australian offset industry such as Climate Friendly, Greenfleet and the CO₂ Group have been joined in recent years by a proliferation of new entrants, many of whom are now offering a more comprehensive approach to carbon neutrality by prioritising the reduction of on-site emissions above offsets. Some of these companies have chosen to voluntarily use existing accredited schemes to legitimate their products, others have not.

The carbon neutrality market is an individualised approach to reducing Australia's GHG emissions. It asserts that an effective way to reduce emissions relies on the industry, business or individual undertaking the action. Currently, the primary means by which Australian companies approach carbon neutrality is through tree planting offsets, although some programs do provide customers with the

opportunity to invest in energy efficiency, renewable energy, methane flaring, organic waste diversion, avoided deforestation, fuel switching and recycling projects.

Whilst the science of forestry plantation offset projects is of significant concern (see section 5.4.1), equally significant issues lie in the by-passing of on-site emissions reductions and the lack of transparency and accountability within the industry. As frequently observed, wherever information asymmetries arise, desired outcomes will be distorted. In such situations, a monitor will be called upon to correct the breakdown of information flows and in this space can emerge one of several governance structures, industry standards, NGO monitors, and/or government oversight.

The following table summarises the Australian offset industry and the extent to which outcomes and internal practices are monitored by current external governance mechanisms.

⁴ Adam 2006; cited in CTW, 2007, p.6

01 THE CARBON NEUTRALITY AND OFFSET MARKET

| | Assess | | | | | | | | Accredited | |
|---------------------------|-------------------------|---------------------------|-----------------------|-------------------|-------------------|----------------|----------------|--------------|-------------------|------------------|
| | Carbon Footprint | On-site Efficiency | Fuel Switching | Efficiency | Renewables | Flaring | Compost | Trees | | Recycling |
| Climate Friendly | | | ■ | | ■ | | | | | GS (part), GP |
| Greenfleet | | | | | | | | ■ | | GF |
| CO2 Australia | | | | | | | | ■ | | GGAS, GF |
| Carbon Planet | ■ | | | ■ | | | | ■ | | GGAS |
| Easy Being Green | | | | ■ | | | | | | GGAS, GF |
| Origin Energy | | | | ■ | | ■ | ■ | ■ | | GF |
| Elementree | | | | | | | | ■ | | |
| Carbon Reduction | ■ | ■ | ■ | ■ | ■ | | | | | GS |
| G'house Friendly | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | GF |
| Carbon Smart | | | | | | | | ■ | | GGAS |
| Australian Carbon Traders | | | | | | | | ■ | | |
| Carbon Neutral | | | | | | | | ■ | | |
| BP Global Choice | | | ■ | | | ■ | ■ | | | GF |
| Carbon Pool | | | | | | | | ■ | | GF |
| Greenhouse Balanced | | | | | | | ■ | ■ | | GF |
| neco | ■ | | | ■ | ■ | | | | | GGAS |
| Project Andromeda | | | | | | | | ■ | | GF |

GS – Gold Standard;

GF – Greenhouse Friendly;

GP – GreenPower;

GGAS - Greenhouse Gas Abatement Scheme (NSW).

The Australian Carbon Neutrality and Offset Industry (as at April 2007)

2.1 Carbon neutrality

*'there is no commonly agreed definition of the term 'carbon neutral' and there is evidence of this being exploited for PR purposes.'*⁵

Carbon neutrality is an umbrella term used to describe a state where emissions have been reduced or offset by a variety of actions, including the reduction of on-site energy consumption, the use of renewable energy for on-site power consumption and the offsetting of remaining emissions. While carbon neutrality could mean that emissions have been negated entirely by off-site measures this would represent the lowest quality means of achieving it and should be discarded as a benchmark. A higher quality of action would be achieved by changing business-as-usual practices as the bulk of the response to global warming.

The attractiveness of carbon neutrality as an indicator of environmental responsibility has made it a goal for many companies, projects, individuals and even countries. As the principles and practices of offsets are increasingly scrutinised, it is likely that becoming 'carbon neutral' will become distinct from the use of offsets, or the term will become tarnished.

2.2 Offsets

*'In terms of other effects of offsetting, some commentators have suggested that the practice allows prosperous Western nations to continue to enjoy carbon-intensive lifestyles at little extra cost while the most immediate effects of unabated climate change will be experienced in the poorer countries of the world.'*⁶

The economic rationale underlying emission offset projects is quite simple. It is based on the fact that climatic impacts of GHG emissions are the same regardless of their origin. For example, a tonne of CO₂ emitted from a coal fired power plant will have the same impact as a tonne of CO₂ emitted from land based transport. In theory, offsets could enable carbon neutrality by reducing emissions 'elsewhere' equal to those being emitted by the business or individual.

What may differ though is the cost of reducing CO₂ emissions within each sector. This difference in cost provides the opportunity to achieve a desired reduction in CO₂ emissions at the lowest possible cost. By providing a mechanism whereby entities seeking to reduce their emissions can do so by financing cheaper emissions reductions elsewhere in society, emitters can theoretically reduce their emissions by the desired amount at the lowest possible cost.

However as noted above we do not regard the purchase of offsets while otherwise carrying on with business-as-usual' as carbon neutrality.

⁵ SLI, 2006, p.3

⁶ (http://www.parliament.uk/parliamentary_committees/environmental_audit_committee/eac_14_12_06a.cfm)

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There is a strong business case for pursuing carbon neutrality. However, it is worth noting that the business case for pursuing on-site emissions reductions is potentially distinct from the more narrow commercial case for achieving carbon neutrality through the purchase of offsets.

