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Carbon Offset Providers in Australia 2007

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Executive Summary

Internationally, and in Australia, businesses are increasingly developing strategies to manage their exposure to climate risk. A comprehensive carbon strategy will involve a rigorous assessment of a business's direct and indirect carbon emissions (measured as carbon dioxide equivalent, or CO₂e- emissions), a strategy to avoid and reduce these emissions, and finally, for those emissions that cannot be reduced further, offsetting those emissions by investing in emission reduction projects which have prevented or removed an equivalent amount of carbon dioxide elsewhere.

Carbon offsets are generated from different types of projects. In Australia the most common are renewable energy, energy efficiency and forestry (known as bio-sequestration) projects.

The market for voluntary carbon offsets, where businesses choose to offset their emissions as part of their carbon strategy, rather than to meet a regulatory compliance imperative, is growing and evolving rapidly. There are new entrants every month, and new products developed every week. Since this study commenced, four new offset service providers have started operations, and several existing providers have altered their product offering to business.

It is a fragmented market, with little regulation and a variety of quality standards emerging internationally, including the Voluntary Carbon Standard (VCS) and the Gold Standard for Voluntary Emission Reductions (Gold Standard VER). In Australia, a variety of mechanisms are used to assure customers of the quality of the offsets they are purchasing, including being accredited by the Australian Greenhouse Office's (AGO's) "Greenhouse Friendly" program.

This report has been prepared to provide Australian organisations seeking to offset their emissions, with comparative information regarding offsetting services available. 13 Australian offset service providers were selected for comparison against a framework which is detailed in Part II of this report.

Table 1 presents a snap-shot comparison of the carbon offset service providers in Australia. The extended information gathered for those providers is presented in Part II.

A number of findings have emerged from the analysis of the services available in Australia and the comparison made with international leaders in the field. These findings include:

- Quality assurance remains the biggest challenge that both buyers and sellers face in the voluntary markets for carbon trading. The different standards which are emerging use different criteria to determine "quality", based on different ideologies and frameworks. Businesses need to understand the different certification standards to know which best meet their overall business strategy requirements.
- There is a clear difference in the state of evolution of the Australian offset service providers compared with their UK and US peers. In particular, the leading UK and US providers appear to have a higher level of involvement in the development and implementation of national and universal standards for offset quality, and communicate quality issues to their clients more so than Australian providers in general.
- Differences between Australian offset providers arise from interpretation and communication of the determinants of offset quality and the level of transparency and availability of information on provider websites. Most organisations responded openly to our direct request for information, however, only some providers already had all the information we required clearly displayed on their websites.

- There is a significant difference in price charged per tonne of carbon dioxide (CO₂) offset. Bio-sequestration focused providers charge approximately \$9 to \$13 per tonne of CO₂ offset, whilst energy efficiency and renewable energy oriented providers charge between \$20 to \$40. Whilst this can be a feature of the type of offset project invested in, other drivers of price include cost of verification and assurance, cost of additional benefits such as community education and the administrative and marketing functions.
- Generally, providers that manage or fund bio-sequestration projects have been active in the voluntary market for longer than providers with a renewable energy or energy efficiency focus.
- Providers with a bio-sequestration focus have generally not adhered to recognised standards and assurance schemes, however, one stated its desire to become 'Kyoto compliant' and most are now seeking AGO Greenhouse Friendly certification.
- Providers offering offsets from energy efficiency and renewable energy projects generally adhere to a recognised assurance scheme and present discussion about offset quality issues on their websites.
- Service providers are in an ideal position to further educate business and communities about initiatives to reduce their impact on climate change. However, only some Australian providers communicate on their websites that offsetting emissions is only one element of a comprehensive carbon strategy. A few organisations do encourage their clients to measure, reduce and then offset, rather than purely offering the offset service.
- The calculation models available on providers' websites all produce fairly similar results of amount of emissions per unit of energy used, with most relying on the AGO assumptions and calculations.
- There is an opportunity for leadership by Australian service providers to work with interested stakeholders in the development of appropriate national standards, accreditation and verification processes.

Introduction

Post-industrial climate change and the urgent need for action to address it are no longer in dispute. Conclusive evidence has been put forward by the Stern Review on the Economics of Climate Change and the Intergovernmental Panel on Climate Change in the last 6 months.

A number of drivers have arisen for business to incorporate climate considerations into the core of their business strategy. Some of these include: interest from investors in business climate risk, legislative and regulatory developments, public demand, emerging market opportunities, reputation management, research and development allocations¹, and opportunities to influence regulation and market processes.

Carbon emissions offsetting is one of the alternatives available to business to manage their climate risk. It is not the solution to climate change but it has the potential to make a contribution when used as part of an overall carbon strategy. A comprehensive carbon strategy will include CO₂ emission assessment, avoidance, reduction and offsetting.

This report presents an overview of the options available to Australian businesses to participate in the voluntary carbon offset market. Our purpose is to present a succinct comparison of options available to assist organisations in choosing an offsets program in line with their overall carbon strategy.

The report is divided into two sections. Part I presents a brief context, including a discussion of emissions trading globally, the types of offset projects available and the standards and codes emerging to assure quality of carbon offsets in the voluntary carbon offset market.

Part II presents the comparison of offset service providers to the Australian market, as well as two international examples for contrast.

Part I

The Australian Case

Generally, the response from Australian business to climate change has been slower than their European and North American counterparts. One of the arguments for inaction includes the lack of a national climate policy² within which business can frame their own future strategies.

A recent study by The Australian Business Roundtable on Climate Change³ showed a clear economic advantage for taking early action to address climate change⁴. The group called for a significant reduction in greenhouse gases and for a carbon pricing mechanism. Key findings of the study included:

- A 60% cut in greenhouse gas emissions is possible while maintaining strong economic growth;
- Economic impact by 2020 under an early action scenario would be modest;
- Delayed action for just nine years has a significant negative impact;

¹ The Carbon Neutral Co (2007). Why it's good for business?

² The Climate Institute of Australia (2007). Global Business Action.

³ A group of leading industry CEOs from BP Australia, Insurance Australia Group, Origin Energy, Swiss Re, Visy Industries and Westpac, convened by the Australian Conservation Foundation.

⁴ Australian Business Roundtable on Climate Change (2006). The Business Case for Early Action.

- An additional 3.5 million jobs will be created in the economy under the early action scenario between 2013 and 2050, equating to 250,000 more jobs than under a delayed action scenario; and
- Electricity price impacts are lower under early action rather than delayed action scenarios.

Emissions Trading: Mandatory and Voluntary

There has been much debate over recent decades about the need for a transition to a low-carbon economy as well as the means to facilitate this. Carbon emissions trading and carbon taxes are the most common policy instruments discussed.

According to the NSW EPA:

"Emissions trading is a market-based scheme for environmental improvement that allows parties to buy and sell permits for emissions or credits for reductions in emissions of certain pollutants.

Emissions trading allows established emission goals to be met in the most cost-effective way by letting the market determine the lowest-cost pollution abatement opportunities.

Participants that emit pollutants must obtain sufficient tradable units to compensate for their emissions. Those that reduce emissions may have surplus units that they can sell to others that find emission reduction more expensive or difficult".⁵

Mandatory

Governments around the world are developing emission trading schemes to encourage the reduction of Greenhouse Gas⁶ (GHG) emissions and the development of renewable energy industries. These are generally "mandatory" for businesses in identified sectors, that is, businesses must purchase or sell carbon credits or offsets to comply with regulatory requirements in particular jurisdictions.

Three mechanisms established under the Kyoto Protocol underpin most of these "cap and trade"⁷ carbon markets, establishing guiding rules and regulations. These mechanisms are emissions trading (as described above) and two project based systems, the Joint Implementation (JI)⁸ and Clean Development Mechanism (CDM)⁹.

The most recognised scheme globally is the European Union Emissions Trading Scheme (EU ETS) which became active in January 2005. In 2006, approximately 992 Mt of CO₂e were traded on the EU ETS, representing about 62% of the global carbon emissions trading market¹⁰.

In Australia, the Mandatory Renewable Energy Target (MRET) was established on the 1st April 2001¹¹. MRET specifically targets the electricity generation sector, and is a renewable energy trading scheme, as opposed to an emissions trading scheme. MRET creates tradeable

⁵ NSW EPA (2007). What is Emissions Trading?

⁶ Greenhouse Gases are those that contribute to global warming. The Kyoto Protocol covers 6 of these: carbon dioxide, methane, nitrous oxide, sulphur hexafluoride, hydrofluorocarbons and perfluorocarbons.

⁷ Cap & Trade – A regulatory body sets an overall target for reductions that acts as the 'cap'. Individual emitters are allocated permits that add up to the 'cap'. Some emitters will be able to cost effectively reduce their emissions, producing credits. For those emitters who cannot cost effectively reduce their emissions, they will purchase credits.

⁸ Joint Implementation - project based transaction system between two developed countries, or between one developed and one economy in transition. That is, one developed country with a Kyoto obligation can gain carbon credits for implementing or assisting with emission reduction projects in other developed or 'in transition' countries.

⁹ Clean Development Mechanism – project based transaction system between one developed country and one developing country. That is, a developed country can gain carbon credits for implementing or assisting with emission reduction projects in developing countries.

¹⁰ Point Carbon (2007). EU ETS now significantly reducing emissions Copenhagen. **2007**: Press Release.

¹¹ Australian Government Office of the Renewable Energy Regulator (2006). Mandatory Renewable Energy Target Overview.

units, Renewable Energy Certificates (RECs), which are equivalent to 1 MWh of renewable energy generation, displace approximately 1 tonne of CO₂ from National Electricity Market generation in Australia¹². These units can be used as a currency for businesses wishing to offset their emissions.

State Governments in Australia have also introduced schemes to reduce GHG emissions. The NSW Greenhouse Gas Abatement Scheme (GGAS) was one of the first mandatory GHG emission trading schemes in the world, and the Victorian Renewable Energy Target (VRET) (due to commence in January 2010) aims to encourage the growth of renewable energy, displacing brown coal power generation. Certificates created under such schemes also provide currencies for trading in emission reduction.

Voluntary

Globally, businesses have been keen to play a part, leading to the emergence of a number of voluntary carbon markets. They are participating in the voluntary markets for different reasons, including their desire to take responsibility for their carbon emissions, reputational reasons and because they see it as valuable training for an inevitable carbon constrained economy. Within voluntary markets, organisations are not compelled to buy or sell carbon offsets to comply with regulation or legislation.

