



Road to Copenhagen: *Negotiating Australia's 'comparable effort'*

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Briefing note by Access Economics Pty Limited for
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Key points

While the Government has publically announced a range of possible national allocations for greenhouse gas emissions in year 2020 (known as 'targets' in the public debate), a cumulative national allocation budget for 2013 to 2020 has yet to be negotiated.

The concept of a national allocation budget — known as the 'assigned amount' under the Kyoto Protocol — is commonly misnamed an emissions 'target' in the public debate. Australia's assigned amount of 108% of 1990 emissions from 2008 to 2012 is *not* an emissions target — that is, there is no cap on Australia's actual emissions, but rather there is an allocation of international emissions rights. Similarly, Australia's national allocation budget for 2013 to 2020 to be negotiated at Copenhagen will not represent a target on domestic emissions.

A key element embedded in Australia's negotiating position is the concept of 'comparable effort', with Australia's preparedness to adopt a national allocation budget being comparable to other advanced countries.

Various indicators are being used to compare individual economies' efforts to reduce greenhouse emissions. These indicators, in order of an increasing level of sophistication for measuring comparability of effort among countries, include:

- efforts relative to existing commitments;
- per capita emissions reductions;
- efforts relative to business-as-usual emissions; and
- national economic costs.

This study demonstrates that, for any of these indicators, applying the same percentage reduction in the national allocation for each advanced country will lead to significantly different effort and economic impacts for each country. Comparable effort among advanced countries can only be achieved with differentiated national allocations.

Using existing Treasury data and modelling for the comprehensive indicator of national economic costs we find that, even at the allocation of -5% of 2000 emissions in 2020, Australia would incur a significantly higher loss of welfare than the seemingly tougher 2020 allocations of -20% would impose on the USA, Canada and the European Union. Our conclusion is that the percentage level of allocation from a historical base year is a very poor indicator of comparable effort.

Further, until additional advanced countries nominate the national allocation budgets they are prepared to agree to for the period 2013 to 2020, a comprehensive assessment will not be possible. At this stage, only the European Union and the USA (through Waxman-Markey Bill) have nominated potential budgets to 2020.

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Background

The United Nations Framework Convention on Climate Change (UNFCCC) provides the foundation for international cooperation on climate change. In December 2009, parties to the UNFCCC will meet in Copenhagen to determine a new framework for international action to address climate change for the post-Kyoto period (to apply after 2012).

A fundamental principle of the UNFCCC is that countries should contribute to the international effort to address climate change according to 'common but differentiated responsibilities and respective capabilities' (Article 3 of UNFCCC). Indeed, this was reflected in the 'assigned amounts' set under the Kyoto Protocol (see Box 1 below) and will be a crucial consideration at Copenhagen in negotiating 'national allocation budgets' for both developed and key developing countries from 2013 to 2020.

Box 1: The Kyoto Protocol

The United Nations Framework Convention on Climate Change (UNFCCC) Kyoto Protocol allocates emissions 'assigned amounts' for developed countries over the period from 2008 to 2012.

Collectively, developed countries agreed to aggregate 'assigned amounts' of greenhouse gas emissions of at least -5% of 1990 emission levels over the period 2008–2012. However, under the principle of 'differentiated targets', individual countries were allocated different 'assigned amounts'. This was intended to reflect particular national circumstances. Some key considerations in this regard were:

- population and economic growth rates;
- level of energy sector dependence on fossil fuels; and
- particular structure of the economy.

Based on such factors, Australia negotiated an annual 'assigned amount' of 108% of its 1990 baseline level of emissions for the period 2008 to 2012. Two other countries — Norway (101%) and Iceland (110%) — also negotiated 'assigned amounts' above their 1990 baselines. Within the European Union, countries such as Spain (115%) and Ireland (113%) also negotiated commitments above their 1990 baselines.

Australia remains on track to meet its Kyoto Protocol commitments without requiring the purchase of international credits. Australia's emissions are expected to reach on average 583 million tonnes (Mt CO₂-e) per annum over 2008-12, which is 107% of 1990 levels.

