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**Submission in response to the Garnaut Climate Change Review
Issues Paper 1 Climate Change: Land use – Agriculture and Forestry**

To who it may concern,

Below are comments on the agriculture and forestry issues paper, these comments relate predominately to the forestry sector and largely in relation to the use of reforestation projects as greenhouse gas offsets.

Regards,



Penny Baalman

Questions for consideration

3.2 Mitigation options for agriculture and forestry

- *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?*
- *What incentives, policy innovations and/or market-based mechanisms would guarantee an optimal contribution to the national mitigation effort?*
- *What is the best way to deal with trade exposure if policy measures are implemented to reduce emissions from the agriculture and forestry sectors?*

As a general comment relating to many of the questions posed it should be noted that the challenges facing agriculture and forestry are quite different. Dealing with either project or entity-level accounting will be significantly less diffuse and have a significantly lower diversity within forest entities compared to agricultural entities.

Within forestry there are quite different greenhouse gas accounting challenges depending on whether dealing with reforestation or forest management (or existing forests), where in almost all respects reforestation is much simpler and consequently well developed.

Measurement and verification (as well as other greenhouse gas accounting challenges) will certainly be simpler when considering reforestation projects compared to agriculture especially, but also compared to existing forests.

- *Accepting existing practical limitations, is direct inclusion in an ETS the most appropriate mechanism for encouraging mitigation in the agriculture and forestry sectors?*
- *What policy mechanisms would be more appropriate for these sectors? How would these measures interact with an ETS covering other emitting sectors?*
- *What would be the economic impacts on the agriculture and forestry sectors of a domestic ETS covering stationary energy and transport?*

Agriculture and forestry should be considered separately as should the potential sub-sectors within both.

If by direct inclusion the paper asks as covered or liable sectors, it is suggested that this is not advisable at this time.

As is well recognised, there are substantial challenges yet to be adequately addressed in including land-based sectors in an emissions trading scheme. These challenges include adequate accounting or measurement, adequately incorporating rules that ensure perverse outcomes do not occur, and undertaking the exercise in a manner that is comparable to other sectors but does not impose too high a cost burden (especially in respect to the potential emission reduction benefits).

When considering the forestry sector there are substantial differences between inclusion of reforestation projects and existing forests.

Forest Management/Existing forests

One of the main aspects to consider regarding the inclusion of forest management is the nature of forests that make them substantially different to other sectors, that being their capacity to act as not just sources of continuous and relatively constant annual emissions, but as both sinks and sources of greenhouse gases, which can fluctuate substantially from year to year.

Of particular relevance when considering their inclusion as a possible covered sector are the long times frames in the cycles of managed forests, and the large variations in emissions and removals within these cycles. From this perspective and the complexities it represents, it is suggested to only consider existing forest as projects (or potential offsets) and not as a covered sector reporting at an entity level.

It is a requirement of Australian legislation that the harvesting of forests for wood be undertaken on a sustainable basis, this requirement effectively ensures (when considered over an appropriate timeframe) that managed forests are 'carbon neutral'. This is regardless of the varying periods of high removals and also high emissions that may occur on a year-to-year basis.

Many of the issues that still cause difficulties within the Kyoto Protocol relate to the fluctuating, highly variable emissions nature of the forest cycle. Some nations will have forests that are currently and/or in the short term likely to be net removers of carbon dioxide while others, purely due to the growth stage, are potentially net emitters. One example is not 'better' than the other, it merely represents the place in the forest cycle that nation happens to be in and is moving into at the beginning of an accounting period.

Dealing with this aspect at a national level is difficult enough, but dealing with it in the context of including Forest Management as a covered sector and reporting at an entity-level will be more problematic again.

This is especially important when considering that it is the additional long-term removal of carbon dioxide from the atmosphere and into the terrestrial biosphere that is the aim when using biological sinks to mitigate the greenhouse effect.

Some parties promote the net 'sink' characteristics of their existing forests, but this claim and its validity, especially in respect to making meaningful, effective, positive changes in relation to the greenhouse effect, is entirely dependent on the timeframe being assessed or described. Any meaningful timeframe should include at least two complete cycles of the forest harvesting period to ensure a representative picture is being drawn.

