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Australia's Clean Energy Future Plan

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Australia's Clean Energy Future Plan is a comprehensive set of national policies aimed at reducing greenhouse gas emissions and driving investments in clean energy. At its core is a carbon pricing mechanism that commenced on 1 July 2012 and covers approximately 60 percent of Australia's emissions. The mechanism begins with a fixed carbon price for the first three years, then transitions to a cap-and-trade emissions trading scheme. The Clean Energy Future Plan is notable for the complexity of its carbon pricing mechanism, for the breadth and depth of its accompanying complementary policies, and for the extent of the financial and other assistance provided to both industry and households. This short paper summarizes the main elements of the Plan and compares it to emissions trading schemes in other jurisdictions.

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Australia's Clean Energy Future Plan

Introduction

Australia's greenhouse gas emissions in 2009/10 were 578 megatonnes of carbon dioxide equivalent (MtCO₂-e). Australia accounts for only 1.5 percent of global greenhouse gas (GHG) emissions, but it is still placed among the top 15 emitting countries. With a large energy-intensive industry sector and a small population, Australia's per capita emissions of 24.9 tCO₂-e per capita in 2009/10 are among the highest in the world. Australia's population growth rate is also higher than that of most developed countries, and is expected to continue to grow, along with GHG emissions.

Australia's Clean Energy Future Plan is a comprehensive set of national policies aimed at reducing GHG emissions and driving investments in clean energy. At its core is a carbon pricing mechanism that commenced on 1 July 2012 and covers approximately 60 percent of Australia's emissions. The mechanism begins with a fixed carbon price for the first three years, then transitions to a cap-and-trade emissions trading scheme.

Overall, the Australian plan is a positive initiative, though it suffers from political compromises, particularly the high levels of financial assistance and compensation provided to mitigate the increased costs experienced by industry and households. The emissions trading component compares reasonably well with the existing examples of emissions trading schemes around the world – each of which also has flaws.

The plan includes some positive elements. Initially a proportion of the carbon permits will be purchased from the government for a fixed price. This is relatively simple and obviates the need for complicated allocation or auctioning processes. A proportion of the revenue generated by permit sales will be used to provide direct financial support for renewable energy, energy efficiency, reducing emissions from land-use and forestry, and other low-carbon alternatives. So, from its commencement, the Australian scheme includes some “recycling” of carbon

revenue to support emissions abatement activities.¹ It is possible that the proportion of recycled revenue will be increased over time.

The main negative feature of the plan, in relation to achieving high levels of emissions reductions, is the high levels of financial assistance and compensation. In addition, the emissions caps for the emissions trading scheme phase have not yet been set and the default is to set the caps to achieve the Government's current unconditional target of reducing Australia's emissions by five percent below 2000 levels by 2020. This short-term target is quite low by international standards. As part of the carbon pricing mechanism, the Government increased its 2050 target for emissions reductions from 60 percent to 80 percent below 2000 levels, but the plan includes no mechanism to ensure that this long-term target is achieved. The plan also allows very high levels of international offsets compared to out-of-region offsets allowed in other emissions trading schemes. Modeling by the Government suggests that more than 50 percent of the emissions abatement achieved under the mechanism will be sourced from outside Australia.

This short paper summarizes the main elements of Australia's Clean Energy Future Plan, as described in the federal Government's main policy documents and in a review article by the Center for Climate and Energy Solutions.²

Political Context

The current Australian federal Government does not have a majority in Parliament and governs with the conditional support of the Greens political party plus

- 1 While recycling of carbon revenue was included from the start of the Regional Greenhouse Gas Initiative and the Californian emissions trading schemes in the United States, it is only just being considered in the European Union emissions trading scheme.
- 2 See the Sources section at the end of this paper for details of the documents consulted during the preparation of the paper.

a handful of independent Members of Parliament. The carbon pricing mechanism was negotiated by a multi-party committee during an eight month period in late 2010 and early 2011. Consequently, the mechanism includes a number of features that have been added to achieve political support from a range of constituencies and vested interests, particularly electricity generators, the mining sector, and heavy industry. The legislation implementing the mechanism was passed into law by the Australian federal Parliament in November 2011.