The Chicago Climate Exchange (CCX) is perhaps the best recognised voluntary market. The CCX operates a voluntary “cap and trade” program, where CCX members commit to annual GHG reductions as a percentage of their baseline. Reductions beyond the contracted level can be sold to other CCX members¹³. The program commenced in the USA, but has expanded to Europe and other countries.

Issues

The separation of the “mandatory” and “voluntary” markets can become unclear. For example, carbon reduction credits created under a mandatory scheme to meet a mandated target, such as RECs created under MRET, or NSW Greenhouse Gas Abatement Certificates (NGACs) created under the NSW GGAS may in some cases be used for voluntary purposes and traded within the voluntary market.

A key element for both the mandatory and voluntary markets is the need for a framework for verification of the validity of an emission reduction or offset. Within the mandatory schemes, there is, in addition to the compliance requirement for liable parties, a formal mechanism for compliance. In voluntary markets, the established formal compliance mechanism may also be used (eg: surrendering RECs to the Office of the Renewable Energy Regulator (ORER). Alternatively, other mechanisms of verification and assurance may satisfy the consumer. These are discussed in more detail in “Quality of Carbon Offsets” on page 10.

This report is concerned with the voluntary market, and focuses on the options offered to Australian businesses for voluntary offsetting of emissions.

¹² Australian Business Council for Sustainable Energy (2006). Australia's Renewable Energy Use, Technologies, and Services Melbourne: 59.

¹³ Clean Air-Cool Planet (2006). A Consumer's Guide to Retail Carbon Offset Providers. Portland, Clean Air-Cool Planet: 28.

Offsetting Emissions

Carbon offsetting schemes arose over a decade ago but have become popular in the past few years¹⁴. Carbon offsetting “involves calculating one’s emissions and then purchasing offsets from emission reduction projects. These projects have prevented or removed an equivalent amount of carbon dioxide elsewhere.”¹⁵ Or they promise to prevent or remove an equivalent amount of carbon dioxide in the future.

The concept of offsetting emissions is contentious, as critics see it as a license to continue business as usual. Our view is that offsetting should be part of a broader climate strategy, where businesses accurately calculate the direct and indirect GHG emissions from their operations, products and services, avoid and reduce these emissions where possible, then finally offset those emissions that cannot be reduced further.

Carbon offsets are generated from different types of projects. The most common in Australia are renewable energy, energy efficiency and forestry projects (or bio-sequestration)¹⁶. Each type of project is different and has different risks and benefits associated with it.

Renewable energy projects generally include wind, solar, geothermal, biomass and some hydro generation. Nuclear energy projects are generally not considered “renewable” energy projects. The amount of energy generated is said to displace GHG polluting generation and therefore creates carbon offsets. For example under the MRET, a Renewable Energy Certificate (REC) is equivalent to 1 MWh of renewable energy generation¹⁷. This 1 MWh of renewable electricity displaces approximately 1 tonne of CO₂ from National Electricity Market generation.

The key benefits of renewable energy projects are that they are generally long-lived projects, which will continue to displace fossil fuel energy generation into the future. They tackle directly our reliance on fossil fuel energy, and create an incentive for growing the renewable energy industry. Utilising RECs created and certified under a government scheme is perceived as a convenient way of ensuring credibility. If utilising RECs, the renewable energy has already been generated, so there is an immediate offset of GHG produced. However, some feel that renewable energy projects do not meet the “additionality” test (see pg 9), as they would have occurred regardless of the offset market.

Energy efficiency projects reduce the amount of energy used by employing better processes or technologies to generate the same output. Efficiency projects can include upgrading a building or factory, using better energy management technology, switching fuels, installing energy saving appliances/products in the home etc. The difference between the energy use pre and post the particular energy efficiency measure, allows for the generation of carbon offsets.

Energy efficiency offset projects have some perceived risks relating to the accuracy and reliability of baseline measurement and changes over time in energy use. In addition questions arise as to whether the energy would have been saved anyway, without the financial contribution of the offset purchase (ie: additionality). Key benefits include the energy efficiency projects’ potential capacity to educate and promote behaviour change, as well as producing ongoing efficiencies and reductions in fossil fuel use.

Bio-sequestration or forestry projects are somewhat different. Instead of preventing carbon emissions being released into the atmosphere, they soak carbon up from the atmosphere (or

¹⁴ BBC News (2007). Quick Guide: Carbon Offsetting.

¹⁵ UK Department for Environment Food and Rural Affairs (2007). Climate Change: Carbon Offsetting.

¹⁶ Other less common projects are gas capture and flaring and waste to energy.

¹⁷ Australian Business Council for Sustainable Energy (2006). Australia’s Renewable Energy Use, Technologies, and Services Melbourne: 59.

sequester). Trees absorb carbon through the process of photosynthesis. About 50% of dry matter in trees is carbon¹⁸. The carbon sequestered allows for the creation of carbon offsets. Offsets can be purchased which account for carbon already sequestered (since the Kyoto base year of 1990), and also for carbon which is expected to be sequestered over the trees' lifetime (70 – 100 years).

Forestry projects are sometimes more controversial than renewable energy and energy efficiency projects. This is mainly due to the difficulty of accurately measuring the amount of carbon sequestered, and the risk of carbon eventually making it back to the atmosphere due to fires or other causes of forest death. In addition, questions arise around offsetting CO₂ which has been released into the atmosphere now, by absorption of CO₂ over a long time frame into the future. However, when designed and managed properly, these projects have the potential to provide additional environmental benefits such as habitat recovery, biodiversity increase / protection, salinity and erosion control.

This paper does not attempt to judge the relative merit of different project types. Ultimately, the choice of offset projects must be determined by individual businesses in accordance with their business circumstances, strategies and stakeholder concerns.

Quality of Carbon Offsets: Standards and Codes

For offsetting to validly help tackle climate change, the offsets need to be generated from projects that are reliably verified and are additional to business as usual activity. Offset purchasers need to have confidence in this. Currently, it is difficult for offset purchasers to differentiate between a low-quality and high-quality offset, and it is often difficult for purchasers to be assured that their purchases of carbon offsets are in reality offsetting their emissions.

There are a number of factors that differentiate high-quality carbon offsets. A recent study by U.S. organisation Clean Air-Cool Planet has made an attempt to summarise the project elements that would produce high-quality carbon offsets¹⁹. The main characteristics identified by this study are:

- *Additionality*: the carbon offsets produced make the project viable, that is, the project would not have occurred otherwise.
- *Baseline Determination*: a credible approach is taken to determine the emissions that would have occurred in absence of the project.
- *Benefit Quantification*: the quantification of emissions reductions resulting from a project does not overstate benefits. It reflects uncertainties.
- *Permanence*: potential future reversal is not an option for the resulting offsets.
- *Ownership and Registration*: ownership of the offsets is clear and formally registered, providing a paper trail and reducing the possibility of offsets being sold many times.
- *Monitoring and Verification*: the offset project will be monitored and verified over time.

The voluntary carbon offsets market is fairly new and as such, no universally accepted standards for product quality have yet gained market dominance. However, some standards do exist (generally connected to the mandatory markets) and others are under development.

Frameworks, codes and standards fall predominantly into four main categories, which can add to the confusion around "quality" for offsets. There are standards which provide quality guidance or quality certification for:

1. Measuring and accounting for GHG emissions;
2. Abatement projects which create emission reduction credits;

¹⁸ The Carbon Neutral Co (2007b). Forestry Projects.

¹⁹ Clean Air-Cool Planet (2006). A Consumer's Guide to Retail Carbon Offset Providers. Portland, Clean Air-Cool Planet: 28.

3. Offset selling schemes;
 4. Organisations, products and services wishing to demonstrate their “carbon neutrality”²⁰.
1. Standards concerned with measuring and accurately accounting for GHG emissions have been developed to provide global uniformity of measurement. These include the GHG Protocol for Project Accounting and the Corporate Accounting and Reporting Standards, released jointly by the World Business Council for Sustainable Development (WBCSD) and World Resources Institute (WRI); and the International Organisation for Standardisation’s ISO 14064 standard for GHG accounting and verification. These standards often lie behind, or are incorporated into project standards.
 2. There are project standards and protocols which establish whether the GHG reduction project is credible, that the project sequestering or reducing emissions meets set criteria, such as the Gold Standard for Voluntary Offsets, the Voluntary Carbon Standard (VCS), Australian Greenhouse Friendly initiative and Origin Energy’s Carbon Reduction Scheme (CRS).
 3. Standards are being developed which certify a scheme for selling offsets, such as the UK Government’s recently announced Code of Best Practice.
 4. In addition, there are standards which can certify that a particular organisation or product has credibly offset its emissions, and can market itself as ‘carbon neutral’, or offers a combination of all of the above. The CarbonNeutral Protocol and Origin Energy’s CRS (both proprietary standards developed and marketed by offset providers) fall into this category, as indeed does the AGO’s Greenhouse Friendly initiative.

Each of the standards, however, has a different concept of what is “credible”, what types of projects will be funded and what conditions for “additionality” must be met.

Five of the abovementioned standards are elaborated upon below, as well as a brief description of Australia’s GreenPower renewable energy scheme.

Gold Standard

Perhaps the most widely recognised global standard to date is the Gold Standard²¹ an independently audited, globally applicable best practice methodology for project development that aims to deliver high quality carbon offsets. It is essentially an additional package of quality control criteria that can be applied to CDM and JI emission reduction projects under the Kyoto umbrella. Although carbon credits created from CDM projects (Certified Emission Reductions - CERs) are traded in the mandatory market, they are also traded in the voluntary market, hence the inclusion of the Gold Standard in this report.

The Gold Standard builds on the same basic framework used for projects developed to comply with CDM and JI, incorporating additional “quality” elements. These include: the restriction of projects only to those that reduce society’s dependence on energy generated from fossil fuels (ie: renewable energy or demand side energy efficiency projects), application of a strict additionality test, the incorporation of environmental and social indicators to ensure the project contributes to sustainable development and ensuring broad local stakeholder engagement. The Gold Standard specifically excludes forestry sequestration, large scale hydro power and energy from waste projects.

Developed by WWF in conjunction with other leading environmental NGOs, governments, corporations and experts around the world, the Gold Standard is administered by the Gold Standard Foundation.