To put it more simply any forest that is being managed on a sustainable basis will be on balance neutral in relation to emissions and removals, there will be cycles of removals followed by the cycle of emissions from timber harvesting/wood production. The value to entities and long-term national accounts will for the most part be negligible unless looking at unrepresentative 'snapshots' of the forest management cycle.

The simplest way to change this equation is to remove the same but emit less through harvesting less, however harvesting less and laying claim to carbon credit benefit then opens the door to the substantial problem of leakage.

There can be instances when forest management can achieve long-term increases that are acceptable, but this will be difficult to determine unless undertaken on a project-level with a baseline that is adequately justified and having shown adequate consideration and allowance for leakage.

For existing forests then (or Forest Management as defined under the Kyoto Protocol), unless every nation was covered it is not considered appropriate for inclusion as a covered sector as it will be very difficult to constrain leakage internationally, and national leakage is not considered adequate given the nature of wood markets.

However, while not currently nominated for the first commitment period of the Kyoto Protocol, Australia should remain open to the possibility of inclusion of forest management at a project level.

Alternately or as part of this, policies could be considered that would aim to improve the health and vigour (and hence removals and storage) of existing forests but that maintain equivalent wood production. Such policies might include providing incentive to improve the silvicultural condition of existing forests or those that increase the recovery rate of wood products, which would result in greater wood produced for the same emissions.

While more difficult due to needing to distinguish and adequately predict the baseline (including selecting an appropriate timeframe), incentives that reduce emissions from fire should also be considered.

Reforestation

Reforestation as defined under the Kyoto Protocol is really the quintessential project or offset. In its definition it requires a change from non-forest to forest cover from a determined date (or in some GHG programs for a determined period of time) for inclusion on a baseline and credit, or offset basis.

At the national level it assumes a negligible (zero) starting storage level and the act of reforestation then builds up biomass on the site increasing the removals and storage or transition of carbon dioxide from the atmosphere to the terrestrial biosphere.

Suggestions have been made recently to consider the inclusion of reforestation not as an offset activity but as a covered sub-sector. This would presumably mean that any land base that meets set definitions is automatically included to track its annual emissions and removals from that time onwards.

Such is the model in New Zealand that allows reforestation owners to volunteer participation where if they do not nominate for participation that forest's emissions and removals default to being the responsibility of the government. This model has

many benefits, not the least of which is simplicity and a more direct relationship between entity-level accounting and national level accounting.

However it also has certain drawbacks in that with the baseline year being 1990 there is now a reasonable timeframe between this year of potential inclusion and the year from which credit can begin to be assigned (2008). For those stands planted close to the baseline year, there is only the potential to gain half the credit yet all of the emissions liability. This makes it unattractive to nominate and include older forests, which essentially did not receive adequate recognition of the removals they had already achieved prior to accreditation or the start of the GHG program.

If that 'pre-accreditation storage' is not adequately recognised this has the potential to lead to perverse outcomes, such as owners harvesting but not replanting areas, this outcome will not benefit the national accounts. Owners would instead be wise to harvest those existing older stands, abandon that land from on-going tree planting and find other land from which they could achieve the full benefit.

This approach, which is a straight carbon stock change approach to crediting, will also make participation by small-scale growers difficult.

However it should be kept in mind and further explored as a possible option.

- *What are the opportunities available to the agriculture and forestry sectors as a result of mitigation policies?*
- *How should uptake of these opportunities be maximised?*
- *Do these opportunities create perverse outcomes and, if so, how should these be managed?*

In regards to forestry there is opportunity to gain recognition for the production of low energy-embodied, sustainable and renewable products.

If appropriate mitigation policies are included the forestry sector will have the ability to create a new base for high quality, land-efficient timber production to balance the reduced resource base that has occurred in recent years from the dedication to non-production forests.

To maximise these opportunities the rules for reforestation should be carefully considered to ensure there is sufficient incentive to invest in the planting of new forests.

As discussed above policies that aim to improve the vigour and recovery rates of forest products will also benefit the industry as well as the state of the forests.

