

# WENTWORTH GROUP OF CONCERNED SCIENTISTS

## Submission on the Carbon Credits (Carbon Farming Initiative) Bill 2011

### SUMMARY

Continued exponential rise in greenhouse gas emissions<sup>1</sup> is making the challenge of keeping global temperatures below 2°C above pre-industrial levels more and more difficult.<sup>2</sup>

The best estimates suggest that with immediate concerted global action, there is a possibility that temperatures won't increase beyond 2°C above pre-industrial levels.<sup>3</sup> Without global action however, climate modelling suggests global temperatures will increase by 4 degrees or more<sup>4</sup> - a level the world has not experienced for over 40 million years.<sup>5</sup>

This would have profound implications for Australian agriculture and for the health of the Australian environment.

It is in Australia's self interest that global greenhouse gas emissions are reduced. Australia needs to make its contribution.<sup>6</sup> We need deep emissions cuts and we need a price on carbon.

Most of the focus in climate change mitigation needs to be on reducing emissions from energy generation, manufacturing and transport. Whilst this is fundamental for reducing Australia's emissions, it is near impossible to achieve the scale of reductions required unless we also harness the full potential of our landscapes to remove carbon from the atmosphere and store it in vegetation and soils.

Storing carbon in trees, grasslands and soils lowers the economic cost of achieving Australia's targets and makes it possible for Australia and the world to adopt deeper emissions cuts.

CSIRO has estimated the biophysical potential of the Australian landscape to store carbon.<sup>7</sup> Whilst only a proportion of the total potential is practically achievable and will take time to build the capacity for it to take effect, if Australia were to capture 15% of the biophysical potential of our landscape to store carbon, it would offset the equivalent of 25% of Australia's current annual greenhouse gas emissions for the next 40 years.<sup>8</sup>

With a carbon price of \$25 tonne CO<sub>2</sub>e, this has the potential to generate over \$2 billion per annum into carbon farming offset investments across the Australian landscape.

The multiple public policy benefits for Australia in adopting full terrestrial carbon offsets are enormous, because healthy landscapes store vast quantities of carbon. Our natural landscapes and agricultural systems are built from carbon. Biodiversity is carbon.

A well designed carbon offsets scheme presents an economic opportunity of unparalleled scale to address a range of other great environmental challenges confronting Australia: repairing degraded land, restoring river corridors, improving the condition of agricultural soils, and conserving Australia's biodiversity.

However there are also significant risks from an uncapped, unregulated market. Without complementary land use controls and water use accounting arrangements in place, there is a risk that carbon forests could take over large areas of agricultural land or affect water availability. This could create adverse impacts on food and fibre production, and impact on regional jobs that are dependent on these industries.

The challenge for Australia is to use this new terrestrial carbon economy to drive investments towards improving the health of our agricultural soils, protecting areas of high conservation significance and repairing degraded landscapes, and away from high value agricultural land, while avoiding perverse impacts on the environment and community.

We see three clear opportunities in carbon farming:

1. Landholder #1 will want to restore creeks and rivers with trees and will enter a long-term agreement to store carbon on their property;
2. Landholder #2 will want to use innovative farming practices to improve the health of their grazing lands and restore carbon in their depleted agricultural soils; and
3. Landholder #3 will want to lease some or all of their property for carbon forestry.

We should use the carbon offsets markets to help landholders #1 and #2 wherever we can. However, landholder #3's goals may put them on a collision course between their personal economic benefit and broader community interests and societal demands - a clash between food and fibre crops and the demands on water and soil.

If we simply leave it to the market, the market will maximise carbon abatement without any guarantee of achieving any other benefits, and with the risk of large scale land use change. We need to manage the carbon offsets market so that carbon farming is guided into areas of highest benefit, and away from areas of high risk.

This submission makes recommendations on:

- linking carbon offset credits with a domestic (and international) price on carbon;
- managing the carbon offsets market using natural resource and land use plans;
- using economic instruments to address other market failures; and
- managing the transition.