Coverage

The Australian carbon pricing mechanism is relatively ambitious in covering four of the six greenhouse gases counted under the Kyoto Protocol — carbon dioxide, methane, nitrous oxide, and perfluorocarbons from aluminium smelting.³

The mechanism covers about 60 percent of GHG emissions in Australia, including: stationary energy; industrial processes; fugitive emissions (other than from decommissioned coal mines); and emissions from non-legacy waste (i.e., waste deposited after 1 July 2012). Agricultural and land sector emissions are not covered and neither are emissions from the combustion of biofuels and biomass, including CO₂-e emissions from combustion of methane from landfill facilities.

Fuel used in private cars and light commercial vehicles is not covered. An equivalent carbon price is applied to transport fuels for domestic aviation, shipping and rail through increases in excise taxes and reductions in fuel tax credits. Revisions to the legislation following comments from major transport companies allow large fuel users such as airlines, miners and rail transporters to voluntarily opt in to the carbon-pricing system from 1 July 2013, rather than paying under the fuel tax credit or excise systems. An equivalent carbon price is also applied to off-road and non-transport use of liquid and gaseous fuels, and to synthetic greenhouse gases. The Government is also intending to include heavy-duty vehicles in the carbon pricing mechanism from July 2014.

In general, similarly to the European Union emissions trading scheme, a threshold of 25,000 tCO₂-e of emissions per annum applies for determining whether a facility is covered by the carbon pricing mechanism. All Scope 1 (direct) emissions covered by the mechanism, plus

emissions from legacy waste, count towards thresholds. The liable entity for direct emissions from a covered facility is generally the person with operational control over that facility.

Landfill facilities are not liable for emissions that arise from waste deposited prior to 1 July 2012, but those emissions count towards facility thresholds. To avoid waste displacement from covered to non-covered landfill facilities, a lower threshold of 10,000 tCO₂-e applies to any small landfill facilities within a prescribed distance of a large landfill facility.

Because covered facilities are only responsible for Scope 1 (direct) emissions, emissions from conversion of primary to secondary energy are the responsibility of the relevant energy companies. Electricity generators are responsible for emissions arising from the generation of electricity. Natural gas retailers are responsible for emissions from the use of natural gas by their customers.⁴ Coal miners are responsible for greenhouse gas emissions emitted during coal mining.

Implementation

The carbon pricing mechanism is being implemented in two phases:

- from 1 July 2012, a three year period without emissions caps during which a fixed price for carbon applies; and
- from 1 July 2015, an emissions trading scheme with legislated emissions caps during which the carbon price will be flexible and set by the market, but with floor and ceiling prices for the first three years.

The domestic unit for compliance with the carbon pricing mechanism is the 'carbon permit'. Each carbon permit corresponds to one tonne of CO₂-e emissions. The creation of equitable interests in carbon permits is allowed,

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- 3 The Regional Greenhouse Gas Initiative and the European Union emissions trading scheme (phases 1 and 2) cover only carbon dioxide. The Californian emissions trading schemes covers multiple greenhouse gases.
 - 4 There is flexibility for large facilities that purchase natural gas from a retailer to assume responsibility for emissions from their use of natural gas. Where natural gas is not supplied by a retailer, emissions from that natural gas count towards the liability of covered facilities. Where the gas is not used at a covered facility, the owner of the gas is the liable entity.

as is taking security over them.

In addition, carbon permits:

- are personal property;
- are regulated as financial products;
- are transferable (except for permits purchased from the Government);
- have a unique identification number and are marked with the first year in which they can be validly surrendered ('vintage year');
- do not have an expiry date (except for free permits issued during the fixed price period); and
- are represented by an electronic entry in Australia's National Registry of Emissions Units.

