

The Australian carbon farming initiative: early developments ongoing challenges

Michele Rosano

Associate Professor, Sustainable Engineering Group, Curtin University

Dermot Duncan

*Head of Carbon Projects at Greenbank Carbon Pty Ltd. Secretary
of the REC Agents Association*

Abstract

This paper reviews the early results of the Carbon Farming Initiative (CFI) within the Australian Federal Government's recently introduced Carbon Pricing Mechanism (CPM) program.

The paper introduces the CPM and its core design elements. It then specifically reviews the CFI domestic offset program and how it fits within the CPM. Discussion then centres on a review of the CFI program in Australia. A brief analysis is then provided on the early achievements of the CFI through a review of a number of currently approved CFI projects. The paper then concludes with a review of the current challenges to the success of these programs in Australia.

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Introduction

Australia has recently embarked upon a program of environmental and climate change management that involves putting a price on carbon emissions (carbon price) to create an incentive for Australia's largest industry and business greenhouse gas emitters to significantly reduce their greenhouse gas emissions (GHG Emissions).

Australia has under the Kyoto Protocol (KP), committed to reduce its GHG Emissions during 2005–2012 (first commitment period) by 108% of 1990 GHG Emission levels by 2012 in comparison to the baseline of 5% below 1990 levels agreed to by most other industrialised countries. Australia agreed on 9 November 2012 to sign-up to a second KP commitment period from 1 January 2013 to 2017 (subject to various conditions) which was confirmed at the Conference of the Parties (COP) 18–26 November to 7 December 2012 in Doha, Qatar. All KP parties agreed at COP 17 in Durban, South Africa to sign up to a legally binding treaty by 2015 which will come into affect from 2020.

Australia pledged at COP 17, the following GHG Emission reduction targets:

- by 5% below 2000 levels by 2020 (bipartisan support);
- up to 15% GHG emissions reduction based on 2000 levels if there is a global international agreement for less than 450 parts per million (ppm) carbon dioxide equivalence emissions, and the major developing countries commit to substantially restraining emissions, and advanced economies take on commitments comparable to Australia; or
- up to a 25% GHG Emission reduction if the world agrees to an ambitious global deal capable of stabilising levels of GHG Emissions in the atmosphere at 450 ppm or lower.

The Clean Energy Act (Cth) 2011 (and associated legislation and regulations) is part of the Australian government's plan to transition Australia to a low carbon, clean energy economy. Central to this plan is: the introduction of the carbon price pursuant to the CPM and the novel agricultural domestic offsets program under the CFI.

This paper reviews the operation of the CPM and CFI programs, and some of the challenges and opportunities for the CFI program in Australia.

Carbon pricing mechanism

Under the CPM around 317 companies (covering approximately 60% of Australia's GHG Emissions) have a mandatory obligation to reduce, offset or pay for their direct (i.e. scope 1) GHG

Emissions from 1 July 2012. This is known as the Australian compliance carbon market. Information collected through the National Greenhouse & Energy Reporting Act (Cth) 2007 (NGER Act) provides the basis for assessing liability under the CPM with only those companies in the “covered sectors” (detailed below) that exceed the thresholds under NGERs in respect of scope 1 emissions (e.g. 25,000 GHG Emissions per annum) being subject to direct liability under the CPM.

The “covered sectors” under the CPM include:

- Stationary energy sector (e.g. fossil fuel electricity generators);
- Industrial processes (e.g. steel, aluminium, cement sectors etc);
- Non-legacy waste (e.g. landfill emissions from waste deposited post 1 July 2012); and
- Fugitive emissions (e.g. emissions escaping from a process such as coal mining but not de-commissioned coal mines).

Only four GHG Emissions are covered by the CPM (in comparison to the six under the United Nations Framework Convention on Climate Change or UNFCCC), namely:

- Carbon dioxide (CO₂);
- Methane (CH₄);
- Nitrous oxide (N₂O); or
- Perfluorocarbons (PFCs)

The unit issued for compliance purposes under the CPM is an ‘Australian Carbon Unit’ (ACU), which will be issued without charge to ‘Emissions-Intensive Trade-Exposed Industries’ (EITEIs) (e.g. aluminium smelters, cement producers) with the levels reviewed by the Australian Productivity Commission. This means for EITEIs an entitlement of 94.5% free emissions will be allowed for ‘highly emission intensive industries’, 66% free emissions for ‘moderately intensive emissions industries’ and approximately 50% free emissions for LNG projects.