The business case for seeking carbon neutrality is ultimately one of risk management although the response to such risks can also present more immediate commercial opportunities to early movers within each sector.

3.1 Risk management

The business case for the pursuit of emission reductions can be most simply conceptualised as a risk management strategy. The generic risk factors that an entity would seek to manage through a credible emissions reduction policy include the following:

3.1.1 Demand risk

As public awareness of the risks of climate change increases, it is foreseeable that the public sector, the private sector, and individual consumers will come to tie their buying decisions to action on climate change. An example of such action is that both Commonwealth and state governments have recently adopted minimum energy efficiency ratings for government tenancies. It is foreseeable that procurement guidelines of government departments will also come to increasingly reward companies seeking to manage their emissions. The private sector is following suit with companies concerned about their carbon footprint increasingly looking to decarbonise their supply chain. In this case, efficiency improvements that reduce on-site emissions, rather than offsets, will be of value when it comes to the choice of provider.

Such shifts in the procurement policies of both public and private sector bodies are likely to come in addition to movements at the consumer level where individual consumers will place an increasing focus on the environmental credentials of the businesses from which they make purchases. Movement on carbon neutrality by companies would not only safeguard existing client relationships but also present the opportunity to capture market share from those groups that fail to take similar action.

3.1.2 Regulatory risk

The manner in which climate change-related regulatory risk will manifest for companies will differ for each sector.

Commercial property runs the risk of energy efficiency upgrades being mandated; the energy sector faces the risk of carbon emissions being priced either through a carbon tax or an emissions trading scheme; and the tourism sector, which is increasingly reliant upon cheap air travel, runs the risk of carbon pricing impacting upon the affordability of air travel.

One generic risk that all businesses face is that of rising energy costs as prices come to reflect the costs of carbon emissions. Whilst energy costs, in general, form a low portion of operating costs for the average Australian company, the true impact of movements in energy prices is best measured by comparing the relative magnitudes of a company's energy costs and their Net Profit after Tax (NPAT). If the two are equal, a 10% increase in energy costs will reduce NPAT by 10%. If total energy costs are double NPAT then a 10% increase in energy prices will decrease NPAT by 20% and if total energy costs are half that of NPAT then a 10% increase in energy costs will lead to a 5% reduction in NPAT.

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Such figures demonstrate the sensitivity of corporate profitability to movements in energy prices. That same sensitivity also presents a significant opportunity for businesses seeking emissions reductions via energy efficiency prior to the incorporation of carbon pricing into energy costs, with the result that such companies will enjoy proportionate profit growth. In this case, early action on energy efficiency will be far more valuable, and possibly much more cost-effective in the long run, than the purchase of offsets, which would merely delay infrastructure transformation.

On a more general level, the demonstration of a 'commitment' to carbon neutrality by business, such as carbon intensive industries, may stay the hand of authorities looking to regulate them. On the one hand this may be a responsible course of action if the offsets are credible and effective; but on the other, policy makers need to exercise caution to not delay action, in order to obtain sector or economy wide action.

3.1.3 Reputational risk

As noted by the Finis submission to the current review of the ASX Corporate Governance Principles, an 'increasing component of company value (book and market) is held in intangibles (eg. brand, image, reputation). If reputation factors are not properly managed (and disclosed), returns are exposed to greater volatility and risk.'⁷ The pursuit of carbon neutrality may act to promote or safeguard the reputation and brand value of a firm thereby supporting both the book and market value of the company.

3.1.4 Labour force risks

In terms of their capacity to attract and retain labour, companies must contend with two forces - an unemployment rate of less than 5% and the entry of Generation Y graduates into the labour market. Both forces ensure that the labour market is increasingly fluid and as a result the ability to attract and retain staff is paramount to the prospects of companies.

The luxury of a tight labour market has given impetus to the mobile tendencies of Generation Y employees with their expression of corporate values emerging as a method by which companies can promote labour retention and manage employee turnover. The mainstreaming of such strategies in recent years has given rise to the term 'employer of choice' and the pursuit of emissions reductions can

be regarded as simply another means by which companies are able to publicly demonstrate the alignment of their corporate values with those of increasingly mobile employees.

3.1.5 Risk of extreme weather events

Climate change is predicted to bring with it an increase in extreme weather events. Companies will not only face increasing insurance costs but also the increased likelihood of supply chain disruption. Every company will be impacted by such issues, and firms acting to become carbon neutral may also be helping wider social efforts to combat global warming.

3.1.6 Broad market risks

The Stern Review on the economics of climate change claimed that the implications of climate change could manifest in economic disruptions of such magnitude as to rival the impacts of the depression and the world wars. Every company will be affected by such downturns and firms acting to become carbon neutral are simultaneously contributing to broader efforts to avoid the likelihood of such outcomes.

3.1.7 Risk of changing investor demands

The financial materiality of climate change-related risks has laid the groundwork for the growth of investor pressure witnessed in recent years. Internationally, the Investor Group on Climate Change (IGCC), whose members collectively account for US\$31 trillion in funds under management, administers the Carbon Disclosure Project (CDP) which requests information from the world's leading companies on how they are addressing the climate change-related risks that they face. Such pressure has been built upon by the Institutional Investors Group on Climate Change (IIGCC), the US based Investor Network on Climate Risk (INCR) and, more locally, by the current review into the ASX Corporate Governance Principles.

