Session SBI45 (2016)

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Question by New Zealand at Wednesday, 31 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: GHG projections

The review report states that Australia was undertaking modelling of emissions for 2030 and that these would be available in 2016. Has this modelling been completed, and if so, what are Australia's emissions and removals projections for 2030?

Answer by Australia, Thursday, 27 October 2016

The Australian Government is currently undertaking modelling of emissions projections to 2030. The Australian Government expects to provide an update of Australia's emissions projections by the end of 2016.

Question by United States of America at Wednesday, 31 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Emission trends before and after 2013

CTF table 6 shows that from 2005 to 2013, emissions with LULUCF dropped by 10%, while they are expected to increase by 8% from 2013 to 2020. Can you explain what caused this reversal from downward trend to upward trend?

Answer by Australia, Friday, 28 October 2016

The trend in net emissions from the land depends largely on rates of deforestation (conversion of forest and bush to pasture or settlements), rates of timber production and sequestration activity. The rise in net emission estimates reflects a projected increase in net emissions from a recovery of timber and agricultural production activity, responding principally to currency movements, and the natural dynamic associated with a decline in sequestration outcomes from past planting events.

Question by United States of America at Wednesday, 31 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Projections relative to inventory data

CTF table 1.1 lists total GHG emissions with LULUCF in 2000 as 554,791 ktCO2e, while CTF table 6 lists the same value 560,789, about 6,000 kt higher. The guidelines state that projections should be presented relative to actual inventory data for the preceding years. Using adjusted values here makes it more difficult to understand emissions trends. Can Australia provide clarify differences?

Answer by Australia, Friday, 28 October 2016

Australia maintains national inventories in keeping with its status as a party to both the UNFCCC, with a 2020 target under the Cancun Agreement, and to the Kyoto Protocol.

CTF table 6 presents data consistent with the inventory maintained for tracking Australia's progress towards its 2020 target (ref. Table ES.02 of Australia's National Inventory Report 2013). That inventory is based on emission estimates prepared using guidance for the Kyoto Protocol, and hence subject to maximum scrutiny under the UNFCCC expert review process.

In aggregate there is little difference in Australia's trend estimates between applying either the UNFCCC and the Kyoto Protocol land classifications. In practice, the major difference in scope between the two classification systems concerns forest lands. Under the Kyoto Protocol classifications, a narrow approach to Forest Management is used that restricts the inclusion of forests to those lands where forests are managed for timber production. Under the UNFCCC classification system all forest lands would be included.

CTF table 1.1 is consistent with Australia's UNFCCC inventory.

Question by United States of America at Wednesday, 31 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Reduction from BAU

Australia's Second Biennial Report states that Australia's target represents a substantial reduction from business-as-usual emissions. Can you please provide information on estimated business-as-usual emissions and the degree to which projected emissions have been reduced from business-as-usual?

For example, in response to a question from Brazil in the previous multilateral assessment of Australia's first Biennial Report, Australia stated that under a business-as-usual scenario without Australia's Emissions Reduction Fund, Australia's emissions were forecast to be 17 percent above 2000 levels in 2020. In addition, CTF table 6 of Australia's Second Biennial Report indicates total GHG emissions without LULUCF are expected to increase 15 percent from 2000 to 2020, and 5.7 percent with LULUCF. This comparison indicates that emissions in 2020 may be 2 to 12 percent below BAU.

Answer by Australia, Friday, 28 October 2016

Australia has not modelled emissions in the absence of policy measures. The impact of policies is instead incorporated into estimates of the drivers of emissions – for example, electricity demand, vehicle efficiency, afforestation and deforestation rates.

Question by United States of America at Wednesday, 31 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Decision to apply carry-over units

In response to multilateral assessment questions from the MA of BR1, Australia stated that it had not yet decided whether or not to use carry-over credits from KP1. BR2 now indicates Australia's plan to apply carry-over units towards its 2020 target. Can you explain the reasons that this decision was made?

How did this decision change the cumulative abatement task? For example, Figure 5.1 of BR2 shows a reduction in the cumulative abatement task between the 2014-15 projections and the 2015-16 update. Is this due to the decision regarding carry-over units?

Answer by Australia, Friday, 28 October 2016

The statements in Australia's second Biennial Report are consistent with our True Up Period Report, which requested the carry-over of surplus Kyoto units from the first commitment period. Once approved and notified by the International Transfer Log, Australia may carry these units over and later retire them for compliance with Australia's second commitment period target, and demonstrate achievement of our 2020 target.

The amount of carry-over units that are retired will be determined closer to the end of the second commitment period, noting that Australia is focusing on domestic action to meet its emission reduction targets.

In Australia's Second Biennial Report, the 2020 cumulative abatement task is presented inclusive of carry-over units.

Figure 5.1 of Australia's second Biennial Report presents the cumulative abatement task as at 2014–15 and 2015–16. Both include carry-over units. The change between the 2014-15 projections and 2015-16 update is due to the availability of more up-to-date sectoral-level data, inclusion of abatement from the Emissions Reduction Fund, updated abatement projections for the Large-scale renewable energy target and the transfer of Waste Industry protocol international units. The magnitude of these changes are summarised in figure 5.3 of Australia's Second Biennial Report.

Question by Japan at Wednesday, 31 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Questions about preparation process for projections

We consider it is excellent that Australia prepares and updates its projections almost every year. What kind of cycle or process is implemented to prepare projections? How does the timing of preparation of projections relate to the timing of preparation of GHG inventories and BR? What kinds of tasks does Technical Working Group regarding projection do specifically?

Answer by Australia, Friday, 28 October 2016

Australia prepares projections at regular intervals in order to inform domestic and international audiences about Australia's progress against its targets as well as the key drivers of emissions into the future. Australia reports on its national inventory and Biennial Report in line with relevant UNFCCC decisions. Generally, the projections are finalised by the end of a calendar year, using latest available National Greenhouse Gas Inventory data. Australia's timing for the preparation of projections allows updated projections to be included in its Biennial Report submissions.

