

**SUBMISSION TO
GARNAUT CLIMATE CHANGE REVIEW, ISSUES PAPER 1,
CLIMATE CHANGE: LAND USE – AGRICULTURE AND FORESTRY**

A3P

THE AUSTRALIAN PLANTATION PRODUCTS AND PAPER INDUSTRY COUNCIL.



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This submission to the *Garnaut Climate Change Review, Issues Paper 1, Climate Change: Land use – Agriculture and Forestry* is made on behalf of the plantation products and paper industry by A3P – the Australian Plantation Products and Paper Industry Council. A3P welcomes the opportunity to make a submission.

SUMMARY

There are four major points that the plantation products and paper industry would like to emphasise regarding the issues facing Australian forestry as a result of climate change and participation in efforts to reduce greenhouse gas emissions:

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- 1. The development of climate change policy must treat forestry (and particularly plantation management) on its merits and be mindful of differences between forestry and agriculture. The difficulties in including agriculture in efforts to reduce greenhouse gas emissions should not be transferred to the treatment of forestry.*
- 2. As a minimum, policy makers should consider the inclusion of reforestation (new plantations whether for harvest or not) within an emissions trading scheme.*
- 3. The establishment and management of additional forests should create credits in accord with the carbon stored. The harvesting of forests should create a liability for emissions in accord with the carbon emitted (but not the carbon remaining in forest products).*
- 4. Measures must be included to maintain the international competitiveness of carbon-intensive, trade-exposed Australian industries, such as pulp and paper production, for as long as a viable global regime is not in place. Free allocation of permits may be the only effective implementable path forward.*

BACKGROUND

A3P is the peak representative body for the Australian plantation, plantation products and paper industry. A3P's 30 member companies have sales revenues of more than \$4 billion per annum and directly employ 13,500 people predominantly in rural and regional Australia in centres such as Mt Gambier, Morwell, Tumut, Albury, Oberon and Gympie.

A significant proportion of A3P's membership is in the 'forestry sector'. Importantly, A3P's members include the major organisations involved in the establishment and management of plantations, encompassing reforestation as

defined under the Kyoto Protocol. In addition, those A3P members not directly involved in the management of plantations have a strong interest in the treatment of forestry in climate change policy due to the integrated nature of the supply chain.

The three sectors of A3P's membership are faced with different opportunities and threats by climate change and Governments' response including a possible emissions trading scheme.

- The pulp & paper sector is a significant user of energy, particularly in mechanical pulping processes, and is faced with strong competition from imported product from countries such as China, Brazil, Indonesia and Korea. The sector is also a producer of renewable energy using processing waste such as black liquor from chemical pulping. This renewable energy may be used on-site or exported to the grid. The pulp & paper sector used more than 50 000 TJ of energy in 2003-04 with more than 12 000 TJ produced from renewable sources on-site.
- The solid wood sector is an energy user and a producer of renewable energy from residues, most of which is used on-site for timber drying. Sawntimber stores carbon and has a significantly lower global warming potential than competing building materials.
- The plantation growing sector manages significant carbon sinks. Plantation expansion is contributing to Australia's performance against our Kyoto target and there is potential for increased activity through appropriate market responses to climate change.

The three sectors are strongly linked through supplier/customer relationships, corporate structures and market arrangements. Positive and negative impacts on one sector inevitably flow through to other sectors.

A3P members comprise 30% of the total elective participants in Australia's only current emissions trading scheme (NSW GGAS). This level of participation is the largest of any sector. A3P is therefore able to draw on extensive practical experience when commenting on proposed emission trading schemes.

A3P accepts that human-induced climate change is real and requires urgent and substantive action on a large scale. Work must continue on the scientific understanding and predictions but enough is currently known to justify action.

Early action will also create flexibility for future emissions paths, encourage rapid development and implementation of new technology, allow better use of long-life capital assets, and reduce the cost of future action.

Emissions trading, if designed well, can be an important component of the response and will be more efficient than the current arrangement of conflicting and duplicative Government programs.

Other components of the response that would complement emissions trading include adaptation; research and development directed toward new low- or zero-emission technology; mandated performance standards; and measures for any sectors not covered by an emissions trading scheme.