²⁰ Carbon neutrality relates to the concept of the maintenance of balance between producing GHG and reducing GHG pollution.

²¹ The Gold Standard (2007). Premium Quality Carbon Credits.

Gold Standard for Voluntary Emission Reductions

Recently, the Gold Standard Foundation developed the Gold Standard for Voluntary Emission Reductions (Gold Standard VER) for carbon offsets produced specifically for the voluntary market. The Gold Standard VER claims to provide assurance of genuine additionality, local stakeholder engagement, contribution to sustainable development and simplified validation and verification process²². It is only available for renewable energy and energy efficiency projects in developing countries, for those projects that fall outside the Kyoto CDM system. It utilises the same basic framework as the Gold Standard, but in a simplified way, so that it can be applied to smaller projects not normally applying for CDM registration. It was developed with the sponsorship of WWF, The David Suzuki Foundation, the Renewable Energy and Energy Efficiency Partnership, Climate Care and My Climate.

Voluntary Carbon Standard

Another global offset standard for the voluntary market is under development, and is due to be released in Australia in the middle of 2007; the Voluntary Carbon Standard (VCS). Developed by The Climate Group, the World Economic Forum (WEF) and the International Emissions Trading Association (IETA), the VCS seeks to provide a "credible but simple set of criteria that will provide integrity to the voluntary carbon market."²³ The VCS will provide Voluntary Carbon Units (VCUs) from independently verified projects that have quantifiable, additional and permanent emission reductions. It will provide project developers with criteria for the creation, verification and registration of VCUs, and a protocol for offset verifiers.

The VCS only allows certification of emission reductions that have already taken place, and all certified projects will be registered on the official VCS website. VCUs must also be registered with an approved VCU Registry.

Unlike the Gold Standard VER, the VCS will include Land Use and Land Use Change and Forestry (LULUCF) projects, once the VCS Steering Committee has approved rules relating to permanence.

AGO Greenhouse Friendly

Some Australian providers offer offsets from projects that have been certified to international standards like the Gold Standard. However, there is also an Australian standard, developed by the Australian Greenhouse Office (AGO).

The Greenhouse Friendly initiative, part of the Australian Government's Greenhouse Challenge Plus Programme, is a standard which certifies approved abatement projects, as well as certifying products and services as "Greenhouse Friendly"²⁴.

The types of projects certified under Greenhouse Friendly include energy efficiency projects, renewable energy projects and bio-sequestration projects – including reforestation, afforestation and avoided deforestation projects. They will also certify projects that capture and flare landfill gas and waste diversion and recycling projects. Abatement projects must occur in Australia, and meet criteria for additionality, be permanent and verifiable emission reductions or sequestration. Greenhouse Friendly approved abatement can be used within the Greenhouse Challenge Plus framework, but also sold outside this framework.

For bio-sequestration projects, projects can be approved before planting has occurred. However, Greenhouse Friendly will not certify offsets that are "forward sold". That is, they will not certify accrued offsets into the future²⁵.

²² The Gold Standard (2006). Gold Standard VER.

²³ International Emissions Trading Association (2006). The Voluntary Carbon Standard: Proposed Version 2: 21.

²⁴ Australian Greenhouse Office (2007). Overview of the Greenhouse Friendly Initiative.

²⁵ Brill, B. (2007). Director Industry Partnerships AGO (Pers Comm).

Energy Efficiency projects, such as the installation of low flow shower heads and compact fluorescent lights are deemed to have generated abatement once installed. Currently these projects also pass the additionality test imposed by Greenhouse Friendly, but due to changing legislation, this is expected to change post 2009, so projects are only approved to this time.

The second form of certification provided by Greenhouse Friendly is product and service certification. This allows companies to offset the GHG emissions associated with the full lifecycle of a particular product or service by purchasing Greenhouse Friendly approved abatement. The product or service can then be labelled with the Greenhouse Friendly logo. An independent, third party verification process underpins certification.

GreenPower

Even though it is not an offset standard, it is worth noting the national GreenPower scheme, which is an accredited renewable energy scheme operated by participating governments. It is a program that ensures that the energy supplier agrees that the equivalent amount of energy nominated is produced from renewable sources, avoiding the use of fossil fuel-generated power. Therefore, GreenPower displaces emissions producing energy, rather than offsetting.

Specific GreenPower products are independently audited, and must be sourced from an eligible renewable energy source (wind, solar, biomass, hydro, geothermal, wave and tidal), built after 1997. GreenPower suppliers are not permitted to count their GreenPower purchases towards their regulated target, ie: MRET. The GreenPower label is a guarantee that contributions are helping facilitate the installation of new renewable energy projects in Australia²⁶, and the fossil fuel electricity generation is being displaced.

UK Code of Best Practice

There have also been recent standard developments specifically for the UK voluntary market. In January 2007, the government released for consultation a document outlining its voluntary *Code of Best Practice*²⁷ for the carbon offsets industry. The proposed standard is aimed at certifying schemes in the voluntary market that trade in certified offsets that can be accurately calculated and verified, such as Kyoto compliant Certified Emission Reductions (CER), EU Allowances (EUA) and Emission Reduction Units (ERU). A quality mark is to be developed and granted to accepted products for increased consumer confidence²⁸.

The announcement has proven controversial for some providers in the UK voluntary market. They argue that this standard instead of taking advantage of the innovativeness and flexibility of the voluntary market is shutting it down²⁹. The certification processes for achieving CERs, EUAs and ERUs are quite costly, and the Code of Best Practice, as it is currently proposed, is perceived to limit the investment in smaller, potentially more innovative and flexible projects.

Overall, whilst globally recognised standards are desired, an overly bureaucratic or costly accreditation process which limits the flexibility and innovation of the voluntary market is not necessarily what is required.

²⁶GreenPower (2007). Accredited Renewable Energy.

²⁷ DEFRA, Code of Best Practice Consultation Document, www.defra.gov.uk/corporate/consult/carbonoffsetting-cop/consultation.pdf

²⁸ UK Department for Environment Food and Rural Affairs (2007b). Consultation on establishing a voluntary Code of Best Practice for the provision of carbon offsetting to UK customers. London: 56.

²⁹ BBC News (2007b). UK to tackle bogus carbon schemes.

Part II - Service Providers

The development of carbon markets has created opportunities for many entrepreneurs who are now offering carbon offset services to business, other organisations and individuals. In Australia, an organisation can purchase carbon offsets in one of three main ways:

- a) directly from the carbon offset project (ie by dealing directly with a reforestation company or renewable energy generator);
- b) purchasing Renewable Energy Certificates through a broker on the open market; and
- c) purchasing offsets through a service provider.

We have chosen to focus on offset service providers in this report, as it is the “retail” end of the market where businesses wishing to offset emissions generally start their search for information.

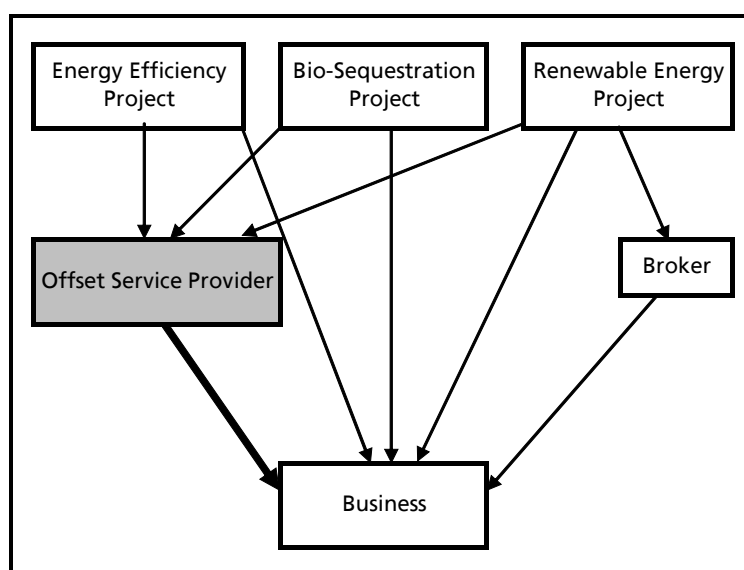


Figure 1: Methods for business to offset emissions

In Part II of this report we look at the most recognised Australian offsetting service providers, as well as one of the leading offset providers in each of the UK and US markets.

Methodology

This report has been prepared to provide organisations that are seeking to offset their emissions with comparable information regarding the offsetting services available.

A comparative analysis framework was developed which included key issues considered relevant to the emerging carbon market. We reiterate that this report does not seek to judge the different services, as it is up to individual businesses to determine which service suits their defined carbon strategy best.

The main elements of the framework are:

- *Nature of the Organisation*: profit or non-profit.
- *Types of emission reduction projects*: renewable energy, energy efficiency, bio-sequestration.
- *Quality assurance*: verification, standards.
- *Price*: per tonne of carbon dioxide equivalent.

- *Percentage of price dedicated to projects*
- *Carbon calculation used: assumptions, models used.*
- *Links with NGOs or individuals recognised for their environmental work.*
- *Current major clients.*

The information was collected mostly through the providers' websites. Emails were sent direct to service providers when clarification was required, or to obtain information not presented online.

The draft report was reviewed by Alan Pears, a senior lecturer at RMIT and consultant in energy and energy efficiency with over 30 years direct experience, and Julia Birch, Sustainability Manager at Solar Systems, former policy and research analyst for the Business Council for Sustainable Energy and the researcher behind the Climate Group's weekly greenhouse indicator for Victoria.

Their comments and contributions in particular strengthened the report's discussion of mandatory emissions trading and the associated instruments, as well as providing overall guidance.

Each service provider was given the opportunity to review the information compiled about their company and submit information to cover any perceived gaps. Most organisations accepted this opportunity, which allowed a fuller discussion in particular of the verification and assurance standards behind each company's products.

The service providers identified for investigation were those found in Australian business directories that provide offsetting services (including some electricity retailers). From the initial list (see Appendix 1), the organisations that claim to provide offsetting services to business in the voluntary market were selected for analysis. Thirteen Australian service providers were therefore included in our analysis. A number of providers have been established after our 'cut-off' period for our research, or are about to be launched, so are not included in this analysis.

International service providers were chosen based on their high profile internationally, and the easy accessibility of their information.