The process of preparing the projections commences with a review and evaluation of the previous projections. A planning phase follows, then commissioning of modelling (externally) and/or commencement of internal modelling, review of results and quality checking, external review, report drafting and publication.

Australia undertakes expert review of its emissions projections assumptions, methodologies and draft results through the Projections Technical Working Group. The Projections Technical Working Group is comprised of independent experts, economists and industry representatives and provides advice around the appropriateness of assumptions and input sources and reviews draft results. Generally, the Technical Working Group formally meets twice each projections cycle with additional ad hoc meetings convened as required.

Question by Brazil at Wednesday, 31 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: CTF Table 3

Regarding mitigation actions referred to in “CTF Table 3 Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects”, are there any current estimates of mitigation impacts since the respective years of implementation?

Answer by Australia, Friday, 28 October 2016

For a number of energy efficiency policies and measures listed in CTF 3, the mitigation impact has not been separately modelled as these programs are accounted for in the baseline energy projections derived from the Australian Energy Market Operator’s electricity demand forecast. These policies and measures include:

- Appliance Energy Efficiency improvements
- Emissions reductions from the *National Construction Code*
- Emissions reductions from the *Nationwide House Energy Rating Scheme*
- Emissions reductions from the *Commercial Building Disclosure* program
- The *National Australian Built Environment Rating System*
- The *Energy Efficiency in Government Operations* program
- The *Community Energy Efficiency Program*
- The *Low Income Energy Efficiency Program*

· The *Energy Efficiency Information Programmes*

· The *Energy efficiency grant programmes*

A number of other policies and measures are implicitly included in the projections and are accounted for in the inventory base data. Their mitigation impact has not been separately quantified. These include:

· Major projects funded through the Emission Technology Demonstration Fund. Emission reductions delivered by the *Carbon Capture and Storage Flagships Program*, *National Low Emissions Coal Initiative* and the *Coal Mining Abatement Technology Support Package*.

· *Voluntary action delivered through the Carbon Neutral program, which is a voluntary scheme which certifies products, business operations or events as carbon neutral against the Australian Government's National Carbon Offset Standard.*

Question by Brazil at Wednesday, 31 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Mitigation impacts

In “CTF Table 3 Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects”, 26 mitigation actions were listed, while in BR1 only 6 mitigation actions were reported. Congratulations for this progress. However, only one mitigation impact was estimated. Please, inform the reasons for not reporting mitigation impacts for the other 25 mitigation actions. What are the difficulties to do so?

Answer by Australia, Friday, 28 October 2016

Accurately estimating the impact of individual policies and measures is complex and requires an assessment of emissions levels in the absence of the measure as well as the interplay between measures. Further details and challenges of quantifying the specific mitigation actions listed in CTF table 3 are outlined below.

Renewable Energy Target

Modelling commissioned to inform Australia’s 2014–15 emissions projections included scenarios with and without the Renewable Energy Target. This modelling has formed the basis of the mitigation impact estimate included in CTF table 3.

Emissions Reduction Fund

The Australian Government has contracted 143Mt CO_2-e of emissions reductions following the first three auctions of the Emissions Reduction Fund.

Energy Efficiency policies and measures

Energy efficiency programs – including programs at the state and territory level – are accounted for in the baseline energy demand projections which are based on the Australian Energy Market Operator's electricity demand forecasts. In instances where this may not be the case, for example when a scheme/program has been extended or updated/amended, demand projections may be adjusted and energy savings estimates are scaled for inclusion in the emissions projections.

The following energy efficiency policies and measures listed in CTF table 3 are accounted for in the energy demand projections and have not been modelled separately:

- Appliance Energy Efficiency improvements
- Emissions reductions from the *National Construction Code*
- Emissions reductions from the *Nationwide House Energy Rating Scheme*
- Emissions reductions from the *Commercial Building Disclosure* program
- The *National Australian Built Environment Rating System*
- The *Energy Efficiency in Government Operations* program
- The *Community Energy Efficiency Program*
- The *Low Income Energy Efficiency Program*
- The *Energy Efficiency Information Programmes*
- The *Energy efficiency grant programmes*

Abatement from the Solar Towns Programme is accounted for in the Renewable Energy Target estimate.

Other policies and measures

A number of other policies and measures are implicitly included in the projections and are accounted for in the inventory base data. These include:

- Major projects funded through the Emission Technology Demonstration Fund. Emission reductions delivered by the *Carbon Capture and Storage Flagships Program*, *National Low Emissions Coal Initiative* and the *Coal Mining Abatement Technology Support Package*.
- Voluntary action delivered through the *Carbon Neutral* program, which is a voluntary scheme which certifies products,

business operations or events as carbon neutral against the Australian Government's *National Carbon Offset Standard*.

Question by Brazil at Wednesday, 31 August 2016

Category: All emissions and removals related to its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Waste Industry Protocol

In page 42, there is the following footnote: “Further information on the voluntary Waste Industry Protocol is available at: www.environment.gov.au/climate-change/publications/voluntary-waste-industry-protocol”.

Thanking Australia for providing the referred web link for further information, it would be useful if more details about the initiative could be provided.

Answer by Australia, Friday, 28 October 2016

Australia implemented a carbon tax for two years, from 1 July 2012 to 30 June 2014. Under the tax, operators of landfills emitting more than 25,000 tonnes CO_2-e per year were liable for emissions of methane generated by organic waste deposited during this period. In response, many landfills increased waste disposal fees to cover projected liability from total emissions expected over the lifetime of decomposition of the waste.