Emission 'allocations' are different to 'targets'

Similar to the Kyoto Protocol agreements, the climate change negotiations in Copenhagen are expected to centre on national allocation budgets for 2013 to 2020, not 'targets'. Crucially, this form of assignment places a cap on a country's national allocation, but not their actual emissions.

To the extent that actual emissions are higher (or lower) than the national allocation, a country would need to purchase (or may sell) emissions permits in the international market. In addition to permit trading and forestry sequestration credits, other factors such as the borrowing or banking of emissions permits introduce an intertemporal dimension to the mitigation effort which can also decouple actual emissions in a given year from the overall mitigation effort.

This concept of a 'national allocation budget' is commonly misnamed an emissions 'target' in the public debate. In this regard, Australia's assigned amount under the Kyoto Protocol of 108% of 1990 emissions from 2008 to 2012 is *not* an emissions target — there is no cap on Australia's actual emissions, but rather there is an allocation of international emissions rights. Similarly, Australia's national allocation budget for 2013 to 2020 to be negotiated at Copenhagen will not represent an emissions target.

To the extent that actual emissions over the period are higher (or lower) than the national allocation budget, a country would need to purchase (or may sell) tradeable international emissions rights from other countries or supplement the national allocation budget with domestic forestry sequestration credits.

Australia's negotiating position

The Government has announced a medium-term national allocation range for the year 2020 of between 5% and 15%, or 25%, below 2000 levels by 2020. To reiterate, while the Government uses the term 'target', this is a misnomer as the Government clearly intends to supplement the national allocation with sequestration credits and imports of international emission rights. Under any of these so-called 'targets', Australia's actual emissions are likely to be higher.

The policy cornerstone that will guide the national allocation budget to be negotiated by Australia has been put in submissions to the UNFCCC as follows:

... the Australian Government [is committed] to reduce Australia's emissions by 25 per cent on 2000 levels by 2020 if the world agrees to an ambitious global deal capable of stabilising levels of greenhouse gases in the atmosphere at 450 ppm CO₂-e or lower. The Australian Government retains its previous policy commitment to unconditionally reduce Australia's emissions by 5 per cent on 2000 levels by 2020, and to reduce emissions by up to 15 per cent by 2020 if there is a global agreement which falls short of securing atmospheric stabilisation at 450 ppm CO₂-e, and under which major developing economies commit to substantially restrain emissions and advanced economies take on commitments comparable to Australia's.

Joint submission to the UNFCCC by Australia, Belarus, Canada, and the European Community, May 2009

A key element embedded in this negotiating position is the concept of 'comparable effort'.

This note sets out a number of issues regarding what constitutes 'comparable effort'. In an overarching sense, the Government's position on this is set out in the White Paper:

Mitigation will be best enhanced by countries making a comparable effort to others at a similar stage of development, taking into account differing national circumstances. Comparable effort would be represented by the entire portfolio of a country's effort, including but not limited to economy wide emission reduction targets for advanced economies.¹

Australia's Low Pollution Future: Carbon Pollution Reduction Scheme, Dec. 2008

¹ 'Advanced' economies have been defined in Australian submissions to the UNFCCC as all countries with a GDP per head greater than Ukraine (an Annex I country).

Australia's year 2020 national allocation

The proposed national allocation of 25% below 2000 emissions in 2020 represents the commitment Australia is prepared to undertake in the context of an ambitious global agreement in which the sum of all economies' national allocations is consistent with greenhouse gas stabilisation at 450 ppm CO₂-e or lower by mid century. There is a range of complex conditions that also attach to this Australian negotiating position.²

If it is not possible to secure such agreement, the Government will adopt a year 2020 national allocation range of 5% to 15% below 2000 emission levels. The -5% allocation is Australia's minimum unconditional commitment and represents the Government's position even if no international greenhouse mitigation agreement is reached.

In addition to these commitments, the Government has also set a long-term goal of a national allocation of 60% below 2000 emission levels in the year 2050.