Regardless of the outcome of ASX deliberations, it is clear that there will be greater investor scrutiny of the measures that listed companies are taking to manage their climate change-related risks. Failure to reduce on-site emissions comes with the risk of facing a decreasing pool of investable funds as investors choose to avoid exposing themselves to the carbon liabilities embedded in companies that fail to address their carbon footprint.

⁷ Finis. Submission to ASX Corporate Governance Council Review of Principles. 14/02/07 p. 3

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3.2 Immediate commercial issues

Neutralising an entity's residual emissions may complement the management of demand risk, reputational risk, labour retention, broad market risks, extreme weather events, and investor pressure. However, the use of offsets to achieve this may not protect profit margins from movements in energy prices. In fact, offsets could contribute to a company's operating costs.

This situation, along with an absence of broad regulatory emissions controls in Australia, has given rise to a belief that the business case for either on-site emissions reductions or carbon offsetting is unconvincing. Despite the apparent statement in a recent BRW article,⁸ that there exists little financial rationale for the pursuit of carbon neutrality, the following extract in fact highlights the two primary commercial reasons why a business would pursue carbon neutrality as outlined below:

*'...while there is little financial incentive or avoidance of liability attached to buying offsets, companies that wish to position themselves as thought leaders are acting to secure offset supply early.'*⁹

3.2.1 Strategic market positioning to boost brand and company value

The public embrace of carbon neutrality is likely to receive greater attention than unadvertised internal efforts. A case in point is offered by the different strategies of Westpac and National Australia Bank. Whilst Westpac has pursued an emissions reduction policy over the last few years and has achieved a 45% reduction in operating emissions it has not made a public commitment to carbon neutrality. This is in contrast to the NAB which announced its intention on March 14, 2007, to achieve carbon neutrality by 2010, when public interest was high.

Despite NAB starting much later on emissions reductions than Westpac, the fact that it was the first bank to make a public commitment to carbon neutrality may mean that, in the public eye, it is perceived as the industry leader on climate change.

3.2.2 An opportunity to secure a relatively low cost regulatory risk management tool?

Offset projects are ultimately finite; that is, opportunities to reduce emissions in other sectors with relatively low marginal costs of abatement are limited by the carbon footprint of those sectors.

However, well before the carbon footprint of low cost abatement has been completely exploited, it is likely that desirable offset opportunities will be limited by a rising marginal cost of abatement within those sectors. This simply reflects the reasonable expectation that the low hanging fruit of emissions abatement will be the first to be exploited and further emissions abatement will become increasingly difficult and costly to achieve, thus ensuring that the marginal cost of abatement will rise within those sectors.

The potential for limitations in the supply of low cost, credible offsets suggests that companies may have a strong interest in moving early to lock in such offset opportunities. If future regulatory changes allow for the offsetting of carbon liabilities in a domestic analogue of Kyoto's Clean Development mechanism (as has been proposed by the National Emissions Trading Taskforce), or if the next Australian government ratifies the Kyoto Protocol, there exists a strong incentive for firms seeking to manage their regulatory risk to move early to lock in low cost offset projects. At this point, the credibility of offsets once again becomes an issue and it can be argued that the more robust schemes such as some Greenhouse Friendly projects in Australia and CDM Gold Standard Projects for Kyoto compliance will be a much safer bet for companies anticipating imminent regulatory action.

⁸ From neutral into drive. Amita Tandukar. March 15-21, 2007. BRW. pp.74-76

⁹ ibid, p.75

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The issue of governance is fundamental. The science of some offset projects remains a major concern and a credible monitoring mechanism is needed to weed out dubious projects. The relative absence of credible governance mechanisms for voluntary offsets renders the industry vulnerable to profiteering and opportunism that would wreck the industry's credibility. In fact, the reliance on tree planting or sequestered rights has already brought the industry under concerted attack.

The absence of oversight in the industry means that consumers have little idea of whether the promised offset strategy has been undertaken; if it is of significant magnitude to fully offset emissions; how it satisfies questions of additionality; and whether the offset mechanism will operate within a time period that ensures relevance.

Given the governance issues that surround the offsets - what approaches are being taken to monitor the sector? Currently there is movement on the three fronts: government oversight, NGO monitoring and voluntary industry standards.

4.1 Government oversight

United Kingdom

On December 14, 2006 the Environmental Audit Committee of the UK Government launched an inquiry into the UK carbon offset industry. As explained in the press release announcing the launch of the inquiry:

'...there is growing concern about the carbon offset market: while it is clearly a growing area of enterprise and a legitimate means of financing carbon reductions through various projects across the world, it is not always

seen to be robustly regulated. In terms of how the market and its funded projects operate, particular concerns surround the issues of proving additionality, of verification and monitoring, of the permanence of the offset, of possible leakage from offset projects and the potential for double-counting.'¹⁰

The particular issues that the inquiry asked interested parties to consider were:

- Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?
- Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?
- Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?
- Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area to accurately assess overall long-term carbon (or other GHG) gains and losses from such projects?
- Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?
- What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?

¹⁰ (http://www.parliament.uk/parliamentary_committees/environmental_audit_committee/eac_14_12_06a.cfm)

- What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?
- To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?

These are important questions that should also be resolved in Australia. This paper addresses a number of the key matters in Sections 5 and 6.

Australia

Australian State Premiers recently called for the strengthening of standards and accreditation schemes for the carbon offset industry including a possible registry of offset products. This declaration was made in a recent Joint Communiqué released by State premiers on February 9, 2007 following a meeting of the Council for the Australian Federation. It remains to be seen what action will be taken.