We need to plan for where we want trees, where we produce food and where we might do both. Before communities disconnect, we need to equip our existing regional natural resource management institutions to do this.

If we plan it well, a price on carbon linked to a carbon offsets market is a once in a lifetime opportunity to pay landholders to manage our landscapes more sustainably.

It is an opportunity that our generation cannot afford to get wrong.

## 1. The Carbon Credits (Carbon Farming Initiative) Bill 2011

The Wentworth Group commends the Carbon Credits (Carbon Farming Initiative) Bill 2011:

1. It is a sound market-based approach for achieving greenhouse gas abatement in the land sector;
2. It establishes a solid framework for taking advantage of the potential for biosequestration to help Australia meet its international emissions reductions obligations; and
3. It provides a base upon which complementary measures can deliver multiple environmental, social and economic benefits.

Other positive features of the legislation include:

1. It enables broad participation across the land sector through clear and simple rules for including both Kyoto and non-Kyoto abatement activities (Table 1);
2. It creates an economic opportunity for Australian farmers and other land managers to generate accredited carbon credits which can be sold in Australia, and allows Australian agriculture to take advantage of the growing international carbon market;
3. It provides a government accredited mechanism for individuals and businesses, both in Australia and overseas, to voluntarily offset their greenhouse gas emissions; and
4. It commits to developing a low-cost, credible standard for co-benefits which can be recognised within the carbon market.

*Table 1: Kyoto and non-Kyoto abatement activities covered by the Carbon Farming Initiative*

	KYOTO CREDITS	NON-KYOTO CREDITS
SEQUESTRATION PROJECTS	<ul style="list-style-type: none"> <li>• Reforestation</li> <li>• Avoided deforestation</li> </ul>	<ul style="list-style-type: none"> <li>• Revegetation</li> <li>• Improved forest management</li> <li>• Native-forest protection</li> <li>• Forest restoration</li> <li>• Activities that enhance carbon in agricultural soils (grazing land management, cropland management, biochar)</li> </ul>
EMISSIONS AVOIDANCE PROJECTS	<ul style="list-style-type: none"> <li>• Reductions in emissions from agricultural production, including from:               <ul style="list-style-type: none"> <li>• livestock digestion;</li> <li>• fertiliser application or use;</li> <li>• manure management in intensive livestock farming;</li> <li>• reduced burning of stubble and agricultural crop residues; and</li> <li>• rice cultivation.</li> </ul> </li> <li>• Savannah fire management</li> <li>• Landfill emissions avoidance</li> </ul>	<ul style="list-style-type: none"> <li>• Management of emissions from feral animals</li> </ul>

## 2. Linking Carbon Offset Credits with a Domestic Price on Carbon

The Carbon Credits (Carbon Farming Initiative) Bill 2011 creates a legislative framework for the establishment of a voluntary carbon offsets market in Australia.

Whilst this is welcomed, the demand for offset credits in voluntary markets alone is unlikely to be of sufficient scale or at a high enough price to attract farmers, forest managers and other landholders to undertake substantial abatement activities.

In March 2011, the government announced a proposal for a carbon pricing mechanism comprising a fixed price on carbon, commencing on 1 July 2012, and transitioning to an emissions trading scheme after 3-5 years.<sup>9</sup> It has been suggested that an appropriate starting point would be fixed price starting between \$20 and \$30 per tonne CO<sub>2</sub>-e, rising at 4 percent (real) per annum for three years.<sup>10</sup>

To realise the full potential of abatement in the land sector, carbon offset credits must be able to be purchased by parties who are liable under a carbon price. Any such carbon pricing mechanism should therefore be linked to the Carbon Farming Initiative.