The carbon price will not apply to household transport fuels, light vehicle business transport (i.e. vehicles 4.5 tonnes or less gross vehicle mass) and off-road fuel use by the agriculture, forestry and fishing industries. Transport including “domestic aviation, domestic shipping, rail transport and non-transport use of fuels” is subject to an indirect/shadow carbon price through changes to the fuel tax credits or in excise duties. The Government will seek to establish an effective carbon price for heavy on-road liquid fuel use from 1 July 2014.

The CPM is split into a fixed price period from 1 July 2012 to 30 June 2015 (Fixed price period) and the flexible price period from 1 July 2015 onwards (Flexible price period).

During the Fixed price period, there is no cap on GHG Emissions so liable entities must ac-

quire ACUs from the Government and then automatically surrender one ACU back to the Government for every tonne of GHG Emissions they emit (by the 15 June (e.g. Interim emissions number) and then balance out any remaining payments by 1 February the following year), or pay a shortfall charge set at 130% of the fixed price for the relevant year. Liable entities cannot bank or borrow the ACUs awarded or purchased from the Government during the Fixed price period. However, they may sell them to banks for cash flow purposes. Liable entities, may meet up to 5% of their liability by creating or purchasing Australian Carbon Credit Units (ACCUs) under the CFI and special provisions allow landfill owners (that are liable entities) to meet up to 100% of their liability during the Fixed priced period from the CFI. The carbon price during the Fixed price period is fixed at \$23/t in 2012, \$24.15/t in 2013 and \$25.40/t in 2014 per tonne of GHG Emissions (rising by 2.5% per annum in real terms for inflationary purposes).

Prior to the Flexible price period commencing, a cap on the level of GHG Emissions will be imposed for all sources of GHG Emissions covered by the carbon price for the first five years from 1 July 2015. The Government will then issue a fixed number of ACUs available to the liable entities up to the cap. The cap will then decline over time, increasing the concept of scarcity and thus reducing the supply of ACUs from which liable entities can purchase via auction in order to meet their liability. Liable entities which value ACUs most highly will obviously be willing to pay more for them which will have a flow on effect on ACCUs/EIUs prices/demand. However for some liable entities, it will still be cheaper to reduce emission/pollution levels than to buy ACUs or ACCUs/EIUs. Liable entities will have to surrender an equivalent number of ACUs/ACCUs/EIUs to meet their GHG Emissions by the 15 June (Interim emissions number) and meet their ACU payments by the 1 February the following year with a shortfall charge set to 200% of the ACU price for that compliance year. Liable entities are restricted to surrendering up to a maximum of 12.5% of Certified Emission Reduction Certificates (CERs) under the Clean Development Mechanism; and 37.5% from European Union Emission Allowances (EUAs). However, liable entities may meet 100% of their surrender obligations through ACCUs or ACUs (depending on the supply available at the time of purchase).

A price ceiling will be set at \$20 above the expected European price in 2015–16. In addition, the banking and borrowing of ACUs will be allowed in the Flexible price period to further enhance the efficiency of the market. Banking will also allow ACUs/ACCUs/EIUs to be surrendered in later years instead of just in their release year. Limited borrowing of ACUs will also be allowed such that, in any particular vintage year, a liable entity will be able to surrender ACUs from the following vintage year to discharge up to 5% of their current year's liability. However limiting the ACU borrowing to 5% maximum, should reduce any risks to the environmental integrity of the CPM and maintain the credibility of the medium-term national target. (CER 2012)

Presently, the liable entities have been focused on initial compliance arrangements, such as:

opening their registry account; amending their Australian Financial Services Licence (AFSL); and either working to develop CFI Projects or purchase ACCUs from other CFI Developers.