One perverse outcome could occur from the inclusion of Forest Management projects if inadequate attention is paid to leakage. When this occurs there is incentive to remove forests from productive use, while this will store additional carbon on the site, it will also reduce the supply of wood - with the most likely outcome being increased harvesting for timber in countries with less well developed regulatory environments.

If Forest Management is included careful attention needs to be paid to consideration and allowing for leakage and not providing perverse incentives.

3.3 Practical considerations for including agriculture and forestry in an emissions trading scheme

- *Do the economic efficiency gains from including small emitters in an ETS justify the costs of compliance?*
- *How could transaction costs be minimised?*
- *What should be the point of obligation for agriculture and forestry industries in an ETS?*
- *Should a threshold for liability be applied, and how should it be defined?*

It would be difficult to say with any reasonable degree of certainty without having made greater progress in assessing their inclusion than is available at this time, especially for agricultural projects/entities.

However one means of both advancing the level of understanding and discovering the cost without imposing an inappropriate burden is to allow the agriculture, forestry and other land use sub-sectors to be included as offsets where participation is voluntary.

As experience is gained regarding including such small emitters and accounting confidence is increased this question could be re-assessed.

Transaction costs could potentially be minimised through allowing for the use of conservative defaults and through allowing arrangements that provide incentive for pool managers or aggregators to operate on behalf of small-scale participants.

For the most part forest entities operate on a scale that is similar to that of other sectors, and points of obligation should be determined in the same way as for energy, industrial processes and waste and determined by operational control, as decided between controlling parties and/or as determined by the regulatory authority.

If forest management was to be covered/liable, an emissions-based threshold is not especially relevant due to the net neutral nature and the high degree of fluctuation over long time frames as discussed above. It would be difficult to determine or predict on an emission/removal basis and would be more appropriate on an area-managed basis. This is an aspect that could be considered more seriously when greater experience and data is available.

- *What 'proxies' would be appropriate for the estimation of emissions in the agriculture and forestry sub-sectors?*
- *What systems are available that would allow for efficient and accurate monitoring of emissions at the operator level?*
- *What are the implications if the stringency of monitoring, reporting and verification requirements vary between sectors and sub-sectors?*

Agriculture and forestry have different estimation challenges. Within forestry there will be differing needs for 'proxies' depending on whether assessing planted or

natural forests and within planted forests whether they are single species and age stands or multi-species variable age stands.

Further different entities will have different capacities to measure forests to various levels of reliability or uncertainty. In many instances single age class and species plantings can be estimated to levels of uncertainty comparable to or even lower than other sectors.

There should be no restrictions on the methodology available for use for measuring emissions and removals in forests, that is participants can use the methodology that best meets their specific needs and aims, as long as the relative precision is appropriately dealt with to allow a conservative or equivalently reliable estimate (to other forest projects and all other sectors).

Forest projects do differ from other types of projects in this manner in that there is an almost infinite number of ways to measure a forest, specific methodologies are determined based on the needs and capabilities of the entity, and can change over time with changing management imperatives.

Small-scale participants would benefit from generic systems, however these estimates should appropriately reflect the level of reliability of the system. Further that assessment or determination should relate to the systems ability to estimate the specific project in question.

The stringency of monitoring, verification and reporting should not vary between sectors and sub-sectors, the use of defaults or proxies and in particular their conservative application and the use of aggregated pool managers should allow wider participation but on an equivalent basis.

- *Should all agriculture and forestry sub-sectors be included in an ETS? What sub-sectors might be better suited for inclusion?*
- *How should economic distortions within the sectors be dealt with?*

Forestry should not be included as a covered sector at this stage until greater understanding is gained.

Reforestation should be included as an immediate eligible project type (offset activity).

Inclusion of forest management as an eligible project type should be considered.

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

As discussed above inclusion of existing forests pose considerable problems due to the variable nature of the emissions/removals profile and the long time periods over which a representative cycle occurs. Due to this setting targets will be very difficult to impose in a manner that is fair to all existing forest owners.