During the first three years of the carbon pricing mechanism, liable parties may purchase carbon permits from the Government for a fixed price and also sell excess permits to the Government for the same price. Some permits are allocated free to emissions-intensive trade-exposed (EITE) industries and some electricity generators. During the emissions trading scheme phase, some of the carbon permits issued each year will be sold by the Government at auction and others will be allocated free to selected industries.

The fixed carbon price starts at AUD23.00 per tonne of CO₂-e in 2012/13 and will increase at 2.5 percent each year (roughly in line with the targeted rate of inflation) to be AUD24.15 in 2013/14 and AUD25.40 in 2014/15.⁵ During the first three years of the emissions trading scheme, the floor price will commence at AUD15 per tonne increasing by four percent in real terms each year, and the ceiling price will commence at AUD20 above the expected international carbon price in 2015/16, increasing by five percent in real terms each year.

During the fixed price period, carbon permits issued free of charge are tradeable, a buy-back of free permits is available for each fixed price year, and unused free permits are cancelled after the first day of the following February. In contrast, any permits purchased at the fixed price are automatically surrendered and cannot be traded. No banking or borrowing of permits is allowed.

During the emissions trading scheme phase, free carbon permits will be tradeable. Banking (holding over permits from one vintage year to the next) and borrowing (surrendering permits in advance of the vintage year) will be permitted. Borrowing will be limited to five percent of

the total number of permits surrendered.

During the emissions trading scheme phase, liable parties will be able to use international carbon reduction units (e.g., from the Kyoto Protocol flexible mechanisms) to meet their carbon reduction liabilities. Until 2020, liable parties must meet at least 50 percent⁶ of their annual liability with domestic carbon permits or credits. The Government may disallow the use of a given type of international unit at any time to ensure the environmental integrity of the Australian carbon pricing mechanism.⁷

Emissions Caps

During the fixed price period, there are no caps on emissions. In addition, some permits will be allocated free to emissions-intensive trade-exposed (EITE) industries and selected electricity generators.

During the emissions trading scheme phase, emissions caps will be set by the Government. In May 2013 the Government will announce the first five years of emissions caps in the 2014 Budget and will be required to table regulations in the Parliament setting five years of caps no later than 31 May 2014. Every year from 2015/16, the emissions cap will be extended in regulations by one year to maintain five years of known caps at any given

- 5 There has been sustained public discussion about these fixed prices, with critics maintaining that they are too high given that the carbon price in the European emissions trading scheme is currently substantially lower than the fixed prices. However high carbon prices during the initial fixed price period may encourage behavior changes in Australia that could persist if the carbon price drops during the emissions trading phase.
- 6 This means that the Australian carbon pricing mechanism (at least until 2020) allows a quite high level of offsets compared to other schemes. In Phase 2 of the European Union emissions trading scheme, offsets are limited to between seven percent and twenty percent of each member state's cap, according to each state's National Allocation Plan. In the California scheme, offsets are allowed for up to eight percent of compliance obligation; if allowance prices exceed a defined range, the allowable offset percentage increases.
- 7 The carbon pricing mechanism has been criticised because modelling by the Government's Treasury department suggests that, over time, more than fifty per cent of the emissions abatement achieved under the mechanism will be sourced from outside Australia.

time. When setting emissions caps, the Government must consider Australia's international climate change obligations and the recommendations on emissions caps made by a newly-established Climate Change Authority.

In the event that the Parliament disallows the regulations presented in 2014, the legislation provides for a default emissions cap that will ensure that covered emissions are reduced each year to at least meet Australia's unconditional target of reducing emissions by five percent below 2000 levels by 2020.

As part of the carbon pricing mechanism, the Government also increased its 2050 target for emissions reductions from 60 percent to 80 percent below 2000 levels. While this is broadly in line with the long-term emissions reduction targets of other developed countries, the Government has not established any policies or measures directed to achieving the target.