4.2 NGO monitoring

A number of NGO reviews into the carbon offset industry, and of competing providers, have appeared recently. NGO surveys can drive market transformation, as has been seen with Green Electricity Watch. However, of perhaps greater value is the ability of NGO surveys to rapidly establish core principles as a precursor to eventual government oversight.

Carbon offset surveys undertaken by NGOs to date, include Clean Air Cool Planet's *A Consumers Guide to Retail Carbon Offset Providers* and Tufts University's *Flying Green*. Further detail on the issues addressed by these surveys follows.

A Consumers Guide to Retail Carbon Offset Providers

Clean Air Cool Planet, December 2006.

This review identified several criteria by which retail offset providers can be evaluated and ranked. Whilst a comprehensive breakdown of seven considerations is offered in the paper the following questions provide an insight into the broad factors considered by the project (see Appendix 1 for more detail).

Seven questions to providers of carbon offsets suggested by CACP

- Do your offsets come from specific projects?
- Do you use an objective standard to ensure the benefits of the offsets you sell?
- How do you prove that the projects in your portfolio could not have happened without customers' purchase of carbon offsets?
- Have your offsets been validated against a third-party standard by a credible source?
- Do you sell offsets that will gain in value over time?
- Can you demonstrate that the same offsets are not sold again to multiple buyers?
- What are you doing to educate buyers about global warming?

Source: *Trexler Climate and Energy Services*

Flying Green. Guidelines developed by the Tufts Climate Initiative.

Tufts University, January 2007

This paper restricted its view to voluntary offset providers that seek to offset the emissions of an individual's flights. The factors taken into consideration by the review were:

- 1) Does the company invest in projects that truly reduce emissions and at the same time benefit the local population and ecosystems?
 - a. In this regard the CDM Gold Standard 'is the strictest available standard.' Ask offset companies if they use third party verification to ensure the quality of carbon offsets.
 - b. Assess 'additionality' of projects.
- 2) Are your emissions calculated correctly?
 - a. Would be worth considering online emissions calculator results with 'rule of thumb' magnitudes.
- 3) Does the company work transparently?
 - a. Does the company list the specific details of projects that they invest in?
- 4) How is your money used?
 - a. What proportion of funds goes to the actual offset project? What proportion of funds goes to administration?

The Carbon Neutral Myth. Offset indulgence for your carbon sins. Carbon Trade Watch - Transnational Institute. February 2007

Whilst this paper does not rank competing offset providers it does offer a fairly comprehensive critique of the sector itself and in so doing raises issues that appear to have been overlooked by previous assessments, such as future value accounting (FVA) in calculating emissions sequestration or reduction.

A priority for most surveys has been to serve as a proxy for an independent or government accreditation system, by asking questions that expose levels of transparency, validation, quality of offset, accounting and additionality. Some critiques have also included value for money and wider sustainability issues.¹¹

Additional issues that could be canvassed include:

- Further scrutiny of the relationship between purported emissions reductions and actual lead times
- The reporting of gross or net emissions reductions

4.3 Voluntary industry standards

To date, there has been an absence of voluntary industry standards for offsets, reflecting the underdeveloped nature of the sector and the lack of a single industry voice. The rapidly expanding range of companies and claims is creating an increasingly chaotic environment as offset providers use testimonies, self-accreditation and logos in the race for credibility and market share.

It is likely however, that NGO or government oversight will emerge before 'industry self-regulation' given the rapid growth and public importance of the issue.

¹¹ Carbon Trade Watch – Transnational Institute, 'The Carbon Neutral Myth: Offset indulgence for your carbon sins, February 2007.

Companies that offer programs to achieve partial or complete carbon neutrality vary widely in their services and methodologies. Because the market is unregulated and generally web based, there is a reliance on the consumer's ability to evaluate the quality of the service or product. For this reason, the degree of transparency concerning technicalities, legal, monitoring and reporting assurances, offset type and project-specific information, are all important.

In TEC's view, companies offering carbon neutrality would be ranked based on the underlying assumption that schemes should prioritise a reduction of emissions at source over the use of offsets that sanction 'business as usual' behaviour. Carbon neutrality assumes a process of genuine carbon reductions, and providers should enable companies and individuals to take the following four steps:¹²

Step 1: Assess carbon footprint

Step 2: Implement on-site emissions reduction measures

Step 2: Compute remaining carbon emissions

Step 4: Purchase GHG offsets

Schemes would then be rated on:

- How effectively and accurately the scheme encourages critical reflection and evaluation of current behaviours and technologies
- How effectively the product reduces on-site emissions
- How legally and physically enduring the reduction
- The quality of the offset for remaining emissions
- The adequacy of monitoring mechanisms
- Transparency of the information

The following subsections provide TEC's view on these. There are also a number of potential external mechanisms that could play a part in determining the quality of the carbon neutral and offset market. These are reviewed in Section 6.

5.1 How effectively and accurately the scheme encourages critical reflection and evaluation

The carbon neutrality market is an individualised approach to reducing Australia's GHG emissions. It asserts that an effective way to reduce emissions relies on the industry, business or individual undertaking the action. This logic depends on thorough analysis and critical reflection on business practice (including the 'life cycle' involving direct and indirect CO₂ emissions, not just direct operational emissions) that will enable a fundamental change in technology, fuel source, behaviour, supply chain or a combination of these. Providers of carbon neutrality services should enable this process to occur, as a first step.

5.2 How effectively the product reduces on-site and supply chain emissions

There are two approaches to carbon neutrality that would inform a proposed rating exercise. Firstly, a process through which businesses or individuals could move toward carbon neutralisation on-site and in the supply chain, where most of the economic activity occurs; and secondly, an approach that uses offsets which, in effect, encourage the continuation of a 'business as usual' approach to behaviour and technology. The former reduces emissions by promoting a shift from an intensive fossil fuel-dependent business and would be ranked significantly higher than the offset approach.

