

Chapter 4

The impact of an emissions trading scheme for the Australian agricultural sector

Introduction

4.1 The impact of an emissions trading scheme on the Australian agricultural sector was a particular point of concern raised in submissions and evidence during the course of the Inquiry. The committee received numerous submissions about the design and coverage of an emissions trading scheme, and specifically the methodology for accounting for agriculture's emissions and removals of greenhouse gases was a source of much debate throughout the inquiry.

4.2 This chapter begins with a discussion of the Government's Carbon Pollution Reduction Scheme (the Scheme) proposal and then moves on to discuss some of the concerns raised in relation to an emissions trading scheme and the agricultural and forestry sectors. All submissions to the Inquiry were received prior to the announcement of details of the Scheme. For this reason, some of the issues in this chapter are not discussed in the context of specific proposals in the Scheme.

The Carbon Pollution Reduction Scheme

4.3 In July 2008, the Australian Government released its Green Paper on the Carbon Pollution Reduction Scheme (Green Paper), which outlines the Government's approach to the design of a national emissions trading scheme.¹ The Carbon Pollution Reduction Scheme (the Scheme) will be a 'cap and trade' scheme. According to the Green Paper this will create a carbon price and ensure that emissions are reduced at the lowest possible cost.²

4.4 Although the Green Paper does not address the levels of the caps in the Scheme, the Government has indicated that the caps will be 'consistent with the Government's commitment to reduce national emissions by 60% of 2000 levels by 2050'.³

4.5 The Green Paper states that the Scheme should have 'maximal practical coverage of greenhouse gas emissions and sectors':

Broad scheme coverage is a key element in reducing the overall cost to the Australian economy of achieving emissions reductions. Broad coverage

1 See Department of Climate Change, *Green Paper on the Carbon Pollution Reduction Scheme* (Green Paper), July 2008, p. 1.

2 Green Paper, p. 12.

3 Green Paper, pp 11-12.

will increase opportunities for low-cost emissions reductions and ensure that the cost of achieving those reductions is shared as equitably as possible across the economy. Broad coverage will also ensure that competing firms and sectors operate within equivalent market conditions.⁴

4.6 However, the Government acknowledges that there are practical limitations to broad coverage by the Scheme, notably compliance costs and the capacity to estimate emissions in an unbiased manner.⁵

4.7 The Green Paper identifies several characteristics of agriculture emissions which create difficulties for including agriculture in the Scheme. As was noted in Chapter 3, agriculture emissions vary in response to management practices and climatic conditions. In addition, the agricultural sector has a large number of entities with relatively low emissions, that is, less than one kilotonne of carbon dioxide equivalent per year.⁶

4.8 The Green Paper states that the Government is disposed to include agriculture emissions in the Scheme by 2015 and to make a final decision on this issue in 2013.⁷ The Green Paper does note that in the event that coverage of agriculture emissions in the Scheme proves impractical, the Government will consider alternative mitigation measures, for example: mandatory adoption of emissions standards, certain low-emissions technologies or management practices. However, the Green Paper notes that such measures are 'unlikely to be as cost effective as market-based approaches such as emissions trading and are likely to increase overall abatement costs'.⁸ The Green Paper also notes that offsets are another mechanism that could provide firms in uncovered sectors to undertake abatement, however:

By their very nature ... offsets assist other sectors to meet their emissions obligations, rather than providing a means by which a sector contributes to national emissions reductions.⁹

Accounting for greenhouse gas emissions and removals

4.9 In the event that agriculture were to be covered by an emissions trading scheme, the accounting framework will be important because it determines which

4 Green Paper, p. 15.

5 Green Paper, p. 96.

6 Green Paper, p. 123. See also Department of Agriculture, Fisheries and Forestry and Department of Climate Change, *Submission 34*, p. 11. The Green Paper states that, in general, the emissions threshold for direct obligations under the scheme would apply to entities with facilities which have direct emissions of 25 kilotonnes of carbon dioxide equivalent a year or more, see p. 98.

7 Green Paper, p. 126.

8 Green Paper, pp 91, 123 and 138.

9 Green Paper, p. 91.

agricultural emissions and sinks will be counted in an emissions trading scheme and those which will be excluded.