Compliance

From 1 July 2012, about 300 liable parties are required to meet their emissions obligations under the carbon pricing mechanism. To discharge their obligations, entities are able to surrender an eligible emissions unit for each tonne of emissions for which they are liable during the compliance year. Each eligible emissions unit represents one tonne of carbon dioxide equivalent. Eligible emissions units include:

- carbon permits purchased from the Government or issued by the Government free of charge under industry assistance schemes;
- Australian carbon credit units (ACCU) issued for greenhouse gas abatement activities undertaken as part of the Carbon Farming Initiative; and
- eligible international emissions units, initially comprising certified emission reductions (CERs) from Clean Development Mechanism projects under the Kyoto Protocol, emission reduction units (ERUs) from Joint Implementation projects under the Kyoto Protocol, removal units (RMUs) issued by a Kyoto Protocol country on the basis of land use, land-use change and forestry activities, plus any other international units that the Government may allow by regulation.

Emissions obligations that are not met through the surrender of eligible emissions units have to be met by

paying an emissions charge. The emissions charge applies for each tCO₂-e for which an eligible emissions unit has not been surrendered. During the fixed price period, the emissions charge is 1.3 times the fixed price for carbon permits, i.e., AUD29.90 in 2012/13, AUD31.40 in 2013/14 and AUD33.00 in 2014/15. During the emissions trading scheme phase, the emissions charge for any shortfall will be double the average price of permits for that year.

Voluntary Action

The Government will take voluntary action into account when setting emissions caps. Voluntary action will be treated as additional when accounting for Australia's post-2012 emissions reduction targets.

During the emissions trading scheme phase, carbon permit holders may voluntarily cancel their permits and their cancellation will reduce the number of permits available in the market. A Pledge Fund will be established from the commencement of the carbon pricing mechanism to help individuals access the carbon market and voluntarily cancel emissions units. Contributions to the Pledge Fund will be tax deductible.

Any purchases of accredited GreenPower⁸ from 1 July 2012 are accounted for as voluntary action. The Government measures GreenPower purchases on an annual basis and will take these into account when setting emissions caps. Reductions to the emissions cap resulting from GreenPower purchases will be backed by a commitment not to count those emission reductions towards meeting the national emissions reduction target.

Voluntary actions in addition to voluntary cancellation of carbon permits and purchases of GreenPower may also be recognized, subject to advice from the Climate Change Authority on whether a robust methodology can be developed to recognize additional voluntary actions.

8 GreenPower is electricity certified as being generated from renewable energy sources that retail electricity customers may pay a premium to purchase.

Measurement, Reporting and Verification

Measurement, reporting and verification related to the carbon pricing mechanism takes place under the *National Greenhouse and Energy Reporting Act* (NGER Act) which was enacted in 2007 in anticipation of the introduction of an emissions trading scheme in Australia. The object of the NGER Act is to introduce a single national reporting framework for the reporting and dissemination of information related to greenhouse gas emissions, greenhouse gas projects, energy consumption and energy production of corporations.

The Act makes registration and reporting mandatory for corporations whose energy production, energy use or greenhouse gas emissions meet specified thresholds. Corporations that meet an NGER threshold must report their: greenhouse gas emissions, energy production, energy consumption, and other information specified under the legislation.

Reporting under the NGER Act commenced on 1 July 2008. This enabled the reporting regime to become well-established before the carbon pricing mechanism commenced and registered corporations are now familiar with their reporting obligations.

The NGER Act also provides for greenhouse and energy audits of reporting corporations registered under the Act and requires the establishment of a register of third party greenhouse and energy auditors who are qualified to carry out audits under the Act.