Explanation of Framework Elements

- *Nature of the Organisation: profit or non-profit.*
When selecting an offset service provider, businesses can choose between not-for-profit and for-profit entities. Not-for-profit entities will often offset an amount of CO₂ on behalf of a business in return for a tax-deductible donation to the organisation. For business, this does not really alter their financial bottom line compared with having the offset recorded as an expense purchased from a for-profit entity, it is more of an issue for individuals seeking tax-deductibility.

Tax deductible donations are contingent on the donor not receiving any material benefit from the donation. This is why the not for profit organisation offsets on behalf of business. To date no conclusive tax ruling has stated whether "donations for offsets" is a material benefit, discussions between offsetters and the ATO are occurring.

Not-for-profits are generally offering offsets which align with their environmental ideology, and business should consider whether there are any conflicts or synergies with their own business strategy.

- *Types of emission reduction projects: renewable energy, energy efficiency, bio-sequestration.*
Businesses should perhaps consider which types of offset projects match their business and carbon strategy. For example, a service provider to regional Australia may find that reforestation projects that specifically target degraded, salinity affected areas align with

other elements of their business strategy, reinforcing the position they wish to hold in the market. Others may wish to align more closely with domestic energy efficiency programs that help promote broader awareness of climate change in the community as an ancillary benefit. Others still may prefer to encourage the growth of the renewable energy industry.

- *Quality assurance: verification, standards.*
The different ideologies and certification procedures behind the existing and developing standards provide another opportunity for business to differentiate itself, and reinforce its overall strategy.
- *Price: per tonne of carbon dioxide.*
The price per tonne of carbon dioxide varies between the type of projects invested in, the level of verification and assurance, and the business model used by the offset providers. Businesses purchasing offsets need to consider the price and drivers of price when making their offset purchase decision.
- *Percentage of price dedicated to projects*
This element is included for transparency reasons. Not-for-profit service providers are accustomed to having their operations scrutinised for the level of administration cost etc. Many providers include education and other services as part of their offset package, which may assist businesses determine the value-added components of the offsets they may be purchasing.
- *Carbon calculation used: assumptions, models used.*
There are a number of methods which offset providers can employ to calculate emissions on behalf of potential customers, including average per capita emissions for product classes like travel, specific point-to-point flight detail or average "zone" calculations, average fuel consumption etc. Businesses need to be aware of the main assumptions and models used if they are relying on the offset service provider calculations.
- *Links with NGOs or individuals recognised for their environmental work.*
This is to provide businesses with an understanding of the environmental ideology that may be indirectly linked to a particular service provider.
- *Current major clients.*
Which service providers have already gained the acceptance of some companies in the market?

Australian Offset Service Providers

The following pages present the information for each of the Australian offset service providers analysed, listed alphabetically.

1. Australian Carbon Traders

Nature:	for profit
Project type:	bio-sequestration; Renewable energy & energy efficiency on request
Assurance:	Greenhouse Friendly and NSW GGAS on request
Price:	not available
Calculator:	not available on website

Australian Carbon Traders is a for profit company based in Victoria, formed in 2004. They offer both individuals and businesses carbon offsets from predominantly reforestation projects.

Communication with the organisation revealed that they also operate as a broker. They can source offsets from renewable

energy and energy efficiency projects if requested.

There is limited information on the website regarding price, carbon calculation models and product assurance. It is stated that the company operates to Australian and international standards but information about particular standards is not available online. Further investigation revealed that offsets generated from renewable energy and energy efficiency can be provided from projects approved by the Greenhouse Friendly scheme, and the NSW GGAS scheme.

The organisation indicated that a single or average price for offsets could not be provided, as the price of the offsets varies according to projects, environmental outcomes and reporting requirements. The percentage of the price dedicated to the offset project was stated to be between 60 to 95%.

Australian Carbon Traders' carbon calculations are based on the Australian National Carbon Accounting Toolbox (NCAT) and methods developed in-house.

The website emphasises the services offered to landholders around growing trees to produce carbon offsets, and other services offered such as community consultation. Major clients are not listed.

Additional information was supplied by Australian Carbon Traders around price of offsets and quality assurance**. To visit their website go to: www.australiancarbontraders.com/default.htm

**NOTE: Alterations have been made to this page since its first printing. Due to circumstances beyond all parties' control additional information was supplied but not received by us prior to first printing. In good faith and for the sake of completeness we have included that additional information in the second printing.

2. Carbon Neutral (Aus)

Nature:	not-for-profit
Project type:	bio-sequestration
Assurance:	working towards Greenhouse Friendly
Price:	\$13 per tonne of CO ₂
Calculator:	available: based on AGO and IPCC

The Carbon Neutral Program was started by *Men of the Trees*³⁰ in 2001 to help community and industry take responsibility for the effect of greenhouse gas emissions on the environment.

Men of the Trees is a not for profit organisation that has planted trees throughout Australia since its inception in

WA in 1979. Men of the Trees grows native Australian species helping to maintain biodiversity and maintaining the natural integrity of local areas.

The program website offers government departments, private corporations and individuals carbon offset services through reforestation projects. Extensive information is presented regarding species' selection as well as site selection and management. Both plants and sites are selected with the aim of improving and protecting the rural environment. Claimed additional benefits (i.e. additional to offsets) include the establishment of wildlife corridors, lowering the water table and combating salinity and erosion.

Carbon Neutral selects at least four indigenous species for all plantings. Non-indigenous species are selected carefully and fire-prone species are not chosen. The plantations are held for between 30 and 70 years. After this period it is anticipated that trees will be harvested, the biomass used and the plantations replaced.

Carbon Neutral is working to become an AGO Greenhouse Friendly Approved Abatement Provider. The organisation produces annual reports with photos to keep track of the plantings' growth and CO₂ sequestration. Abatement is said to be measured, verified and created via the Greenhouse Friendly process in intervals of about 10 years; and the abatement acquitted against the pre-sold registry. External verification is part of the Greenhouse Friendly process.

The organisation works on a donation model, making its supporters' payments tax deductible. The price of offsetting is about \$3 per tree or approximately \$13 per tonne of CO₂ (according to the program's calculator). 73% of this price is directed to planting costs and the rest to administration, marketing, accounting, reporting, emission estimations and website maintenance.

Carbon Neutral offers flexibility in its product offering, allowing supporters to choose from a range of offsetting options that include air travel and electricity use. The Carbon Neutral carbon calculator offers the option for determining the carbon footprint of those activities. A fifty-page document detailing information regarding the assumptions and factors used for calculation is available on the website³¹. The user is required to enter data such as the number of kilometres flown in a year, the number of kWh of electricity used per year and the number of kilometres travelled by car plus the size of the car engine and the type of fuel used.

The program has a wide-ranging list of supporters including the Government of WA, Western Power, Water Corporation, RAC WA and Pilbara Iron Company. The complete list of supporters is accessible at: www.carbonneutral.com.au/platinum.htm

³⁰ Men of the Trees is an independent, not for profit, non-government organisation. It was founded in Kenya in the 1920s, to plant and care for trees in order to save tribal land from turning into desert.

³¹ Carbon Neutral (2006). GHG Energy Calc. A tool for self audit of domestic GHG emissions: 50.

For more information visit www.carbonneutral.com.au/default.htm. The website is very comprehensive with most of the information for this study found online. Carbon Neutral provided additional information mostly regarding the certification and assurance process.

3. Carbon Planet

Nature:	for profit
Project Type:	bio-sequestration; and broker others on request
Assurance:	NSW GGAS
Price:	\$23 per tonne of CO ₂
Calculator:	not available online

Carbon Planet Pty Ltd conducts carbon emissions audits and retails carbon offsets to individuals and organisations that wish to offset their carbon dioxide emissions. It can also act as a carbon broker for businesses, sourcing any type of credits.

Carbon Planet was founded in Adelaide in January 2000 by Ross Williams and Dave Sag and began trading in June 2005.

Carbon Planet's offsets come from Forests NSW's sequestration projects. All NSW Forests plantation projects are established under the NSW Plantations and Reafforestation Act (1999). A selection of 13 species that grow naturally in north-eastern NSW form the pool of NSW Forests. At least 3 different species are included in most plantations. No additional environmental benefits of these plantations are claimed on the website.

The offsets are certified through the NSW GGAS. This certification process ensures that:

- each NGAC (NSW Greenhouse Gas Abatement Certificate) represents one tonne of carbon dioxide stored for at least 100 years.
- the trees have been planted since 1990.
- the trees weren't planted on old growth forest cleared land (the land must have been clear prior to 1990).
- should a tree come to any harm within 100 years of purchase (eg. fire, disease, logging) the carbon offsets will be replaced immediately from another source.
- Forests NSW's carbon pool is audited annually.

The price of offsets is not explained on the website. Communication with Carbon Planet disclosed that the organisation charges \$23 per tonne of CO₂. The starter pack, which includes abatement of two tonnes of CO₂ is \$60. The extra \$6 is to cover additional once-only costs such as setting the customer up on the registry, merchandise and posted information. 57% of the income goes to the forestry projects with the rest dedicated to running the organisation, the internet facility and GST.

The website does not present a carbon calculator. Instead the company offers carbon emission audit services and national averages. These audits are conducted in accordance with The GHG Protocol Corporate Accounting and Reporting Standards³². The audits include individualised emission reduction recommendations.

Carbon Planet does not list its major clients.

For more information visit www.carbonplanet.com. The website contains a variety of information. Carbon Planet provided additional information around prices, cost structure, brokerage service and audits.

³² World Business Council for Sustainable Development (2001). GHG Corporate Accounting and Reporting Standard: 116.

4. Climate Friendly

Nature:	for profit
Project type:	renewable energy
Assurance:	GreenPower, Gold Standard
Price:	\$22 - \$34 per tonne of CO ₂
Calculator:	available online; based on IPCC, GHG Protocol & AGO data

Climate Friendly Pty Ltd call themselves a "profit for a purpose" company. The company was established in 2003 by Joel Fleming with the support of a group of individuals, Michael Robinson, Madeleine Lyons and Melanie Manton.

Climate Friendly invests in renewable energy projects in Australia and overseas. They claim to fund "only genuine sustainable energy

projects with undisputed climate benefits that build a long term solution to climate change. These include: wind, solar electric, solar thermal, low-impact hydro, geothermal, ecologically sound biomass, energy crops, forest and agricultural waste and agro-processing residues"³³.