The repeal of the carbon tax removed future liability for landfill operators, but left them in possession of money collected to cover emissions expected beyond that date. The Australian waste industry developed the voluntary Waste Industry Protocol to provide a pathway for landfill operators to return this money. Participation under the Protocol is voluntary. Nine of Australia’s largest landfill operators have agreed to abide by the rules of the Protocol.

Landfill operators agreeing to the Protocol have undertaken to refund excess carbon charges to customers where it is feasible, for example to local governments. Any remaining non-refunded carbon charges will be invested in domestic emissions reduction projects or used to purchase eligible carbon units, to be transferred to the Australian Government.

Under the voluntary Waste Industry Protocol, landfill operators have purchased over 25.4 million Certified Emission Reductions (CERs) and transferred them to the Government. All CERs transferred to the Australian Government must be Kyoto Protocol compliant and undertaken in accordance with the rules and methodologies of the Clean Development Mechanism.

Question by Brazil at Wednesday, 31 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: CERs

Table 2(f) reports the following: “Under the voluntary Waste Industry Protocol the Australian Government has been gifted 21,768,290 first commitment period CERs by landfill operators. Australia will use units received though the voluntary Waste Industry Protocol to contribute to its unconditional 2020 target”.

Please, further elaborate on how Australia will use the units received to meet the target. Please, refer to CERs cancelation, National Registry, ITL, etc.

Answer by Australia, Friday, 28 October 2016

Australia assesses its progress towards its 2020 target using a carbon budgeting approach, and applies reporting and accounting approaches consistent with the Kyoto Protocol, including the use of carry-over and market-based mechanisms.

Australia currently holds 21.77 million CERs from the first commitment period, and an additional 3.69 million CERs from the second commitment period (an increase on the figure reported in Second Biennial Report). These units were purchased and transferred into the Holding Account of Australia’s National Registry by private landfill operators under the voluntary Waste Industry Protocol.

Australia’s True Up Period Report requested the carry-over of Kyoto units from the first commitment period. Once approved and notified by the International Transfer Log, Australia may carry these units over and later retire them for compliance with Australia’s 2020 target.

Australia’s National Registry is legislated under the *Australian National Registry of Emissions Units Act 2011*. Australia’s Registry is designed to support Australia’s commitment under the Kyoto Protocol, and links with the International Transfer Log. Australia’s Registry is administered by the Clean Energy Regulator. Once approved and notified by the International Transfer Log, the *Australian National Registry of Emissions Units Regulations 2011* requires the Minister to instruct the Clean Energy Regulator to carry over an amount of units into a relevant second commitment period account. This legislated process ensures an approach that is consistent with relevant Kyoto rules.

Question by Brazil at Wednesday, 31 August 2016

Category: All emissions and removals related to its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Projections for 2020

Australia states that “emissions are rising from 560 Mt CO2-e in 2014–15 to 593 Mt CO2-e in 2019–20, which is 63 Mt CO2-e lower than the 2014–15 projections’ estimate for 2019–20 of 656 Mt CO2-e (figure 5.4)”. However, according to Table 6 (a) (Information on updated greenhouse gas projections Under a ‘With Measures’ Scenario) contained in BR1, the GHG emissions projected for 2020 were of *613* Mt CO2e.

Why is Australia referring to 656 Mt CO2e as previous estimate for 2019-2020 if the estimate contained in BR1 for 2020 is *613* Mt CO2e?

Answer by Australia, Friday, 28 October 2016

Australia updates its emissions projections regularly to ensure the expected mitigation impacts reflect the most up-to-date information on policies and measures progress. Since the first Biennial Report Australia published updated emission projections in March 2015.

Australia’s first Biennial Report was submitted to the UNFCCC in 2013. The projections in the first Biennial Report included the policies and measures in place at the time including the *Clean Energy Act 2011*. At the time domestic emissions were estimated to be 614Mt CO_2-e in 2020.

In 2014 the Parliament of Australia repealed the carbon tax by passing the *Clean Energy Legislation (Carbon Tax Repeal) Act 2014*. In March 2015 Australia published the 2014-15 Projections. Emissions in 2020 were estimated to be 656 Mt CO_2-e. The 201415 Projections did not include abatement from the Emissions Reduction Fund. The operation of the Emissions Reduction Fund was being finalised when the 2014-15 Projections were published.

The Second Biennial Report projections included estimates of abatement from the Emissions Reduction Fund for the first time with emissions in 2020 estimated to be 593Mt CO_2-e.

Question by Switzerland at Wednesday, 31 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Development of transport emissions

According to the Technical Review Report, the most significant GHG emission increases under Australia's WEM scenario from 1990 to 2020 will occur in the energy sector, followed by the transport sector, where an increase of 67.7 per cent is expected.

In its 2nd BR, Australia states that "The Australian Government aims to reduce emissions from motor vehicles. Australia has had road vehicle emission standards for new vehicles in place since the early 1970s and these have been progressively tightened over the past 40 years."

1) Could Australia inform about the evolution of the fuel efficiency of its road vehicle fleet (in terms of CO_2 emissions per kilometre for new vehicles) over time? Has Australia experiences it could share concerning efficiency targets for lowering fuel consumption or GHG emissions from road traffic?

2) As regards emissions from freight transports: Is Australia also considering development of non-fossil fuel based freight transport options, e.g. through electrification of railways and their operation with renewable electricity?

Answer by Australia, Friday, 28 October 2016

1) The fuel efficiency of the Australian light vehicle fleet has evolved at different rates over time, as shown in the below table.

Average emissions intensity of new light vehicles sold in Australia (NTC 2016)

Year	Average emissions intensity (g/km)
2002	252.4
2003	249.5
2004	246.5
2005	240.5
2006	230.3
2007	226.4
2008	222.4
2009	218.6
2010	212.6
2011	206.6
2012	199
2013	192.2
2014	187.8
2015	184.2

Source: National Transport Commission 2016, *Carbon Dioxide Emissions Intensity for New Australian Light Vehicles* 2015,

Information paper, NTC, Australia.