¹² Based on carbon neutrality steps outlined in Clean Air Cool Planet report

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5.3 How legally and physically enduring is the reduction?

The contractual aspects relating to assurance about the reduction of on-site emissions need to be safe and secure. At present there does not appear to be any standard or tested models that can be followed, but standards will be essential to avoid bad publicity as claims of carbon neutrality increase. In an accredited system, claims of carbon neutrality would be time-limited on a register to ensure regular evaluation. During the immediate growth phase, this may not be urgent but in the medium term it will become increasingly relevant.

Endurance of the carbon offset arrangement, as with the endurance of carbon neutrality claims, is also subject to risk. Offsets that rely on behavioural change, such as energy efficiency through the installation of compact fluorescents by the householder at some time in the future, are subject to uncertainty as they rely on many individual actions. Offsets that include a substantial element of immediate or quick implementation plus education are likely to be more enduring, and would be viewed as superior.

In the case of carbon sequestration, there are serious difficulties. Parties that enter into an agreement to sell sequestered carbon commit to a legally binding document with associated legal ramifications. It is important for potential sellers and purchasers of sequestered carbon to fully understand the commodity they are selling/buying, and the conditions under which they are selling/buying it.¹³ Monitoring must be sufficient and the penalties serious enough to discourage bad practice.

As sequestered carbon is a relatively new commodity with some unique characteristics, it is difficult for buyers and sellers to access information on the legal issues to consider in drafting carbon sequestration sales contracts. One of the key issues requiring consideration is how to guarantee the maintenance of the sequestered carbon in the long-term and how this may be achieved. Another key issue is determining what specific rights and responsibilities should be assigned to each contract party, such as the management and maintenance of

the vegetation and ensuring the 'quality' of the sequestered carbon in a contract.

The risk of changing practices is also high, as management teams and company priorities change. It is possible, for example, that in the future a new owner of a site may revert to inefficient practices, and emissions will increase. For on-site emissions reductions to remain in place, systems, technologies and practices need to be integrated into businesses. To ensure that this is achieved, reductions need to be subject to ongoing monitoring and reporting.

5.4 The quality of the offset for remaining emissions

The science of any offset project needs to be assessed to determine its efficacy in reducing emissions. There are many offset projects that are based on uncertain science, have an inherent risk or poor and unwieldy management chains.

Offset projects should be aligned with the concerns of climate scientists who have emphasised that the next decade is a critical period for emissions reductions in order to avoid the 'positive feedback loops'¹⁴ that will amplify the impact of climate change.¹⁵ Offset projects that rely on long periods for carbon absorption will, hypothetically, be lowering emission levels after this 'critical period for action has passed.'¹⁶ Therefore, TEC would rate those projects that enable the most immediate and effective reduction in emissions more highly than those that require long time periods for CO₂ absorption or use technologies that may degrade over time.

Higher ranking would also be given to offset schemes that stimulated investment in new green technologies that reduce emissions at the generation source, rather than those that purported to 'clean' outdated technologies. Some aspects of the offset market currently support investments in the very industries that are the most highly polluting because it is less costly than investing in new clean technologies. Investments in 'cleaning' outdated technologies also mean that the consumer is effectively paying twice. Once for the effects of the CO₂ emitted by dirty technology and again to try to 'clean' it up.

¹³ <http://www.greenhouse.gov.au/nrm/publications/forestsinks.html>

¹⁴ Otherwise known as 'ecological tipping points.'

¹⁵ See for instance, "Avoiding Dangerous Climate Change," edited by H J Schellnhuber, The Cambridge University Press, Feb 2006 in Carbon Trade Watch, 2007, The Carbon Neutral Myth Offset Indulgencies for your climate sins, chapter 3 The Netherlands, www.carbontradewatch.org

¹⁶ CTW, 2007, Chapter 3

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5.4.1 Carbon sequestration - the issue of trees

In Australia, the majority of companies offering offset schemes promise to plant a certain number of trees that will 'soak' up the equivalent CO₂ emitted from specific activities. They often promote their services by emphasising other environmental benefits such as improvements in soil salinity and increased biodiversity.

However, the science of forestry plantings is considerably uncertain. A recent study undertaken by the Planck Institute found that whilst trees do sequester carbon they may also contribute to climate change simply because 'the earth's vegetation is churning out vast quantities of methane' which carries with it a global warming potential 23 times that of CO₂.¹⁷ In addition, the extent to which the carbon released from the disturbance of soil, implicit in forestry plantings, negates the benefit offered by the sequestering of carbon by the trees, has been questioned. It is also suggested that the significant amounts of water required by eucalyptus trees, favoured by forestry planting operations, can lead to the die-off of existing vegetation forced to compete for water resources.¹⁸

Even if we accept that forestry plantings, on balance, sequester a significant amount of CO₂, a remaining question is what happens to the sequestered carbon once the trees die. In the case that a plantation turns into a self sustaining forest then one could argue that the growth of new trees would simply take the place of old trees and sequester the carbon subsequently released. However, the exact mechanics of such carbon cycling are highly uncertain. In addition, the presence of fire as a reality of the Australian landscape and the potential that the manifestation of climate change will bring lower levels of rainfall in some areas further queries the permanence, certainty, and reliability of forestry plantings as offsets.

