THE TRADE PRACTICES ACT AND CARBON OFFSET CLAIMS - a Submission by TreeSmart Australia

prepared by Dr. Tony Richardson,

Director, TreeSmart Australia

PO Box 363, Alexandra, Vic, 3714

Phone: (03) 5774 7617

Email: tony.richardson@tuti.com.au

Web: www.treesmart.com.au

THE TRADE PRACTICES ACT AND CARBON OFFSET CLAIMS - a Submission by TreeSmart Australia

prepared by Dr. Tony Richardson, Director, TreeSmart Australia

1 Introduction

The ACCC has identified the need to provide guidance to consumers and businesses on claims being made about carbon offsets. The ACCC has prepared an Issues Paper (16 January 2008) and has called for public submissions on the issues raised in that paper.

This submission is made by TreeSmart Australia, a private company established in 2005 for the purposes of offsetting greenhouse gas emissions from the transport sector, using carbon sequestered in farm forestry plantations. These plantations are destined for eventual harvesting, with the carbon continuing to be sequestered in two ways. This ongoing sequestration can be in long-lived timber products or in fossil fuels that are not used because the harvest residue has been used for bioenergy production.

2 Issues Raised In The ACCC Paper

The Issues Paper raises many important points concerned with the Trade Practices Act (TPA) implications of carbon offsetting claims, but, given TreeSmart's primary interests, this submission concentrates only on those relevant to the creation and sale of offset credits through the forestry sector. In particular, this submission addresses the following issues:

- An overall framework for carbon offsetting
- Methodologies used to assess carbon emissions
- Methodologies used to assess offset quantities
- Examples of misleading and/or deceptive practice
- Options for providing guidance for consumers and business.

3 An Overall Framework for Carbon Offsetting – The MAORI Model

Before considering the detail of carbon offsetting, it is useful to put this activity into an overall framework of greenhouse emissions management strategies. Offsetting is only one of the tasks that must be undertaken in a concerted effort to reduce atmospheric greenhouse gases. In seeking to address this issue, many individuals and organisations have adopted a range of strategies. For example, the Victorian EPA has recently announced its intention to go Carbon Neutral (www.epa.vic.gov.au/greenhouse/carbon_offsets). In doing so, it has produced a booklet (EPA goes Carbon Neutral) in which they outline a set of Carbon Management Principles, consisting of the following steps:

- Measure
- Set Objectives
- Avoid
- Reduce
- Contain
- Assess
- Offset

In considering the role of offsets, they note that offsets "are an important final component to becoming carbon neutral".

While agreeing with many of the sentiments behind the EPA Carbon Neutral Principles, TreeSmart considers that offsets should be used earlier and should be a central component of an overall Carbon Neutral strategy, rather than an afterthought. To this end, TreeSmart Australia has developed and works within the MAORI[1] model of Carbon Neutrality, with the following steps:

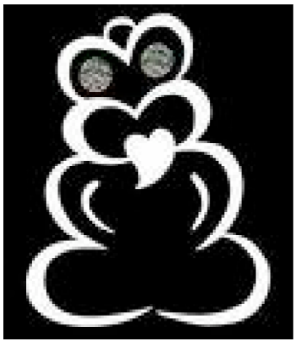
Measure

Avoid

Offset

Reduce

Iterate



Measure

The first step in going Carbon Neutral is to ***Measure*** (or at least estimate) the emissions associated with the specific activities. In the context of transport, this is a relatively straight-forward task for land-based transport, since greenhouse emissions (mainly CO_2) are directly related to fuel consumption, and many methods exist for modelling and measuring fuel consumption from land-based transport. For air transport, the position is not quite so clear, since CO_2 is not the only (or the major) greenhouse emission from air transport. This issue will be considered in more depth later in the section on Methodologies used to Assess Carbon Offsets. Another measurement issue of importance is a proper consideration of the three Scopes of emissions; Scope 1 direct emissions, Scope 2 indirect emissions in energy consumed, and Scope 3 indirect emissions in products and services consumed. A proper consideration of these three Scopes is consistent with a full Life Cycle Analysis of emissions (and will be considered further in the Methodologies section).

