
Issue:

The Australian Emissions Trading Scheme (AETS) is planned to commence in 2012. There is considerable uncertainty about how agricultural emissions will be treated and whether or not farmers can gain useful income from carbon credits. This will continue with the change of government; at least until we see some definitive statements from the new Minister for Water and Climate Change, Penny Wong.

Background**The Australian Emissions Trading Scheme (AETS)**

The AETS scheme will place a cap (upper limit) on the emissions of some firms that are major sources of greenhouse gases (eg power stations, liquid fuel producers, aluminium smelters). The outgoing federal government said that 'initially' a cap will not be placed on agricultural firms and that the only reason agriculture may not be included at the outset of the scheme is that they do not yet have a practical way of measuring and monitoring agricultural emissions. Unlike emissions from heavy industry, which can be monitored at the chimney, emissions from agriculture are complex and diffuse. The AGO, however, is developing tools for modelling agricultural emissions at property scale and it is possible that agriculture will be included under the cap at scheme outset. It is likely that in 2012, at least some agricultural emissions – eg those from intensive livestock – will be capped, and to avoid a fine, farmers will need to either purchase credits or create vegetation-based offsets.

Farmers will not be able to create avoided energy emission credits (eg by switching to biodiesel), and will be able to create offsets only in standing vegetation (trees, shrubs). Such credits will be of questionable value due to the need to lock up land for 80 or more years and the resulting loss of this land for production purposes.

There is currently no provision to use the carbon market to create positive incentives for agriculture to adapt to climate change – for example, by switching to renewable energy sources and increasing sequestration in soil and ground cover as part of production systems.

How does a carbon market achieve abatement of emissions?

Under a 'cap and trade' scheme such as the AETS, firms are required by law to hold permits equivalent to their annual emissions cap. If they exceed their cap they are fined. Alternatively, they can purchase additional permits from other firms.

Abatement, therefore, becomes a commercial decision. Firms can offset investment in emission reduction by selling excess permits; or they can purchase permits/credits from other firms; or they can pay a fine. In principle, the net result is a general reduction in emissions as government progressively lowers the cap and the amount of permits allocated.

Arguably, this approach is more efficient than governments directly funding emission abatement activities as the market will decide the least-cost solution for society.

The effectiveness of a carbon market in achieving abatement and the impacts on the economy depend primarily on:

- The starting level of the cap;
- The reduction target (eg 60% by 2020);
- The rate at which the government lowers the cap to achieve the target;
- The nature and amount of the penalty for exceeding the cap; and
- The proportion of permits given to firms by government, rather than sold.

If firms are gifted too many permits and the cap remains at, or close to, the level of current emissions, there is little incentive to reduce emissions as there will be an excess of permits in the market. A corollary is low demand for offset credits such as those created via carbon sequestration.

If energy companies are required to purchase all of the permits needed to cover their emissions, as has been called for by some commentators, they will be forced to recover larger costs from energy dependent firms and consumers, resulting in potentially severe shocks to the economy.

The designers of carbon markets must therefore attempt to strike a balance between maximising cuts to emissions and smoothing out the impacts on the economy.

There are several possible approaches to permit allocation, including compensation for loss of asset value, grandfathering (the approach taken in the EU scheme), benchmarking and auctioning. Canberra appears to be committed to a compensation

approach that involves gifting billions of dollars worth of free permits to the energy sector and 'trade exposed' firms that are subject to the cap. The Association has asked the government to clarify whether permits would be gifted to agricultural firms at such time as they come under the cap.

Farm carbon accounting

The AGO reports agriculture as contributing 17% of national emissions. This figure, however, is a product of the accounting construct used by AGO and is not based on physical measurement. Greenhouse gas fluxes from land and agricultural systems are rapid, highly variable and poorly understood. Biological processes, primarily photosynthesis, are constantly removing carbon from the atmosphere and storing it in soil and biomass. Likewise, carbon is constantly emitted from soil and vegetation due to natural processes.