The proportion of a liable party's emissions that could be offset through the purchase of carbon credits could be capped (at least in the early stages).<sup>11</sup> Without a cap there is a risk that there will be insufficient incentive to ensure that the carbon pricing mechanism drives the transition to a low carbon emissions economy, nor will there be sufficient revenue available for household and industry assistance to compensate them for the carbon price.<sup>12</sup> There is no proposal to cap the sale of Australian carbon offset credits into the international market.

We support the capping of carbon offset credits for the reasons stated above and argue that the level of the cap should be in proportion to the level of greenhouse gas emissions that originate from the land sector in Australia.

The land sector currently contributes around 23 percent of Australia's greenhouse gas emissions.<sup>13</sup> Even with a 23 percent cap, a carbon price of \$25 tonne has the potential to generate over \$2 billion per annum into carbon farming offset investments across the Australian landscape. This represents a substantial amount of carbon finance available to farmers and other landholders and still leaves revenue of over \$9 billion for compensation to households and industry, and other purposes.

This scale of abatement potential from domestic offset projects, driven by potential future demand from an uncapped international offsets market, has the potential to bring about substantial environmental, social and economic changes across rural Australia.

It is essential that complementary institutional arrangements are put in place to ensure any perverse impacts are carefully managed.

This carbon offset market has the potential to yield over 100Mt CO<sub>2</sub>e<sup>14</sup> of abatement per annum from sequestration and emissions avoidance activities such as carbon forestry, biodiversity plantings, and changed grazing, fire management, cropping and livestock management practices.

The Wentworth Group also considers that all carbon offsets, not only Kyoto compliant offsets, should be linked to Australia's emissions target. Incorporating carbon offsets from both Kyoto compliant and non-Kyoto abatement activities (Table 1) within Australia's emissions reduction target will lead to further innovation across the land sector.

The rigour and integrity of the Carbon Farming Initiative, through the establishment of the Domestic Offsets Integrity Committee, and the monitoring, leakage and additionality standards, means that this is a policy position that should be supported by the international community. In time, the carbon farming legislation may also be used as a template for other nations to follow.

**Recommendation 1:**

Ensure there is sufficient demand in the market for carbon credits by linking the Carbon Farming legislation to the domestic and international carbon pricing mechanism.

**Recommendation 2:**

Liable parties under a future carbon price mechanism be entitled to offset up to 23% of their emissions by purchasing credits created under the Carbon Farming legislation.

**Recommendation 3:**

All carbon offsets, not only Kyoto compliant offsets, should be counted towards Australia's emissions reduction target.

### 3. Optimising the Carbon Offsets Market by Linking Natural Resource Management and Land Use Plans

This new carbon offsets market has the potential to transform how we manage our landscapes and how we farm in Australia.

An annual \$2 billion carbon offset market is four times greater than the entire annual budget of the Australian Government's *Caring for our Country* program, and this will grow over time as the price on carbon increases.

A price on carbon linked to a carbon offsets market is a once in a lifetime opportunity to pay landholders to manage our landscapes more sustainably. It is an opportunity that our generation cannot afford to get wrong.

A well designed carbon offsets scheme presents an economic opportunity of unparalleled scale to help pay Australian farmers and other land managers address a range of other great environmental challenges confronting Australia: repairing degraded land, restoring river corridors, improving the condition of agricultural soils, and conserving Australia's biodiversity.<sup>15</sup>

However there are also significant risks from an unregulated market. Without complementary land use controls and water use accounting arrangements in place, there is a risk that carbon forests could take over large areas of agricultural land or affect water availability. This could create adverse impacts on food and fibre production, and impact on regional jobs that are dependent on these industries.

We therefore support the objective of the Bill to *"increase carbon abatement in a manner that: (a) is consistent with the protection of Australia's natural environment; and (b) improves resilience to the effects of climate change"*.

However, we argue that the objective should be extended to ensure opportunities for biodiversity conservation are promoted, and that carbon abatement activities maximise other social, environmental and economic benefits, and to ensure any adverse impacts are avoided.