Avoid

Having identified the greenhouse emissions attributable to an individual, a household or an organization, there may be some activities that result in emissions that are relatively easy to ***Avoid***. These activities are often referred to as "low-hanging fruit", in that they are easy to reach. Examples of such activities in the context of personal travel might include walking to the local shops instead of driving, combining activities on one round-trip rather than making separate trips, inflating tyres to the correct pressure, and using public transport for trips where public transport is a viable alternative.

One important aspect of Avoidance activities is that they are very short-term in the context of greenhouse reduction activities (1-5 years). They also usually don't require any significant infrastructure investment. They are mainly concerned with how we might better use the existing system to minimize emissions.

However, the number of such activities where emissions can easily be Avoided is likely to be relatively few in number, and the total emissions avoidable is likely to be relatively small. If there were large numbers of such activities, then reducing greenhouse emissions would be fairly straight-forward and easily implemented, and we know that is not the case.

[1] The word MAORI is used for its memorability, and not necessarily for its cultural association with the indigenous people of New Zealand. This is despite New Zealand having a long history of farm forestry, from which the author has learned a lot.

Offset

While other models of Carbon Neutrality (such as the Victorian EPA Principles described above) tend to put offsetting at the end of the chain of activities, the MAORI model puts ***Offsets*** in the centre of activities, for two main reasons.

Firstly, as noted in the Stern Review, there is a need for immediate action with respect to reductions in greenhouse emissions in the atmosphere. While the long-term[2] aim might be to eliminate or change the activities which give rise to the emissions, such changes typically take a considerable period of time (e.g. changing over the fleet to low emission vehicles will take at least 10-20 years), and we simply can't wait that long to do something about reducing atmospheric CO_2. While waiting for the long-term changes to occur, we need to make immediate reductions in atmospheric CO_2, both for our current activities and also for past activities that have contributed to CO_2 emissions.

Secondly, having offset the emissions that cannot easily be avoided this year provides a metric and an incentive to proceed to the next steps in the MAORI process (Reducing and Iterating), as will be described below.

Reduce

Having avoided the polluting activities that can easily be avoided, and then offset the emissions that cannot easily be avoided this year, the next step is to start to ***Reduce*** the emissions that are not easily avoided and that may take some time to completely remove. This process may take several years to completely implement.

Examples of such changes (in a household context) might include reducing the number of vehicles in the household, changing those vehicles to low-emission vehicles, and changing residential location to be in a position to make better use of public transport services. From a policy perspective, the type of changes that will reduce emissions in the future might be investing in public transport infrastructure and services, encouraging higher-density urban development, changing taxation laws to remove incentives for vehicle use, implementing user-pays road-pricing systems, introducing carbon tax policies, etc.

None of these changes will occur overnight, and yet we need to make immediate changes in atmospheric CO_2 if we are to stave off the inevitable global warming consequences. This is why Offsets come before Reductions in the MAORI model. We need to take short-term action while we start implementing the long-term actions.

Iterate

Some Carbon Neutral models imply that the process of going carbon neutral is a once-off process (or at least they don't stress that it is a continuous process). However, for the same reason that Quality Management is a seen as "a process of continuous improvement", so "going Carbon Neutral" must also be seen as a process of continuous improvement.

So, the final step in the MAORI model is to ***Iterate***. Thus, after Measuring your greenhouse emissions, Avoiding the easily avoided emissions, Offsetting the rest, and then starting to Reduce your emissions in the long-term, the next step is to Iterate the process and go back around and do it all again next year. Next year, your Measurements should show a reduction in emissions (from those that were easily Avoided and those that you have already been able to Reduce). Your early experience may now show a few more emissions that can be easily Avoided. In year 2, you will still

[2] In the context of global warming initiatives, long-term refers to a hundred years or more, while short-term refers to less than 50 years. The carbon sequestered in trees growing in harvested plantations with a rotation length of 20-30 years would be regarded as short-term measures, while the carbon sequestered in the timber products after harvest are more long-term measures.

need to Offset what you haven't been able to Avoid or Reduce, but the amount of Offsets required in year 2 should be less than what was required in year 1. Indeed, the true test of the success of the MAORI model is that the offsets should reduce year by year until they reach a minimum level. This minimum level will be unlikely to be zero (since some travel and some emissions will almost always be occurring), but the need for offsets should be reduced year by year. This is particularly relevant in the transport sector, where zero-emission transport fleets are unlikely to ever be developed, and where some level of offsetting will always be required.