Australia's National Energy Productivity Plan recommended improving light vehicle efficiency as part of a range of measures designed to improve Australia's energy productivity 40 per cent from 2015 to 2030.

Australia has established a Ministerial Forum on Vehicle Emissions. The Ministerial Forum is undertaking a whole of government review of vehicle emissions looking at issues such as, a noxious emissions standard, fuel quality and how to best reduce greenhouse gas emissions. A fuel efficiency standard for light vehicles is one issue being considered by the Forum.

The Emissions Reduction Fund Safeguard Mechanism places emissions limits on Australia's largest emitters (those who emit over 100,000 t CO_2-e per year). It commenced on 1 July 2016 and covers around half of Australia's emissions, including emissions from the transport sector. Transport sectors covered by the Safeguard Mechanism include domestic aviation, rail, marine and heavy on-road.

The Land and Sea Transport method of the Emissions Reduction Fund provides a way for vehicle fleet owners to earn Australian Carbon Credit Units by improving vehicle efficiency, including replacing older vehicles with more efficient vehicles. The resulting carbon credits may then be sold to the Australian Government through a competitive process via a reverse auction held by the Clean Energy Regulator.

2) Australia supports reducing emissions from Australia's road freight and is working through a number of policy approaches including:

· moving more freight onto rail;

· facilitating more efficient access to the road network for freight vehicles; and

· supporting the introduction of innovative, more productive fuel efficient vehicles through the Performance Based Standards scheme.

Australia is investing in rail freight infrastructure to increase the volume of freight that can be transported by trains and to ease urban congestion. The Australian Government is progressing planning for the approximately AUD$10 billion Melbourne to Brisbane inland rail project, committing an additional AUD$593.7 million for continued preconstruction works and land acquisition in the 2016 Budget, bringing the current Australian Government commitment to AAUD$893.7 million. On the basis that one interstate train on the Inland Railway is the equivalent of approximately 110 B-double trucks, Inland Rail in 2050 would reduce the freight task's carbon footprint by 750,000 tonnes. Further information can be found at www.infrastructure.gov.au/rail/inland.

The Australian Government's Transport and Infrastructure Council will shortly release the National Rail Vision and Work Program. The National Rail vision and Work Program, which includes freight and passenger rail services, identifies future

areas for rail reform and a program of activities for all Australian governments, and industry, that seek to enhance productivity, competitiveness and liveability. The National Rail Vision and Work Program should be available from December 2016 on the Transport and Infrastructure Council's website www.transportinfrastructurecouncil.gov.au/publications.

As part of the Work Program, the Australian Government is undertaking research to develop a national intermodal strategy which will consider future demand and capacity and operational and design requirements to meet long term needs. It is also considering reform to optimise rail's market share of the landside port transport task. This work builds on the research undertaken by the Bureau of Transport and Regional Economics (BITRE) titled Why short-haul intermodal rail services succeed. This research paper can be found at www.bitre.gov.au/publications/2016/rr_139.aspx.

Question by Switzerland at Wednesday, 31 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Business-as-usual vs climate policy driven emission levels

In its 2nd BR, Australia states that "The Australian Government is committed to an unconditional Quantified Economy-wide Emission Reduction Target (QEERT) of five per cent on 2000 levels by 2020. Australia's target is equivalent to a 13 per cent reduction on 2005 levels and represents a substantial reduction from business-as-usual emissions on a range of indicators."

1) Could Australia elaborate on the indicators it refers to in its BR as well as on the methods employed for the ex-ante assessment of the difference between business-as-usual emission levels versus climate policy driven emission levels?

2) According to information provided in its 2nd BR, the expected mitigation impact has been estimated for a very limited number of measures only. Could Australia elaborate on how progress in the implementation of these measures will be assessed in order to monitor and evaluate their contribution to the achievement of the 2020 target?

Answer by Australia, Friday, 28 October 2016

Section 5.2.2 of Australia's Second Biennial Report identifies indicators that provide additional context to Australia's 2020 target.

- The emissions intensity of GDP is expected to fall by 42 per cent in 2020 when compared to 2000.
- Emissions per person are expected to fall by 22 per cent in 2020 compared to 2000 levels.

Accurately estimating the impact of individual policies and measures is complex and requires an assessment of emissions levels in the absence of the measure as well as the interplay between measures.

For a number of the energy efficiency policies and measures listed in CTF 3, the mitigation impact has not been separately modelled. Instead these policies and measures are accounted for in the baseline energy projections derived from the Australian Energy Market Operator's electricity demand forecast. These policies and measures include:

- Appliance Energy Efficiency improvements
- Emissions reductions from the *National Construction Code*
- Emissions reductions from the *Nationwide House Energy Rating Scheme*
- Emissions reductions from the *Commercial Building Disclosure* program
- The *National Australian Built Environment Rating System*
- The *Energy Efficiency in Government Operations* program
- The *Community Energy Efficiency Program*
- The *Low Income Energy Efficiency Program*
- The *Energy Efficiency Information Programmes*
- The *Energy efficiency grant programmes*

Australia's development of emissions projections follows a robust process to ensure that the mitigation impacts of measures and their contribution to meeting Australia's targets is informed by the most up-to-date information. This process includes:

- review and evaluation of the previous projections including assumptions, modelling methodology and data sources.
- project planning, including commissioning of modelling (externally) and/or development of internal modelling.
- internal quality assurance and quality control processes.
- an external expert review of the underlying assumptions, methodologies and draft results through the Projections Technical Working Group.

Question by United States of America at Wednesday, 31 August 2016

Category: All emissions and removals related to its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Contribution of LULUCF

Changes in emissions from LULUCF have had a very important impact on Australia's emissions trajectory. Do you have any estimates for the total effect of policies affecting the land use change and forestry sector or business-as-usual projections for what emissions from this sector would have been without policies and measures?

