



TreeSmart News

Time for Consultation

The past few months have seen many reports released on climate change and related topics, with much consultation encouraged to obtain feedback on those reports. On July 4, the Garnaut Review Draft Report was released, and on July 16, the Federal Government released their Green Paper on the Emissions Trading Scheme (now labelled the Carbon Pollution Reduction Scheme). Comments on both these reports are included in this issue of *TreeSmart News*.

In addition, in June, the Council of Australian Governments (COAG) released a paper on Design Options for the Expanded National Renewable Energy Target Scheme and called for comment on the two design approaches suggested in the paper. Finally, in October, the COAG will have a paper presented to them on design options for a National Feed-in Tariff Scheme. Comments on the role of biomass in renewable energy schemes will also be covered in this issue of *TreeSmart News*.

All these papers highlight the extreme interest currently shown in the various strategies being developed to deal with climate change. The Australian Government has set an ambitious, but achievable, target of having an Emissions Trading Scheme, and complementary schemes, up and running by 2010. Now is the time to sort out the details, and have the interested community submit comments and suggestions. ✿

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The purpose of the *TreeSmart Newsletter* is to keep *TreeSmart* subscribers and farm foresters aware of some recent developments in carbon offsetting in Australia.

The Garnaut Draft Report

In April 2007, the Federal Opposition of the day appointed Professor Ross Garnaut to undertake a review of climate change issues, and to report back to the States and, if invited, to the Prime Minister. With the change of Federal Government in November 2007, this Review will now be a major force in shaping the Australian Government's policy positions on climate change, and the forthcoming Emissions Trading Scheme.

It is highly desirable, indeed essential, that forestry and agriculture emissions eventually be covered by international agreements.

On 4th July 2008, The Garnaut Review released its Draft Report. The Draft report was wide-ranging and covered many topics within its 500 pages. Of special interest to *TreeSmart* were the report's views on the role of forestry within a proposed ETS, especially with respect to:

- Coverage
- Creation of Offsets
- Recognition of Carbon in Harvested Wood Products

Importantly, the Report recommended that Forestry be "covered" by the ETS "on the earliest possible timeframe", but stopped short of saying that it should be included from inception of the ETS in 2010. It concluded that the inclusion of Agriculture would be "subject to progress on measurement and administration". It foreshadowed that issues related to the coverage of forestry and agriculture would be discussed in more detail in the final report to be released in September. However, this is hardly a satisfactory situation, since by then the opportunity for comments on the proposals will have passed. This behoves the forestry industry to ensure that its views are well-heard by the Garnaut Review team well before the final report is released.

Nonetheless, the generally favourable disposition towards coverage of the Forestry sector is illustrated by the Report's comment that "it is highly desirable, indeed essential, that forestry and agriculture emissions eventually be covered by international agreements".

Because of the broad coverage of the ETS, covering most sectors of the economy, the Report concluded that domestic

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offsets would have a small role (given that offsets can only be created by non-covered sectors of the economy). Nonetheless, it recommended that unlimited offset credits should be accepted from forestry before and during coverage in the ETS.

With respect to the recognition of carbon's continued storage in Harvested Wood Products, the report concluded that "as reliable measurement rules of thumb are developed, carbon stored in wood products and biochar should also be reflected in carbon accounting and under the scheme". This is a very important development for farm foresters wanting to use harvested plantations for carbon sequestration purposes.

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Overall, the recommendations in the Garnaut Draft Report were very supportive of the approach to carbon sequestration pursued by **TreeSmart** over the past few years. ☼

Government Green Paper

Following hot on the heels of the Garnaut Draft Report, the Federal Government's Green Paper on the Emissions Trading Scheme was released on 16th July 2008. In this report, the ETS was re-labelled as the Carbon Pollution Reduction Scheme (CPRS), probably in response to extensive focus-group market research. However, pending the next name change, the following commentary will continue to refer to it as the ETS.

The Green Paper was also over 500 pages in length, but unlike the Garnaut Draft Report which covered many aspects of Climate Change, the Green Paper concentrated almost exclusively on issues related directly to the ETS. As such, it was far more detailed in its treatment of specific ETS issues. Also, because it is seen as the Government's likely view on these issues, it quickly replaced the Garnaut Draft Report as the centrepiece of conversation on ETS issues, with the Garnaut Report now being seen "as just one source of policy input".