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Much has already been done by the plantation products & paper industry, partly in response to these carbon costs, but also as part of ongoing investment and cost minimisation. The plantation products and paper industry is already a key part of Australia's response to climate change through activities such as carbon sequestration in plantations, the production of timber – a low greenhouse impact building material, reduction of energy used in processing and production of renewable energy.

A3P members have been involved in current Australian and international emissions trading schemes. This includes a number of A3P members being benchmark participants in the NSW GGAS scheme, and members with operations in countries working under the European trading scheme.

STRUCTURE OF THIS SUBMISSION

This submission includes some initial comments on the grouping of 'agriculture and forestry' before providing further response under the broad themes raised in the Issues Paper: Adaptation, Mitigation, Inclusion of forestry, and Recognition of carbon sinks and offsets.

The main recommendations of this submission are emphasised in italics.

To ensure a comprehensive response A3P has included an Attachment with extracts from this submission, with some additional clarification, in response to each of the Issues Paper's *Questions for consideration*.

AGRICULTURE AND FORESTRY

The Issues Paper addresses Australian agriculture and forestry, though noting some areas where the issues facing forestry and agriculture differ. Agriculture and forestry are also grouped together in most of the international work on climate change including the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. There are many similarities between agriculture and forestry in a climate change context including:

- Biological production systems
- The importance of adaptation to changing local conditions as part of the response
- The use, or potential use, of the same land
- The broad-scale nature of the activities.

However there are also a number of crucial differences between forestry and agriculture in the context of climate change policy that are often ignored or glossed over in the development of policy. These include:

- Emissions and carbon storage are more easily measured in forestry than agriculture (trees are long lived, don't move around, and there are significantly lower emissions of non-CO₂ greenhouse gases).
- The time scale of adaptation is different. Agriculture is most interested in improved seasonal predictions of climate while for forestry the longer term (30-50 year) changes are critical.
- The ownership structure of forestry is much more concentrated than agriculture. Forestry is more similar to other non-agricultural



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- industries where a large proportion of the activity is concentrated in a relatively small number of participants.
- A land use change to forestry usually entails an increase in carbon storage while a land use change to agriculture may entail increased emissions.
- Forestry products store carbon for longer periods of time while in use (such as timber used in construction) and detailed research has shown that the carbon remains stored in timber for many decades after disposal.
- There is greater willingness, data, experience and information for the inclusion of forestry within an emissions trading scheme than for agriculture.

A3P does not object to the parallel consideration of forestry and agriculture in the development of climate change policy; however the development of policy must treat forestry (and particularly plantation management) on its merits and be mindful of the differences described above. There is no reason to 'transfer' some of the difficulties associated with agriculture to the treatment of forestry.

ADAPTATION

Adaptation to climate change is an important issue for the forestry sector. Plantations are long-lived assets, where productivity is highly dependent on climatic variables (particularly rainfall). They supply other long-lived assets in the form of sawmills and pulp & paper manufacturing facilities. Climate change is likely to result in changes to the suitability of regions and sites for plantation management and a requirement to adapt management techniques in other regions.

Forest managers are experienced in dealing with management of long term resource supplies and risk. Two critical factors are necessary to apply and adapt this experience to the challenge of climate change:

1. *Information relevant at a regional level on changes in climatic patterns, changes in climatic risk profiles and particularly changes in extreme events (e.g., low summer rainfall, extreme fire weather) over 30-50 year timeframes.*
2. *Research and development into: improved genetic material (e.g., tolerance of climatic extremes); adaptive management practices (e.g., site preparation, thinning); opportunities for new products (e.g., bioenergy); and production techniques (e.g., reduced energy consumption in paper production)*

Plantations will also be an important land use option at a farm and sub-farm level in the process of adaptation for other agricultural land uses.

MITIGATION

CONTRIBUTION OF FORESTS

The forestry sector is in a position to make an additional and immediate contribution to climate change mitigation in response to a carbon price. Growing forests and wood products demonstrably store carbon and there is existing technology, infrastructure, skills and expertise to increase the level of carbon storage as one of a range of mitigation options.



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Unlike many other mitigation options, there would be an immediate response to a carbon market signal in the forestry sector. Forestry also differs in that the benefit accrues over a period of decades (or in the first Kyoto commitment period). Policy-makers should be aware of this 'lag' between the response (planting trees) and the mitigation; however it is compatible with the scale and timeframe of the required global response to climate change.