A suite of policy measures has been announced or is in place in order to reach the proposed goals, with the central pillar being a national emissions trading scheme — the Carbon Pollution Reduction Scheme (CPRS) — which is scheduled to start on 1 July 2011. Under the CPRS, emission permit prices will be fixed at \$10 per tonne CO₂-e over 2011-12, with a transition to full market trading from 1 July 2012. The economic modelling indicates Australia will be a net importer of international emission permits, which means the permit price applying in Australia will likely be the international price or the capped price starting at \$40/tonne CO₂-e.

Formulating a position on comparable effort

Australia's position on the national allocation budget over the period 2013 to 2020, at and around the forthcoming Copenhagen negotiations, will have important economic implications. Crucially, it will affect how many international permits Australia will need to purchase to meet its negotiated commitment.

A key consideration in determining Australia's position on the national allocation budget is the concept of 'comparable effort' with other advanced countries. The Government's position is that Australia's negotiated budget will need to reflect comparable effort, taking into account the circumstances of individual countries.

Various indicators are relevant to effectively compare individual economies' commitments. These include:

- efforts relative to existing commitments;
- per capita emissions reductions;
- efforts relative to business-as-usual emissions; and
- national economic costs.

There are a number of issues relating to using these specific indicators to gauge comparable effort. A key concern is that the level of 'effort' can be presented in markedly different ways depending on which indicator is used. For example, examining countries' efforts relative to

² See May 2009 Australian Government submission to the UNFCCC.

existing commitments can overplay mitigation efforts if they are compared to favourable base years.

Using per capita emissions as an indicator of effort can involve similar complexities. This indicator not only reflects a country's demographic profile, but also by extension can reflect a country's existing economic base and comparative advantages. Countries can have considerably different emission reduction potentials due to higher or lower population growth rates, even if per capita income levels and the emissions intensity of their economies (ie emissions per GDP) remain stable or decline.

The development of a 'business-as-usual' (BAU) or reference case of future emissions growth can also be used to assess a country's effort. The BAU essentially provides a profile of projected future emissions reflecting the dynamics of an economy in the absence of climate change policies. At a fundamental level, it presents a 'world without climate change', and allows commitments to be examined relative to what emissions would have been in that year, as opposed to emissions at some historical reference point.

Establishing a BAU involves a range of uncertainties and requires assumptions on a wide range of economic, social and environmental factors. These include macroeconomic variables such as population, productivity and economic growth, as well as existing policy settings. In the case of climate change analysis, these uncertainties can be especially pronounced because the dimensions are typically long term and non-marginal.

Adopting the economic costs of emissions reduction — often referred to as marginal abatement costs — as an indicator of effort has received some support. This is because, to a certain degree, it brings together all the other indicators discussed above, usually via economic modelling. In a practical sense, however, it is subject to a range of uncertainties regarding the nature, timing and costs of future abatement opportunities, and economic and population growth rates that are inputs to that modelling. Nevertheless, if done in a transparent way, it can provide the most comprehensive indicator of relative effort and, therefore, can be a good reference point for negotiations.

Comparing announced national allocations

In the lead up to the Copenhagen meeting in December, countries have been encouraged to nominate national allocations they would be prepared to adopt in the years 2020 and 2050. Nominated national allocations, as at July 2009, for Australia, the USA, Canada and the EU are provided in Table 1. At this stage, only the EU's allocations have been legislated.

These countries have been chosen as potential comparable effort benchmarks for Australia for the following reasons:

- The USA because it is the key to an effective international agreement that embraces other advanced countries, including China;
- Canada because it has an economic structure and resource endowment similar to Australia; and
- The EU because it is also a leading stakeholder in international climate change negotiations and its commitments are often used as an example of what Australia should commit to.

Each of these countries shown has chosen to express its nominated national allocation from a different reference year. For example, Australia has a reference year of 2000, compared with the EU which has chosen 1990.