4.10 Australia has obligations under the United Nations Framework Convention on Climate Change (UNFCCC) and under the Kyoto Protocol to the UNFCCC (Kyoto Protocol) for monitoring and reporting its greenhouse gas emissions.¹⁰

4.11 Ms Margaret Blakers explained to the committee the differences between the UNFCCC and Kyoto Protocol accounting frameworks for greenhouse gas emissions estimates:

... the Intergovernmental Panel on Climate Change – sets the methodology. It says how to measure the carbon. Then there are two ways of reporting the accounts. One is the Kyoto reporting and the other one is what is called UNFCCC accounting. That is attempting to be more like a full carbon accounting report.

The Kyoto accounting is a partial report. ... It looks only at land use change, in particular at land use change that relates to forests, because the assumption was that that was where the biggest emissions and uptake would happen. So, for example, it does not look at soil carbon, it does not look at degradation of rangelands and it does not look at logging native forests.

The UNFCCC account is more comprehensive. It does look at logging native forests. It still does not look, in the way that it is done in Australia, at soil carbon, rangelands or any kind of non-forest vegetation. In the Australian version it does not even look at conservation land. That is not counted. It does not look at wetlands, for example. So even the UNFCCC accounting ... is not yet anything like full carbon accounting, particularly the way in which it is implemented in Australia.¹¹

4.12 The Green Paper states that the Government's preferred position in relation to accounting under the Carbon Pollution Reduction Scheme (the Scheme) 'should be consistent with the internationally agreed climate change framework and cover only domestic emissions sources and sinks that are counted in Australia's Kyoto Protocol emissions inventory'.¹²

10 The United Nations Framework Convention on Climate Change (UNFCCC) is an international treaty setting out an overall framework for intergovernmental efforts to address climate change. Australia ratified the UNFCCC in December 1992. The Australian National Greenhouse Accounts is the accounting system developed to monitor and record changes in Australia's greenhouse gas emissions under the UNFCCC, see Department of Climate Change, *Australia's National Greenhouse Accounts*. Available at: <http://www.climatechange.gov.au/inventory/index.html>, accessed 29 October 2008. The National Greenhouse Gas Inventory estimates of Australia's greenhouse gas emissions are based on the accounting rules that apply to Australia's Kyoto Protocol emissions target of 108% of 1990 levels during the period 2008-2012.

11 *Committee Hansard*, 30 June 2008, p. 117.

12 Green Paper, p. 122.

4.13 Ms Blakers explained to the committee her concerns about proposals for an emissions trading scheme which did not include full carbon accounting.

We are about to embark on a major economic change – namely, emissions trading. I do not know on which accounting system it will be based but, whichever accounting system it is, it is not going to be full carbon accounting. That leaves the potential for very major what people call 'perverse outcomes' because, if you are not counting everything properly – and, in particular, if you are not disaggregating it; looking at the emissions on the one side and the uptake on the other side – you do not know what you are dealing with. It is like a shop trying to work out what to sell and what stock to get in when all it knows is that it has had so many dollars worth of sales in the last six weeks but it does not know whether it sold oranges or barley sugar. It is the same problem with the carbon accounts. If you only have net figures, you do not know what you are dealing with – you do not know where the emissions are, you do not know where the uptake is and you cannot make policies to get rid of the emissions, which I would say is the primary objective, along with encouraging uptake where that is appropriate.¹³

4.14 Ms Blakers indicated to the committee that the UNFCCC system would be the best system to be used in an emissions trading scheme.¹⁴

The Kyoto Protocol accounting framework

4.15 The committee heard from a number of stakeholders concerned that the Kyoto Protocol framework would be adopted for accounting under the emissions trading scheme. This section of the report outlines how agricultural and forestry emissions are accounted for under the Kyoto Protocol accounting framework.

4.16 In determining its greenhouse gas emissions, a party to the Kyoto Protocol must account for emissions and removals from the following sectors: energy; industrial processes; solvent and other product use; agriculture; and waste.¹⁵ As described in Chapter 3 of the report, agricultural emissions in this context include: enteric fermentation, manure management, rice cultivation, agricultural soils, prescribed burning of savannas, and field burning of agricultural residues.