Complementary Policies

The involvement of the Greens party and independent Members of Parliament in the development of the carbon pricing mechanism, together with lobbying by the clean energy industry, resulted in the mechanism including several complementary policies to assist the transition to a clean energy future. Because many of these policies were the result of political negotiations, they have not been developed as a coherent package of measures that are each assigned an estimated emissions reduction target, as was done in California.

A new Clean Energy Finance Corporation has been allocated AUD10 billion to be spent over a period of five years from 2013/14.⁹ The funds will be allocated via commercial loans, concessional loans, loan guarantees and

equity. Half of the funds will be reserved for a renewable energy stream, while the other half will be allocated to a “general clean energy” stream, but may also invest in renewables. The first stream is designed to support emerging technologies such as solar and geothermal, as well as battery storage. The other stream is not earmarked for gas-fired generators, but might include “hybrid” plants that combine solar and gas, or solar and coal.

Another new body, the Australian Renewable Energy Agency (ARENA) will provide funding for projects through a range of competitive grants programs. ARENA will take over AUD3.2 billion of funding to be spent over nine years that had already been allocated to several separate programs. ARENA will consolidate or replace inefficient federal government renewable energy support schemes with a “one stop shop” that will prevent the rules for investment in renewables being changed every few months, as has been the case in the past few years.

The Australian Energy Market Operator, that operates competitive wholesale electricity and gas markets in eastern and southern Australia, has been commissioned to plan for the time when the Australian electricity grid operates with 100% renewable energy.

The Government has “provided scope” under the *Energy Security Act* to buy out and shut down up to 2,000 MW of capacity from coal-fired electricity generators by 2020. This offer will be limited to generators that emit more than 1.2 tCO₂-e/MWh – which means that it will only be open to four Australian brown coal power stations.

Work will continue on developing a national white certificate scheme that would place an obligation on energy retailers to find and implement energy savings in households and businesses. If implemented, the national scheme would combine and replace the three separate white certificate schemes that have been established by State Governments in Australia.

A Clean Technology Investment Program will provide AUD1.2 billion over seven years as competitive grants for manufacturing businesses to invest in energy efficient capital equipment and low-emissions technologies,

9 The Clean Energy Finance Corporation will not be funded by recycling of carbon revenue because the AUD10 billion will be provided by the Government as a direct budgetary appropriation.

processes and products, and in low emissions research and development (R&D) in the areas of renewable energy, low emissions technologies and energy efficiency.

Funding will be provided through competitive grants to local government councils and community organizations to undertake energy efficient upgrades of buildings, facilities and street lights. The program will assist councils and community organizations to reduce their energy costs and the outcomes will serve as demonstration projects to promote long-term energy efficiency behavior change in the community.

AUD240 million in competitive grants will be provided to industry associations and NGOs that have established relationships with small businesses and community organizations. The grant recipients will develop and deliver relevant and tailored information about the likely impacts of a carbon price on small businesses and community organizations, and the practical steps they can take to manage these impacts, particularly energy efficiency.

Funding will be provided to help educational institutions and industry develop the materials and expertise needed to promote clean energy skills. Tradespersons and professionals will develop the skills needed to deliver energy efficiency services, clean energy projects and low-pollution products to Australian households, communities and businesses.

A new AUD100 million Energy Affordability Scheme will trial how best to improve the energy efficiency of low-income households and will be designed to build on work already being done by community organizations. A second new program for low-income households, the AUD30 million Household Energy and Financial Sustainability Scheme, will help vulnerable people who are having difficulty meeting their energy bills to find more sustainable ways to manage their financial situation and their energy consumption.