Table 1: Nominated national allocations for the year 2020, as at July 2009

| Region | Stated allocation range | Reference year | Status |
|-----------|-------------------------|----------------|------------------------|
| Australia | -5% to -15%; or -25% | 2000 | Officially announced |
| USA | -20% | 2005 | Legislation in Senate |
| Canada | -20% | 2006 | Officially announced |
| EU27 | -20% to 30% | 1990 | Adopted in legislation |

Source: UNFCCC

What the reference year means for effort

The choice of base year combined with the proposed national allocation in 2020 has a significant influence on the indicator of effort. It does not, however, show the whole picture as the national allocation budget over the period — that is, the sum of annual allocations from 2013 to 2020 — would need to be known. These issues are discussed further below.

Between the economies represented in Table 1, comparison of nominated national allocations from a base year is heavily dependent on emissions growth over the period 1990 to 2006.

In order to conduct such a comparison, the first step is to compare consistent national allocations from each respective base year. This can be seen in Table 2, which shows a normalised 20% reduction in allocations using each of the economies' base years. A 20% national allocation has been selected as it is common to the current allocations announced by the EU, the USA and Canada; it is also within the bounds announced by Australia.

The analysis shows that a -20% national allocation in the year 2020 relative to the year 2000 to Australia is equivalent to a -18.6% allocation relative to 1990 emission levels (if that was chosen as the base year). For Canada, the announced -20% allocation in 2020 relative to 2006 is equivalent to a 4.4% increase relative to 1990 emission levels.

Based on a normalised -20% national allocation in the year 2020, the percentage reduction in Australia's allocation from each of the considered base years is higher than all other countries with the exception of the EU when a 1990 base year is chosen. This is primarily because Australia's emissions growth over the period 1990 to 2006 was not as high as the USA or Canada, driven principally by a reduction in domestic land clearing activities.

Table 2: Implied emission reductions from various base years (%) on a normalised -20% national allocation

| Region | Base year | 1990-2020 | 2000-2020 | 2005-2020 | 2006-2020 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| Australia | 2000 | -18.6 | -20.0 | -23.5 | -24.1 |
| USA | 2005 | -6.3 | -18.0 | -20.0 | -20.9 |
| Canada | 2006 | 4.4 | -13.8 | -18.8 | -20.0 |
| EU27 | 1990 | -20.0 | -16.0 | -13.8 | -13.3 |

Source: *Australia's Fourth National Communication on Climate Change, 2005*, Department of Environment and Heritage (Australian Greenhouse Office); *Canada's Fourth National Report on Climate Change, 2006*, Environment Canada; *US Climate Action Report, Fourth National Communication of the United States of America, 2006*; *Greenhouse gas emission trends and projections in Europe, 2008*, European Environment Agency Report No. 5/2008.

Rate of reduction in per capita allocation as an indicator of effort

Table 3 shows the comparable effort associated with the announced national allocations for each country in 2020. Over the period 2000 to 2020, Australia's per capita allocations imply an effort of 22.4% per capita for the -5% national allocation. This compares with a 36.1% effort for the USA for a nominated allocation of -20% in 2020 and a -18.7% effort for the EU for a stated -20% national allocation in 2020.

Table 3: Per capita emission reductions (tonnes per person), under stated national allocations, percentage change 2000-2020

| | Stated national allocation (%) | Emissions per capita (% change) |
|-----------|--------------------------------|---------------------------------|
| Australia | -5 | -22.4 |
| | -15 | -30.5 |
| | -25 | -38.7 |
| USA | -20 | -36.1 |
| Canada | -20 | -27.7 |
| EU27 | -20 | -18.7 |
| | -30 | -28.9 |

Source: Access Economics

Table 4 shows 1990 emissions per capita (expressed as tonnes of CO₂-e per capita) for Australia, the USA, Canada and the EU. It also shows the implications of adopting a normalised 20% reduction in the rate of per capita national allocation for the year 2020.

The outcome is that a 20% reduction in Australia's per capita national allocation compared to 2000 level emissions would involve considerably more effort than these other economies if they also adopted a 20% reduction in their national allocation relative to their respective base years.