Climate Friendly commits to invest in projects that:

- address fossil fuel emissions
- prevent greenhouse emissions
- are additional
- are independently verified for quality
- have a 'real time' vintage (i.e. neutralise emissions close to the time of emission)

The organisation claims that by investing in these types of projects, there is a contribution being made to the fight against global warming as well as a contribution to the development of the renewable energy industry in Australia and abroad.

Climate Friendly has a strong link with WWF Australia, with CEO Greg Bourne praising the program. The Australian Conservation Foundation and Greenpeace Australia are also on the climate friendly list of clients.

All Climate Friendly projects are independently verified. Currently the projects are accredited through two mechanisms: the Gold Standard and GreenPower accreditation. The company maintains a detailed carbon register of all sales and purchases of RECs and other carbon offsets. All transactions are recorded so that offsets are used only once. More information on accountability is available at:

www.climatefriendly.com/pdfs/climate_friendly_accountability_commitments_and_procedure_s.pdf

Climate Friendly charges its customers a price of \$22 or \$34 per tonne of CO₂ offset. Of this approximately 60% goes to the actual funding of carbon neutral projects. The remaining 40% is spread in administrative costs including:

- programming the web site
- staff salary
- promotion of customer initiatives
- communications materials
- education initiatives
- independent auditing / verification
- maintaining a greenhouse register of all of their purchases and sales

The Climate Friendly calculator has the capability of calculating emissions for air and car travel and electricity use. Car travel emissions are calculated using travel distance or fuel cost. Air travel requires the user to enter the cities between which travel has occurred. Electricity use emissions can be calculated for users anywhere in the world entering the amount of

³³ Climate Friendly (2006). Our Projects.

electricity used per year. Communication with Climate Friendly revealed that the organisation uses the IPCC and GHG Protocol factors for air travel calculations and AGO data for car travel. The Climate Friendly calculator has been ranked as one of the best calculators, according to a study by the Tufts Climate Initiative³⁴.

Climate Friendly's diverse list of clients includes Westpac Corporation, the City of Sydney, Szencorp, ICLEI, Ethical Investment Services, NSW Department of Energy Utilities and Sustainability, Vic Super, Tim Flannery, the ACF among many others. The complete list is accessible at: www.climatefriendly.com/pdfs/climate%2ofriendly%2ocustomer%2olist.pdf

For more information visit www.climatefriendly.com

³⁴ Kollmuss, A. and B. Bowell (2006). Voluntary Offsets For Air-Travel Carbon Emissions- Evaluations and Recommendations of Voluntary Offset Companies. Tufts Climate Initiative: 58.

5. Climate Positive

Nature:	not for profit
Project Type:	renewable energy + bio-sequestration
Assurance:	RECs and VCS pending
Price:	\$20, \$25 or \$35 per tonne of CO ₂ -e
Calculator:	available online; based on AGO and IPCC data

Climate Positive is a not for profit organisation established in 2006. Environmentalists such as Brendan Condon and Dr. Graeme Pearman are part of the Climate Positive team.

Although Climate Positive state they provide offsetting services to business, the current calculator is for individuals and small businesses. Large businesses are encouraged

to contact the organisation directly to arrange services.

Climate Positive offsets carbon emissions by investing in accredited renewable energy projects, with preference given to wind and solar power projects. In addition, the company matches each tonne that is offset with a further 0.3 tonne sequestered in replanting projects. This gives rise to the carbon-positive concept, which goes beyond carbon neutrality.

The company requests that customers take the three step process of: measure, reduce and then offset. When progressing through the calculator, recommendations are made for how to reduce emissions before progressing to the "offset" step.

Offsets are provided through RECs and in the very near future through Voluntary Carbon Units (VCUs), accredited under the Voluntary Carbon Standard (VCS). Climate Positive preferentially selects renewable projects which displace the use of brown coal. All projects from which RECs are purchased must meet Climate Positive's own selection criteria, based on the VCS and GreenPower criteria, which ensures projects were built after 1997 and meet GreenPower's social and environmental standards. Some of these are discussed, but a full list is not elaborated upon on the website.

There is no information on the website at this stage about the projects from which VCUs will be sourced, but it is stated that such information will be made available through the website by May 2007. The aim of the organisation to include VCUs into their pool of offsets is to provide greater price range to customers, whilst still selling credits that are accredited to a reputable standard. Customers will be able to choose offsets that are 100% RECs, 100% VCUs or a combination of 80% VCUs and 20% RECs.

Native trees are planted as a 'bonus' investment to assist environmental restoration. The company doesn't use offsets from existing forestry plantations, only replanting areas which were previously cleared. Plantings are biodiverse and carefully planned to recreate ecosystems similar to what would have naturally existed in the area. The land selection criteria for plantings are available online.

The company's assurance comes from the purchase of new RECs registered under the MRET or VCUs accredited under the VCS. Reporting requirements are met under MRET legislation. The VCS, which will be launched in Australia in 2007, ensures that the offsets are real, uniform, quantifiable, additional and permanent project-based emission reductions.

Full reports are also made on all planting projects, including details on survival rates, biodiversity and habitat construction, biomass accumulation, water catchments and community engagement. The first plantings will be audited in July - September 2007 and from that time planting data will commence to be collected and made publicly available.

The Climate Positive price was \$28 per tonne of CO₂-e at the time of gathering data. In communication with Climate Positive it was revealed that new products with prices of \$20, \$25 or \$35 per tonne of CO₂-e will be available to customers by May 2007.

Similarly, Climate Positive informed us that 90% of the price is spent on offsets and additional bio-sequestration. 5% is dedicated to education campaigns about climate change and 5% to cover the running of the organisation.

Climate Positive works with other environmental organisations such as Cool Globe and Village Green to complement the services it offers to clients. Additional services include education, cultural change, audits and emissions calculations (other than that provided by the online calculator).

The company's website presents a comprehensive GHG emissions calculator. The calculator is accompanied by solid documentation around assumptions and sources. For Australian-based emissions, these are primarily from AGO data. For international emissions, average national data is used based on World Resources Institute and International Energy Agency data. Calculations are based on the methodology developed by the IPCC. However, the calculator is aimed at individuals and households and allows little flexibility to adapt it for business use at this stage.

For Australian-based clients the calculator allows individuals to calculate emissions associated with travel, household and diet activities. The data can be entered by the user in various ways including yearly use or cost, number of trips or actual distance of flights etc.

The Climate Positive client list includes Daimler Chrysler, Sustainable Living Festival 2007, Red Star Coffee and Sustainable Solutions among others. The complete list is available at: www.climatepositive.com/Members.asp

The Climate Positive website is very comprehensive and most of the information required for this study was available online. The site can be accessed at www.climatepositive.com. Additional information was submitted by the organisation to present their up-coming products and adherence to standards.

6. Easy Being Green

Nature:	for profit
Project Type:	energy efficiency
Assurance:	NSW GGAS, Greenhouse Friendly
Price:	\$20 per tonne of CO ₂
Calculator:	not available online

Easy Being Green was founded in 2004 by social campaigner Nic Frances with the aim of assisting Australian households and businesses to become more energy and water efficient. Former Greenpeace CEO and founder of Ecos Corp, Paul Gilding joined the organisation in 2005.

The types of projects Easy Being Green invests in for offsets are energy efficiency projects in the community. Energy-efficient light globes are installed and the energy savings created by the installation of these items are assigned by the householder to Easy Being Green to be traded as NSW Greenhouse Gas Abatement Certificates (NGACs). Offsets are then sold to individuals or businesses wanting to offset their emissions in part or wholly.

Easy Being Green is accredited under the NSW Greenhouse Gas Abatement Scheme and the Federal Government's Greenhouse Friendly program. To receive accreditation under these schemes, Easy Being Green must prove that reduced pollution matches the claimed value. The company claims to be externally audited and verified, but no further information regarding these audits is given on the website. The organisation has commented about its recognition of the need for standardised calculating methodologies for emissions and abatement and its commitment to promote this.

The company states that for every \$20 spent, they reduce one tonne of CO₂ pollution. In communication with Easy Being Green, the organisation told us that the percentage of this price that is dedicated to projects varies according to the economies of scale reached with different projects.

The carbon footprint calculator developed by Easy Being Green is not available on the company's website but the service is offered to businesses and calls to enquire are encouraged. For individuals, links to Government calculators are available.

The company informed us that all calculations are based on the latest and most broadly used emissions factors such as those from the World Business Council for Sustainable Development (WBCSD), the World Resources Institute (WRI) and the AGO.

Easy Being Green's list of clients includes Westpac, BHP Billiton, Visy, Department of Sustainability & Environment (Vic) and Parks Victoria. A complete list is available on the website.

The company's website is comprehensive. Go to: www.easybeinggreen.com.au. Most of the information for this study was sourced through the website. However, the company provided additional information about standards, price structure and calculation assumptions and models.

7. Elementree

Nature:	not for profit
Project Type:	bio-sequestration
Assurance:	working towards Greenhouse Friendly for Wholesale offsets
Price:	\$10 per tonne of CO ₂ ; Retail Project
Calculator:	available online; based on AGO data

Elementree assists organisations offset GHG emissions through revegetation projects using native trees. Plantings are intended to survive in perpetuity, and not be harvested for timber products.

Elementree operates two programs: one is dedicated to individuals and small-scale business offsetters called the Retail Forestry Project, for which the website is the sales mechanism. The second program for buyers

of at least 100,000 tonnes of CO₂ abatement is called the Wholesale Forestry Project, for which direct contact is necessary to make arrangements under this program.

Elementree assists businesses with a range of services relating to their carbon strategy:

- Design and delivery of large-scale reforestation projects for the generation of Kyoto-compliant carbon offsets (Wholesale Forestry Project).
- Advisory and brokerage services for offset transactions.
- Design and delivery of landcare initiatives of any scale.

Reforestation activities are said to be managed in a professional way and independently audited, however details are not yet provided. Elementree are working towards Greenhouse Friendly certification.

The projects are selected to not only create carbon offsets which can be traded, but also to combat salinity and provide other environmental services for landowners. Social and environmental benefits are said to be included in the criteria for project selection, many of which are outlined in Elementree's "General Planting Policy" document.³⁵

The Retail Forestry Project is designed to provide carbon offsets to businesses that want to offset their carbon footprint using uncertified carbon offsets. The Wholesale Forestry Project seeks to generate offsets that are Kyoto compliant. Communication with Elementree established that plantations are externally audited and reports made available to business clients on request. The Independent Auditors Report will be published on the website in due course, according to communication with Elementree.