Key issues raised by the Association with government in this regard include:

- The need for robust and practical farm greenhouse accounting and reporting tools. Developing these will require significant further investigation of the terrestrial carbon cycle (and local variables) so as to better differentiate between natural emissions and those resulting from primary production.
- The need for a net, balance sheet, approach to reporting agricultural emissions. Given the complex nature of terrestrial carbon fluxes and the balancing impact of biosequestration, a net reporting approach is essential
- The need for permanence rules applying to agricultural sequestration in soil and ground cover that account for systemic fluctuations in net emissions and reward net long term improvements.

How will the AETS affect agriculture?

Whether or not agriculture is under the cap, farm input costs will be increased by the cap. The purpose of the cap is to make electricity, fuel and emission intensive products such as chemical fertiliser more expensive, thus creating an incentive to switch to 'climate friendly' alternatives. In theory, the introduction of a 'carbon price' into the market will drive the desired changes in consumption and a switch to renewable energy sources and practices that reduce emissions. The economists call this a 'price signal'.

Under the proposed model, energy related emissions will be capped and accounted for at the level of the bulk energy producers and only these producers will be able create and trade avoided emissions credits. In other words, a fuel company can claim a credit by including bio-diesel in its products, but a farmer cannot claim a credit for switching to bio-diesel. The government argues that allowing energy users to claim avoided emission credits would be double counting (as they have already accounted for all energy-related emissions at the top of the energy production system).

The Association disputes this argument on the grounds that a market design that allows all participants in the energy economy to claim emission reduction credits will achieve faster results and, further, will support more innovative solutions. For example, if farmers could create energy abatement credits, this could drive a new industry in farm, or local-scale biodiesel. Likewise, abatement credits could help businesses and communities to become energy self sufficient and literally, disconnect from the grid.

Allowing abatement credits at lower levels in the energy economy could threaten the market dominance of the bulk energy production firms, many of which are owned by government (by accelerating a transition to small-scale renewables and allowing firms and communities to 'go off the grid'). The main impediment, however, is that monitoring and accounting would be more difficult for government, as they would have to keep track of a more complex set of debits and credits.

The Federal bureaucracy is under time pressure to commence a scheme by 2012, which demands establishing the necessary legal and informational infrastructure and appear resistant to discussion about alternative models. A range of ideological and political factors are also in play, with the energy sector and environment movement dominating the outcomes.

It appears that many of the key decisions about the rules and structure of the scheme have already been made, almost entirely without the input of general community, and sectors of industry other than the energy sector. While politicians have been arguing about whether climate change is a reality, teams within the AGO have been busy over the past decade establishing the details of the AETS. In this regard, it is noteworthy that consultation about the National Greenhouse Gas Reporting System,

which legally requires firms to report emissions over a certain threshold, closed in mid November (we made a submission via NFF).

In summary, PM&C is seeking to implement the simplest and administratively cheapest model for the AETS. It also happens to be one that minimises negative impacts on the major energy, or energy intensive firms, protects the coal industry and relies on negative reinforcement (higher prices) to drive shifts to renewables in the general economy. The Association believes that considerably more consultation and public dialogue is required before final decisions are made.

Agricultural offsets - 'farm carbon'

Avoided emission credit = a credit granted due to reductions in emissions

Sequestration credit = a credit granted as a result of storing carbon

Voluntary market = not legally mandated, no standard rules

Mandated market = established by law and with strict rules.

In theory, a combination of avoided emission and sequestration credits could become a valuable element in farm income, and help fund adaptation to climate change. In reality, we are a very long way from achieving this and Canberra, in spite of our efforts, has not been open to discussing alternatives to credits in standing vegetation¹.