4.17 In addition, under Article 3.3 of the Kyoto Protocol, a country must account for greenhouse gas emissions and removals in relation to direct, human-induced afforestation, deforestation and reforestation activities. Under Article 3.4 of the Kyoto Protocol, countries may also elect to include emissions and removals from the following activities: revegetation; forest land management; cropland management; and grazing land management.

13 *Committee Hansard*, 30 June 2008, pp 117-118.

14 *Committee Hansard*, 30 June 2008, p. 122.

15 See Article 3.1 of the Kyoto Protocol and Annex A of the Kyoto Protocol.

4.18 In counting emissions towards its Kyoto Protocol target, Australia counts emissions from sources covered under Article 3.3 of the Kyoto Protocol, but has elected not to count sources covered under Article 3.4 of the Kyoto Protocol.¹⁶ By implication, this means that farming practices covered by Article 3.4 of the Kyoto Protocol would not be included in the Scheme, were agriculture to be covered.

4.19 In responding to a question on notice, the Department of Climate Change stated that it has not conducted a regulatory impact assessment in relation to the inclusion of activities under Articles 3.3 and 3.4 of the Kyoto Protocol in Australia's emissions accounts. The Department of Climate Change went on to explain why the Australian Government elected not to include activities under Article 3.4 of the Kyoto Protocol in its emissions accounts:

Australia has elected not to account for Article 3.4 activities for the first commitment period. This decision was based on a risk analysis prepared by the former Department of the Environment and Heritage (in consultation with other relevant departments), as well as consultations undertaken with state and territory governments and national agriculture and forest industry stakeholders. The risk analysis found that the accounting rules, Australia's variable climate, and the potential for disturbances such as bushfires introduce a high risk of significant negative emissions outcomes. The stakeholders endorsed the non-election of Article 3.4 activities.

The treatment of Article 3.3 and 3.4 activities under post-2012 international climate change agreements will be considered in negotiations under the United Nations Framework Convention on Climate Change. The Australian Government is consulting stakeholders on this matter in developing its position for these negotiations, and will undertake further consultation as negotiations progress.¹⁷

4.20 In relation to coverage by the Scheme of afforestation, deforestation and reforestation activities, as defined in Article 3.3 of the Kyoto Protocol, the Government's preferred positions are as follows:

- all reforestation (as defined for the 2008-2012 period of the Kyoto Protocol) would be included in the Scheme, on a voluntary basis, from the commencement of the Scheme in 2010, with design details to be determined;¹⁸
- deforestation will not be included in the Scheme because Australian deforestation emissions have reduced markedly since 1990, due to increased protections against land clearing.¹⁹

16 Department of Climate Change, *Australia's National Greenhouse Accounts: The Australian Government's Initial Report under the Kyoto Protocol*, 2008, p. 4.

17 Department of Climate Change, *Answers to Questions on Notice*, 25 August 2008.

18 Green Paper, p. 132.

19 Green Paper, p. 135.

4.21 The committee notes that deforestation activities are not included in the Scheme, despite being counted towards Australia's Kyoto Protocol targets.

Implications of an emissions trading scheme for agriculture

4.22 As was noted in the introduction, the details of the Scheme were not available at the time that the committee received submissions and held hearings in this Inquiry. Despite this, the committee received submissions and evidence on the implications of an emissions trading scheme for agriculture. One of the key issues raised was the possibility that an emissions trading scheme would not provide for full carbon accounting, particularly activities which are covered by Article 3.4 of the Kyoto Protocol.

4.23 Ms Nicolette Boele of the Agricultural Alliance on Climate Change (AACC) told the committee why she 'intuitively' supported a system of full carbon accounting if agriculture were included in an emissions trading scheme:

...currently, under accounting protocols our commitments under the first Kyoto period are that we count the bad stuff. We count the methane emissions out the front end of the cows and we count the nitrous oxides that oxidise through urea et cetera and the relationship with the soils and other things like soil conditioners. We do not count the good stuff. We do not give farmers the opportunity to actually get paid to improve and better adapt to the changing climatic patterns. That, to me, is a complete opportunity lost.²⁰

4.24 Mr Tim Wiley and Mr Bob Wilson provided the committee with a submission outlining why they supported full carbon accounting, particularly the inclusion of activities which increase soil carbon levels:

Farm management methods can change the amount of carbon in the soil. A decrease in soil carbon is accounted for as an increase in a countries green house gas emission. While an increase in soil carbon levels is accounted as a reduction in emission for a country.