For the Retail Forestry Project the price of carbon is approximately \$10 per tonne of CO₂ or \$2.50 per tree. Communication with Elementree revealed that 90% of this price is directed to the offset projects and the additional 10% dedicated to marketing and promotional materials. Labour is provided pro-bono by the founders.

The assumptions and factors employed in the calculation model are presented on the website. The GHG emission factors used in the estimation of greenhouse emissions from the consumption of electricity and natural gas, are based on the AGO Factors and Methods Workbook August 2004. Some of the assumptions are also available in the Elementree "How We Calculate" document.³⁶

The calculator offers the alternatives of calculating emissions from air and car travel and stationary energy (the language used refers to households but it is possible to use it for office use). Stationary energy emissions can be established for electricity and gas use. Air travel emissions require the user to enter number of kilometres travelled in a year and car travel requires the user to enter data associated with the size of engine, fuel used and

³⁵ Elementree (2007). General Planting Policy. www.elementree.com.au/documents/plantingpolicy.pdf

³⁶ Elementree (2007b). Emissions Calculator.

distance travelled per year, or yearly cost of the fuel. Data for more than one vehicle needs to be entered one at a time.

The conversion of litres of fuel to kilograms of CO₂ emissions is calculated using the 'point-source emissions factor' figures from the AGO's Factors & Methods Workbook 2004. 'Point-source' does not include the non-direct emissions from refining and transporting the fuel.

Elementree does not consider emissions from the manufacture of fuels and the delivery of electricity and gas to be the responsibility of the end user. However, Elementree offers the option to offset these emissions (or true cost) in addition to pursuing accountability for them with the electricity and gas providers and distributors.

Elementree chooses not to list its major clients on its website.

The website presents a reasonable amount of information and is updated regularly. It can be accessed at www.elementree.com.au. Elementree provided additional information for this study to clarify the two main services it carries out, their price structure and certification issues.

8. Future Climate Australia

Nature:	for profit
Project Type:	bio-sequestration, landfill gas capture
Assurance:	Greenhouse Friendly (if requested)
Price:	\$8.50 per tonne of CO ₂ (non-verified). Greenhouse Friendly Certified abatement, price available on request
Calculator:	not available online

Future Climate was recently established as a network of climate and sustainability experts to assist individuals, business and government develop climate strategies. It offers consultancy, carbon offsetting services and design and delivery of events for organisations.

Future Climate offers two types of offsets: native reforestation-based abatement and AGO Greenhouse Friendly Approved offsets from landfill gas capture and burning.

For native reforestation projects the organisation claims to plant at least four native trees for each tonne of CO₂ offset, which is said to exceed commitments providing a safety buffer against losses. The trees absorb emissions and contribute to the establishment of permanent native forests. This creates environmental benefits additional to carbon storage such as restoring biodiversity and providing habitat for native wildlife. Under this program offsets that will occur with the maturation of the trees are pre-sold.

Internally, Future Climate has its own monitoring system. Corporate clients are encouraged to inspect the system and regular progress reports can be generated from the database. Records include site maps, GPS references, planting methodology, density, survival etc. Work is undertaken with landholders and other stakeholders to ensure the carbon sold is matched in sequestration.

AGO Greenhouse Friendly verified abatement is also available through Future Climate. This is mostly acquired from landfill methane capture and burning projects. AGO protocols for retiring offsets and reporting are followed by the organisation.

Future Climate charges a price of \$8.50 per tonne of non-verified CO₂ offsets. Prices for verified abatement are provided to customers on an individual basis. There is no indication of the percentage that is spent in administration costs.

The website does not state links with major NGOs. However well recognised sustainability and climate practitioners are members of the Future Climate network including Henry O'Clery, Alan Pears and Dr. Graeme Pearman.

The website does not present a calculator for clients. Future Climate uses the AGO Office Workbook for their carbon calculations.

Major clients are not listed.

Future Climate provided additional information in regard to their AGO approved abatement, internal assurance process for bio-sequestration projects, calculations model and price structure. The rest of the material was available on the website.

For more information visit www.futureclimate.com.au.

9. Greenfleet

Nature:	not for profit
Project type:	bio-sequestration
Assurance:	working towards Greenhouse Friendly
Price:	\$8.80 per tonne of CO ₂ e- (from calculator)
Calculator:	available online; based on AGO, IPCC and ABS data

Greenfleet was established in 2001 as a not for profit environmental organisation after it had been launched as a project in 1997. The organisation's Board and Advisory group include a number of well recognised professionals in the environmental field, scientists and business people, including the Hon. Tom Roper and Robert Joy.

Greenfleet's stated aim is to reduce transport impact on the global climate. However, their programs also offer offsets for office and event energy use.

Greenfleet provides offsets by investing in native re-vegetation projects, particularly in areas of environmental concern. The plantings aim to provide a range of long-term benefits such as improved water quality, lowering of the water table, salinity reduction and essential habitat for native species.

Greenfleet's objectives also include promoting fuel-efficient technologies and low carbon fuels in order to reduce emissions in the future. However, offsetting projects are bio-sequestration-based only.

Greenfleet offers organisations two alternatives for offsets:

- a) A carbon-offset for cars and light commercials, based on the average car producing 4.3 tonnes of CO₂ in one year³⁷. This is then applied to the number of vehicles in the fleet.
- b) A carbon-offset based on energy use, in relation to:
 - Vehicle fleet (based on annual fuel usage)
 - Staff air travel
 - Office energy use
 - Conferences and events

Greenfleet generates reports on progress of plantings to its members, and the organisation's newsletter showcases progress of a planting in each issue. The website states: "One of our priorities is to become 'Kyoto compliant', so that we have the ability to measure the carbon uptake from our trees to emerging international standards."³⁸ Also, in communication with Greenfleet it was established that the organisation is currently applying to become an Approved Abatement Provider under the AGO Greenhouse Friendly program.

The website calculator returned a carbon price of about \$8.80 per tonne. For \$40 (tax deductible) Greenfleet plants 17 native trees. About 70% is said to be destined to reforestation projects and the remaining 30% attributed to administration costs, newsletter production and website maintenance.

Greenfleet's carbon calculator, the Tree Totaller, is available on the website: it offers alternatives for calculating carbon footprints of car use, air travel and household / office energy use. The calculator is accompanied by notes³⁹ describing the methods and assumptions implicit in the model.

³⁷ From Greenfleet website: 16,000 km, 19,020 litres of fuel

³⁸ GreenFleet (2007). Projects.

³⁹ Pears, A. (Undated). Notes about the Tree Totaller.

The notes make clear that trees planted to offset a particular year's emissions will absorb the equivalent carbon during their lifetime. So more planting is required to offset following years' emissions.

To calculate car use emissions the Tree Totaller provides users 4 options:

- Australian average emissions per car using ABS data;
- Weekly fuel cost; The Tree Totaller requires input of weekly fuel cost and it provides an estimation of yearly emissions;
- Annual distance travelled and vehicle information; and
- Annual fuel consumption.

For household / office energy use, the Tree Totaller gives users 3 options for calculations for each type of fuel potentially used:

- No use of the fuel
- Use average values (from ABS data)
- Enter data from energy bills

The associated emissions for each fuel are then calculated using greenhouse factors from the AGO.

The emissions associated with air travel are calculated by means of user-entered data under two options. Average trip length or actual trip distances. Average figures are based on data from AVFACTS 2001 published by the Bureau of Transport and Regional Economics. The actual trip distances option requires the user to enter origin and destination points into the calculator.

Of particular interest, the calculator provides the user the alternative of calculating direct impacts or full impacts of flights. Direct impacts include mainly the carbon dioxide emissions associated with burning fossil fuel. Full impacts include the greater effect emissions have when released in the sky, and the effect of contrails etc. The IPCC has estimated the full impact to be 2.5 to 7 times greater than the direct impacts.⁴⁰ The Tree Totaller uses a factor of 2.5, assuming that aircrafts travel a Great Circle (i.e. the shortest distance between two points on the earth's Surface) and cruise at about 10,000 metres of altitude. The emissions associated with air travel are then calculated using AVFACTS 2001 data.

The website contains further technical information at:

www.greenfleet.com.au/transport/technical.asp

Greenfleet has re-vegetation relationships with Scouts Australia, Parks Victoria, NSW Parks and Trust for Nature. They also run, with the Science Teachers Association of Victoria, a fuel efficient car design competition.

Greenfleet's list of clients includes Telstra, the Victorian Government, the ACT Government, AAMI, City West Water, City Power, the City of Melbourne, Ciba Chemicals, Mecu, Roche, The Federal Department of Environment and Heritage and many others. A complete list of clients can be accessed at: www.greenfleet.com.au/supporters/arrivals.asp

Greenfleet's website contains a broad range of information. Most of the data for this study was found online. Greenfleet communicated that the site is currently being reviewed and provided further information around certification, price structure and partnerships. The site can be accessed at www.greenfleet.com.au/

40 For more information, see IPCC (1999). IPCC Special Report Aviation and the Global Atmosphere 1999.

10. Neco

Nature:	for profit
Project type:	energy efficiency, renewable energy
Assurance:	NSW GGAS, RECs
Price:	\$20 or \$40 per tonne of CO ₂
Calculator:	available online

Neco is a for profit organisation operating out of NSW since March 2004. Neco supplies a variety of eco-friendly products for households and businesses, and offers carbon offset products as part of its range.

Neco's carbon offsets are generated predominantly from what they call Demand Side Abatement (DSA), which are energy

efficiency projects. Also some offsets are generated through investment in renewable energy projects.

The organisation's DSA programs distribute energy efficient products to households. The differential in electricity use in households, compared with a pre-determined base-line, allows Neco to produce carbon offsets under the NSW GGAS, under which the organisation is accredited. The offsets are surrendered to the NSW GGAS authority once they have been purchased by offsetting customers. Neco is independently audited regularly to ensure compliance with the scheme.

Ancillary benefits of these projects, claimed by Neco, include education and awareness in the community. Neco encourages its customers to follow the "measure, reduce and offset" approach to energy strategy.

A small portion of Neco's offset units come from renewable energy projects. Neco purchases RECs from wind farms in Western Australia. The trade of these certificates is registered through the Office of the Renewable Energy Regulator (ORER). There is no further information about the projects on the website.