This outcome is influenced by using allocations based on emissions production as the indicator and reflects Australia's comparative advantage in low-cost energy and related industry structure, as well as its relatively small and growing population base.

Table 4: Emissions and rate of reduction in national allocation per capita

| | Tonnes CO ₂ -e per capita | | | % change | |
|-----------|--------------------------------------|------|------|-----------|-----------|
| | 1990 | 2013 | 2020 | 1990-2020 | 2013-2020 |
| Australia | 30.3 | 25.3 | 17.8 | -41.3 | -29.8 |
| USA | 23.9 | 23.0 | 16.7 | -30.0 | -27.3 |
| Canada | 21.6 | 23.4 | 17.1 | -21.0 | -27.1 |
| EU27 | 11.8 | 9.9 | 8.9 | -24.4 | -9.8 |

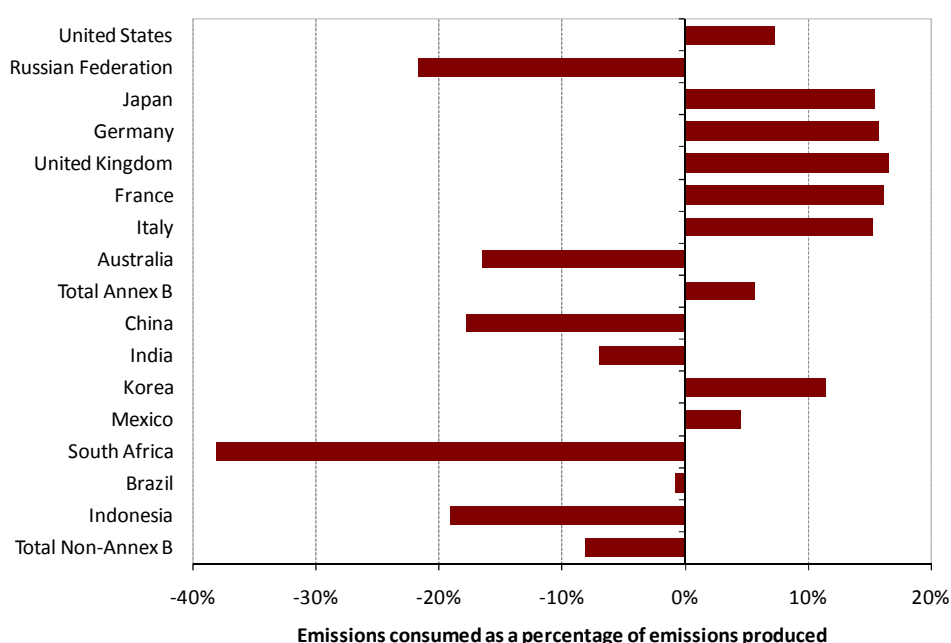
Note: National allocations per capita in 2020 show a 20% reduction relative to the emissions from each country's respective base year. Base years are: European Union 1990; Australia 2000; USA 2005; and Canada 2006.

Source: *Australia's Fourth National Communication on Climate Change*, 2005, Department of Environment and Heritage (Australian Greenhouse Office); *Canada's Fourth National Report on Climate Change*, 2006, Environment Canada; *US Climate Action Report*, Fourth National Communication of the United States of America, 2006; *Greenhouse gas emission trends and projections in Europe*, 2008, European Environment Agency Report No. 5/2008; United Nations Department of Economic and Social Affairs World Population Database (<http://esa.un.org/wpp/sources/country.aspx>)

An important issue with using per capita national allocations as an indicator of comparable effort concerns whether emissions are measured on a national production basis or on a consumption basis. The measure of emissions can vary markedly between countries (see Chart 1). For example, Australia's production of emissions is considerably higher than its emissions consumption; reflecting significant exports of emission-intensive commodities — not dissimilar to China. Basing an indicator of per capita comparable effort on emissions production is particularly distorting for countries, such as Australia and many developing nations, which have a comparative advantage in natural resources.