The plantation sector also provides an important mitigation opportunity through the production and supply of biomass for electricity generation or biofuel production. Importantly, this opportunity can be progressed in a manner integrated with the existing production of plantation logs, plantation sawntimber and paper. It would not create some of the perverse outcomes associated with other biofuel opportunities such as more intense harvesting or conversion of natural forests, reduced food production, or reduced fibre for timber and paper production.

EMISSIONS TRADING

Emissions trading is promulgated as an appropriate policy response to climate change because of its ability to find least cost solutions without requiring Governments or regulators to pick winners. It is commonly accepted that an emissions trading scheme should be as broad as possible so that the market may access the full range of mitigation options in seeking the lowest cost solution.

Against this, the reasons for possible exclusion of the agriculture or forestry sectors include difficulties in measurement and the relative cost of measurement compared to the likely abatement or emissions.

At this point, it is important not only to consider agriculture and forestry separately, but in considering possible coverage of the forest sector it may be beneficial to consider the measurement challenges separately for: plantations and native forests; forests that will be harvested and forests that will not; and for 'new' forests and existing forests.

The major source of abatement in the forestry sector will be from the establishment of trees on previously cleared land (reforestation). This is a relatively small subset of the measurement challenge posed by the combined agriculture and forestry sectors. These areas are readily identifiable and measurable. The emissions and storage of carbon from these plantations can be successfully tracked and accounted.

As a minimum, policy makers should consider the inclusion of reforestation (new plantations whether for harvest or not) within an emissions trading scheme. Other options are inclusion above a certain threshold area or voluntary inclusion.

The further inclusion of existing plantations, native forests and agriculture present increasingly more complex and costly measurement issues and in most cases reduced abatement potential. The objective of comprehensiveness suggests that they should still be critically examined for inclusion in an emissions trading scheme but the most important point to A3P's members is that any hurdles associated with agriculture or natural forests should not impinge on the potential inclusion of reforestation in an emissions trading scheme.



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A final point on the role of plantations in mitigation relates to the scale of the potential response. Enthusiasts for the role of forests are prone to speculate on the vast quantities of greenhouse gases that can be offset through reforestation. Equally those who view the only solution to climate change as being a fundamental change in energy production and consumption seek to exclude options such as reforestation from any scheme.

As always, the optimal path is somewhere between the extremes - reforestation has an important role to play as one of a range of mitigation options. It has certain characteristics that lend it added importance, such as:

- Immediately implementable
- Relatively stable in price
- As an alternative land use in some key rural areas.

However it will only ever be one of a range of options and not the most significant form of abatement. The most important role for plantations may be based on the characteristics above, perhaps acting as a surrogate cap on carbon prices and a form of immediate action. Outside of these characteristics, the need for a comprehensive system and to pursue all mitigation options provides strong arguments for inclusion of reforestation.

INCLUSION OF FORESTRY

If reforestation or some expanded portion of the forestry sector is to be covered in an emissions trading scheme (or even included as offsets) there are a number of issues that require resolution. These are discussed under the headings below.

CARBON ACCOUNTING FOR FORESTS

Before proposing how carbon accounting could be undertaken for forests it is necessary to understand the emissions and storage of carbon in the forestry sector.

Trees sequester (store) carbon as they grow. At the time of harvest, some carbon is removed from the site in the form of logs, while the remainder is left on the site to decompose or add to the carbon stored in the soil. A subsequent crop of trees is usually grown on the same site, commencing a new cycle of storage. Of the carbon taken off-site in logs, some will remain stored in the product (timber or paper) while the residues from production (bark, sawdust, etc) will be emitted, usually through burning - though this often is a source of heat or energy. Of the carbon stored in timber, research has shown that it remains stored for many decades after disposal.

Accounting for these relatively simple flows of carbon has become problematic for a number of reasons, including:

- *Simplifying assumptions* – for the purpose of simplifying accounting (and perhaps for other reasons), the Kyoto Protocol uses an assumption that all carbon is emitted at the time of harvest, despite this clearly not being the case.
- *Other abatement forms* – most other forms of abatement produce an immediate and quantifiable reduction in greenhouse gas emissions. Tree growth stores carbon over time but may later be reversed. Attempts to force forest carbon accounting into the same



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structure as other carbon accounting has led to the imposition of concepts such as permanence.