The MAORI model of Carbon Neutrality is applicable at the level of the Individual, the Household, the Organization and the Government. It provides a holistic process that enables short-term and long-term strategies to be implemented, with a view to achieving greenhouse emission reductions of sufficient magnitude, and with sufficient speed, to contain global warming within manageable bounds.

While the above description has used transport examples to demonstrate how the MAORI Model might be applied (because that is the focus of TreeSmart offsets), it is clear that the MAORI Model applies to offsets in all other areas of emissions. The MAORI Model provides an overall framework in which the necessary, but not sufficient, role of offsets can be fully appreciated.

4 Methodologies Used to Assess Carbon Emissions

There are two aspects to estimating what needs to be done to offset a carbon footprint. Firstly, the size of the footprint (the quantity of CO2-e emissions) needs to be estimated, Secondly, the actions needed to offset that footprint need to be determined. The former point is addressed in this section and the latter point addressed in the next section.

The estimation of the carbon footprint is directly related to the first point in the MAORI Model described above. The are three major types of emissions to consider:

Scope 1 Emissions: greenhouse emissions created directly by you

Scope 2 Emissions: indirect greenhouse emissions associated with your use of energy

Scope 3 Emissions: indirect emissions embodied in products and services you consume.

In the context of transport, all three types of emissions need to be considered. Scope 1 emissions would include fuel used in operating your own motor vehicles. Scope 2 emissions would include electricity used in the garaging and maintenance of your vehicles. Scope 3 emissions are quite broad, and would include the emissions generated in the manufacture of your vehicles, emissions from fuel burned on air trips that you undertake, and emissions from electricity generation used to power public transport services.

In the context of the ACCC and the TPA, it is considered unnecessary to always include all three Scopes, provided that it is made clear exactly what is covered by the claim of carbon neutrality. To be required to undertake a full Life Cycle Analysis (LCA) every time it is desired to offset emissions is probably overly restrictive, and potentially counter-productive if it results in the individual or organization deciding not to offset some of their emissions simply because it is too much trouble to try estimating all of their emissions. For example, in the context of transport, it is common practice to only offset the emissions arising from the operation of the vehicle (i.e. the Scope 1 emissions) and not to offset the embodied emissions in the construction of the vehicle (Scope 3 emissions). Provided this limitation is made clear, it should not be considered misleading to only offset a proportion of the total emissions. Indeed, it may also be acceptable to only offset a percentage of the Scope 1 emissions (e.g. 50% offsetting) provided this is made clear to the purchaser.

As noted above, in the context of transport, the estimation of Scope 1 emissions is a relatively straight-forward task for land-based transport, since greenhouse emissions (mainly CO_2) are directly

related to fuel consumption, and many methods exist for modelling and measuring fuel consumption from land-based transport. For air transport, the position is not quite so clear, since CO_2 is not the only (or the major) greenhouse emission from air transport. At high altitudes, other emissions (even water vapour) are significant contributors to greenhouse emissions, with the result that total greenhouse emissions are about 2-3 times as much as the CO_2 emissions. The UK Commission for Integrated Transport (2003) has recommended a Radiative Forcing Index (RFI) factor of 2.7 be applied to CO_2 emissions to account for the non- CO_2 emissions from air transport, although debate persists as to the best value of this factor to apply.

Given this uncertainly, different air travel emissions calculators use different values of the RFI to estimate air travel emissions, with the result that somewhat different estimates of emissions can be obtained for the same air trip. Sometimes this difference is extreme as shown in the table below using the results from several online calculators for the same air trip from Sydney to Melbourne.