The areas of specific interest to TreeSmart were concerned with:

- Coverage
- Creation of Offsets
- Recognition of Carbon in Harvested Wood Products
- International Issues
- Starting Dates and Credit for Early Action

Unlike the Garnaut Draft Report, the Green Paper states that the Government proposes to include Forestry as a covered sector from the start of the ETS, albeit on an "opt-in" basis. Thus foresters, or forestry organisations, who choose to be covered will need to account for their emissions, but can also count their abatement of CO₂. They would also be responsible for net reductions in stored CO₂ that might occur, for example, during

harvesting operations. Because older plantations have less abatement yet to be counted, the incentives for forestry provided by the ETS will be more relevant for the establishment of new plantations, rather than for management of existing plantations.

Because of the ability of foresters to opt into the ETS, the Green Paper proposes that forest offsets are not relevant, even for those who choose not to opt into the scheme. Thus, the only way to get credit for carbon sequestered in trees is for the treegrower to opt into the ETS, either directly or via a carbon pooling arrangement.

One of the most important issues for Forestry in the Green Paper was the treatment of Harvested Wood Products (HWP). The Government is very clear in its attitude when it states that "The Kyoto rules...treat the carbon stored in felled trees as if it had all been released into the atmosphere at that time. The Government believes these accounting rules are not an appropriate reflection of reality – carbon stored in wood products should be recognised in international agreements. Australia will, therefore, increase its efforts to influence changes to the international climate change framework in ways that...are based on science and provide appropriate incentives to reduce emissions". Unfortunately, despite this stance, the Green Paper also states that "The Government proposes that only forestry activities that are recognised in Australia's Kyoto Protocol accounts will be eligible for inclusion in the CPRS". Thus, the Government says one thing, and then does the other. Continued representations are being made to Government by forest industry organisations to include HWP carbon storage in the domestic ETS, in advance of getting international agreement for the post-Kyoto schemes, thereby giving Australia a headstart in working with HWP carbon accounting.

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One issue in the previous Government's plans for their ETS was that only plantations established after 3rd June 2007 would be eligible for creating carbon credits. This position appears to have been relaxed somewhat in the Green Paper, with sequestration that occurs after the commencement of the ETS in 2010 being eligible for the creation of credits, even though the plantation may have been established before that date (but after 1990). However, the Green Paper also dismisses the creation of "early action credits", meaning that sequestration that occurs before 2010 cannot be used to create carbon credits for use within the ETS. Clearly, however, such credits could be used in voluntary offset schemes, which will continue in parallel with the ETS, providing they meet the requirements of those schemes.

Finally, to place the role of Forestry in true perspective, the last line of Appendix D in the Green Paper is very important, where it shows that Forestry is the only industry with a negative carbon footprint in Australia. ☼

Bioenergy from Trees

An analysis of the true fate of carbon in trees highlights that two terms often used interchangeably in fact have very different meanings. These terms are carbon sequestration and carbon storage. Carbon sequestration is the act of removing carbon dioxide from the atmosphere, converting it to carbon and then storing it in the tree. This occurs through the process of photosynthesis, whereby CO₂ and sunlight are combined to produce carbon (stored in the tree) and oxygen (released back to the atmosphere). Once the carbon has been sequestered, it can then be stored in various ways, firstly in the tree and then in other formats.

Indeed, a full analysis shows that there are four ways in which the carbon sequestered in trees can then be stored:

- In the standing trees
- In long-lived timber products after harvesting
- In landfills (after the end of the life of the product)
- Indirectly, in fossil fuels that are not used when wood is used to produce energy

This last form of carbon storage underlies the generation of carbon credits by the use of wood for the production of bioenergy. When wood is burned to produce energy, there are emissions of CO₂ that are produced. However, these emissions can be no more than what was recently sequestered from the atmosphere when the wood was being grown. Therefore, the burning of the wood is essentially carbon-neutral. However, when wood is used to produce bioenergy (either as electricity or heat), it is assumed that it is used in place of another type of fuel to produce the same amount of energy. In Australia, that alternative fuel is usually coal. By using the wood to produce the energy, the carbon in the unused coal remains stored in the coal.