However, there is no reason why the accounting cannot be done in a way that mirrors the real carbon flows (credits created as carbon is stored, liabilities imposed as carbon is released). Indeed there is a strong argument that in the medium- to long-term this will be the only way that forest carbon can be accounted. Existing systems for measuring, monitoring and predicting forest growth for wood production can be easily adapted for carbon sequestration accounting.

The establishment and management of additional forests should create credits in accord with the carbon stored. The harvesting of forests should create a liability for emissions in accord with the carbon emitted (but not the carbon remaining in forest products).

That is, rather than imposing a constraint of permanence on reforestation and the commensurate uncertainty about future management and fate of carbon, the managers of reforestation projects should be liable for their emissions, and able to gain credit for their storage as, and when, it occurs. This proposed treatment of forest carbon is fundamentally different to that used in the NSW GGAS Scheme or the Australian Greenhouse Office's Greenhouse Friendly program. However, it is more transparent, less reliant on modelling of forest growth and better reflects the actual carbon flows in the forest.

It is worth noting that the fledgling New Zealand emissions trading scheme is starting with coverage of agriculture and forests and is using an approach to forest accounting consistent with the above description.

The data, tools and methods to conduct the accounting in this manner are available for reforestation in the same way that they are used in other sectors – for example, the use of emission factors, proxies and activity levels. Decisions on points of liability and credit along the value chain are no more problematic for reforestation than most other aspects of the carbon economy.

SMALL LANDOWNERS

As noted earlier, the issue of small growers and a dispersed production base is not as significant for forestry as agriculture. However, it will still be to the benefit of an emissions trading scheme if it can be accessed by small landowners. The approach of carbon pooling has often been proposed though the administrative overhead seems crippling for many growers.

The New Zealand Government has proposed an elegant tender/grant system for small growers that warrants consideration in an Australian context. The approach offers an up-front payment to small landowners in return for the carbon rights to the forest. It is a simple, low-overhead system that enables participation by small landowners but still provides an incentive for direct participation if tree planting is on a larger scale.

INTERNATIONAL CONSISTENCY

Consistency with rules in other emissions trading schemes has rightly been identified as an issue. However the rules for all emissions trading schemes, particularly their treatment of forests, are in a state of flux. As noted, the New Zealand Government is proposing a treatment of forestry very similar to that



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proposed in this submission. It is also consistent with accounting under the UNFCCC.

In the medium- to long-term, all emissions trading schemes will converge towards accounting that reflects the true fate of carbon; this should be the primary goal of an Australian approach to forest carbon accounting rather than consistency with current international approaches that are preliminary and likely to change.

WOOD PRODUCTS

Under most existing carbon accounting approaches it is assumed that upon harvesting a forest, all carbon in the trees is immediately emitted. This has been implemented to simplify the accounting approach. Demonstrably the carbon in the forest products (timber, paper, etc) remains stored while those products are in use and research has shown that for timber products it remains stored for many decades after disposal.

Wood products compete primarily in building and construction markets against materials such as concrete, steel and aluminium that have much higher greenhouse footprints. There are two elements to the greenhouse benefit of timber compared to these other products – fewer emissions associated with manufacturing, and the carbon stored in timber while in use and for many years after disposal. Both components should be reflected in an emissions trading scheme.

It is possible that manufacturers of steel, concrete and aluminium building products will be shielded from the carbon cost of their products through measures to address trade-exposed, emissions-intensive industries. This creates an even more critical reason to incorporate accounting methods that acknowledge the carbon stored in timber.

The credibility and clarity of a carbon market signal, particularly in situations where timber competes against non-timber alternatives, is dependent on developing accounting procedures that credit carbon storage and impose emission liability when it occurs and on the party in control of that decision (e.g., selection of building materials, fate of timber after use, etc).

An Australian emissions trading scheme should use an accounting method for forests and timber that ‘credits’ the carbon remaining in timber products while in use and after disposal. For example, by not imposing a liability on the forest grower for the carbon in timber, or allowing the carbon stored in timber employed in long-term uses (greater than 15 years: construction, furniture, etc) as an offset.