This problem is unlikely to change considerably with more time and greater data, but perhaps policies for inclusion can come up with a way to fairly treat or compensate forest owners that start with higher biomass levels, and at the same time not overly credit those who begin with a lower profile.

Whether existing forests have begun as offsets or not and at a later time become 'covered' this issue will largely remain the same.

For reforestation, depending on how eligible start year and baseline years are defined and rules are established, care needs to be taken to appropriately account for biomass stored prior to accreditation.

Transitional arrangements should not be as considerable for forestry as they may be for agriculture and other sectors, largely as forestry will be quite complex to 'baseline' in the first place.

3.4 Recognition of carbon sinks and offsets

- *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?*
- *How should positive incentives to reduce emissions or perverse incentives to increase emissions prior to inclusion in an ETS be managed?*
- *Should offset regimes recognised under an Australian ETS be limited to those that satisfy international carbon accounting protocols?*

Any sub-sector of the agriculture, forestry and other land uses sector should potentially be able to generate offsets from projects as long as comparable standards of greenhouse gas accounting are met. For agriculture and forest management issues of leakage, scale efficiency and ensuring reliable measurement will need to be adequately considered and allowed for.

Of all the land-based projects reforestation is the simplest to deal with adequately and has the greatest development in respect to accounting rules both in Australia and internationally on which to base policies for their immediate inclusion.

Cost effective and reliable monitoring procedures are common practice for single-species plantings and hence is not a significant issue for most reforestation projects any more so than for emissions reduction projects.

Allowing the creation of fungible offset credits from approved projects leading up to implementation of an emission trading scheme will create immediate positive incentive for emission reductions/removal enhancements to occur.

In regards to limiting regimes to those that satisfy international carbon accounting protocols, it is hard to answer as what is considered an international carbon accounting protocol?

At this time there is really no one internationally recognised and applied carbon accounting protocol for reforestation projects. It should be acknowledged that the protocols and mechanisms in place within the NSW Greenhouse Gas Abatement Scheme (GGAS) are the most advanced anywhere in the world at this time.

Some may view the modalities and procedures in the Clean Development Mechanism (CDM) as representing an international protocol, but these are designed to allow for the particular conditions of many various developing, non-covered countries. This has particular significance to reforestation projects especially in regards to the issue of impermanence.

The other prominent international greenhouse gas accounting standards would include the International Organization for Standardization 14064/65 standards (ISO 14064-2) and the World Resources Institute/World Business Council for Sustainable Development (WRI/WBCSD) GHG Protocol series. These provide a broad framework for accounting and should be considered, especially as a means of ensuring consistency between the potential different projects.

While Joint Implementation (JI) rules are proceeding, the mechanisms for reforestation in the GGAS should be considered to be world leading.

Any protocol Australia applies should aim to maximise the likelihood of international consistency, probably the best means of achieving this is to draw on the experience of GGAS with consideration of JI rules.

It needs to be acknowledged that reforestation and land-based projects do pose greater issues for their inclusion than most other potential project types, the policies rules and standards that are developed to include reforestation need to be carefully considered to ensure a balance of rigour, robustness and equivalence to emission reductions, but that allow adequate incentive for parties to actually invest in them.

In order to meet international consistency, projects within an Australian scheme should aim to meet the five core elements of environmental integrity, those being real, additional, measurable, verifiable and long-term.

Meeting these standards will achieve core international consistency and facilitate international linkages and equivalence of offsets between emissions trading schemes.

Each of these five are discussed in turn as well as a number of other aspects of particular relevance to reforestation projects that include; reforestation definition, eligible start date, offset creation date, accounting methodologies and dynamic baselines/recurrent project approval.

Real – it is important for reforestation projects especially that only real, actual *ex post* certificates be allowed within an Australian emissions trading scheme. This ensures

that actual abatement is traded and also provides appropriate incentive for on-going management of reforestation projects.

Additional – it is important that only additional abatement be credited within an Australian ETS. However that said how additionality is actually determined is a highly complex issue, and reforestation projects are quite different to most other emission reduction projects for two reasons in particular.