Such permanence issues underlie the statement from Cambridge University botanist, Oliver Rackham that, 'Telling people to plant trees (to address climate change) is like telling them to drink more water to keep down rising sea levels.'¹⁹

One of the greatest concerns relating to carbon offset operations is their use of future value accounting in which future emissions reductions are reported as current emissions reductions. FVA was made notorious by the now defunct US energy company Enron which inflated reported revenues by including forecast revenues in current revenue statements.²⁰ For example, carbon offset companies that sell 'x' amount of trees to negate 'y' tonnes of emissions associated with an airlight give the impression that such emissions offsetting will occur immediately. However, a recent study undertaken by scientists at the University of East Anglia and Sweden's Lund University found that an offset bought through the British company, Climate Care, would take about 100 years to recapture the carbon emitted by a flight.²¹ When we consider the warnings of climate scientists that we have 10-15 years to move on climate change, such long lead times render such offsets irrelevant.

In Australia there is the potential to plant up to one million ha of forests. Even if this was carried out immediately, this would lead to the sequestration of only between 2.5-5% of total Australia's total GHG emissions.²² Whilst useful, it should not be overstated to the detriment of other more environmentally effective, offsets that would reduce GHG emissions at source.

Price discrepancies often exist in offset schemes that offer tree planting services. The apparent simplicity and price attractiveness can be misleading to the consumer who does not know or understand the inherent variability, difficulties and often unavoidable failures that are involved in tree planting. There are many providers that undertake their programs cheaply for several reasons: they do not have accreditation; they calculate relatively low levels of emissions as associated with particular activities; they don't employ sufficient professional staff; or they don't insure against future carbon stock loss.

There is also a need to differentiate between tree planting to absorb emissions and avoided deforestation. Maintenance of existing carbon stocks, such as by not harvesting or not clearing native forest areas only avoid carbon emissions; they do not generate carbon benefits.²³ Emission

¹⁷ Mathews, R. 2006

¹⁸ SLI, 2006. p.18

¹⁹ Adam 2006

²⁰ CTW, 2007, p.24

²¹ Carbon Plans 100 years in the making. 12.03.07. The Australian.

²² Brand, The importance of the flexibility mechanisms under the Kyoto Protocol

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reductions from 'avoided deforestation' are 'based on protecting the carbon that is already stored in vegetation' whereas projects for 'reforestation are based on absorption of atmospheric carbon over time.'²⁴ There is the significant additionality issue of proving the trees would have been cleared in the first place, especially given the opportunity for 'gaming' of the land clearing approvals system in several states.²⁵ If this test is passed, however, and the vegetation is to be preserved in perpetuity, the prevention of carbon emissions provides greater attraction than new tree plantings, because the impact is more immediate.

The use of carbon sinks arising from changed agricultural practices should also be treated cautiously due to problems of persistence of the practice in the face of economic pressures and drought; and objectively benchmarking the practice. For example, a farmer may change a grazing practice in a way that increases carbon stored in the soil; however new market demands or changes in financial needs or a new owner could result in reversion to the previous practice. Thus it is difficult to suggest that the carbon offset has a long lasting effect and a purchaser of the carbon credits will have to ensure payments are retrospective, rather than a lump sum upfront; and that adequate monitoring is in place.

5.5 Transparency

The current offset market in Australia offers a broad array of both products and services to individuals and businesses. Because it remains largely unregulated it is difficult for the individual or business to undertake the necessary analysis to make an informed choice of the type of offset that will be most beneficial to their needs. Unregulated markets have a responsibility to the consumer to be completely transparent and ensure that the consumer is fully informed.

Offset projects that are based on uncertain science also lead to concerns about the types of claims being made in advertising and information. TEC has found that there is much misleading information on websites and 'vision statements' (spin) by carbon offset providers that would confuse the consumer. Companies that make claims for which they are

unable to provide sufficient detailed proof as to the amount of CO₂ reduced would be penalised in any future survey.

5.6 Discrepancies between emissions calculations can reinforce inappropriate choices

The lack of consistency and standards in the current carbon offset market allows for significant discrepancies in the measurement of the emissions associated with the particular activity that a customer is attempting to offset. A recent study by the Queensland Tourism Industry Council surveyed 10 carbon offset products and found that the level of emissions that each provider deemed to be associated with a flight from Australia to Europe varied from 3.5 to 11.5 tonnes.

A related issue is whether a company calculates the life cycle emissions associated with a particular activity or whether the company simply measures emissions more narrowly; such as simply measuring the emissions associated with an aeroplane's fuel use and not accounting for embodied energy or the enhanced impact that emissions released directly into the atmosphere have through 'radiative forcing' (i.e. emissions have a greater impact when released higher in the atmosphere). These discrepancies perhaps explains the significant divergence in cost of the competing offset products with the quoted price varying from \$43 to \$230.²⁶

These factors are likely to reinforce inappropriate choices as consumers are more likely to choose the product that offers the lowest price, unaware that they are also purchasing an inferior product. In a worst case scenario the consumer may be paying for a product that does even exist.²⁷

Unaccredited providers can also offer their products at a lower cost to their accredited competitors and thus enjoy an unfair advantage over their competitors that choose to subject their operations to an external benchmark.

TEC will consider the extent to which the emissions calculation methodologies of carbon offset providers adhere to accepted emission calculation methodologies and the extent to which life cycle emissions are calculated, when ranking competing providers.

²³ State Forests of NSW, Forest Facts, 2005

²⁴ Minding the Carbon Store, Landholders Information,

²⁵ Approvals systems already prohibit some clearing and dummy proposals could be submitted for other vegetation not in reality likely to be cleared.