However stakeholders in carbon markets in Australia are currently faced with significant uncertainty as the leader of the opposition party, a coalition of the Liberal Party and National Party (Coalition), in Australia, as the leader of the opposition party, a coalition of the Liberal Party and National Party (Coalition) in Australia, has pledged to repeal the CPM if his party is elected into Government at the next Federal Election to be held on 14 September 2013. To exacerbate this risk, the Coalition has not provided detailed information to the market or to the public about their alternative constrained emissions policy titled the “Direct Action Plan” which is a baseline and credit emissions trading scheme (with a penalty for exceeding the baseline but only to be enforced in exceptional circumstances) coupled with a green tendering scheme (directly funded by the tax payer) for liable entities to tender into for renewable energy/carbon projects where an elected Coalition Government will select the “least cost” project to finance through the fund. In this event, not all projects (unlike the current CPM scheme) will receive funding under the Direct Action Plan and secondly, history has shown green tendering schemes to often be inefficient (see the Non-Fossil Fuel Obligation in the UK from 1990–2002).

The Coalition also state, that the CFI has “bi-partisan” support, which is not true. Besides scrapping the CPM (and thus any credible liability on the liable parties to purchase and surrender ACUs/ACCUs/EIUs to meet their liability – there is unlikely to be “trading” under a Coalition Government), not all CFI projects complying with a methodology would be eligible for ACCUs (if indeed, ACCUs were available under a Coalition Government) because they would chose the “least cost” CFI project and not all eligible CFI projects.

Considering this, whilst there is movement in the carbon markets in Australia particularly with the domestic CFI projects, CFI project developers are only proceeding if they have sufficient liquidity as banks are reticent to finance a CFI project given the current political uncertainty. Indeed, the CER has confirmed that “approved CPI project are on–hold” as the private sector awaits policy certainty. However, three industries have progressed with CFI projects in Australia. Large pig producers, landfill site owners and Indigenous groups through Savannah Burning are developing their own CFI projects under the relevant approved methodologies. The, traders, like Greenbank Carbon Pty Ltd, provide the relevant expertise and experience to either assist these CFI developers (as project proponents and ROEs) to apply to the Government for ACCUs (often pursuant to an Off-take contract whereby the CFI developer agrees to sell any ACCUs created by the Government to the trader at an agreed price) or undertake that process themselves as the project proponent and ROE for the project. However, these traders are unlikely to accept liability to purchase another CFI developer’s ACCUs up to two weeks prior to 15 June 2013 or at a discount to 1 February 2014 due

to the risk of a Coalition victory in August 2013 with a possible (although unlikely) majority in both houses enabling them to repeal the CPM.

If the Coalition do win the next federal election, then a possible solution for the CPM would be to “staple” an ACCU to an Assigned Amount Unit (AAU) so as to incorporate it into Australia’s national inventory submitted to the UNFCCC and to meet Australia’s KP obligations going forward from “human induced” domestic abatement pursuant to Article 3.3 of the KP (i.e. the Land Use, Land Use Change, and Forestry (LULUCF), possibly as a Joint Implementation Project (JI Project). An AAU is an allowance allocated to parties (based on historical emissions and emissions targets) and is equal to one metric tonne of carbon dioxide equivalent. So, in layman terms, ACCUs could still be created and then sold internationally or surrendered by the Government as a means of meeting our international obligations. However, if no credible solution is offered, then any ACCUs created under the CFI prior to its repeal will only be tradable on the voluntary market. However, if we query the value of these certificates on the international market with the current CER price around \$0.40 c – the question then arises who would pay more than \$0.40 c for a voluntary certificate if a party can purchase a compliance certificate for \$0.40 c. It is interesting to note that in 2010, 131 million carbon credits were traded in the voluntary carbon market worldwide, 34% more than in 2009 (Peters-Stanley *et al.* 2011). The prices of these credits ranged from US \$0.10 to US\$136.3 tCO₂-e. Several factors contribute to this variability, including the credibility of the offsets program, the integrity of offset credits and whether the project provided social or environmental co-benefits. (Peters-Stanley *et al.* 2011)

CFI

The CFI is the world’s first nationally-backed carbon offset market for the land sector, allowing farmers, foresters and land managers to earn ACCUs by storing carbon or reducing GHG Emissions on the land pursuant to the LULUCF principles of the KP. These carbon units can then be sold to liable entities in Australia wishing to offset their CPM liability. Agriculture is not a sector directly covered by the CPM, therefore, farmers do not pay a direct carbon price. In addition, the Government has bestowed on the agricultural sector the only domestic offset market in Australia for the CPM, which is estimated to be worth a second “wool clip” to the Australian agricultural sector. ACCUs cannot be sold into the EU ETS as it does not recognise LULUCF abatement activities: however, the EU and other countries (such as the US Californian ETS) may recognise ACCUs as eligible off-sets in the future.