Answer by Australia, Friday, 28 October 2016

Net emissions from Australia's land sector have fallen significantly over time due to the impact of government policies and structural changes in the economy.

Principal sources of the decline in net emissions result from declines in conversion of forest to other land uses, declines in timber harvest and increases in conversion of other lands to forest land. Principal policies include actions at federal and state levels.

Under the Emissions Reduction Fund, companies, farmers, Indigenous groups, local councils and others can initiate projects that reduce emissions and earn carbon credits (known as Australian Carbon Credit Units). The Australian Government has allocated $2.55 billion to purchase Australian Carbon Credit Units. The Clean Energy Regulator administers a competitive process to purchase carbon credits at the lowest available cost. The Emissions Reduction Fund has purchased more than 143 million tonnes in emissions reductions at an average price of AUD$12.10 per tonne from emission reduction projects.

A large number of projects under the Emissions Reduction Fund occur in the LULUCF sector. It is estimated that the volume of abatement contracted from the first three auctions under the Emissions Reduction Fund in the land sector is around 106 Mt CO_2-e.

At state and territory level, management of vegetation is controlled by state legislation which, in many cases, requires licenses to be obtained prior to the conversion of forest to other land uses. Changes in state legislation are captured within Australia's national land inventory, however their impact has not been disaggregated.

Question by United States of America at Wednesday, 31 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Longer term mitigation policy

How is Australia taking into account longer-term mitigation needs when formulating mitigation policy? Is Australia implementing mitigation policy measures that are important to prepare for implementation of longer-range targets (e.g., 2030), but which do not achieve major mitigation gains in the short-term? This might include, for example, work to prepare for the electrification of the transport sector.

Answer by Australia, Friday, 28 October 2016

Research, development and innovation, particularly in relation to clean energy, is an important component of the Australian Government's approach to climate change. For example:

- The Australian Renewable Energy Agency supports early stage renewable energy research and development activities through its grant funding programs, which help to develop technologies and improve sector confidence in renewable energy projects to strengthen those projects' chance of success.
    - The Australian Renewable Energy Agency priority areas of focus include bioenergy, energy storage, hybrid/enabling technologies, ocean energy, renewable energy industry capacity building, and solar energy.
    - To date, the Australian Renewable Energy Agency has provided around AUD$1.1 billion in funding for around 240 projects, drawing in a further AUD$1.6 billion in other investment.

- The Clean Energy Finance Corporation is a statutory authority established in 2013. It has AUD$10 billion in capital to invest clean energy technologies – renewables, energy efficiency and low emissions.
    - To date, the Clean Energy Finance Corporation has made cumulative commitments of more than AUD$2.3 billion since inception. These projects and programs will catalyse a further AUD$5.7 billion in other investment in clean technology infrastructure and energy efficiency projects.

- The Clean Energy Innovation Fund, which is jointly managed by the Australian Renewable Energy Agency and the Clean Energy Finance Corporation, targets projects such as large scale solar with storage, off-shore energy, biofuels and smart grids. The fund takes a commercial approach and is expected to assist in pushing emerging clean energy technologies from demonstration to commercial deployment.

- The Commonwealth Scientific and Industrial Research Organisation currently spends around AUD$120 million each year on its Energy Division, which includes clean
energy-related research, development and demonstration.

- The Commonwealth Scientific and Industrial Research Organisation is also currently developing a Low Emissions Technology Roadmap which will highlight opportunities to grow Australia's clean technology sector, fast track emissions reductions and promote Australia's role in future global supply chains.

· The Australian Research Council (ARC) provides competitive research grants to fund pure and applied research across the full range of university disciplines. In 2015, approximately AUD$19 million of ARC grants were awarded to research into clean energy technologies.

· In recognition of the need for global efforts to reduce emissions, grow national economies and create jobs of the future, Australia joined the global Mission Innovation Initiative in November 2015, and pledged to double early stage government clean energy research and development expenditure over five years to approximately AUD$210 million by 2020.

In light of the Australian Government's commitment at Paris, the integration of climate and energy policy at a federal level, and the outcomes of recent reviews into Australia's energy sector, the Australian Government recently agreed with sub-national jurisdictions to an independent review of the security of Australia's energy system. The review is expected to be completed in early 2017 and will lead to a blueprint to manage Australia's changing energy mix.

Additionally, the Australian Government has committed to review Australia's climate change policy framework next year (2017) to ensure it remains effective in achieving our 2030 target. The review will look to build on our established policies to ensure they are efficient and calibrated towards achieving our 2030 target. The Government's approach to the review will be announced prior to the review start date of 2017.

Question by United States of America at Wednesday, 31 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: CER project types

You state that, "Under the voluntary Waste Industry Protocol the Australian Government has been gifted 21,768,290 first commitment period CERs by landfill operators. Australia will use units received though the voluntary Waste Industry Protocol to contribute to its unconditional 2020 target." Do we understand correctly that these CERs are based on the same project types as those endorsed by Australia's Emissions Reduction Fund and/or the National Carbon Offset standard, or are these CERs based on additional project types? If based on additional project types, what types of projects formed the basis for these CERs purchased by landfill operators?

Answer by Australia, Friday, 28 October 2016

Under the voluntary Waste Industry Protocol, landfill operators purchased Certified Emission Reductions (CERs) and

transferred them to the Government. All CERs transferred to the Australian Government must be Kyoto Protocol compliant and undertaken in accordance with the rules and methodologies of the Clean Development Mechanism.

CERs transferred to the Government under the Waste Industry Protocol have supported projects in: renewable energy; energy efficiency; destruction of fugitive emissions; destruction of methane from landfill; other methane destruction; fuel switching; destruction of nitrous oxide (N2O) at nitric acid plants; clinker replacement in cement production; district heating; and destruction of sulphur hexafluoride (SF6).