#### **Recommendation 4:**

**That Objective 3 of the Bill is amended to read:**

*The third object of this Act is to increase carbon abatement in a manner that:*

- (a) is consistent with the protection of Australia's natural environment;*
- (b) improves the resilience of Australian landscapes to adapt to the effects of climate change;*
- (c) maximises other social, environmental and economic benefits, and avoids any adverse impacts.*

The Carbon Farming Bill acknowledges that if we simply leave it to the market, the market will maximise carbon abatement without any guarantee of achieving any other benefits. There are provisions in the scheme aimed at optimising community and environmental benefits, such as: the establishment of a 'negative list' (Pt 3, Div 12, clause 56); the establishment of a co-benefits index (p7, Explanatory Memorandum); requiring regional natural resource management plans to be taken account of (Pt 3, Div 2, clause 23); and monitoring for impacts.

These are important provisions, particularly for managing the transition to a full carbon farming offset market, but they alone are not sufficient to guarantee the objective of maximising benefits and avoiding adverse impacts.

Governments will also need to use our existing regional natural resource management institutions and state, territory and local government land use planning schemes to direct carbon offset investments to achieve these outcomes across the Australian landscape.

Regional NRM plans coupled with land use plans can help to identify and manage community and environmental benefits and impacts from carbon farming, and can work together to both incentivise and regulate carbon offset activities.

Existing regional NRM plans identify priorities for working with land managers to invest in improving biodiversity, soils, water and other natural resources. Existing land use plans (and development approval processes) in state, territory and local governments regulate where and how land use changes and how land is managed. The challenge for governments is to link the carbon offsets markets into these two existing complementary systems.

Both NRM and land use planning, when done well, involve communities and stakeholders in determining where and how land should be used and managed to achieve a variety of objectives - social, economic and environmental.

Public investment in regional NRM bodies across Australia over the past decade has created the institutional capacity across Australia to produce more spatially explicit regional plans, and some state governments have begun this process.<sup>16</sup>

Regional NRM plans can be used to identify where carbon offset projects might be located in a region to deliver multiple benefits. They can also identify where there might be impacts on the environment or communities if offset projects were to take place in certain locations. For example, a regional NRM plan might identify where the highest biodiversity benefit might be achieved through environmental reforestation, or where there might be risks to water availability from plantation establishment.

In many cases, it is local and regional communities that are best placed to determine whether or not a project is likely to cause adverse impacts. It is local and regional communities that are often best placed to make decisions on the most appropriate locations for offset projects, and NRM and land use plans are the appropriate places for communities to have input.

The most effective approach for optimising carbon farming offsets at the appropriate scale is for state, territory and local governments to link regional NRM plans across Australia to land use planning schemes and zone land according to its suitability for carbon farming offsets.<sup>17</sup> Land use planning schemes can then guide carbon farming offsets into areas of highest benefit and away from areas of risk, without significantly undermining the terrestrial carbon market.

For example, in areas of Australia where an offset activity such as carbon forestry is likely to cause adverse economic, social or environmental impacts, state, territory and local governments would amend their land use planning schemes to zone land according to its suitability for carbon forestry:

- Green light areas identified in regional NRM plans as suitable for biodiversity plantings could be zoned “permitted use”, subject to compliance with environmental guidelines with regard to location and species type;
- Red light areas of high value arable land deemed unsuitable for carbon forestry because of its expected long-term impact on food production, jobs or regional economic development could be zoned “prohibited use”; and
- Amber light areas for areas not in the two categories above could be zoned “permitted with consent”, subject to a formal development application or environmental impact assessment process.<sup>18</sup>

Governments (through planning schemes and approvals processes) might choose to place upper limits on the amount of carbon forestry that can occur in a region or catchment. This could be an appropriate tool for avoiding adverse impacts on water availability or community values arising from large scale land use change.