Neco's assurance to its customers comes from selling offsets that are either NGACs or RECs. There is no further information on the website in this regard.

Neco's website states a price of \$20 per tonne of CO₂ offset through energy efficiency projects and \$40 per tonne of offsets provided through renewable energy projects. Customers can choose to offset their carbon footprint or buy off-the-shelf offsetting products (e.g. a certificate of offsetting a small car's emission for a year). There is no information regarding the percentage of the price dedicated to offsetting projects.

The website does not state links with major NGOs.

The website presents users with a carbon footprint calculation model. The calculations and assumptions are not discussed except to state that calculations are based on government calculations and national averages.

Major clients are not listed.

No additional information was submitted by the organisation. For more information visit www.neco.com.au

11. TreeSmart

Nature:	for profit
Project type:	bio-sequestration
Assurance:	working towards Greenhouse Friendly
Price:	approx. \$12 per tonne of CO ₂
calculator:	not available online

The TreeSmart program is run by private company TreeSmart Australia Pty Ltd. It was developed by the Urban Transport Institute (a private research consultancy) and its subsidiary Green & Gold Tree Farms. The directors of the company are Dr. Tony Richardson and Rita Seethaler.

Although the organisation is registered as a private entity, communication with TreeSmart revealed that, in the foreseeable future, all profits will be reinvested in tree planting and carbon sequestration.

The program's aim is to offset the emissions of Australian travellers by planting, maintaining and harvesting plantation eucalypt trees. The program operates by selling subscriptions to motorists, road freight operators, public transport travellers, air travellers and conference attendees to enable the CO₂ emissions from their travel to be sequestered in eucalypt trees grown for eventual harvesting and replanting.

The TreeSmart program is different from most other bio-sequestration programs in Australia. Instead of planting trees that will remain as forests over time, TreeSmart's plantations are harvested and replanted in planned cycles. According to the company's research "plantations that are harvested on a regular rotation can absorb more CO₂ over their lifetime than can a perpetual forest, when one counts the carbon still sequestered in timber products derived from the plantation, or the reduction in fossil fuel use as a result of using the harvested timber as fuelwood. They can also do this more cost-effectively because the cost of planting is subsidised by the revenue obtained from the harvest."⁴¹

Also the company chooses to offset an average year of emissions against an average year of tree growth. This means that TreeSmart plants a larger number of trees and only count one average year of the trees' lives to offset a year of emissions.

In regard to verification of offsets, TreeSmart states that it is seeking registration by the AGO to be a "Greenhouse Friendly" supplier of carbon offsets. They also state that the operations of TreeSmart will be audited by the accounting firm of Prowse, Perrin & Twomey. Accounting of carbon sequestration is undertaken using AGO and Permanent Sampling Plots methodologies.

The company charges \$50 for a subscription to offset the annual emissions of a vehicle that emits on average 4.3 tonnes of carbon in a year. The average price per tonne of CO₂ is therefore \$12. No calculator is presented online. According to TreeSmart, 75% of this is destined to payments to farmers and a carbon reserve. The balance is spent on GST, monitoring and administration costs.

The information about the carbon calculations used by the program is contained in the Frequently Asked Questions section of the web. It generally refers to AGO calculations, ABS data and research undertaken by TreeSmart.

TreeSmart was appointed in January 2007 to be one of the six organisations that will provide offsetting services for the Victorian State Government fleet of vehicles. Other major clients are not listed.

⁴¹ Richardson, A. J. (2005). The cost-effectiveness of carbon sequestration in harvested and unharvested eucalypt plantations.

Additional information was submitted by the organisation in regards to cost structure, mechanisms for carbon sequestration accounting, verification issues and the basis for their carbon emission calculations. To see the website visit www.treesmart.com.au

Electricity Retailers

12. Origin Energy – ‘Go Green’ and Carbon Reduction Scheme

Nature:	for profit
Project type:	bio-sequestration, renewable energy, energy efficiency
Assurance:	Origin CRS
Price:	\$16 per tonne of CO ₂ e-
Calculator:	available: based on AGO data

Origin Energy is a top 100 ASX listed company involved in gas and oil exploration and production, energy retailing, power generation and utility network management.

Origin Go Green offers both businesses and individuals alternatives to offset their greenhouse gas emissions. The types of projects invested in are bio-sequestration, renewable energy projects and contributions

towards energy efficiency projects.

Origin undertakes projects, or purchases offsets from others who undertake projects that offset greenhouse gas emissions, meet additionality requirements and are independently verified.

An independent audit is conducted by an auditing firm to verify that the offsets meet standards and principles of the company’s own carbon reduction scheme; and that the amount of offsets undertaken or purchased equals or exceeds the company’s commitments to customers. The auditor’s comments are made available through the company’s website.

Origin claims to participate in projects that adhere to the company’s own Carbon Reduction Scheme, which is informed by the following frameworks:

- ISO 14064:2 and ISO 14064:3
- The GHG Protocol for Project Accounting
- The Gold Standard VERs
- The IETA/Climate Group Voluntary Carbon Standard
- The NSW Greenhouse Gas Abatement Scheme
- The Australian Mandatory Renewable Energy Target
- The Australian Greenhouse Friendly Program

Origin’s price for a tonne of offset GHG emissions is \$16. The percentage of the price directed to projects is not stated.

The carbon calculator on Origin’s website has separate facilities for individual / households and businesses. The calculator has an upper use limit of 5-figure electricity or gas units. Large businesses which use greater than this are encouraged to contact Origin’s Business Direct Team.

The website presents the assumptions and factors used in the model. Air travel is calculated using AGO’s emissions factor (2002) for the amount of fuel consumed per kilometre. This figure is then multiplied by the factor related to burning fossil fuel at altitude, which Origin’s website states is 2 to 4. The company uses a factor of 2.

Car travel emissions are estimated using AGO’s Factors and Methods Workbook – December 2005. User emissions are estimated using the AGO emissions factor combined with information about the number of kilometres travelled, type of fuel used, and engine size of vehicles.

Emissions related to electricity and gas use are calculated with user information regarding average daily consumption (from bills) and the AGO’s emission factors for electricity and gas that are state specific.

At the end of March 2007, Origin launched the Origin Energy Carbon Reduction Scheme (CRS). Information regarding the CRS is not yet available on the website. However, details about the Scheme were revealed in communication with Origin Energy.

The CRS aims to increase confidence in the voluntary carbon offset market. To achieve this, it serves a twofold operation:

- Accreditation of abatement projects
- Sales of Verified Emission Reductions for an organisation's activity-related emissions or for accreditation of carbon offset certified products.

Verified Emission Reductions are either generated by Origin abatement projects or bought from CRS Accredited Abatement Providers. Assurance processes for the Scheme are detailed in the CRS Governance Structure (available on request from Origin) and the CRS Set of Rules.

The Governance Structure sets the framework and principles for abatement eligibility and the development of carbon offset certified products. The CRS Rules define what type of carbon offsets can classify as CRS offsets (i.e. Verified Emission Reductions) and what measures must be taken to prevent double-counting. There are currently 4 rules, addressing: compliance, verification, renewable and low emissions generation and other emission reduction activities.

Founding partners of the CRS are: National Australia Bank, Insurance Australia Group, Lend Lease, Intrepid, STA Travel, Transurban and Australian Football League. The ACF provided advice on the development of the Rules and Governance Framework for the CRS.

Information about the Go Green program is available on the company's website. It can be accessed at: www.originenergy.com.au/carbon/index.php?cp88715677115865. Information regarding the CRS was provided to us by Origin Energy but can also be accessed online at www.originenergy.com.au/crs.

13. AGL Green Balance

Nature:	for profit
Project type:	landfill gas flaring
Assurance:	AGO Greenhouse Friendly
Price:	Approx. \$12/MWh electricity sold (premium)
Calculator:	not available online

AGL's website presents little information regarding its carbon offset service. The following paragraph is all that was available at the time of collecting data:

"AGL Green Balance - For our major industrial and commercial customers, we offer an additional product, AGL Green Balance™, certified by the Australian Greenhouse Office.

Customers who purchase AGL Green Balance have the emissions associated with their energy use offset through landfill gas flaring activities financed by AGL⁴²."

Additional information was provided by AGL for this study on request.

AGL Green Balance customers are charged a premium of approximately \$12/MWh to offset the emissions associated with their electricity. This price varies between the different states.

AGL Green Balance is certified under the AGO Greenhouse Friendly program as a Greenhouse Friendly product. The abatement created by each approved abatement project is audited, and the abatement surrendered by AGL is also audited, then matched to assure customers that their offsets have actually been met.

There is no online calculator available. AGL works directly with their customers to calculate the volume of emissions to be offset using the AGO methodology for its calculations.

AGL's website is www.agl.com.au .

⁴² AGL (2007). Green Energy Options.

International Offset Service Providers

14. The CarbonNeutral Company (UK)

Nature:	for profit
Project type:	bio-sequestration, renewable energy, energy efficiency
Assurance:	CarbonNeutral Protocol
Price:	\$18 - \$23 per tonne of CO ₂ (28/3/07 currency conversion)
Calculator:	available

The company was founded in 1997 as Future Forests focusing initially on providing carbon offsets generated from forestry projects. The company later expanded its product and service portfolio, to include offsets from technology driven projects. The name of the company was changed in September 2005 to The CarbonNeutral Company⁴³.

The company's website is very comprehensive and presents information not only on its products and services but also a substantial amount of corporate information that includes CarbonNeutral's corporate responsibility commitments and progress.



CarbonNeutral services cover the process for measuring, reducing, offsetting and communicating climate change. The CarbonNeutral mark is supported by a Protocol and an independent audit process. The website claims that the mark can be applied to entire companies, events, products, services etc. The label aims to provide a guarantee that greenhouse gas emissions have been assessed, reduced where possible and the

remaining non-reducible emissions offset through high quality projects.

CarbonNeutral invests in a variety of carbon emissions offsetting projects including renewable energy, energy efficiency projects, methane capture projects and forestry projects. The company states on its site its support for all project types but recommends limited use of forestry. Clients are able to choose offsets portfolios according to their particular needs and the requirements of their stakeholders.