Further complexities with this indicator involve accounting for future population growth rates. Depending on economic structures (and expected changes to industrial emissions intensities), population changes might essentially 'dilute' or 'concentrate' overall per capita emissions.

Chart 1: Emission relativities by consumption or production



Source: Peters G, and Hertwich 2008, CO₂ Embodied in International Trade with Implications for Global Climate Policy, *Environmental Science & Technology*, Vol 42, No. 5.

What the BAU baseline means for effort

The estimated deviation from BAU emissions for each economy's nominated national allocation (or range) is provided in Table 5. Australia's minimum unconditional commitment of -5% below 2000 levels by 2020 represents a 24% decline from BAU emissions with current measures (but without the CPRS). This deviation is larger than that estimated for the EU's upper -30% national allocation, which represents a 21% reduction from BAU emissions levels.

Table 5: National allocations in 2020 relative to BAU emissions

| Region | Stated national allocations in 2020 (%) | Deviation from BAU (%) |
|-----------|---|------------------------|
| Australia | -5 | -23.6 |
| | -15 | -31.6 |
| | -25 | -39.7 |
| USA | -20 | -31.3 |
| Canada | -20 | -30.3 |
| EU | -20 | -9.4 |
| | -30 | -20.8 |

Source: Access Economics estimates

In a given year, it is more appropriate to consider comparable effort relative to what emissions would have been in that year, as opposed to emissions at some historical reference point (as analysed in the preceding section). In this case, national allocations would be reflected as a change relative to a reference case or 'business as usual' scenario. This can usefully allow comparisons on the scale of policy impacts across years.

Normalised -20% national allocations for each country in 2020 are shown in Chart 2 in terms of the deviation from the current 'with measures' baseline projections (see Box 2 below). **Australia's allocation at 2020 compared to BAU emissions is greater than other countries, being around 36% lower than the BAU case.** This is substantially higher than the EU's projected effort at 2020 of just a 9% reduction from its BAU case emissions.

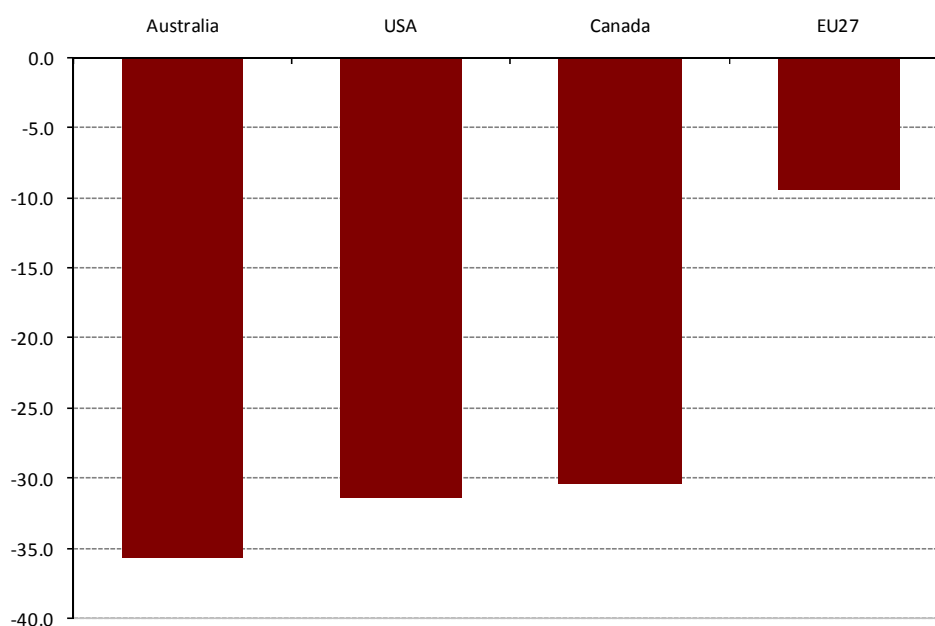
Box 2: 'With measures' is a component of effort

BAU emissions projections can be significantly affected by the extent to which pre-existing climate change policy measures are included. Reference cases would be higher if specific policies and measures to address greenhouse gas emissions were excluded.