Question by New Zealand at Tuesday, 30 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Policies and measures in projections

Which policies and measures are included in Australia's "with measures" projections scenario?

Answer by Australia, Friday, 28 October 2016

The policies and measures included in Australia's 'with measures' projections scenario are those indicated in CTF table 3. These are:

- Emissions Reduction Fund (Crediting and Safeguard).
- Renewable Energy Target.
- Appliance Energy Efficiency.
- National Construction Code.
- Nationwide House Energy Rating Scheme.
- Commercial Building Disclosure Program.
- National Australian Built Environment Rating System.
- Energy Efficiency in Government Operations.
- Community Energy Efficiency Program.
- Low Income Energy Efficiency Program.

- Energy efficiency information programmes.
- Energy efficiency grants programmes.
- 20 Million Trees Programme.
- Solar Towns programme.
- Carbon Capture and Storage Flagships Program.
- National Low Emissions Coal Initiative.
- Emissions Technology Development Fund.
- Coal Mining Abatement Technology Support Package.
- National Carbon Offset Standard.
- Carbon Neutral Program.

Question by European Union at Monday, 29 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Emissions Base Year

Australia's emissions are on a rising trend since 1990, but have recently started to flatten. Overall emissions have fallen since 2005-06, due largely to a substantial fall in LULUCF emissions. LULUCF emissions have varied strongly from year to year and have been subject to large retroactive revisions in the recent past. Given the importance of LULUCF in national emissions, it is possible that the base year (2000) emissions for Australia's quantified economy-wide emission reduction target will continue to be revised as new methodologies are adopted and implemented. Could Australia explain its approach for ensuring the consistency of its mitigation commitments in the light of such revisions? What lessons could be drawn from this in terms for the preparation and implementation of future efforts, such as the NDC?

Answer by Australia, Friday, 28 October 2016

Australia's national emissions have fallen since the late 2000s due to implementing mitigation measures, the effects of the Global Financial Crisis and structural changes in the economy. Australia's land sector emissions have fallen as a result of substantially reduced rates of deforestation and timber harvests, which have led to reductions in emissions from 'Deforestation' and 'Forest Management' under the Kyoto Protocol. Similar reductions are observed for the UNFCCC classifications 'Forest converted to other land uses' and for 'Forest land remaining forest land'. These improvements in

emission outcomes across the Australian landscape contribute towards our emission reduction targets.

Australia's 2030 emission reduction target has been estimated using data based on the UNFCCC classification for Land Use Land Use Change and Forestry. Estimates are prepared consistently across all member states of the Australian federation using the latest IPCC Guidelines. The estimates have been recently recalculated to apply the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, as well as improved estimation methods and data. All data is time series consistent. Any recalculations affect estimates for 2000 and for out years consistently. All data in the national inventory is subject to UNFCCC annual expert review, providing assurance that any recalculations have been done correctly and consistently.

Question by European Union at Monday, 29 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Emissions Reduction Fund - safeguard mechanism (2)

In section 4.3.1.1 of the BR, Australia states that the safeguard mechanism covers facilities that exceed the emissions threshold of 100,000 tonnes CO_2-e per year. What is the projected contribution of ERF abatement purchased from projects under this threshold?

Answer by Australia, Friday, 28 October 2016

Abatement from the Safeguard Mechanism was not estimated for the Biennial Report as it was still being designed. The Safeguard Mechanism commenced on 1 July 2016. The Safeguard Mechanism requires facilities with direct emissions of more than 100,000 tonnes CO_2-e a year to keep emissions within established emission limits.

The thresholds for the Safeguard Mechanism are not related to abatement credited or purchased under the Emissions Reduction Fund. Safeguard Mechanism thresholds apply to facilities in the industrial sectors. Emissions Reduction Fund projects can occur in any sector using an approved method.

Question by European Union at Monday, 29 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Energy efficiency

Section 4.3.1.3.2 of Australia's biennial report refers to a number of energy sector methods to purchase emissions reductions from projects that improve energy performance. Energy efficiency improvements are a typical part of ongoing business operations. How does the ERF separate these purchased emissions reductions from business-as-usual reductions and guard against the selection of lowest auction bids that are more likely to be non-additional "anyway" projects?

Answer by Australia, Friday, 28 October 2016

All Emissions Reduction Fund methods, including energy efficiency methods, must comply with offset integrity standards set out in the *Carbon Credits (Carbon Farming Initiative) Act 2011*. One of these standards requires projects to deliver abatement that is unlikely to occur in the ordinary course of events.

An independent group of experts established under the *Carbon Credits (Carbon Farming Initiative) Act 2011*, the Emissions Reduction Assurance Committee, has responsibility for providing advice to Australia's Minister for the Environment and Energy on whether methods comply with these standards. The Minister for the Environment and Energy must not make or vary a method if the Committee considers it inconsistent with the offsets integrity standards. Each Emissions Reduction Fund method includes a range of features to ensure the offsets integrity standards are met.

In addition to these requirements for methods, all projects applying to be registered under a method must meet additionality requirements set out in the *Carbon Credits (Carbon Farming Initiative) Act 2011*. The Clean Energy Regulator assesses whether projects comply with the method and other additionality criteria.

Question by European Union at Monday, 29 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Renewable energy target

In section 4.3.2 of the BR, Australia provided updated details on the Renewable Energy Target (RET), informing that the RET has been amended to exempt all emissions-intensive trade-exposed industries from all RET costs. Are the effects of these exemptions included in Australia's projected cumulative abatement? Could Australia provide a quantified estimate of

the total emissions that might result from these exemptions?

Answer by Australia, Friday, 28 October 2016

In 2015, the Australian Government increased assistance for emissions-intensive trade-exposed activities under the Renewable Energy Target by increasing the exemption rate to 100 per cent for electricity used in undertaking emissions-intensive trade-exposed activities.