The company's accountability and quality assurance is documented and grouped into 3 main processes:

- The CarbonNeutral Protocol which sets the criteria for projects. A 30 page document outlining the Protocol is available on the web site.⁴⁴
- The CarbonNeutral Verified Process which assists the company to manage its carbon contracts and includes an external audit. Independent assurance reports are available on the website.
- The CarbonNeutral Carbon Registry which serves two purposes: -to record the details of all client CarbonNeutral programs (emissions levels, company reduction plans, offset projects and specific CarbonNeutral commitments i.e. that their offsets purchases match what has been contracted with clients); and to prevent double-counting of carbon offset by multiple users. Although not currently available on the website, the company is working towards making key non-confidential elements of this available.

⁴³ The company's two leading shareholders are Zouk Ventures and Triodos Bank. Zouk Ventures manages over \$100 million in two technology funds and has investments in Finland, Germany, Ireland and the United Kingdom. Triodos Bank is an independent bank investing in enterprises creating social, environmental or cultural added value

⁴⁴ The Carbon Neutral Co (2006). The CarbonNeutral Protocol 2006: 30.

Further, the company is involved in the development of the Voluntary Carbon Standard (VCS), which is being developed by The Climate Group, World Economic Forum and the International Emissions Trading Association (*refer to page 10*).

The CarbonNeutral Company charges its clients a carbon price of £7.40, £7.60 or £9.30⁴⁵ per tonne of CO₂ depending on the portfolio of projects selected by the client. A complete list of current projects can be accessed at: www.carbonneutral.com/pages/projectlocations.asp

The CarbonNeutral Company has developed a range of calculators for different uses; all use the UK's Department of Environment, Food and Rural Affairs' (DEFRA) emissions factors. The website offers businesses calculators for air and car travel emissions. The user is required to enter data such as the airports from and to where travel is conducted or the amount of electricity (or other fuels such as coal, gas, or fuel oil) used in a year or the cost of that consumption. The company states they can develop company specific calculators for business clients if desired.

The CarbonNeutral Company has executed carbon contracts under the CarbonNeutral Protocol with over 50,000 individual and 500 corporate buyers. Corporate clients include Honda, ITV, ABN-AMRO, America Express, Avis, Corporation of London, Domino's Pizza, Volvo and many others. The full list is available at: www.carbonneutral.com/pages/networkofcompaniesa-f.asp#Top

For more information visit www.carbonneutral.com . The company was not contacted directly to provide further information.

⁴⁵ \$18, \$18.50, \$22.60 as of 28 March 2007

15. Carbonfund.org (US)

Nature:	not for profit
Project type:	bio-sequestration, renewable energy, energy efficiency
Assurance:	green-e, ERT, CCX
Price:	\$7.50 per tonne of CO ₂ (28/3/07 currency conversion)
Calculator:	available

Carbonfund.org is a non-profit organisation. It states that its aim is to educate the public about climate change and to facilitate reduction of climate impact for individuals, businesses and other organisations.

The organisation supports renewable energy, energy efficiency and reforestation projects. Clients can opt for one or a combination of these.

Renewable energy projects chosen include wind, solar, geothermal and biomass energy. Carbonfund.org does not support large-scale hydro or nuclear projects. Carbonfund.org purchases renewable electricity certificates and other offsets generated from renewable energy projects. All certificates are retired (i.e. made unavailable for future commercial transactions) by Carbonfund.org.

Carbonfund.org purchases carbon dioxide emissions reductions from energy efficiency projects from the Chicago Climate Exchange (CCX). These offsets are the result of industrial energy efficiency improvements of their members who have reduced their emissions from a 1998-2001 baseline.

The organisation maintains that reforestation projects are more controversial. This is due to the risk of emissions returning to the atmosphere as a consequence of fires or tree death. However Carbonfund.org claims that a well-managed forest creates a net CO₂ reduction by absorbing CO₂ and moving it into the depths of the soil around it.

Carbonfund.org presents on its website a comprehensive discussion of its verification processes and its commitment to leadership in setting standards for transparency and openness.

The organisation's verification process is broken to match the three steps of its services: baseline assessment, project selection, retirement and results. The website presents a summary of the verification processes for each of those three steps. Each component is monitored and audited by third parties. Following, we present some of the available information.

Baseline Assessment: Carbonfund.org prepares carbon emission averages or assessments for customers. Carbonfund.org relies upon a range of resources for baseline data, including the Energy Information Agency, World Resources Institute, and several industry specific sources.

The baseline calculation methodologies are reviewed and audited by Environmental Resources Trust (ERT), who is said to be one of the leading greenhouse gas assessment and verification groups in the United States.

Project Selection: Carbonfund.org's renewable energy commitments are primarily certified by either Green-e or ERT, two well known renewable energy certification organisations in the United States.

Carbonfund.org, as an associate member of the Chicago Climate Exchange (CCX), purchases and retires carbon offsets on the CCX. Carbonfund.org is also considering having its energy efficiency projects certified by the ERT, although they are not at this time.

Retirement & Results: Verification requires both a technical and financial audit of Carbonfund.org. McDonald, Fox and Lund prepares audit reports that are available on the

website. Additionally, Carbonfund.org has contracted ERT to technically audit the offset results and claims to ensure purchase and retirement of offsets matches the contributions.

Carbonfund.org charges US\$6.06⁴⁶ per tonne of CO₂ offset and claims that 93% goes to support climate change education, offsets and outreach activities. The web site does not detail what portion of this is spent specifically on offsets however.

The organisation's carbon calculator is simple and allows for emissions from stationary energy (electricity, natural gas and heating oil), air travel and road transport to be estimated. The options for users to enter data are limited to one option for each question. The website presents some information about the assumptions behind the calculations. Some of them are presented below. The complete document can be accessed at:

www.carbonfund.org/site/pages/calculator/category/Assumptions/

Carbonfund.org's Carbon Calculator uses information from the US Department of Energy's Energy Information Agency and other sources. It relies heavily on "averages", some of which appear to be several years old, see below.

For calculation of electricity, carbonfund.org has opted to use the national US residential average of 4,401 kWh per person, generating 0.000606 metric tons per kWh.

For vehicles, the 2005 US fleet average is about 25.2 MPG. In 2001, the average distance driven by US drivers was 13,785 miles per year, and the CO₂ emissions are 8.87kg per gallon.

CO₂ emissions of air travel vary but Carbonfund.org uses an average figure of 0.19 kg CO₂ per passenger mile travelled. They are not currently taking into account the issues surrounding the additional radiative forcing caused by air travel claiming that the issue is still not thoroughly understood. Total US emissions were 7,122 million metric tons CO₂-equivalent in 2004. Dividing by the US population of 299 million, this equals 23.8 metric tons of CO₂-equivalent per person.

For more information visit www.carbonfund.org. Carbonfund.org was not contacted directly to provide further information.

46 A\$7.50 as of 28 March 2007

Conclusion

The emergent Australian industry that serves the voluntary carbon offset market is growing rapidly. New players and products enter the market regularly to meet the demand from companies and individuals wishing to go "carbon neutral". However, it is still a relatively new market in Australia, and a number of issues surrounding product quality, assurance and verification need to be addressed and better understood by consumers.

There is significant difference between the operators in the market – in terms of products offered, communication of issues, price paid, assurance and transparency. As international standards are developed, there is an opportunity for Australian firms to play a role in ensuring Australian considerations are part of these standards, and that they are well communicated, understood and adopted in Australia.

Glossary of Acronyms

ABS:	Australian Bureau of Statistics
ACF:	Australian Conservation Foundation
ACT:	Australian Capital Territory
AGO:	Australian Greenhouse Office
ASX:	Australian Stock Exchange
CCX:	Chicago Climate Exchange
CO ₂	Carbon Dioxide
CO ₂ e:	Carbon Dioxide Equivalent
CRS:	Carbon Reduction Scheme (Origin Energy)
DEFRA:	UK Department of Environment, Food and Rural Affairs
ERT:	Environmental Resources Trust
GHG:	Greenhouse Gas
GIS:	Geographical Information System
GWP:	Global Warming Potential
IETA:	International Emissions Trading Association
IPCC:	International Panel on Climate Change
ISO:	International Standards Organisation
kWh	Kilowatt Hour
LULUCF:	Land Use, Land Use Change and Forestry
MRET:	Australian Mandatory Renewable Energy Target
MWh:	Mega Watt Hour
NCAT	National Carbon Accounting Toolbox
NFP:	Not-For-Profit organisation
NGAC:	NSW Greenhouse Gas Abatement Certificate
NGO:	Non-Government Organisation
NSW:	New South Wales
NSW GGAS:	NSW Greenhouse Gas Abatement Scheme
ORER:	Office of the Renewable Energy Regulator
RAC WA:	Royal Automotive Club of Western Australia
REC:	Renewable Energy Certificate
VCS:	Voluntary Carbon Standard
VCU:	Voluntary Carbon Unit
VER:	Voluntary Emission Reduction
VRET:	Victorian Renewable Energy Target
WA:	Western Australia

Appendix 1:

Companies Explored and Companies Analysed

Companies Researched	Companies Analysed
Australian Providers	
ANZ	No: The program started operations after data was gathered for this study
Australian Carbon Traders	Yes
Bendigo Bank – Green Generation	No: program focus is on individuals
Big Green Umbrella	No: information was not available at the time of gathering. Offsets section of website under development.
Carbon Neutral (Aus)	Yes
Carbon Planet	Yes
climate friendly	Yes
Climate Positive	Yes
Easy Being Green	Yes
Elementree	Yes
Future Climate Australia	Yes
Greenfleet	Yes
Greening Australia	No: Product is due to be launched, but information is not yet available to be included in the study.
GreenSwitch	No: not an offset provider. A provider of GreenPower
Green Bank	No: information was not available at the time of gathering. Website under development
TreeSmart	Yes
CO ₂ Australia	No: sell offsets for NSW GGAS liable parties only
Landcare – CarbonSMART	No: sell offsets for NSW GGAS liable parties only
Neco	Yes
Pacific Hydro	No: not an offset provider. A provider of GreenPower
Electricity Retailers	
Origin Energy	Yes
AGL	Yes
Red energy	No: Do not advertise offset services.
Tru Energy	No: Do not advertise offset services
Aurora Energy	No: Do not advertise offset services
Country Energy	No: Do not advertise offset services
Energy Australia	No: Do not advertise offset services
Integral Energy	No: Do not advertise offset services
Horizon Energy	No: Do not advertise offset services
Synergy Energy	No: Do not advertise offset services
International Providers	
The Carbon Neutral Company (UK)	Yes
Carbonfund.org (US)	Yes

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