Farming and land-based activities are not covered under the carbon pricing mechanism, but emission-reducing opportunities are offered through the Carbon Farming Initiative (CFI), which includes an offset program. The CFI program allows credits to be generated and sold from both Kyoto-compliant and non-Kyoto-compliant land-use activities, and also provides incentives for research, innovation and GHG abatement action. Only Kyoto-compliant credits generated under the CFI can be used by liable parties to discharge their obligations under the

carbon pricing mechanism; the Government will purchase non-Kyoto compliant CFI credits. The ongoing Carbon Farming Initiative non-Kyoto Carbon Fund will increase incentives for activities that are not counted towards Australia's emissions target under current international carbon accounting rules. These include soil carbon, revegetation and cessation of logging in native forests. The ongoing Carbon Farming Futures Fund will help landholders benefit from carbon farming and will provide funding for on-farm abatement, including support for farmers to adopt more sustainable conservation tillage farm equipment.

The ongoing Biodiversity Fund will support the restoration and protection of biodiverse carbon stores, including establishing biodiverse carbon plantings in areas of high conservation value; preventing the spread of invasive species across connected landscapes; and managing existing biodiverse carbon stores, including on land already under conservation covenants or subject to land clearing restrictions, and publicly owned native forests. The Renewable Energy Target regulations will be amended to exclude biomass from native forest as an eligible renewable energy resource. This includes products, by-products and waste associated with or produced from clearing or harvesting of native forests, subject to appropriate transitional arrangements for existing accredited power stations.

Industry Assistance

During the period when the carbon pricing mechanism was being developed, there was a frenzy of lobbying by various vested interests seeking to minimize the impact of the carbon pricing mechanism on their particular sectors. This was a continuation of lobbying carried out in relation to the previous three attempts to implement an emissions reduction scheme in Australia. Because of the Government's precarious political position, much of this lobbying was successful.

Assistance for EITE industries through a Jobs and Competitiveness Program is guaranteed by legislation for five years. New and existing entities undertaking an EITE activity receive free allocations of permits based on production levels. Eligibility is determined through trade exposure (ratio of value of imports and exports to value of domestic production greater than 10 percent, and

the inability to pass through costs due to international competition) and emissions intensity assessments (average emissions per AUD million of revenue or value-added).

Two levels of free permits will be initially available:

- 94.5 percent of carbon permits will be issued free to EITE industries with an emissions intensity of at least 2,000 tCO₂ e/AUD million revenue or at least 6,000 tCO₂ e/AUD million value-added;
- 66 percent of carbon permits will be issued free to EITE industries with an emissions intensity between 1,000 tCO₂ e/AUD million and 1,999 tCO₂ e/AUD million revenue or between 3,000 tCO₂ e/AUD million and 5,999 tCO₂ e/AUD million value-added.

The number of free permits will be reduced by 1.3 percent per annum. Over the first three years of the mechanism, this EITE industry assistance program will cost AUD9.2 billion. If this assistance stays in place until 2020, it will then be reviewed to see if it is still needed.

The steel industry will also receive AUD300 million in extra grants to help support jobs.

Coal mining companies are eligible for an AUD1.3 billion compensation package to help the most emissions-intensive mines adjust to the carbon tax. This will add an average AUD1.80 per tonne to the cost of mining coal.

In addition to the buyout of some coal-fired power stations, electricity generators will receive AUD5.5 billion in cash and free carbon permits over six years, including loan guarantees through a new Energy Security Fund to help the industry refinance loans over the next five years,¹⁰ plus short-term loans to help re-finance debt and buy extra permits. Free permits and cash are only allocated to generators with emissions intensity above 1.0 tCO₂-e/MWh, mainly brown coal power stations. Generators receiving free carbon permits are required to provide Clean Energy Investment Plans, which will be made public. These plans identify the generators' proposals to reduce emissions from existing facilities and to invest in R&D and new low or zero-emissions capacity.