A model for linking natural resource management planning to land use planning for carbon forestry is being developed by the Queensland Government.<sup>19</sup> It has agreed to identify economic opportunities for carbon forestry, resource its regional NRM groups to work with the community to identify areas in which carbon forestry could deliver multiple benefits, and then amend planning schemes to consider carbon forestry and steer it away from valuable agricultural land.

The challenge for the Australian Government is that whilst it is responsible for the creation of the carbon offsets market, it does not have constitutional power over land use and land management. This power resides with the states. The Commonwealth does however, by creating the carbon offsets market, have a responsibility to ensure that appropriate institutional arrangements are put in place.

It is in the interests of state and Commonwealth governments to agree on a framework for natural resource management and land use planning systems to drive terrestrial carbon investments.

Regional and state level ownership of the Carbon Farming Initiative is important for its success. We therefore need to find a way to encourage regional NRM bodies and state and local governments to upgrade their NRM and land use plans for optimising carbon in the landscape.

**Recommendation 5:**

The Commonwealth establish a 3-year Carbon Farming Program, funded from a portion of the revenue from a carbon price, to provide financial assistance to regional NRM bodies and state, territory and local governments to upgrade regional NRM plans.

Regional plans should identify where in the landscape carbon offset investments can improve the health of agricultural soils, protect areas of high conservation significance and repair degraded landscapes, and where there might be perverse impacts on high value agricultural land or water availability.

Where appropriate, the outcomes of these regional planning processes should be incorporated into land use planning schemes.

**Recommendation 6:**

The Act should authorise the Domestic Offsets Integrity Committee or another independent body, to accredit the terrestrial carbon components of regional NRM plans against a set of minimum standards consistent with the objectives of the Act.

This will ensure that planning processes are of a sufficient standard to optimise community and environmental benefits from the Carbon Farming Initiative.



## 4. Using Economic Instruments to Address Other Market Failures

Whilst land use planning, informed by regional NRM plans, can make a substantial contribution to optimising community and environmental benefits arising from the Carbon Farming Initiative, it alone does not guarantee offset projects will maximise environmental, social and economic benefits.

The Carbon Credits (Carbon Farming Initiative) Bill proposes the development of a co-benefits index to quantify the benefits of a given carbon offset project. The co-benefits index is intended to enable offset credits generated by that project to receive a premium price.<sup>20</sup>

This is a great innovation and should be supported. However a voluntary market alone it is not likely to fully address the market failure in accounting for the value of all environmental co-benefits, such as biodiversity conservation, salinity mitigation, and soil health and water quality benefits.

Governments should therefore take advantage of this innovation and use it as an opportunity to explore other instruments to encourage markets to better conserve our natural capital.

There are several options for using complementary economic instruments to contribute to the multiple benefits arising from the carbon offsets market. Governments could for example:

1. Redirect investments from existing government environmental programs, such as *Caring for Our Country*, to support regional NRM bodies, Landcare groups and others, to 'top up' offset projects with additional incentives to leverage multiple public benefit outcomes;
2. Create additional voluntary environmental markets, such as biodiversity offset markets or environmental stewardship schemes;
3. Provide targeted taxation incentives to landholders that are engaged in accredited co-benefits projects on properties identified in regional NRM plans as being of high conservation significance; or
4. Assist in the establishment of farm or sector based stewardship accreditation schemes.

### **Recommendation 7:**

**The Government review existing government environmental programs, such as *Caring for Our Country*, to support regional NRM bodies, Landcare groups and others, to 'top up' carbon offset projects with additional incentives to leverage multiple public benefit outcomes.**

### **Recommendation 8:**

**The Government explore options for using economic instruments to more fully value co-benefits such as voluntary environmental markets, taxation incentives or stewardship accreditation schemes.**

## 5. Managing the Transition

The use of 'positive' and 'negative' lists outlined in the Carbon Credits (Carbon Farming Initiative) Bill is an innovative way of managing the complexity of carbon offset eligibility assessment. The positive list is a simple means of streamlining project assessment against the additionality standard, and the negative list is a way of preventing carbon farming activities that have a high potential for perverse outcomes.