Firstly reforestation projects, by their very definition, represent a change from low carbon storage on non-forest land to higher carbon storage on land under forest. Secondly, in having to deal with the aspect of impermanence, reforestation projects move away from business as usual scenarios as it is not business as usual for forest plantations to be kept under forest either indefinitely or for a minimum period such as 100 years.

The two main models in Australia at this time have quite different approaches to additionality; the NSW GGAS applies regulatory and environmental additionality requirements, whereas the Greenhouse Friendly Initiative applies what is essentially the CDM's approved tool for testing additionality. Those familiar with the CDM additionality tool know it is a highly complex and in many instances subjective process. Such a process is not common practice within the various GHG programs in operation and design and is not a requirement of the Kyoto Protocol.

Care should be taken when developing additionality tests to ensure that the kinds of perverse outcome that can occur from such screens are not included. It is suggested that additionality test be developed to best screen projects on a project-specific basis.

It should also be acknowledged that the more difficult and complex the additionality test, the less incentive there will be to engage in abatement activities. A trade off needs to be made where it may be that some 'free-riders' get through but that there is a more streamlined, less subject process that results in much greater activity overall.

Measurable – Reforestation projects should not be broadly included with the other agriculture and forestry sub-sectors in terms of the considerable problems with measurement. Most reforestation projects are highly measurable when inventories are appropriately designed.

Verifiable – There should be no differentiation in the rules applied to projects regarding verification, any project or emissions estimation should be verified to the same level of confidence, having achieved the same stringency in monitoring, reporting and verification.

Long-term – The issue of long-term abatement or dealing with impermanence is a complex one for all land-based projects including reforestation. Removals need to be long-term in order to achieve an effective positive outcome in respect of the greenhouse effect. A removal enhancement should also be fully equivalent to an emission reduction.

The GGAS has been a leader in dealing with this issue and the model used there should be carefully considered. One problem with this method though is how it is

applied on a pool level. This makes it difficult to apply to small-scale projects, it is difficult to allocate the relative benefits from the pool to different contributors of a pool, and it is difficult to build a valid business case without knowing the ultimate composition of the pool.

It is suggested that consideration be given to using a stand-based equivalence approach instead of a pool-based approach.

Reforestation definition – For the first commitment period of the Kyoto Protocol the definition of reforestation is land that was cleared on 31st December 1989 and is planted after 1990. In North America in particular reforestation is often defined as land that has been out of forest cover for a period of more than 10 years. Setting a date is problematic as it means that each year you move further away from that date and hence the effective time out of forest becomes longer (more stringent). The problem with using a time period is that there is no one fixed point of reference and this makes assessing the change at a national level against a base year problematic.

Eligible start date – The eligible start date for reforestation is an important consideration. The GGAS applied that as defined for national accounting under the Kyoto Protocol and allowed for reforestation that was planted after 1st January 1990. CDM and JI rules allow a start date after 1st January 2000. The previous government proposed the 3rd June 2007 to coincide with the announcement of the scheme.

Most early GHG programs used 1990, some more recent programs apply 2000, but few use the announcement of the emissions trading scheme date at this stage due to the fact that it disadvantages early movers. Setting an eligible start date can be an effective additionality screen, however especially given that the GGAS (which included reforestation) was announced in 2001, it seems inappropriate to disadvantage early movers in this way.

Crediting should only occur from the beginning of an emissions trading scheme, however the start date should aim for international consistency, to allow some form of additionality screening but not to disadvantage early movers. As such it is suggested that an eligible start date of 1st January 2000 be applied.

Offset creation date – The date from which offsets can be created should be following announcement of implementation of the scheme, after finalisation of applicable rules and policies, and once accreditation has been achieved.

Accounting methodologies – As discussed above reforestation project developers should be able to propose the use of whatever accounting methodology best fits their capacity and needs, as long as the estimation process adequately allows for the relative uncertainty of the estimation.

Dynamic baselines – The use of dynamic baselines or the need to obtain recurrent project approval is understandable for many emission reduction projects but is not appropriate to reforestation projects. This would result in substantial investment uncertainty and is especially problematic for reforestation projects due to the significant up-front costs and the long abatement periods that are involved.