... With full carbon accounting farmers could off set their emissions from live stock and energy use through the sequestration of carbon in vegetation and soil.²¹

4.25 Mr Wiley and Mr Wilson went on to note that the inclusion of Article 3.4 sinks in an emissions trading scheme could provide a much needed source of finance to farmers:

20 Ms Nicolette Boele, *Committee Hansard*, 1 July 2008, pp 18-19.

21 *Submission 41*, pp 13 and 25. Soil carbon sequestration is discussed further in Chapter 3 of this report. See also: Mr Ben Fargher, Chief Executive Officer, National Farmers' Federation *Committee Hansard*, 1 July 2008, p. 27 and Mr Charles McElhone, Manager, Economics, National Farmers' Federation, *Committee Hansard*, 1 July 2008, p. 28.

Carbon trading could provide the finance for agriculture restructure. If soil carbon (Kyoto Article 3.4 sinks) was recognised under the proposed national Emissions Trading Scheme (ETS) a new equity in agricultural land will be created. Farmers will then be able to borrow against their carbon sequestered or forward sell enough to finance the changes to their systems.²²

4.26 The Australian Landcare Council noted that landholders could be paid for offsets provided, but also stated that such offsets are viewed with caution by rural industries because of the potential compliance constraints and liabilities involved, at least until national policy is more settled.²³

4.27 The committee did receive evidence that expressed doubts as to the value of agricultural sequestrations under an emissions trading scheme. For example, the Queensland Government's submission stated:

There is an expectation that there will be some financial benefit to farmers from the carbon they sequester in vegetation or in the soil, and carbon-trading schemes are currently being promoted to farmers. The value to farmers of carbon sequestration is highly speculative until the design of the trading scheme is resolved, and a means of verifying sequestration is determined.²⁴

4.28 The Future Farm Industries Cooperative Research Centre (Future Farm Industries CRC) described as 'hype' the proposition that farmers will be able to sequester carbon in plants and soils and sell it through emissions trading:

Experience with the NSW Greenhouse Gas Abatement Scheme has already shown that individual farmers and incremental improvements in soil carbon will not be in the market.

These schemes are for larger players who can validate to a fussy buyer or regulator the amount of carbon sequestered, underwrite its security for 70-100 years, and manage the risk of depletion events such as fire and erosion.²⁵

4.29 Ms Boele cited the trading of soil carbon on the Chicago Climate Exchange as one example of where soil carbon trading had been successfully incorporated into an emissions trading scheme.²⁶ Ms Boele also explained to the committee how the

22 *Submission 41*, p. 30.

23 *Submission 13*, p. 4.

24 *Submission 30*, p. 7. See also: Victorian Department of Primary Industries, *Submission 27*, p. 18; and Dr Beverly Henry, Manager, Environment, Sustainability and Climate Change, Meat & Livestock Australia, *Committee Hansard*, 1 July 2008, p. 14.

25 Future Farm Industries Cooperative Research Centre, *Submission 38*, attachment: Mr Kevin Goss, Chief Executive Officer, Future Farm Industries, Cooperative Research Centre, *Address to the Rural Press Club of Victoria*, 28 February 2008, p. 3.

26 *Committee Hansard*, 1 July 2008, p. 19.