²⁶ SMH. 30.03.07. Confusion grows as tourism takes on carbon offsets.

²⁷ This was also the experience with some green electricity products which were portrayed as 100% renewable, but in fact only contained a small proportion of new green generation.

External and independent accreditation and associated monitoring and audit are essential. This limits possibilities for double counting and provides confidence to the consumer. It does not however, necessarily provide assurance that the product is the most effective in terms of reducing GHG emissions. For instance, the Commonwealth Government's scheme, Greenhouse Friendly includes tree plantations which, as noted above, TEC regards as a poor offset measure.

Carbon credits have attracted early government and NGO action which can potentially assist to resolve some of the issues mentioned above. They are not sufficient to provide a fully effective 'cover' for this rapidly emerging industry, but do need to be taken into consideration when reviewing the credibility of the market. A range of regulatory and voluntary schemes are either available or being developed.

6.1 Carbon property rights

Although Australia has chosen not to ratify the Kyoto Protocol, there has been a recognition of the emerging need for legal frameworks that ensure consistency and credibility. To this end, the Kyoto frameworks have set a benchmark for Australian offsets. In assessing the eligibility of carbon sequestration projects for recognition as offsets in Australian programs such as Greenhouse Friendly, the Australian Government applies Kyoto Protocol accounting methodologies and rules. State Government programs such as the NSW

Greenhouse Gas Abatement Scheme use similar criteria to assess the eligibility of carbon sequestration projects.

Governments can facilitate improvements in the accessibility, quality and credibility of offsets. Recent amendments to NSW Crown Lands legislation, for example, now provide the opportunity for those leasing Crown lands to participate in carbon sequestration in the NSW Greenhouse Gas Abatement Scheme (GGAS). Legal impediments that prevented registering a Forestry Right (Carbon Sequestration) and entering a Restriction on Use, both of which are mandatory requirements in GGAS have been eliminated by the amendments.²⁸ Whilst the changes enable more participation in the scheme, there remain questions as to the real value of this form of offset and, if legislation can ensure their endurance.

Going even further, the Queensland Government has recently introduced the Voluntary Carbon Credit Trading Bill 2007 to establish a Carbon Credit Trading Corporation as a government owned corporation. The purpose of the Bill is to create a voluntary, certificate based carbon credit trading exchange.²⁹ The rationale is that the credits issued will have potentially significant value and will drive corporate behaviour by creating incentives for companies to participate and reduce emissions. The intention is to position Queensland credits to seek accreditation both interstate and internationally.³⁰ For this to be effective there needs

²⁸ The amendments introduced by the Crown Lands Legislation Amendment (Forestry Rights) Bill 2006, commenced on 9 February 2007.

http://www.greenhousegas.nsw.gov.au/Documents/Newsletter_Issue3_March07.pdf

²⁹ TressCox Lawyers, 2007

<http://www.tresscox.com.au/resources/resource.asp?id=181>

³⁰ *ibid*

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to be an agreed standard and a robust certification process that underlies the scheme.

6.2 Monitoring and transparency

Concerns raised by participants of the Kyoto Protocol about the legal and physical credibility of carbon credits revolve around those credits produced in countries that have property rights laws that differ markedly from Western countries. Even though the credits may be accredited under the Kyoto CDM scheme there is doubt expressed over whether international standards governing CDM projects are likely to be obeyed.

These doubts query whether countries can demonstrate dependable legal systems and independent judiciaries that are ready to stand behind contracts such as environmental trading agreements. Also, when the scale of the regulatory effort is global, no world court exists to litigate the trustworthiness of the pollution reductions contained in emission credits.³¹ These concerns become particularly relevant as the Australian carbon market expands and trades internationally.

6.3 Penalties

There has been much emphasis within government programs to ensure a credible system of measuring carbon emissions. These tend to follow the Kyoto guidelines, but a system for strict compliance and enforcement for the overall industry has yet to emerge. This has been largely due to a desire to attract participants to the program without dissuading potential participants with harsh measures imposed for non-compliance or for not meeting their targets.

Penalties for companies that provide misleading information or for those who do not fulfil stated commitments will be essential. Provisions would cover any statements in documents supplied by those applying for credit accreditation and importantly any advertising or promotion that is undertaken by those holding credits in a manner that is misleading.

6.4 Use of regulated schemes for the provision of offsets

There are several types of government accreditation systems currently being accessed by carbon offset companies in Australia. Greenhouse Friendly, run by the Commonwealth Government, is the only program specifically designed for the voluntary offset market. Others, including the NSW Greenhouse Gas Abatement Scheme, the Mandatory Renewable Energy Target and CDM Gold Standard, have originated as regulatory schemes but due to their market-based nature, are able to be used by offset companies to authenticate abatement.

6.4.1 Kyoto and the Clean Development Mechanism (CDM)

'...the problem is fundamental and stems from the CDM's structure as a project-based market mechanism in which the search for least-cost carbon credits is the paramount consideration. This sidelines projects like renewables by not rewarding the multiple benefits they provide. Three years after the Marrakech Accords kick-started the CDM2, it has become clear that the CDM's first mandate to help reduce Kyoto compliance costs is all but making impossible the fulfilment of its second mandate to promote sustainable development'.³²

Only 2% of all CDM-sanctioned carbon capital goes towards renewable energy technologies.³³ Most credits are for industrial gas capture projects at major chemical and manufacturing plants that capture HFC.