There is clearly a quantity of timber currently used in such situations that represents business-as-usual storage. The potential problem of ‘additionality’ of the timber use could be resolved by quarantining (not allocating) an annual quantity of permits equivalent to the historical use of timber for these purposes. Any concern of unduly favouring timber production is likely to be grossly outweighed by measures to maintain the competitiveness of the competing industries – albeit against imported product of the same material but with the unintended consequence of assisting these products in comparison to lower greenhouse footprint Australian timber.



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TRADE EXPOSURE

The pulp & paper sector particularly is a large user of energy and despite high levels of renewable energy use is relatively carbon-intensive. The sector also faces intense competition from suppliers in countries with lower environmental standards and little likelihood of introducing a carbon cost, such as China, Brazil, Indonesia and Korea. The impact of a (less than global) carbon cost on the competitiveness of the Australian pulp & paper sector is a major concern.

Given that an effective global regime is unlikely in the short or medium term, and there are strong arguments for commencing action sooner rather than later in Australia, measures must be included to maintain the international competitiveness of carbon-intensive, trade-exposed Australian industries, such as pulp and paper production, for as long as a viable global regime is not in place.

Three types of measures are often proposed as methods of maintaining international competitiveness.

Exemption – exempt trade exposed industry from obligations under the scheme.

Border measures – rebates of increased costs for exports, and tariffs on imports.

Free allocation – partial free allocation of permits to carbon-intensive, trade-exposed industry to offset increased production costs.

Exemption is difficult in practice, if not impossible, given that emissions and increased costs occur predominantly within the energy sector rather than the manufacturing sector.

Border measures appear to effectively address the problem and minimise collateral damage. However there is an enormous level of sovereign risk associated with whether such an approach would be durable under World Trade Organisation rules or could feasibly be negotiated internationally. There is a strong case to explore this option further and either identify what would need to change internationally to make it feasible, or definitively rule it out as an option.

Free allocation of permits may be the only effective implementable path forward to maintain the competitiveness of a range of emissions-intensive industries against competition from countries with no carbon cost.

RECOGNITION OF CARBON SINKS AND OFFSETS

The recognition of carbon stored in forests and forest products requires a framework that enables measurable and verifiable actions, and explicitly resolves issues of permanence and additionality.

MEASURABLE AND VERIFIABLE

It has been demonstrated in the NSW GGAS scheme that carbon stored in forests can be measured and appropriately accounted. This process has resulted in the development of an Australian Standard: AS4978.1

Quantification, monitoring and reporting of greenhouse gases in forest projects Part 1: Afforestation and reforestation. This Australian Standard was



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developed to be applicable in any emissions trading scheme with a similar architecture.

Unlike NSW GGAS, the forest carbon accounting described earlier does not require the estimation of 100 year minima and therefore does not require modelling of future growth. The measurement of actual storage as it occurs is therefore more robust.

Similarly the NSW GGAS scheme has demonstrated that forest offsets can be independently verified to a high level of confidence and security.

The measurement and verification of carbon in timber would need to be developed but it is proposed to be done through research, development of factors and then ongoing monitoring and sampling, similar to many other elements of greenhouse accounting in the broader economy.

PERMANENCE

Forests are different to most other forms of abatement in that action taken today does not automatically lead to a permanent reduction in atmospheric greenhouse gas concentration. While a decision to change fuel sources, for example, leads to a certain change in greenhouse gas concentrations, a decision to establish a forest may only cause a delay in emissions depending on the future management of the forest and products harvested from it. Geo-sequestration is perhaps the only other significant abatement option that shares this characteristic.

This characteristic leads to consideration of the 'permanence' of the claimed abatement. This has been dealt with in some schemes by measures that require the carbon to be maintained in the forest for a minimum period (e.g., seventy or a hundred years). However it could also be dealt with through a carbon accounting methodology that accurately tracked the flux in carbon storage - crediting storage and creating liabilities for emissions, as and when they occur.

This would be achieved by the imposition of a liability for harvesting emissions on any forest where credits have been created. That is, a long term credit, without a commensurate liability, can only be created by the long-term or permanent storage of carbon in the forest.