Chicago Climate Exchange had found a way around the 'imperfect science of soil carbon':

They divide the continent of North America into two rainfall zones. Essentially, there is desert, which they give a 0.4 value to, and then there are regular rainfall areas, which get a value of one. Then there are approximately seven or eight different soil types ... They have done the tests on the ground about changing practice A to practice B with a fence line in the middle, and done the science on approximately how much extra carbon they get in the soil. Then they have just done these proxies...where they have just said that a certain strand of eucalyptus planted in this geographical region is going to have a proxy value of X. It is the same thing they have done in the United States: if you change your management from A to B, you get a credit of whatever it might be. That credit then becomes, at the end, a function of which rainfall pattern you are in – high or low – and then which soil type as well. Then they discount it even further to provide enough market confidence. Of course, some farmers decide not to do it because they are sequestering a lot more carbon than the credit they get for it.²⁷

4.30 The committee also notes Ms Boele's statements about the role of governments in providing confidence to achieve these ends:

What we found was that yes, there are still barriers to understanding the science ... but equally what is missing is market confidence that there will in fact be a market for soil carbon. I am not getting any signals yet from the Commonwealth or from the elected officials that soil carbon can be part of Australia's international response on climate change. Without that statement – and hopefully we will get it in the Green Paper this month – it is little wonder that [Meat and Livestock Australia] is not investing extra money in it and that the private sector, like Macquarie Bank, has not leapt on doing deals with farmers for soil carbon improvements.

Without that certainty you will not get farmers paid to improve the land. We do not actually have to have huge amounts in the government coffers to do it. The private sector can probably do quite a bit of that.²⁸

4.31 The need for political guidance on this issue was emphasised to the committee on its visit to the Binu district of Western Australia. Mr Wiley and Mr Wilson noted in their submission that mining companies in Western Australia are interested in funding research into farming systems that sequester carbon. However, as Mr Wilson pointed out when the committee visited Binu following the release of the Green Paper, in the event that soil carbon sequestration was not covered in the emissions trading scheme, there would be little motivation for mining companies to invest in this type of research.

27 *Committee Hansard*, 1 July 2008, p. 20.

28 *Committee Hansard*, 1 July 2008, p. 16.

Implications of an emissions trading scheme for the forestry sector

4.32 Submissions and evidence to the inquiry from the forest industry demonstrated that it supports the forestry and plantation industry playing an important role in an emissions trading scheme. However, the committee also heard concerns from those in the agricultural industry about the potential impacts of including forestry sinks, albeit voluntarily, in an emissions trading scheme. The role that the forestry industry can play in adapting to, and mitigating, climate change is discussed in Chapter 3.

4.33 AP3, the peak representative body for the Australian plantation, plantation products and paper industry, outlined some of the reasons it believed that reforestation was amenable to inclusion in an emissions trading scheme:

...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.

... 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.²⁹

4.34 In its submission to the Garnaut Climate Change Review, the National Association of Forest Industries outlined the potential for carbon sequestration offered by the expansion of plantation forests covered in Australia's Kyoto Protocol targets.³⁰ However, the Green Institute described offsetting emissions by replanting as 'slow and inefficient' and argued that tree planting should only be allowed to create offsets under an emissions trading scheme in very limited circumstances.³¹

4.35 Another aspect of an emissions trading scheme that the committee was interested in was whether there is a point at which plantations become more valuable as a carbon sink, than for timber products. Ms Blakers outlined for the committee the type of situation where there may be plantations that become too expensive to cut down:

29 *Submission 9*, p. 5.

30 National Association of Forestry Industries and Tree Plantations Australia, *Garnaut Climate Change Review: Issues paper 1 – Climate Change: Land use – Agriculture and Forestry. A response by the national Association of Forest Industries and Tree Plantations Australia*, December 2007. Available at: [http://www.garnautreview.org.au/CA25734E0016A131/WebObj/35549ResponsetoIssuePaper1-NAFIandTPASubmission-V2/\\$File/35549%20Response%20to%20Issue%20Paper%201%20-%20%20NAFI%20and%20TPA%20Submission%20-%20V2.pdf](http://www.garnautreview.org.au/CA25734E0016A131/WebObj/35549ResponsetoIssuePaper1-NAFIandTPASubmission-V2/$File/35549%20Response%20to%20Issue%20Paper%201%20-%20%20NAFI%20and%20TPA%20Submission%20-%20V2.pdf), accessed 22 November 2008, p. 4.