GHG abatement is achieved under the CFI by:

- reducing or avoiding emissions, for example, through capture and destruction of methane

- emissions from landfill or livestock manure; or
- removing carbon from the atmosphere and storing it in soil or trees, for example, by growing a forest or farming in a way that increases soil carbon.

To be eligible to receive ACCUs, activities must be on a positive list and covered by a methodology approved by the Domestic Offsets Integrity Commission (DOIC) and then approved by the Minister for Climate Change & Energy Efficiency (Minister).

Four methodologies have been currently approved by the Minister for use under the CFI. These include:

- manure management in piggeries (see case study below);
- establishing environmental plantings,
- capture and combustion of landfill gas (see case study below); and
- the management of savannah fires (see case study below).

Substantial time, effort and money is currently being spent by future project proponents to develop new CFI methodologies, with many thinking that the scope of approved methodologies will rival the CDM market. However, we believe some methodologies will be successfully adapted by similar industries (i.e. piggery methodology for the dairy/cattle/chicken industries), so there are positive spill-overs for the market but negative spill-overs for the developers of the methodology as their IP is used by others with no compensation. The traders and purchasers of ACCUs both on the “primary market” (i.e. through ANREU) and the “secondary market” (i.e. through Offtake contracts with other project proponents over the counter) see the secondary market as substantially riskier and that risk will vary between methodologies. For example, if a trader was to enter into an Off-Take contract with a project proponent developing a “sequestration” project, they are unlikely to offer them the same “term” and/or “price” that could be offered to a “piggery” project. The reasons for this are, that the Coalition Government are seeking to significantly reduce the “permanency” requirement for sequestering carbon dioxide through the LULUCF from 100 years, currently stipulated by international carbon accounting rules, to 25 years. This would mean that it could not be surrendered by the Australian Government for an AAU and thus would place it outside of the “compliance market” – meaning that it would possibly be a non-Kyoto ACCU (i.e. non compliance) or a “voluntary” credit. There are also mandatory obligations to surrender ACCUs if trees from a sequestration project are cut down by a later owner, further exacerbating the risk of future liabilities.

The CFI will be administered by the Clear Energy Regulator (CER). The CER is responsible for approving CFI projects, issuing ACCUs and managing the holding, transfer, retirement, relin-

quishment and cancellation of ACCUs through the ANREU Registry.

CFI methodologies set out the rules and instructions for undertaking projects, estimating abatement and reporting to the CER. Each CFI project must use an approved CFI methodology to ensure that abatement is measureable and verifiable, with most methodologies containing the following:

- a description of the activity and how it reduces emissions or stores carbon;
- a list of the emissions sources and sinks affected by a project;
- instructions for determining a baseline that represents what would occur in the absence of the project (i.e. “Additionality”); and
- procedures for measuring or estimating abatement relative to the baseline and project-specific data collection, monitoring, reporting; and record keeping requirements.

In terms of carbon sequestration opportunities under the CFI, carbon in vegetation or soils can only offset emissions if it is stored permanently and are subject to permanence obligations. By comparison, emissions reductions projects are not subject to permanence requirements as they stop emissions from entering the atmosphere in the first place.

There are many different ways to participate in the CFI including independently, with multiple project proponents, with service providers and through the use of aggregators, allowing the sharing of costs, benefits and responsibilities for the project. However, a CFI project developer must be: a ROE, the project proponent, and listed in the s.27 Declaration as the project proponent. The project proponent must then apply to the CER for a Certificate of Entitlement including confirming that all regulatory approvals have been obtained and that there are no penalties outstanding accompanied by an Audit Report and Offset Report. They may also require an Australian Financial Services Licence (AFSL) if they are looking to sell their ACCUs.

EU ETS and CFI

Once the Flexible price period has begun on 1 July 2015, the ACU will be subject to a floor set by the market, similar to the EUA price. Linking the CPM with the EU ETS will result in the world’s largest carbon market.

Parties can buy CERs/EUAs today and bank them in their EU Registry Account or their domestic ANREU Account when established and arrangements are finalised for interim linking by July 2013. However, CERs/EUAs may only be used to meet the limited percentage of domestic compliance requirements from 1 July 2015. However, full linkage between the CPM and the EU ETS is set down for 1 July 2018, when ACUs (not ACCUs) maybe surrendered in place of an

EUA.