Compensation for Households

More than 50 percent of the revenue from the carbon pricing mechanism is being used to provide compensation for households (i.e. voters). This assistance is permanent and is being delivered through income tax cuts for low

and middle-income households, as well as increased state pension and social security payments. Low-income households (including all pensioners) are eligible for financial assistance that exceeds their average expected cost increases from the carbon pricing mechanism. Middle-income households are eligible for financial assistance that helps them to meet the expected cost increases. Because of the way the tax cuts are being delivered, through altering the income tax scales, high income households will probably pay slightly more tax and will also be exposed to cost increases from the carbon pricing mechanism without receiving financial assistance.¹¹

Governance

A Clean Energy Regulator has been established to administer the carbon pricing mechanism within a limited and legislatively prescribed discretion. Responsibilities of the Regulator include:

- providing education on the carbon pricing mechanism, particularly about the administrative arrangements;
- assessing emissions data to determine each entity's liability;
- operating the Australian National Registry of Emissions Units;
- monitoring, facilitating and enforcing compliance with the carbon pricing mechanism;
- allocating carbon permits, including freely allocated permits, fixed price permits and auctioned permits;
- applying legislative rules to determine if a particular entity is eligible for free permits, and the number of other permits to be allocated;
- administering the National Greenhouse and Energy Reporting System, the Renewable Energy Target and the Carbon Farming Initiative; and

10 Electricity generators argued successfully that they require this assistance or the financial impact of the fixed carbon price on their businesses would cause them to breach their loan covenants and force them to go out of business.

11 The changes to the income tax scales were recommended to the Government in a review of the tax system in 2010. The carbon pricing mechanism provides a useful excuse to introduce these changes.

- accrediting auditors for the National Greenhouse and Energy Reporting System and the Carbon Farming Initiative.

A Climate Change Authority has been established by legislation as an independent body to provide expert advice on key aspects of the carbon pricing mechanism (including the setting of emissions caps) and on the Government's climate change mitigation initiatives.

A new Energy Security Council including energy and financial market experts will advise the Government in the event that systemic risks to energy security emerge from the financial impairment of power stations arising from any source, including from the introduction of the carbon pricing mechanism. The Council will provide advice to the Treasurer on the appropriate policy instruments available to address energy security risks. This will include providing advice to the Treasurer on the provision of Government loans to electricity generators which need to refinance their debt if finance from the market is not available.

The Productivity Commission, the Government's existing independent research and advisory body for analysis of economic, social and environmental policy issues, is tasked with undertaking reviews and assessments of assistance programs for EITE industries. These include consideration of how assistance arrangements are operating, their economic and environmental efficiency, and the impact of the Clean Energy Future Plan on EITE industries. As it currently does, the Productivity Commission will continue to report on actions taken by other countries to reduce GHG emissions.

Forecast Results

Modeling by the Government's Treasury department forecasts that the carbon pricing mechanism will increase the Consumer Price Index by 0.7 percent in 2012/13, the first year of the mechanism. The increase in the total average cost of living will be AUD515 a year. The bottom line for consumers will be an average household weekly increase of AUD9.90 in their cost of living, including AUD3.30 on electricity bills, AUD1.50 on gas and 80 cents on food. Against this, the average household compensation will be AUD10.10 per week. Assuming that actual results are similar to those predicted by the modeling, the average household will receive slightly more in compensation than

their increased costs under the carbon pricing mechanism.

Treasury estimates that without the carbon pricing mechanism, emissions in Australia would increase from 578 MtCO₂-e in 2009/10 to 679 MtCO₂-e in 2020 and 1008 MtCO₂-e in 2050. With the mechanism, the corresponding figures will be 621 MtCO₂-e in 2020 and 545 MtCO₂-e in 2050. Treasury expects Australian business to export funds and import emission reduction units to meet nearly two thirds of its abatement target, with 94 MtCO₂-e of abatement coming from overseas by 2020, and only 58 MtCO₂-e of abatement sourced at home.¹²

Treasury also estimates that, by 2050, as the global price of carbon rises to around AUD130 to AUD140/tCO₂-e, Australia will be sourcing less than half of its abatement from overseas, buying in 434 MtCO₂-e of abatement per year from international sources, out of a total requirement of 897 MtCO₂-e to meet the new 80 percent target by 2050.