Burning wood for energy is carbon-neutral; the real benefit is the carbon that remains stored in the fossil fuel that would have been burned to produce the same amount of energy.

Both wood and coal absorb CO₂ and (sun) energy in their creation. When they are burnt, they both produce CO₂ and energy. The only real difference is timescale. Whereas wood is carbon-neutral in a human timescale (10 to 100 years, depending on the source of the wood), coal is only carbon-neutral on a geological timescale (millions of years). Wood can be replaced in tens of years, whereas coal requires millions of years.

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Wood can be converted to energy in several ways, from the very simple to the very complex. The simplest method is the old-fashioned practice of burning firewood. While many people frown on this practice, it is in fact carbon-neutral (as explained earlier). The real problem with traditional fireplaces is the efficiency with which the wood is converted to energy, and the production of other pollutants (especially particulates).

Wood has also been used for centuries in steam engines, whereby the heat from the burnt wood is used to convert water to steam, which is then used to produce mechanical power or run through a turbine and generator to create electrical power.

Two alternatives to “burning” the wood, are to “heat” the wood, with different amounts of air. Gasification entails heating the wood with little air. This converts the wood to “wood gas” which can then be burned in a turbine engine, or even in a simple internal combustion engine (e.g. a car engine), to run a generator to produce electricity. Pyrolysis involves heating the wood with no air present, to again produce a form of wood gas which can then be used to power a generator.

The main differences between the various methods of converting wood to energy are the scale of installation, the efficiency of conversion, and the capital and operating costs of the installation, with firewood being the cheapest and pyrolysis being the most expensive (but also the most efficient).

Carbon sequestration and bioenergy production are very complementary activities, in that the use of the wood for bioenergy production ensures that the carbon sequestered in the wood remains stored for extended periods (indirectly in the unused fossil fuels). At the same time, income derived from producing bioenergy can finance the development of more sequestration plantations, leading to less CO₂ in the atmosphere.



TreeSmart is currently involved in a National Landcare Program project (with FFORNE Hardwood Cooperative, Plantations North-East, Department of Primary Industries and Gasification Australia), showing the supply chain from establishing plantations through to producing electricity via gasification from woody biomass. ☼

Carbon Neutral Return Flights



Members of the 2008 Australian Boomerang Team shown with their TreeSmart team shirts. From left to right, David Richardson, Rob Croll, Jarrod Byham and Craig Carter.

The World Boomerang Championships are being held in Seattle in August 2008, and Australia will again be represented, following the most recent championships in France and Japan. **TreeSmart Australia** has signed on as Team Sponsor, and emissions offsetter for the team's travel to and from Seattle. Four of the team members are shown above with the team t-shirt, displaying the "Carbon Neutral Return Flights" logo.

Rob Croll is a two-time World Champion and ten-time Australian Champion, Craig Carter and Jarrod Byham are multiple junior and senior Australian Champions, while David Richardson has competed at the last two World Championships and has set Australian Records for Accuracy and Trick Catch events. The 2008 World Championships will be held on the University of Washington campus in Seattle from August 17 through 28, and will include team and individual championship events.

The flights of the four team members to and from Seattle will generate over 100,000 kms of air travel, and about 34 tonnes of CO₂-e emissions. This will be offset by one year's growth in about 1.7 hectares of **TreeSmart** plantations over the coming year.

TreeSmart wishes the team well, and hopes they have many Carbon Neutral "Return Flights" during the competition in Seattle. ☘

About TreeSmart Australia

TreeSmart Australia is a carbon pooling organisation which offsets emissions primarily from the transport sector by supporting the establishment and management of farm forestry plantations.

Farm foresters are paid for the carbon sequestered in their trees according to the amount sequestered each year.

TreeSmart uses a year-for-year carbon accounting system, whereby the emissions produced each year are offset by the amount of carbon sequestered in that, or previous, years. No forward borrowing of sequestered carbon (offsetting past or current emissions through future growth of trees) is allowed.

TreeSmart Australia is a private company, with all profits re-invested in growing more trees for sequestration purposes.

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