Currently, the only kind of farm carbon credit that can be created in a mandated Australian market (ie under the current NSW or AGO schemes, or the AETS), is in trees and shrubs. Moreover, accounting rules require that the land allocated for such credit schemes is locked up for 80 or more years to guarantee the permanence of the offsets. The Association advises farmers to think carefully about the pros and cons before entering into agreements of this kind. The first question should be, 'how will this contract affect my future ability to use the land'

Another current source of confusion is the range of farm-based credits that are being created and sold in the voluntary market. The voluntary market is not subject to standard rules and a number of firms are creating and selling various kinds of credits for sale to any buyers they can find. Currently, this market is characterised by low liquidity and relatively low prices. The establishment of the AETS may damage the voluntary market, as buyers may prefer credits that are backed by government, but this is not necessarily the case. Government policy could make many of these informal credits worthless to the purchaser or alternatively could oblige the vendor to generate an official credit to back the original sale.

The mandated market should enable depth, liquidity and higher prices for credits. Credits created in the AETS should also have lower transaction costs as a corollary of higher volume, and therefore lower margins for brokers and higher returns to farmers. All this depends, however, on it being legally possible to create credits as part of productive farming systems.

Establishment of a mandated suite of offsets that are not dependent on standing vegetation is critical to the development of a viable farm carbon market. Farmers need a comprehensive suite of options to reduce emissions and to generate credits. This should include soil carbon as an important element.

Soil carbon

Increasing soil carbon offers significant benefits for climate adaptation and is a critical base element within farming systems.

In Australia and globally, agriculture could achieve a significant reduction in the risk of climate change by taking CO₂ back out of the atmosphere and storing it in the soil. Globally, approximately half of all soil carbon in farmed land, has been lost to the atmosphere during the past two centuries due to cultivation.

¹ Restricting land-based sequestration to trees and shrubs complements a long-standing policy intention at both federal and state level to return significant areas of already cleared land to native vegetation. The tax breaks for carbon plantations announced in the 2007-8 budget, plus income from carbon credits, will increase the net return from land purchased for plantations making such investments more attractive. Significant distortions to agricultural land and water markets may result if the policy framework encourages speculation in carbon plantations, as seems likely.

This loss, however, creates an opportunity for carbon storage. The global additional storage potential in agricultural soils is up to 80 billion tonnes, or ten percent of total atmospheric carbon. Australian soils, while naturally relatively low in carbon by global standards, would benefit from more carbon and can readily store it.²

Increasing soils carbon can be achieved in a number of ways including selection of high-residue-producing crops, residue retention via lessened tillage intensity, use of crop rotations, and improved management of nutrients and water. There is also potential to introduce charcoal and other carbon products from industrial and urban waste streams.

Decreasing soil carbon loss is accomplished by minimizing soil disturbance and erosion through reduced tillage intensity and improved grazing practices.

Impediments to an Australian program for soil carbon sequestration include a range of measurement, permanence and accounting issues.

Solutions to all these issues are available but have not been progressed as rapidly as they could have been. In Australia, the cause appears mainly to be the political preference for vegetation-based offsets. The relatively low ability of Australian soils to store carbon is sometime cited as an argument against soil offsets. However, even small increases in soil carbon, could result in the creation of significant credits, as well as providing numerous fringe benefits (improved natural fertility, reducing dependence on nitrogenous fertilisers, more efficient use of water and reduced erosion).

It is essential to note that the current policy framework does not provide any means to claim credits for soil carbon as part of the NETS. Moreover, Kyoto accounting principles would have to be changed so as to distinguish between natural soil carbon losses, and losses and sequestration resulting from human activity. Otherwise, climatic factors could create massive soil carbon liabilities for farmers. The potential of the soil carbon market is great but so are the policy impediments.

The Kyoto Protocol

The first official action of the Labor government will be to ratify Kyoto and the Prime Minister will be representing Australia at the December Kyoto conference in Bali as a full participant in negotiations.

The current Kyoto ends in 2012 and the priority of the Bali meeting is to establish the base for negotiation of a new accord.