Offset Calculator	Tonnes CO2-e	Cost of Offset
TreeSmart	0.31	$3.73
Carbon Planet*	0.30	$23.00
Greenfleet	0.26	$2.35
Qantas	0.10	$1.20
Jetstar**	??	$0.82
Virgin***	??	??

* although Carbon Planet's emissions estimate is similar to TreeSmart and Greenfleet, their cost is much higher because the smallest offset they sell is 1 tonne CO2-e

** the JetStar website only gives the cost of the offset, and not the quantity of emissions offset

*** the Virgin Blue website does not allow the user to get an estimate of the quantity or cost of the offset until after the ticket has been purchased

The three dedicated offset organizations (TreeSmart, Carbon Planet and Greenfleet) give similar estimates of the quantity of emissions, since they all use a realistic value of the RFI (TreeSmart and Carbon Planet use 2.7, while Greenfleet uses 2.0). The ancilliary offset programs run by the airlines give much lower estimates of emissions because they assume that the RFI effect does not exist, and only offset the carbon dioxide emissions from the fuel burned. They justify their methods of calculation by saying that they use the calculation methodologies contained in the AGO Factors and Methods Workbook (given that these programs have been accredited by the government Greenhouse Friendly program). However, the AGO Workbook (re-issued in 2008 by the new Department of Climate Change) says absolutely nothing about RFI (the term or concept is never mentioned in the Workbook) and clearly indicates that the emission factors in the Workbook only cover the emissions from the burning of different types of fuel. The ignoring of the RFI effect in the airlines calculations is therefore of their own choosing and is not supported by the AGO Workbook. Nonetheless, this impression has been reinforced by the airline offset programs receiving Greenhouse Friendly accreditation.

The effect of this accreditation is twofold. It misleads the consumer into thinking that the airlines must be offsetting the total greenhouse emissions associated with their flights, since all of the advertising states that the consumer can "Fly Carbon Neutral" by paying the small amount calculated by the airline. In reality, what it might be doing is offsetting the carbon dioxide emissions from the burning of

the aviation fuel, and does nothing to account for the RFI effects. While it is understood that there is still some uncertainty about the RFI Factor that should be applied, it is generally accepted that it is probably somewhere between 2.0 and 3.0. To use this uncertainty to ignore the RFI effect altogether (by setting the RFI Factor =1.0) is unsupportable, and misleading to the consumer.

A second effect is that when consumers compare the offset prices between the airlines own schemes and those of the dedicated offset organizations, there is a clear difference, with the offset organizations schemes being about three times the price. Since the airlines are able to claim Greenhouse Friendly accreditation, it leads the consumer to think that the offset organizations are "ripping them off" by charging such high prices (around $3.00 for the Melbourne-Sydney flight, compared to about $1.00 from the airlines). In reality, the difference is that the higher price is due to covering the total effect of the emissions and not just the carbon dioxide emissions from the burning of the fuel. The difference in calculation methodologies and assumptions gives the airlines offsetting an unfair commercial advantage over those offsetters who are offsetting the total effect of the emissions.

Another difference in methodology that the airlines use to their advantage is to subtract an allowance for freight carried on passenger flights. The general procedure in calculating air travel emissions is to estimate the total emissions for the flight and then apportion this to each of the passengers in proportion to the space consumed by each passenger on board (e.g. business class passengers often pay more for offsets because they take up more room on the flight). However, the Australian airlines also subtract a proportion that they say is attributable to the freight carried on board passenger flights. This might be an acceptable procedure if those shipping the freight paid for the carbon offsetting attributable to their freight. However, to my knowledge, none of these airlines charges carbon offset charges to those shipping freight on their flights. This means that even if all passengers on board actually paid for their offsets, there would still be a shortfall due to the freight component, which has not covered the cost of their offsets.

While the above examples all apply to air travel, they indicate the type of confusion and potentially misleading information that can confront a consumer when attempting to purchase a carbon offset.