It is also possible to use this mechanism to manage the transition to a properly planned and regulated carbon offsets market. Regional NRM plans and local land use planning instruments should eventually become the primary means by which a project is assessed for environmental and community benefits and impacts.

We have recommended that regional NRM plans are upgraded to identify where in the landscape carbon offset projects can achieve co-benefits, and where there might be adverse impacts. We have also suggested that the outcomes of these regional planning processes should be incorporated into land use planning schemes.

However, it will take time to improve these plans so they can do that job – up to 3 years to do it well across Australia. Good planning takes time. Therefore we must find mechanisms in the interim to optimise environmental and community benefits from carbon farming.

As an interim measure, the positive list could for example, encourage carbon offset projects which involve environmental plantings in riparian zones, or environmental plantings on a small proportion of a property (to avoid wholesale land use change).

The negative list could be used as an interim measure to restrict projects that when unregulated have the potential to cause adverse impacts, such as exotic species plantings, or reforestation projects greater than a specified size that don't hold a water access license, until the necessary regulatory instruments are in place.

The benefits and impacts arising from different types of carbon offsets projects will vary depending on local and regional factors. The lists could be tailored to different projects in different regions. Therefore, the Government should seek input from state, territory and local governments, and regional NRM bodies on draft lists before including them in the regulations.

As the regional NRM bodies, state and territory governments, local councils and communities develop their regional plans, the positive and negative lists would be amended.

Examples of how the positive and negative lists could be used to streamline project assessment against the additionality test and as an interim transition to a planned approach for optimising environmental and community benefits are described in Table 2.

### **Recommendation 9:**

**Use the positive and negative lists to streamline project assessment, prevent projects with a high potential for perverse impacts, and as an interim mechanism, for transitioning to an accredited regional planning system to ensure the carbon offsets market is used to optimise environmental, economic and community benefits.**

### **Recommendation 10:**

**The Government should seek input from state, territory and local governments, and regional NRM bodies, on the use of the 'positive' and 'negative' list, as an interim measure, before finalising the regulation.**

*Table 2: Examples of projects that could be included on 'positive' and 'negative' lists*

	EXAMPLES FOR THE 'POSITIVE' LIST	EXAMPLES FOR THE 'NEGATIVE' LIST
ONGOING	<ol style="list-style-type: none"> <li>1. Biodiversity plantings on suitable land identified in an accredited regional NRM plan.</li> <li>2. Carbon forests on land identified in an accredited regional NRM plan.</li> <li>3. Land containing a registered conservation covenant.</li> </ol>	<ol style="list-style-type: none"> <li>1. Projects that involve the conversion of harvest plantations into permanent carbon sinks.<sup>21</sup></li> <li>2. Carbon forests except those complying with an accredited regional NRM plan, including an assessment of the impacts on fresh water resources.</li> </ol>
TRANSITIONAL LIST	<ol style="list-style-type: none"> <li>1. Biodiversity plantings within 50 metres of prescribed rivers and streams.</li> <li>2. Biodiversity plantings occupying no more than 15% of a property.</li> <li>3. Projects certified by a regional NRM body that improve critical habitat and/or are consistent with recovery plans/conservation advice.</li> </ol>	<ol style="list-style-type: none"> <li>1. Plantings: <ul style="list-style-type: none"> <li>• in large contiguous blocks;</li> <li>• without a water license that occupy greater than 10% of a farm;</li> <li>• occupying a whole farm; or</li> <li>• dominated by exotic species.</li> </ul> </li> </ol>

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- Prof. Lesley Hughes, Dept Biological Sciences, Macquarie University.