It would be achieved in the case of wood products by the long-term use of the product and the ongoing storage of carbon after disposal as demonstrated from recent research.

ADDITIONALITY

If forests are not covered in an emissions trading scheme but participate through the provision of offsets, the issue of additionality becomes important. Offset credits should only be created by action that is additional to business-as-usual. Elements of additionality include financial, environmental and regulatory.

Whether plantations are 'additional' is a complex issue. Investment in commercial plantations by Government forest services or by processing companies through the 1990s and early 2000s has been negligible. The expansion in the resource base over this time has been the result of



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investments through managed investment schemes. Although these schemes have established varying amounts of plantations over the years, it is important to note that they are a 'vehicle' for investment and that the suite of investors in each year is different. They are a series of individual investment decisions that have been aggregated, not an ongoing investment program. Investment by any individual in any year does not require, imply, or even encourage, investment by that same investor in future years.

Furthermore, the vast majority of these plantations are to be managed on a 10-15 year rotation without an intention or investment mechanism for growing subsequent rotations.

Under the forest carbon accounting described in this paper, a long-term credit (without a commensurate liability) could only be created by the establishment of a new plantation, on previously cleared land, and then maintaining those carbon stocks beyond the initial rotation. These requirements are clearly additional to business-as-usual for any investor prior to the impact of a carbon price.

A3P is conducting further work in the areas outlined in this submission including through three projects that have been externally funded (two by the Australian Government and one by Forest and Wood Products Australia):

- o A Forestry and Climate Change Action Plan;
- o Scoping Study into Managing Plantation Forests for Timber and Carbon; and
- o Mechanisms for the Inclusion of Carbon in Timber in an Emissions Trading Scheme.

It is our intention to hold a Government-industry workshop on the methods for inclusion of the forestry and wood products in an emissions trading scheme in February. I would welcome participation by the Garnaut Climate Change Review team in that workshop and will forward an invitation in due course.

Thank you for the opportunity to provide a submission on the Issues Paper. I look forward to further engagement with the Garnaut Review on these issues. If you have any questions please contact Miles Prosser on 02 6273 8111 or miles.prosser@a3p.asn.au

Yours sincerely



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18TH JANUARY 2008



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ATTACHMENT – RESPONSE TO QUESTIONS

How might these adaptation challenges be addressed?

Adaptation in the forestry sector requires two critical factors:

1. Information relevant at a regional level on changes in climatic patterns, changes in climatic risk profiles and particularly changes in extreme events (e.g., low summer rainfall, extreme fire weather) over 30-50 year timeframes.
2. Research and development into: improved genetic material (e.g., tolerance of climatic extremes); adaptive management practices (e.g., site preparation, thinning); opportunities for new products (e.g., bioenergy); and production techniques (e.g., reduced energy consumption in paper production)

What other factors affect the implementation of adaptation measures in the agriculture and forestry sectors?

A crucial factor influencing the implementation of adaptation measures in the forestry sector will be the level of new investment in the sector – adaptation will not occur without investment. The level of investment will be heavily influenced by the perceived profitability of forest growing and processing (timber and paper) including the impact of Government policy in these areas.

How should responsibilities be shared in dealing with adaptation?

The key responsibilities for Government in dealing with adaptation are:

- Provision of information and predictions that are of interest to most sectors of the economy.
- Implementation of market structures that address market failure and empower commercial forces to internalise existing externalities.
- Replacement of the current inefficient and duplicative policies on greenhouse, energy efficiency and reporting with a single efficient program.

The key responsibilities for industry in dealing with adaptation are:

- Commercial, strategic, business decisions in light of the information and market structures.
- Risk management, innovation and deployment of new technology in a commercial manner.

What potential is there for mitigation in the agriculture sector in the short term? What practical options for mitigation are likely to become commercially viable in the near future?

The forestry sector is in a position to make an additional and immediate contribution to climate change mitigation in response to a carbon price. Growing forests and wood products demonstrably store carbon and there is existing technology, infrastructure, skills and expertise to increase the level of carbon storage as one of a range of mitigation options.



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Unlike many other mitigation options, there would be an immediate response to a carbon market signal in the forestry sector. Forestry also differs in that the benefit accrues over a period of decades rather than immediately.