5 Methodologies Used to Assess Offset Quantities

The previous section has considered the estimation of how much emissions (in tonnes CO2-e) need to be offset. This section considers how those emissions will be offset. The following discussion pertains specifically to forestry offsets, but many of the general principles also apply to other types of offsets (such as energy efficiency offsets).

There are many issues involved in estimating the quantity of offsets generated through forestry projects, including the estimation of growth (and hence sequestration) rates of the trees, the issues of permanence and additionality, and the question of timing of the offsets. There is also the question of how sequestration in Harvested Wood Products should be handled. Many of these issues are being actively addressed in the design of the proposed Australian Emissions Trading Scheme (AETS), so the only point to be addressed in this submission is the timing of sequestration.

Most forestry offset schemes have used a whole-of-life sequestration calculation to estimate the number of carbon credits (offsets) that can be sold. For example, Greenfleet (one of the earliest offset schemes in Australia and a true pioneer) was forced to develop their own rules because they were so far ahead of the pack. They chose a whole-of-life approach whereby the emissions from one year of motoring were offset by the carbon sequestered in trees over their entire lifetime (or at least the next 100 years). Thus, they estimated that the emissions from one average passenger vehicle in one year (4.3 tonnes CO2-e) could be offset by planting 17 trees (4 trees per tonne), and then waiting for them to sequester that 4.3 tonnes of CO2 over the next 100 years of their life. While this approach allowed Greenfleet to get many trees in the ground in the early years, it is a business model that has run it's course and is no longer a sustainable economic or environmental practice.

The proposed AETS will not allow such “forward borrowing”, since the risks involved in assuming that the trees will actually sequester the required amount over the next 100 years is too high (particularly under Australian conditions) for it to be acceptable. As a result, some offsetting organizations (notably TreeSmart and CarbonSMART) have adopted a year-on-year accounting system, whereby the emissions in this year must be offset by sequestration in this year (or in a previous year). This ensures that the sequestration required to offset the emissions actually occurs this year, or has already occurred.

Unfortunately, the Greenfleet assumption of 17 trees per vehicle has infiltrated the mindset of offsetting. We are often asked how many trees we would plant to offset a specified number of tonnes of CO2, but this is the wrong question on two counts. Firstly, the metric should not be the number of trees, but the area of trees planted. Each tree will sequester a different amount of carbon, depending on the density of planting. This is well known in sawlog forestry, where the plantation is thinned to about 20% of the original density (1000 stems per ha, down to 200 stems per ha) in order to make each tree grow larger. The total volume of wood in the trees (and hence the amount of carbon) is virtually the same in the long run in both cases; it’s just that each tree in the thinned plantation contains more wood (and carbon). The second problem with the “how many trees” question is that it is incomplete without specifying the time frame involved. If all of the Greenfleet trees survived for 100 years, then their 17 trees might be enough to sequester the 4.3 tonnes of CO2 from one year’s motoring. However, if the sequestration has to be done in one year, then many more trees (or area) need to be planted. For example, TreeSmart has estimated that (in North-East Victoria with 700mm annual rainfall), one hectare of eucalypt plantation would (on average, across its lifetime) sequester about 20 tonnes of CO2 per year. Thus, in one year, about one-fifth of a hectare would sequester the annual emissions of one vehicle. At a planting density of 1000 stems per hectare, this would require about 200 stems (trees) to be planted. The difference is that this area of 1/5 hectare would continue to sequester enough CO2 each year (on average) to offset that vehicle in each of those years, whereas Greenfleet would have to plant another 17 trees next year to offset that same vehicle next year.

Saying that only 17 trees need be planted to offset one year of motoring gives the wrong impression to the consumer, and is potentially misleading.