## Notes and References

- <sup>1</sup> Royal Society, 2011. "Four degrees and beyond: the potential for a global temperature increase of four degrees and its implications" *Philosophical Transactions of the Royal Society A* (2011) 369.
- <sup>2</sup> Copenhagen Accord, 2009. Australia, along with 113 other countries, is a signatory to the Copenhagen Accord which agreed to hold any increase in global temperature to below 2°C above pre-industrial levels.
- <sup>3</sup> Meinshausen, M., Meinshausen, N., Hare, W., Raper, S., Frieler, K., Knutti, R., Frame, D.J., & Allen, M.R., 2009. "Greenhouse-gas emission targets for limiting global warming to 20C" *Nature*. 458. 30 April 2009.
- <sup>4</sup> Royal Society, 2011. "Four degrees and beyond: the potential for a global temperature increase of four degrees and its implications" *Philosophical Transactions of the Royal Society A* (2011) 369.
- <sup>5</sup> Barrett, P. 2005. *What 3° of global warming really means*. Pacific Ecologist, Summer 2005/06.
- <sup>6</sup> Australian Government, 2010. Submission to the Copenhagen Accord, United Nations Framework Convention on Climate Change. Under the Copenhagen Accord, Australia has committed to an unconditional 5% reduction by 2020 on 2000 levels and up to 15% or 25% conditional on the extent of action by other countries.
- <sup>7</sup> CSIRO, 2009. *Analysis of greenhouse gas mitigation and carbon biosequestration from rural land use*. Edited by Sandra Eady, Mike Grundy, Michael Battaglia and Brian Keating for the Queensland Premiers Climate Change Council.
- <sup>8</sup> Wentworth Group of Concerned Scientists, 2009. *Optimising carbon in the Australian landscape: How to guide the terrestrial carbon market to deliver multiple economic and environmental benefits*. October 2009.
- <sup>9</sup> <http://www.climatechange.gov.au/government/initiatives/multi-party-committee/carbon-price-framework.aspx>
- <sup>10</sup> Garnaut, R, 2011. *Carbon pricing and reducing Australia's emissions*. Update Paper 6. Garnaut Climate Change Review Update 2011. Commonwealth of Australia.
- <sup>11</sup> Garnaut, R, 2011. *Transforming rural land use*. Update Paper 4. Garnaut Climate Change Review Update 2011. Commonwealth of Australia.
- <sup>12</sup> Professor Garnaut proposes that the purchase of Kyoto offset credits be capped at 10 percent by 2020 and non-Kyoto offset credits be capped at 4 percent by 2020. See Garnaut Climate Change Review Update Paper 4.
- <sup>13</sup> Australian Government, 2010. *Australian National Greenhouse Accounts: National Greenhouse Gas Inventory May 2010*. Department of Climate Change and Energy Efficiency.
- <sup>14</sup> Calculated on the basis of 23 percent of the emissions of the sectors likely to be covered by the carbon pricing mechanism.
- <sup>15</sup> Wentworth Group of Concerned Scientists, 2002. *Blueprint for a Living Continent: A way forward from the Wentworth Group of Concerned Scientists*. November 2002.
- <sup>16</sup> Natural Resources Commission, 2010. *Progress towards healthy resilient landscapes: Implementing the Standard, Targets and Catchment Action Plans*. Progress Report December 2010. NSW Government.
- <sup>17</sup> See discussion on regulating the terrestrial carbon market in Wentworth Group of Concerned Scientists, 2009. *Optimising carbon in the Australian landscape: How to guide the terrestrial carbon market to deliver multiple economic and environmental benefits*. October 2009. p16.
- <sup>18</sup> As for note 15.
- <sup>19</sup> DERM, 2010. *Queensland Government Response to Premier's Council on Climate Change. Working Paper 4 Capturing carbon in the rural landscape: Opportunities for Queensland*. May 2010. Available at <http://www.climatechange.qld.gov.au/>
- <sup>20</sup> Page 6 of the Explanatory Memorandum to the Carbon Credits (Carbon Farming Initiative) Bill.
- <sup>21</sup> Page 14 of the Explanatory Memorandum to the Carbon Credits (Carbon Farming Initiative) Bill.