Kyoto Protocol and the CFI

Some CFI activities do not count toward the Australian national emissions target and are not able to earn Kyoto ACCU's. These activities include soil carbon management, feral animal management, improved forest management and non-forest revegetation. However, through the CFI, these activities can earn non-Kyoto ACCUs.

The Government will also buy non-Kyoto ACCUs, using revenue collected from the carbon price. The \$250 million CFI non-Kyoto Carbon Fund will be operational from July 2013. The Government will purchase non-Kyoto ACCUs via competitive tender. The price the Government will pay for non-Kyoto ACCUs will be no higher than the price of Kyoto ACCUs in the compliance market.

Compliance

All CFI projects must comply with the water, planning and environment requirements of all levels of government, and obtain all necessary approvals. In addition proponents must take account of regional natural resource management plans and confirm that the proposal is consistent with these plans. The CFI excludes high-risk activities through a regulated 'negative list'. Activities that pose risks for the availability of water, the conservation of biodiversity, employment, the local community, or land access for agricultural production can be included on the negative list. The CFI also includes provisions to promote projects that provide benefits for biodiversity or Indigenous communities, potentially allowing the opportunity for a premium price for the ACCUs generated. (CER 2012)

According to the CER there are two key components to ensuring the integrity of the CFI credits offered: The offsets integrity standards; and Measures taken to minimise fraud and dishonest conduct. (CER 2012)

The CFI offsets integrity standards are based on internationally accepted principles to ensure that ACCUs are only issued for genuine offsets. The offsets integrity standards can be summarised as follows:

- abatement must be measureable and verifiable;
- measurement methods must be supported by peer reviewed science and consistent with Australia's international accounts;
- measurement methods must account for leakage and variability and use conservative as-

sumptions;

- abatement must be additional to what would occur in the absence of the project; and
- sequestration must be permanent.

The CFI is supported by legislation and includes several measures to minimise fraud and dishonest conduct. These include:

- crediting only after abatement has occurred;
- a test to ensure project proponents are ‘fit and proper’ persons (The CER is also finalising new regulations specifically setting requirements for aggregators/traders of Renewable Energy Certificates (RECs) in Australia meeting a “fit and proper” person test in order to be registered as a “registered person” under the Renewable Energy (Electricity) Act 2000 and corresponding regulations. These new provisions are aimed at tightening the compliance requirements for traders of RECs to avoid “cowboys” and “phoenix companies” aggregating/trading RECs illegally detrimentally impacting on the reputation of the REC market and its stakeholders).
- issuing and tracking credits in a central national registry, managed by an administrator with powers to suspend trade or cancel accounts;
- project reporting, notification and auditing requirements;
- requirements for project information to be published;
- legislated enforcement provisions and financial penalties to address non-compliance; and
- regulation of marketing and trading of ACCUs as financial products.

Recent Case Studies

Recently, the first CFI piggery project was developed in Young (NSW) by the owners Blantyre Farms, Michael and Edwina Beveridge using the “Destruction of Methane Generated from Manure in Piggeries Methodology” approved by the DOIC and Minister. They used an Australian company to assist them to develop the project which included covering the effluent ponds with an impermeable cover in order to trap the methane emissions from the effluent generated from their 22,000 pigs. The methane is then converted into electricity using scrubbers and a bio-gas generator to provide heating for their piglets as well as generating their own saleable electricity. The scheme is expected to save them \$15,000 p/annum in avoided electricity costs and in addition earn them \$5,000 a month by selling electricity back into the grid. They are also eligible for RECs from the generation of the electricity under the Renewable Energy (Electricity) Act 2000 as well as ACCUs. The payback for this project is expected to be around three years: but, it appears to be based on

electricity rather than REC/ACCU revenues as no ACCUs have yet been registered with the CER. The primary driver for the owners was reduced electricity costs: not environmental.

In addition, the Tweed Shire Council in Northern NSW recently undertook a landfill gas extraction and destruction project under the “Capture & Combustion of Methane in Landfill Gas from Legacy Waste Methodology” approved by the DOIC and Minister at their landfill site. In this project, pipe works are incorporated into the landfill site to capture the methane which is then pumped up to the on-site gas generation facility generating renewable electricity which is then eligible for RECs as well as ACCUs for the destruction of methane. The project has proved so successful, it has meant that the Council has now reduced its GHG Emissions to below the 25,000 tonnes per annum threshold under NGERs and the CPM which obviates their need to pay the carbon price. The electricity generated by this project is enough to power approximately 400 suburban homes. It also appears that no ACCUs have yet to be registered with the CER by the Council for this project.