(the above comments are not meant to be derogatory to Greenfllleet; they were a pioneer in this field, and were forced to develop their own rules in the absence of anything else. Now, however, they need to change their rules to be in line with current and future practice)

6 Examples of Good and Poor Practice

The ACCC Issues Paper asks for examples of good and poor substantiation of carbon neutral claims. By coincidence, while preparing this submission, I flew from Sydney to Melbourne on Qantas (having offset my full emissions with TreeSmart). In reading their in-flight magazine with the cover title of “the green wave” (February 2008), I came across a number of examples which are typical of the confusing and misleading claims found in many similar situations. Some of these examples include the following:

Page 24: Interview with Mara Bun, CEO, Green Cross Australia. “It takes two trees to offset a flight from Gold Coast to Sydney, so each trip is an opportunity to plant”. It is hard to know where this figure comes from. A one-way trip from the Gold Coast to Sydney, according to Qantas, emits 0.1 tonnes of CO2-e. Using the Greenfleet estimate of 4 trees per tonne, this would require only 0.4 trees to offset the flight. If the Greenfleet estimate of emissions was used (0.24 tonnes), this would require only 1 tree to offset the flight. However, the 2 trees quoted could offset a return flight, if we were willing to wait 100 years for the sequestration to occur. Given, however, that this quote appears in a Qantas publication, it is hard to know how it has been calculated. (Verdict: Confusing)

Page 30: Simply the Best. “when you’re flying the A380 you’re burning only 2.9 litres for every 100km, lower than the average small car (8 litres per 100km)”. This statement is either clearly incorrect or, at best, simply misleading. Information about the A380 on the Qantas website shows that the maximum fuel capacity of the A380 is 310,000 litres and the maximum range is 14,800 km. Assuming that a reserve fuel supply of, say, 25% of capacity is kept at the end of a flight, then the average fuel consumption for the A380 is 1570 litres per 100 km (not 2.9 litres per 100km). The only way that the 2.9 figure could be vaguely correct would be if the figure was meant to be the fuel consumption per 100km per passenger (assuming a full plane). Using the Qantas website A380 capacity of 501 passengers, this would equate to 3.14 litres per 100 km per passenger. But this is not what is said in the article, especially when the comparison is made with the average fuel consumption of a small car (not per passenger in a small car). (Verdict: Misleading)

Page 43: The SAAB Ad. This is some good news. The ACCC attention seems to have got SAAB to stop using the Greeeen claims in their ads (Verdict: Reassuring)

Page 98: the Qantas Carbon Neutral Ad. What is meant by “it’s natural to fly carbon neutral”? (Verdict: Confusing adspeak)

Page 100: the Honda Civic Hybrid Ad: At least in this ad, Honda only claims that they offset “it’s small emissions for 3 years by planting native trees on your behalf”. Unfortunately, they don’t state how or with whom this is done. However, a check on the Honda website shows that it is again Greenfleet that is planting 18 trees to cover 3 years of emissions (6 trees per vehicle year). Even considering the lower emissions of the Hybrid, this is hardly enough to offset these emissions, given that the sequestration will be taking place over the next 100 years, as explained above. (Verdict: better than the Saab ads, but still misleading).

Page 108: Lean, Green machines. This article on the F1 Grand Prix seems to imply that the GP will be “green” because the fuel used will contain 5.75% ethanol. (Verdict: substantial overstatement).

Page 109: Green glory box. This ad for Toshiba photocopier implies that the machine is “green” because of various manufacturing, distribution and recycling processes (Verdict: substantial overstatement).

All the above examples substantiate the ACCC contention that many practices surrounding claims of carbon neutrality or product “greenness” can be seen as misleading or deceptive.

7 Options for Providing Guidance to Consumers and Business

While TreeSmart agrees with the ACCC position that consumers and businesses should be provided with assistance in assessing claims of carbon neutrality, we do not believe that yet another organization should take on the task of creating yet another website or information portal to provide this advice to consumers. Rather, we believe that the ACCC could lend support (both moral and financial support) to others efforts that are already underway. An example of such a website could be the Carbon Offset Guide website established in 2007 by the Victorian EPA and RMIT University (www.carbonoffsetguide.com.au). This would minimise the number of sites offering such advice and reduce the possibility of yet more conflicting advice being offered to consumers.

CONTACT DETAILS

Dr. Tony Richardson

Director, TreeSmart Australia

PO Box 363, Alexandra, Vic, 3714

Phone: (03) 5774 7617

Email: tony.richardson@tuti.com.au

Web: www.treesmart.com.au