The plantation sector also provides an important mitigation opportunity through the production and supply of biomass for electricity generation or biofuel production. Importantly, this opportunity can be progressed in a manner integrated with the existing production of plantation logs, plantation sawntimber and paper.

What incentives, policy innovations and/or market-based mechanisms would guarantee an optimal contribution to the national mitigation effort?

The major source of abatement in the forestry sector will be from the establishment of trees on previously cleared land (reforestation). This is a relatively small subset of the measurement challenge posed by the combined agriculture and forestry sectors. These areas are readily identifiable and measurable. The emissions and storage of carbon from these plantations can be successfully tracked and accounted.

As a minimum, policy makers should consider the inclusion of reforestation (new plantations whether for harvest or not) within an emissions trading scheme.

What is the best way to deal with trade exposure if policy measures are implemented to reduce emissions from the agriculture and forestry sectors?

Measures must be included to maintain the international competitiveness of carbon-intensive, trade-exposed Australian industries, such as pulp and paper production, for as long as a viable global regime is not in place. Free allocation of permits may be the only effective implementable path forward.

Accepting existing practical limitations, is direct inclusion in an ETS the most appropriate mechanism for encouraging mitigation in the agriculture and forestry sectors?

As a minimum, policy makers should consider the inclusion of reforestation (new plantations whether for harvest or not) within an emissions trading scheme.

The further inclusion of existing plantations, native forests and agriculture present increasingly more complex and costly measurement issues and in most cases reduced abatement potential. The objective of comprehensiveness suggests that they should still be critically examined for inclusion in an emissions trading scheme but the most important point to A3P's members is that any hurdles associated with agriculture or natural forests should not impinge on the potential inclusion of reforestation in an emissions trading scheme.

What policy mechanisms would be more appropriate for these sectors? How would these measures interact with an ETS covering other emitting sectors?



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If reforestation or some expanded portion of the forestry sector is to be covered in an emissions trading scheme then new plantations should be included as offsets.

What would be the economic impacts on the agriculture and forestry sectors of a domestic ETS covering stationary energy and transport?

Outside the storage and possible eventual release of carbon within forests, timber and paper, the majority of emissions associated with the forestry sector are related to energy and transport. Therefore domestic ETS covering stationary energy and transport would impose costs on the forestry sector.

What are the opportunities available to the agriculture and forestry sectors as a result of mitigation policies?

The forestry sector is in a position to make an additional and immediate contribution to climate change mitigation in response to a carbon price. Growing forests and wood products demonstrably store carbon and there is existing technology, infrastructure, skills and expertise to increase the level of carbon storage as one of a range of mitigation options.

The plantation sector also provides an important mitigation opportunity through the production and supply of biomass for electricity generation or biofuel production. Importantly, this opportunity can be progressed in a manner integrated with the existing production of plantation logs, plantation sawntimber and paper.

How should uptake of these opportunities be maximised?

As a minimum, policy makers should consider the inclusion of reforestation (new plantations whether for harvest or not) within an emissions trading scheme.

The establishment and management of additional forests should create credits in accord with the carbon stored. The harvesting of forests should create a liability for emissions in accord with the carbon emitted (but not the carbon remaining in forest products).

Do these opportunities create perverse outcomes and, if so, how should these be managed?

Perverse outcomes would be minimised by the inclusion of reforestation and wood products in an ETS.

Wood products compete primarily in building and construction markets against materials such as concrete, steel and aluminium that have much higher greenhouse footprints. It is possible that manufacturers of steel, concrete and aluminium building products will be shielded from the carbon cost of their products through measures to address trade-exposed, emissions-intensive industries. This creates an even more critical reason to incorporate accounting methods that acknowledge the carbon stored in timber.

Do the economic efficiency gains from including small emitters in an ETS justify the costs of compliance?



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The New Zealand Government has proposed an elegant tender/grant system for small growers that warrants consideration in an Australian context. The approach offers an up-front payment to small landowners in return for the carbon rights to the forest. It is a simple, low-overhead system that enables participation by small landowners but still provides an incentive for direct participation if tree planting is on a larger scale.

How could transaction costs be minimised?