The Gold Standard is endorsed by 37 NGOs, in an attempt to ensure that key environmental criteria have been met by offset projects.³⁴ Significantly, only offsets from energy efficiency and renewable energy projects qualify for the Gold Standard, as these projects encourage a shift away from fossil fuel use and carry inherently low environmental risks. Tree planting projects are explicitly excluded by Gold Standard.

³¹ Lohmann, L (2006) Carbon Trading, Development Dialogue, No 48, September 2006

³² CDM Watch, 'Market Failure: Why the Clean Development Mechanism won't promote clean development', November 2004, p. 1.

³³ UNFCCC, <http://cdm.unfccc.int>, information current as of 12 May 2006.

³⁴ see <http://www.cdmgoldstandard.org/faqs.php?type=What+is+the+Gold+Standard%3F> for full description.

³⁵ http://www.greenhousegas.nsw.gov.au/overview/scheme_overview/overview.asp

6.4.2 NSW Greenhouse Gas Abatement Scheme (GGAS)

One well developed scheme is NSW's GGAS which establishes annual statewide greenhouse gas benchmarks for the electricity sector and then requires individual Benchmark Participants (who buy or sell electricity in NSW) to meet their allocation of the mandatory greenhouse gas benchmark, based on their share of the NSW electricity demand. Greenhouse abatement certificates (NGACs) are created and then sold. The NSW Independent Pricing and Regulatory Tribunal (IPART) accredits NGAC providers and an audit panel assists in ensuring the integrity and validity of the NGACs. A registry evidences the creation, payment for creation, transfer and ultimate surrender of the abatement certificates. Once surrendered, the certificates cannot be reused.³⁵

6.4.3 Mandatory Renewable Energy Target (MRET)

As with NGACs, certificates created by the Commonwealth Government's Mandatory Renewable Energy Target can also be used by offset providers to verify the emissions reductions that they sell. Under MRET, renewable energy generators or solar hot water providers are able to create Renewable Energy Certificates (RECs) if they comply with certain conditions. Each REC represents one megawatt hour of renewable energy from an eligible renewable energy source. Critically, in order for the RECs to be of value, they must be surrendered to ensure they are not double counted by being sold again. The value of existing regulatory schemes as verification mechanisms is demonstrated by the use of MRET by another voluntary scheme, GreenPower, which uses surrendered RECs to verify that new renewable generation has taken place.

6.4.4 Developing schemes

A range of non-government bodies are devising new schemes including - Center for Resource Solutions, Voluntary Carbon Standard, The Climate Group, International Emissions Trading Association and World Economic Forum. The rapid pace of this activity reflects the growing level of concern about the veracity of carbon neutrality and offsets.

The increasing use of accredited instruments such as NGACs and RECs shows that the market is undergoing a voluntary shift towards accreditation as it recognises that this provides greater consumer

confidence. It is an opportune time for NGOs and government to consider standards and improved accreditation. A degree of regulation appears necessary, so that the market can have credibility; leader service providers are not undercut by inadequate programs; monitoring is transparent and well resourced; and growth is not impeded.

A further point to consider is that accreditation schemes should be accessible to new technology and services, and flexible to allow their entry, if they pass the standards. Accreditation should not become a barrier to entry resulting in protection of existing programs.

TEC has not undertaken a comprehensive review of the use of these external accreditation schemes but such a review would be a necessary component of an industry wide survey. External accreditation schemes currently in use by offset providers were not designed to fully govern the currently emerging carbon neutrality and offset industry, and further work is required to develop adequate arrangements. A final and key issue that will need to be resolved is how the industry and the accreditation instruments are integrated into the cap and trade emissions mechanism that will could operate in Australia, as early as 2010.

³⁵ http://www.greenhousegas.nsw.gov.au/overview/scheme_overview/overview.asp

An Introduction to Offset Quality defined by Clean Air-Cool Planet in A Consumers' Guide to Retail Carbon Offset Providers

A perfect offset project would be characterised by specific quality characteristics:

- **Additionality:** It would be easy to see the connection between the demand created by carbon offset markets and the emissions reductions begin sold as offsets. The connection can be a financial one, e.g. where offset revenues clearly make a project happen that otherwise would not have happened, or it can be more subtle, where the offset market or offset funding makes it possible to overcome other barriers to a project.

Regulatory Test: does the project go beyond legal requirements?

Financial Test: is the project economically viable without offset revenues?

Barriers Test: are there significant non-financial barriers that a project needs to overcome?

Common Practice Test: does the project go beyond common business practice?

Timing Test: was the project started after a given date?

- **Baseline Determination:** Once additionality is confirmed, a credible approach would have been used to create an emissions baseline for the project, namely the emissions that would have occurred in the absence of the project. An inflated emissions baseline can easily make it look as if a project is generating more offsets than it really is.

- **Benefit Quantification:** The quantification of the GHG emissions reductions (or sequestration) resulting from an offset project (relative to baseline emissions) would reflect key potential uncertainties, as well as the potential for leakage.
- **Permanence:** The offsets would not be subject to potential reversal in the future (as can occur with carbon sequestration projects where the trees might die by fire or pest infestation.)
- **Ownership:** Ownership of the reductions would be clear, making it less likely that the same offsets might be claimed and sold multiple times. This is much easier with direct reductions (eg. on-site reductions) than with indirect ones (e.g. off-site reductions)
- **Monitoring and Verification:** The offset project would be monitored and its offsets verified over time.
- **Registration:** The offsets would be registered to provide a paper trail and to reduce the possibility that the same offsets might be sold multiple times.

08

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Green Electricity Watch
www.greenelectricitywatch.org.au



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