Australia signed Kyoto in 1998, but the Howard Government refused to ratify the treaty - largely because it feared damage to our revenue as a coal exporter. Notwithstanding this, the AGO has continued to implement Kyoto emissions accounting and reporting principles – hence the Howard government's claims that we are meeting Kyoto targets. During APEC 2007, China and the US with 19 other nations including Australia, signed the Sydney Declaration, which agreed in principle to the setting of emission reduction targets and timetables but set no explicit dates or targets. It is anticipated that Labor will now set dates and targets.

The existing Kyoto agreement (and underlying framework principles) has a number of features that are bad for agriculture.

- Under the 'Australia clause' – article 3.7 – the Kyoto signatory nations agreed to allow Australia to meet its targets by banning land clearing. The clause permits countries for which land-use change and forestry are a net source of greenhouse gas emissions to include net emissions from land-use change in their 1990 base year for the purpose of calculating assigned amounts or targets for the commitment period 2008–2010. Banning land clearing, therefore, counts as a reduction in emissions against our baseline, and is the only reason that Australia is close to meeting its Kyoto targets (emissions from other sectors have substantially increased in the same period). The clearing bans are effectively a cap on agricultural emissions, which has been imposed prior to the implementation of the AETS and with no provision for farmers to claim carbon credits for their efforts. Farmers who have been prevented from developing land, therefore, have taken the economic brunt of Australia's Kyoto efforts and have done so entirely without compensation.
- It is not only Australia's farmers that have been disadvantaged by the current version of Kyoto. The protocol is underpinned by complex accounting rules (the Marrakech accords) that establish how emissions are measured and

² The soil carbon capability of soils is affected by a range of factors including temperature, water availability and biological activity. Carbon fluxes can be relatively high in Australian soils but research indicates that, even in the most arid landscapes, average net increases in soil carbon can be achieved through changes in land management practices.

where offsets can be created. These rules have several features that prevent agriculture from benefiting/receiving compensation from a carbon market:

- 'Permanence' rules require land sector offsets to be locked up for 80 or more years – while this stands, the only feasible land sector offsets are in trees. This is good for the forest sector and bad for agriculture, which needs to create credits as a component of cropping and grazing systems to retain flexibility in land use under a 'balance sheet' approach to carbon accounting.
- There is no distinction allowed between natural soil carbon losses, and losses and sequestration resulting from human activity. This means that if Australia (or any other nation with extensive agricultural lands) elected to include soil carbon in national accounts, climatic factors could create massive soil carbon liabilities for farmers.

Nations such as the USA have called for the above rules to be changed so as to allow offsets to be created as an integral part of productive farming systems – for example soil carbon credits. It is to be hoped that the Labor government will join with such nations in calling for new framework rules that support the world's farmers in responding to climate change.

What is the Association doing?

The Association is working intensively with the NFF and other state farming organisation to represent the needs of agriculture in relation to the AETS and climate change policy in general. This has involved commissioning research papers, responses to consultation papers and numerous representations to relevant government agencies and politicians. In spite of assurances to the contrary, Agriculture was excluded from the Prime Minister's task group on emissions trading. While government has been more responsive in recent months, much work remains to be done. In early November, NSWFA and NFF representatives met with department of Prime Minister and Cabinet (PM&C) and Australian Greenhouse Office (AGO) officials to reiterate our concerns and requirements. It was clear at these meetings that the needs of agriculture are still not regarded as a high priority when designing the AETs.

The Australia farm sector will be represented at the December Kyoto meeting in Bali, by NFF President David Crombie, who will be a member of the official Australian delegation.

Labor appears to have responded in part to our calls for significant R&D funding for agricultural climate change initiatives, committing \$60 million over 4 years in recent policy announcements. We have called for the establishment of a new agricultural R&D corporation for climate change (a CCRDC) with funding equivalent to that given to the coal sector for clean coal and geo-sequestration research.

We are also exploring alliances with the renewable energy and the waste sector, who have related interests in regard to the creation of abatement credits.