The establishment and management of additional forests should create credits in accord with the carbon stored. The harvesting of forests should create a liability for emissions in accord with the carbon emitted (but not the carbon remaining in forest products).

It has been demonstrated in the NSW GGAS scheme that carbon stored in forests can be measured and appropriately accounted. This process has resulted in the development of an Australian Standard: AS4978.1 *Quantification, monitoring and reporting of greenhouse gases in forest projects Part 1: Afforestation and reforestation.*

What should be the point of obligation for agriculture and forestry industries in an ETS?

The point of obligation in forestry should be the forest manager. The establishment and management of additional forests should create credits in accord with the carbon stored. The harvesting of forests should create a liability for emissions in accord with the carbon emitted (but not the carbon remaining in forest products).

Should a threshold for liability be applied, and how should it be defined?

If reforestation was covered by a domestic ETS it may be possible to define a threshold based on the area of eligible plantation managed.

What 'proxies' would be appropriate for the estimation of emissions in the agriculture and forestry sub-sectors?

The estimation of storage and emissions in forestry would be based on existing systems for monitoring forest growth.

What systems are available that would allow for efficient and accurate monitoring of emissions at the operator level?

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What are the implications if the stringency of monitoring, reporting and verification requirements vary between sectors and sub-sectors?

No specific comment



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Should all agriculture and forestry sub-sectors be included in an ETS? What sub-sectors might be better suited for inclusion?

As a minimum, policy makers should consider the inclusion of reforestation (new plantations whether for harvest or not) within an emissions trading scheme.

The further inclusion of existing plantations, native forests and agriculture present increasingly more complex and costly measurement issues and in most cases reduced abatement potential. The objective of comprehensiveness suggests that they should still be critically examined for inclusion in an emissions trading scheme but the most important point to A3P's members is that any hurdles associated with agriculture or natural forests should not impinge on the potential inclusion of reforestation in an emissions trading scheme.

How should economic distortions within the sectors be dealt with?

Perverse outcomes would be minimised by the inclusion of reforestation and wood products in an ETS.

Wood products compete primarily in building and construction markets against materials such as concrete, steel and aluminium that have much higher greenhouse footprints. It is possible that manufacturers of steel, concrete and aluminium building products will be shielded from the carbon cost of their products through measures to address trade-exposed, emissions-intensive industries. This creates an even more critical reason to incorporate accounting methods that acknowledge the carbon stored in timber.

Measures must be included to maintain the international competitiveness of carbon-intensive, trade-exposed Australian industries, such as pulp and paper production, for as long as a viable global regime is not in place. Free allocation of permits may be the only effective implementable path forward.

If a domestic ETS excludes agriculture and forestry initially, but includes them at a later point in time:

What are the advantages/disadvantages of involving these sectors in the scheme through the inclusion of offsets, or an 'opting in' baseline and credit trading scheme?

If reforestation or some expanded portion of the forestry sector is to be covered in an emissions trading scheme then new plantations should be included as offsets.

What sort of transitional arrangements should be incorporated in the initial design?

Transitional arrangements will be required to maintain property rights for plantation offsets that are currently covered by the NSW GGAS scheme and the Greenhouse Friendly program.



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What types of carbon sink and mitigation measures should be included as offsets or within an ETS? Are there practical and cost effective monitoring solutions available for these measures?

As a minimum, policy makers should consider the inclusion of reforestation (new plantations whether for harvest or not) within an emissions trading scheme.

It has been demonstrated in the NSW GGAS scheme that carbon stored in forests can be measured and appropriately accounted. This process has resulted in the development of an Australian Standard: AS4978.1

Quantification, monitoring and reporting of greenhouse gases in forest projects Part 1: Afforestation and reforestation.

How should positive incentives to reduce emissions or perverse incentives to increase emissions prior to inclusion in an ETS be managed?

A prompt decision on the rules, particularly threshold dates, for forests to enter a domestic ETS will be crucial in maintaining incentives for continued action.

Should offset regimes recognised under an Australian ETS be limited to those that satisfy international carbon accounting protocols?

In the medium- to long-term, all emissions trading schemes will converge towards accounting that reflects the true fate of carbon; this should be the primary goal of an Australian approach to forest carbon accounting rather than consistency with current international approaches that are preliminary and likely to change.



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