The first ACCUs were recently awarded by the CER for a landfill gas destruction project in Darwin by a private sector project proponent. A total of 66,797 ACCUs were awarded by the Government for this project for abatement occurring between 1 July 2010 to 30 June 2012.

An innovative CFI project was also recently granted eligible offset project status by the Government for a Savannah Burning project in the Northern Territory of Australia under the “Reduction in GHG Emissions through the Early Dry Season Savannah Burning Methodology”. The project proponent is the Indigenous Land Council.

Greenbank Carbon’s recent experience with the CFI is that a large proportion of the project proponents are from the Landfill Gas sector as they are able to transfer landfill gas projects developed under the now defunct NSW Greenhouse Gas Abatement Scheme into the CFI scheme with little/no capital expenditure required in order to apply for ACCUs from the Government. The majority of these project proponents also have a direct liability under the CPM and are thus surrendering their ACCUs on their own behalf to satisfy their own liability. However, some project proponents have a surplus of ACCUs and have entered into Offtake contracts with the secondary market for the sale of ACCUs. However, this is a new and developing market.

Greenbank Carbon have also noted a number of innovative Offtake models by other project proponents who are seeking a debt or equity contribution just to be able to purchase their ACCUs at an agreed price over a period of 10–15 years. In this scenario it should be noted that debt is still debt and equity is still equity and as a result the ACCU’s will need to be priced accordingly.

The CFI market is clearly in its infancy. Whilst the more traditional Offtake model does provide commensurate value for other project proponents the assistance of a trader may be valuable. For example, when a trader like Greenbank can enter into an Offtake contract to purchase another project proponents ACCUs, because in certain instances a “fixed” price can be offered sheltering the project proponent from price risk. Alternatively a trader can offer measurement and verification,

advisory, technical and financial advice on the CFI with costs recouped from the ACCU price (rather than as up front fees). Even if an Offtake is entered into for ACCUs at “spot” less “margin” fees, this arrangement can still provide real value for project proponents as they should be able to secure important bank funding based on this structure.

Early Lessons for the CFI

Early movers in the CFI market have been busy meeting a high compliance bar, through:

- registering with the Regulator as a ROE;
- procuring an AFSL or amending an existing AFSL;
- organising business/marketing plans and financial budgets;
- evaluating Offtake opportunities; and
- evaluating project development opportunities.

Whilst early compliance challenges for the CFI market have proven to be quite arduous, the inherent regulation of this market is expected to provide an effective and equitable framework for the development of GHG offsets and provide further economic benefit for a number of Australian industries.

Conclusion

A number of challenges still remain for the CPM and the CFI market and its ongoing development in Australia.

Firstly, the political uncertainty associated with the 2013 Federal election places a dark cloud over the future of the program given the lack of current Federal government bi-partisan support for the CPM. Secondly, Banks remain reticent to lend critical funds to CFI proponents in the face of the CPM’s uncertain future. Thirdly, CFI proponents have been hampered by the lack of insurance products in the domestic/international markets for the trading of ACUs/ACCUs/EIUs in Australia as “financial products”. Whilst international insurers are not required to insure a carbon traders as a “financial product”, Australian compliance requires the carbon traders to be insured for our domestic trading market. Unfortunately the Australian insurance industry has been slow to offer these products. Finally, the factors influencing energy behaviour change have been rather slow in Australia, tormented by a political discourse debating climate change science and its anthropogenic GHG evolution and further exacerbated by Australia’s overall high per capita emission levels but smaller absolute contribution to GHG global warming.

The basic tenet however of the CPM and CFI program has already been espoused and practiced by a large proportion of the world economy. The Australian Government are merely followers in these actions. The EU ETS and other programs have led the way in terms of carbon offsetting, renewable energy production and energy behaviour change. The CPM and CFI programs are a critical opportunity for Australia to efficiently offset the GHG Emissions associated with our economic production. The biggest challenge however will be in offsetting political opportunism with salient outcomes from this program that illustrate the financial and environmental benefits associated with carbon price programs.

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