Exemptions under the Renewable Energy Target do not impact on the total amount of renewable energy that is required under the scheme (i.e. the amount of renewable energy incentivised by the mechanism is not impacted on by the exemptions). Therefore, there is no change to Australia's quantified estimate of the total emissions due to increased assistance for emissions-intensive trade-exposed activities.

Question by European Union at Monday, 29 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Emissions Reduction Fund - safeguard mechanism (1)

In section 4.3 of the BR, Australia announced the implementation of a "safeguard mechanism" for the Emissions Reduction Fund (ERF) which came into effect on 1 July 2016. Could Australia explain whether the ERF abatement including from forest protection and pre-existing landfill gas projects purchased prior to this date has also been safeguarded?

Answer by Australia, Friday, 28 October 2016

Australia's Safeguard Mechanism, which commenced 1 July this year, puts emissions limits on facilities with direct emissions of more than 100,000 tonnes CO_2-e a year. The emissions limits ensure emissions reductions purchased by the Australian Government, including from forest protection and pre-existing landfill projects, are not displaced by significant increases in emissions above business-as-usual levels elsewhere in the economy. The Safeguard Mechanism applies to all industrial sectors and includes stationary energy, transport and solid waste disposal.

All Emissions Reduction Fund methods must comply with offset integrity standards set out in the *Carbon Credits (Carbon Farming Initiative) Act 2011*. An independent group of experts, the Emissions Reduction Assurance Committee that is established under the *Carbon Credits (Carbon Farming Initiative) Act 2011*, has responsibility for providing advice to

Australia's Minister for the Environment and Energy on whether methods comply with these standards.

All project credits, including those purchased prior to 1 July 2016, have adhered to the standards and rigorous method requirements.

Question by European Union at Monday, 29 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: LULUCF contribution

In sections 4.3.1.3.3 and 5.3.8 of its BR2, Australia updates some details on "Avoided Clearing of Native Regrowth", stating that projected increases in land clearing will be offset by low rates of native forest harvesting. Noting that tree-clearing controls were instrumental in Australia meeting its Kyoto commitment, have the emissions projections been adjusted to account for the updates?

Answer by Australia, Friday, 28 October 2016

Any changes to land use regulations are considered when preparing Australia's emissions projections to ensure the emissions and sinks are appropriately reflected.

The most recently published projections incorporate the effects of land regulations and activities currently in place, including those relating to land clearing and native forest harvesting. Australia publishes updated projections every year to ensure timely information to inform the public, policy makers and other parties of Australia's progress towards its emission reduction commitments.

Question by China at Monday, 29 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Effects of mitigation actions

GHG emission removed by LULUCF sector is equal to about 25% of the total emission of Australia and is the largest contributor to the decrease in GHG emission. However, little information on the estimated effects of PaMs in LULUCF sector has been reported in BR2. Could Australia identify the key PaMs in its LULUCF sector and provide more information on their implementation progress and estimated effects?

Answer by Australia, Friday, 28 October 2016

The Government's key abatement program on the land sector is the Emission Reduction Fund, which provides project proponents support for abatement activities across the land. Following the most recent auction, the Government has contracted around 106 Mt CO_2-e of abatement in the land sector at a total cost of A$1.29 billion.

At state and territory level, management of vegetation is controlled by state legislation which, in many cases, requires licenses to be obtained prior to the conversion of forest to other land uses. Changes in state legislation are captured within Australia's national land inventory; however their impact has not been disaggregated.

Question by China at Monday, 29 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Projections

It is observed that during 2005 to 2013, the GHG emission of Australia has been decreased. In the projection reported in BR2, the GHG emission will start to increase after 2013 even in the "with measure" scenario. Could Australia elaborate on the drivers for that projected increase?

Answer by Australia, Friday, 28 October 2016

The key driver for emissions increasing after 2013 is the large expansion of the Liquefied Natural Gas (LNG) production industry in Australia. LNG production is expected to increase by over 200 per cent to 2020. This is expected to lead to emissions growth from this industry by over 27 Mt CO_2-e.

Australia's current emissions projections indicate that Australia will not exceed 2006 emissions in the period to 2020. The Australian Government has committed to review its policies in 2017 in the context of Australia's 2030 target and Paris

Agreement, including considering a long-term target for Australia. The Australian Government's policies and measures will be designed to ensure Australia meets its 2030 target of 26-28 per cent below 2005 levels.

Question by China at Monday, 29 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: per capita GDP

It is reported that in 2013 per capita GHG emission is of 23.3 tCO_2-eq per person in Australia. Although it is the lowest level since 1990, it is significantly higher than the world average and is the highest among OECD countries. Could Australia illustrate the reasons for such high per capita emission, such as economic structure, behavior and lifestyle, incentives for low-carbon development, etc.?

Answer by Australia, Friday, 28 October 2016

Australia's per capita emission levels reflect the nation's reliance on fossil fuels as a primary energy source, the absence of any nuclear power, and structure of the economy. In particular, this is evident in exports of energy intensive products, such as Liquefied Natural Gas, or methane intensive products, such as beef.

Australia has a broad suite of policies in place to continue to decouple emissions from economic growth. Australia is rapidly reducing its emissions per capita. Between 2005 and 2015, the emissions per capita have decreased on average 2.6 per cent per annum compared with an observed average of 0.3 per cent per annum between 1990 and 2005.

Australia's INDC projects a reduction in per capita emissions of over 50 per cent between 2005 and 2030, among the highest per capita reductions of any commitment.

Question by China at Monday, 29 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: vehicle emission standard

Could Australia provide more information on how the Ministerial Forum on Vehicle Emissions Standard and Vehicle Testing will promote emission reduction in transportation sector? And does Australia have any plans on promoting public transportation system?