31 Green Institute, *Supplementary submission*, tabled 30 June 2008.

So the question of having wood as a joint product with carbon is a really critical one. If you end up with a plantation and the current rules for permanence say 70 years – that is, under the government's greenhouse-friendly rules—if you are committed to holding your plantation or your pool of plantations for 70 years, then the price of carbon will have gone up enormously but the price of wood very likely will not have, and so you might very well end up with plantations that you can never afford to cut down because the carbon emissions cost will be too great.³²

4.36 Mr Hansard indicated that NAFI had not done any modelling on this point.³³

4.37 The committee also heard concerns about the environmental impacts that may result if an emissions trading scheme was to result in an increase in forestry at the expense of agricultural industries. Mr Charles McElhorne of the NFF, outlined concerns that the NFF have about the balance between forestry and agriculture in an emissions trading scheme:

I have been particularly focused on the perverse outcome potential in the economic field, but there is also potential for perverse outcomes in the environmental area. What are the water run-off and biodiversity issues of replacing agricultural land with mass plantation forestry in order to meet our Kyoto [Protocol] obligations? And what are the social implications of [an emissions trading scheme] as well? We have to get those policy settings right.³⁴

4.38 The Victorian Department of Primary Industries also noted the conflict an emissions trading scheme could create as there was a shortage of suitable land in that State for commercial carbon sinks:

Victoria's prime areas for plantation forestry are those with a higher than average rainfall (over 600mm) and fertile, well drained soils, which are also prime agricultural land.³⁵

4.39 Professor Michael Young of the Wentworth Group of Concerned Scientists expressed concern that the inclusion of forestry in an emissions trading scheme would have impacts on water availability:

...another very important thing that Australia is still finding it greatly difficult to face up to. That is the issue of the interception of rainfall by forests – particularly in plantation forests. Your discussions and the evidence you have received have talked about the plans to set up an emissions-trading system from 2010. It will give people credits for planting forests. Forests tend to get planted in high rainfall areas and areas where

32 *Committee Hansard*, 30 June 2008, pp 122-123.

33 Mr Allan Hansard, Chief Executive Officer, National Association of Forest Industries, *Committee Hansard*, 30 June 2008, p. 115.

34 *Committee Hansard*, 1 July 2008, p. 28.

35 *Submission 27*, p. 19. See also: Ms Blakers, *Committee Hansard*, 30 June 2008, p. 118.

roots can access water free of charge. It is high security water; it is the water that is taken first. When you plant a tree, it intercepts all the water it needs before it lets any run off. If you plant a tree close to a river and it gets its roots into the river or into the aquifer, it takes all the water it needs. It grows on hydroponics. If Australia goes into an emissions-trading system that gives people carbon credits for planting trees and does not bring water accounting into that regime then this nation could be in very serious strife as we dry up our rivers.³⁶

4.40 While acknowledging that trees grow better in high rainfall areas, representatives from NAFI argued that the forest industry's strategy was to plant trees in areas that benefited downstream agricultural industries:

...the strategy for the forest industry going forward is based on being smart about where we put trees in the landscape so we can reduce salinity ... because this really will help agriculture. As we know, we cannot grow food crops with saline water. However, if we are smart about where we put trees in the landscape we can actually decrease salinity ... and actually increase our ability to grow food.³⁷

Committee view

4.41 The committee understands the difficulties in including the agricultural sector in an emissions trading scheme from its proposed commencement date in 2010. The committee encourages the Government to put substantial resources into investigating and resolving the difficulties before considering including agriculture in the Scheme.

4.42 The committee recognises that forests play an important role in the mitigation of greenhouse gas emissions. However, the committee is equally concerned that as currently structured, there is the possibility the Scheme will not maintain the important balance between the forestry and agricultural sectors, resulting in adverse social and environmental consequences. The committee believes that introducing full carbon accounting as the framework for an emissions trading scheme would go some way to redressing this imbalance. The committee notes that this recommendation is in line with the proposed approach of the Garnaut Review on Climate Change.³⁸

Recommendation 2

4.43 The committee recommends that the Government should provide for a full carbon accounting framework in relation to agricultural and forestry sectors in a domestic emissions trading scheme.

36 *Committee Hansard*, 1 July 2008, p. 40.

37 Mr Allan Hansard, Chief Executive Officer, National Association of Forest Industries, *Committee Hansard*, 30 June 2008, p. 105.

38 Professor Ross Garnaut, *Garnaut Review on Climate Change*, September 2008, p. 536.