Conclusions

The Australian Clean Energy Future Plan is notable for the complexity of its carbon pricing mechanism, for the breadth and depth of its accompanying complementary policies, and for the extent of the financial and other assistance provided to both industry and households.

The purpose of a carbon pricing mechanism is to reduce GHG emissions by increasing prices for emissions-intensive products and services. In Australia, by providing direct financial support for low-carbon alternatives, the complementary policies will stimulate GHG abatement in excess of that caused directly by the carbon pricing mechanism. However, the impact of the pricing mechanism in lowering emissions will be reduced by the allocation of much of the remaining carbon permit revenue to provide financial assistance and compensation for the increased costs experienced by industry and households. To increase the effectiveness of the pricing mechanism in reducing emissions, the carbon permit revenue initially directed to financial assistance and compensation should be redirected

12 Treasury's calculations do not include three important policy measures decided in the later stages of developing the carbon pricing mechanism: the buyout of brown coal generators; the \$10 billion extra funding for renewables; and the energy efficiency measures.

as soon as possible to provide funding for energy efficiency and renewable energy programs, and other low-carbon alternatives.

The effectiveness of the Australian carbon pricing mechanism is also influenced by political uncertainty. The current Australian federal Government still governs with the support of the Greens party and independent Members of Parliament and its success at the next election due in 2013 is far from certain. Opposition leader Tony Abbott has threatened to dismantle the carbon pricing mechanism and repeal the Clean Energy Future legislation if elected in 2013. In October 2011, he warned businesses not to purchase forward carbon permits, prompting reactions from electricity generators that such policy uncertainty will hinder investment decisions. It is unclear how feasible

dismantling the carbon pricing mechanism would be, both in practical and in political terms. Carbon permits have been defined as property rights under the legislation, and the government would need to compensate businesses for permits already purchased.

Australia's Clean Energy Future Plan is a bold attempt to use a combination of carbon pricing and complementary policies to achieve significant reductions in GHG emissions. Hopefully, the political process will allow both the pricing mechanism and the policies to be implemented for long enough to discover how effective they actually are. This implementation experience could then be used to guide modification and fine-tuning to further improve the effectiveness of Australia's comprehensive approach to mitigating climate change.

Update

September 2012

In late August and early September 2012, the Australian Government announced several significant changes to the Clean Energy Future Plan.

From 1 July 2015, a one-way link will be implemented between Australia's carbon pricing mechanism and the European Union Emissions Trading Scheme. The Australian Government and European Commission will then negotiate a two-way link between the schemes to commence from 1 July 2018.

Consequent on this linking, two changes will be made to the operation of the carbon pricing mechanism during the emissions trading scheme phase.

First, the AUD15 floor price for Australian carbon permits during the first three years of the emissions trading scheme phase will no longer apply and the price for permits will be set by the market price – reflecting an international market price.

Second, the use of international carbon reduction units from the Kyoto Protocol flexible mechanisms (CERs, ERUs and RMUs) will be limited to 12.5 percent of a liable entity's total liability. Liable parties will still be able to meet up to 50 percent of their annual liability with international units, however, this limit will include European Union Allowances, Kyoto units, and possibly other future carbon credits. As a result of these changes, the proposal to implement a top-up arrangement for eligible international units to the floor price will no longer be required.

Finally, the Australian Government announced that it has not been able to reach agreement with the owners of any of the emissions-intensive brown coal power stations on a price for buying out and shutting down a power station. Consequently, the buy-out program will not proceed.

Sources

The following documents were consulted during the preparation of this paper:

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A list of all the Acts forming the Clean Energy Future legislative package, with links to their full texts and explanatory memoranda, is available at: <http://www.climatechange.gov.au/en/government/clean-energy-future/legislation.aspx>

The Australian Treasury's carbon price modeling is available at: <http://archive.treasury.gov.au/carbonpricemodelling/content/default.asp>



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