Answer by Australia, Friday, 28 October 2016

The Australian Government has established a Ministerial Forum on Vehicle Emissions to undertake a whole of government review of vehicle emission measures. The Forum is considering measures to reduce emissions from cars, trucks and busses, including:

- Introducing light vehicle fuel efficiency standards;
- Moving from the Euro 5/V standard to Euro 6/VI to reduce noxious emissions from vehicles;
- Improving fuel quality standards; and
- Other measures, such as support for alternatively fuelled vehicles, including electric vehicles.

A decision by the Australian Government on which measures to implement is expected in 2017.

The Australian Government is committed to improving connectivity and reducing congestion on our roads. Infrastructure projects are assessed on their merits by the relevant jurisdiction, with funding being provided for both public transport and road improvement projects. State and Territory governments have a range of measures in place to promote public transportation.

Question by China at Monday, 29 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: ETS

Could Australia provide information or estimation on the impacts on GHG emission by the repeal of ETS? Has Australia considered other approaches to set up a domestic carbon price?

Answer by Australia, Friday, 28 October 2016

The Australian Government has not undertaken analysis of the impact of the repeal of the carbon tax on emissions.

Following the repeal of the carbon tax, Australia has implemented a suite of other emissions reduction policies, including the Emissions Reduction Fund. The Emissions Reduction Fund provides an economy-wide mechanism to facilitate the creation of Australian Carbon Credit Units. These units can be sold to private purchasers or to the Australian Government under its AUD$2.55 billion Emissions Reduction Fund.

Through a competitive reverse auction, the Australian Government has contracted 143 million tonnes of emissions reductions through three auctions with an average price of AUD$12.10 per tonne.

Question by China at Monday, 29 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: conditional targets

Australia did not report on its conditional target for 2020 in its BR2 and clarified during the technical review that it has determined to strengthen long-term climate action building on unconditional 2020 target according to the TRR. However, a 2030 target cannot close pre-2020 gap. Meanwhile, according COP decision 1/CP.19, developed country Parties are urged to revisit their QEWERT and periodically evaluate the continuing application of any conditions associated with its QEWERT with a view to adjusting, resolving or removing such conditions. In this regard, we would like to know that whether Australia has evaluated the continuing application of the conditions associated with their 2020 targets. If no, when Australia plans to do so? If yes, what are the conclusions?

Answer by Australia, Friday, 28 October 2016

Australia is committed to its unconditional 2020 target to reduce emissions to five per cent below 2000 levels by 2020. This represents an increase in ambition from our first commitment period target under the Kyoto Protocol. Australia is working to achieve ambitious mitigation reductions and, according to emissions projections published in April 2015, we are expected to achieve and surpass our cumulative abatement task to 2020 by 78 million tonnes of carbon dioxide equivalent.

In 2015, Australia committed to a 2030 target to reduce emissions by between 26 to 28 per cent below the 2005 level. Our existing policies are providing an enduring framework to deliver the deeper emissions reductions required to meet our 2030 target and they are also delivering abatement toward our 2020 target. To achieve our 2030 target, Australia is also in the process of developing and implementing new measures to reduce emissions in the areas of light vehicle efficiency, energy efficiency and a hydro-fluorocarbon phase-down. Some of these measures will come into effect before 2020. The Australian Government has committed to review its policies in 2017 in the context of Australia’s 2030 target and Paris Agreement,

including considering a long-term target for Australia.

Question by China at Monday, 29 August 2016

Category: All emissions and removals related to its quantified economy-wide emission reduction target

Type: Before 31 August

Title: LULUCF emission/removal

What are the uncertainties for emission estimation for LULUCF and its sub-sectors? How will the relatively high uncertainty level impact the estimation of total emission?

Answer by Australia, Friday, 28 October 2016

Uncertainty analysis for the Australia's LULUCF sector was undertaken using the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. More detail about the uncertainty approaches can be found in Australia's 2014 National Inventory Report (Volume 3, Annex 2.4) submitted in August 2016 and available at www.environment.gov.au

While uncertainties may seem high for any given year, these are mitigated through the use of a consistent time series. From the produced data, trends can be identified and this improves the confidence when considered in conjunction with all other estimates. Estimates are reviewed every year by UNFCCC expert review teams and Australia welcomes the opportunity these reviews provide to scrutinise and refine its national inventory systems and reporting.

Question by China at Monday, 29 August 2016

Category: All emissions and removals related to its quantified economy-wide emission reduction target

Type: Before 31 August

Title: recalculation

In its 2015 national inventory, Australia has reported a recalculation result with a significant increase of 8.1% and 9.6% for year 2000 and 2005, but at the meantime the results for other years have not been significantly different. Could Australia illustrate the reasons for those changes in emission levels for base years of its QEWERT and INDC?

Answer by Australia, Friday, 28 October 2016

Table 10.3 of Australia's National Inventory Report 2013 Volume 2 (NIR Vol.2) submitted in 2015 lists the recalculations as a percentage change between total national emissions in 2012 and 2013. As shown in that table, the percentage change values for each year during the 1990-2012 time period vary between values higher and lower than those reported for 2000 and 2005. Australia customarily reports recalculations on a sectoral basis in table 10.2 of Volume 2 of its NIR and CRF tables 8s1-8s4.

The recalculations reflect in part the requirement to apply, for the first time, the 2006 IPCC Guidelines for National Greenhouse Gas Inventories including the requirement to apply updated Global Warming Potentials and Emissions Factors. They also reflect Australia's commitment to the continuous improvement of its national inventory. The recalculations, along with the rest of Australia's 2015 NIR submission, have been subject to the UNFCCC expert review process.

Changes made to the inventory since 2015 reverse some of these effects, as shown in tables 10.2 and 10.3 of Australia's National Inventory Report 2014 (revised). Note we expect further changes to the data in the future as improved estimation methods and data are developed – which could increase or decrease emissions levels.

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