Australia's BAU emissions case presented in this analysis includes 'with measures' — that is, it encompasses all existing greenhouse emissions policies such as the Renewable Energy Target (RET) and some state-based policies, but not the CPRS. Importantly, these pre-existing climate change policy measures involve actual costs and economic resources and they therefore capture part of Australia's overall abatement effort. Australia's emissions would actually be higher in the absence of such policies.

A comparison of measures has not been undertaken in the context of this work other than to note that the baseline projections for the USA, Canada and the EU also encompass existing policy programs to address climate change. A standard approach is to assume that respective programs and measures are fully implemented over the period in which funding has been allocated. Programs are assumed to cease once the period of approved funding expires. From that point, the effect of those programs will no longer be included in the reference case.

Chart 2: National allocation relative to BAU emissions from the baseline in 2020 (%)



Note: Base years are: European Union 1990; Australia 2000; USA 2005; and Canada 2006. Baseline projections include 'with measures'.

Source: *Australia's Fourth National Communication on Climate Change, 2005*, Department of Environment and Heritage (Australian Greenhouse Office); *Canada's Fourth National Report on Climate Change, 2006*, Environment Canada; *US Climate Action Report, Fourth National Communication of the United States of America, 2006*; *Greenhouse gas emission trends and projections in Europe, 2008*, European Environment Agency Report No. 5/2008.

What economic costs means for effort

The Australian Government has proposed consideration of the estimated economic cost of mitigation as an indicator of comparable effort. This measure essentially incorporates the key elements of the other indicators, such as base years, business-as-usual emissions and population growth factors. In this regard, it represents an increased level of sophistication for measuring levels of national effort that comprehensively captures a country's particular circumstances.

Based on modelling undertaken in 2008, the Government considered a range of global mitigation scenarios to compare the economic costs across countries and regions. The scenarios considered were the CPRS-5 and CPRS-15. Economic costs were measured by percentage deviations in gross national product (GNP).

The modelling (summarised in Table 6) clearly showed that at 2020, despite different national allocations adopted, the economic impacts of emissions abatement varied considerably across each country. **In particular, this analysis shows that Australia has relatively high abatement costs compared with other countries.** For example, under the modelling assumptions made for the CPRS-5 scenario, Australia is assumed to adopt a national allocation for 2020 4% below 1990 levels of emissions. This results in a 1.1% reduction in GNP from reference case levels.

This compares with Japan and the EU which, under the CPRS-5 scenario, adopt national allocations 21% and 34% respectively below 1990 emissions — seemingly much tougher commitments — yet only experience projected reductions in GNP of 0.2% and 0.4% respectively in 2020.

The relatively high abatement costs for Australia are due to the dominance of low-cost coal fired power generation which means that a relatively large penalty will need to be placed on carbon to encourage fuel switching in Australia. This will have adverse impacts on Australia's relatively large proportion of emission and energy-intensive industries, primarily through a reduction in trade competitiveness, notwithstanding that the modelling included some shielding of these industries.

Table 6: National allocations and costs: modelling assumptions and results at 2020

| | National allocation | | Cost |
|----------------|------------------------------|------------------|--------------------------------------|
| | Percentage of 1990 emissions | | |
| | Change from Kyoto commitment | Change from 1990 | Percentage change from reference GNP |
| CPRS-5 | | | |
| Australia | -12 | -4 | -1.1 |
| Canada | +17 | +11 | -1.1 |
| Japan | -15 | -21 | -0.2 |
| United States | n.a. | +5 | -0.3 |
| European Union | -27 | -34 | -0.4 |
| Russia and CIS | -25 | -25 | -3.6 |
| World | | | -0.7 |
| CPRS-15 | | | |
| Australia | -22 | -14 | -1.6 |
| Canada | +5 | -1 | -1.5 |
| Japan | -23 | -29 | -0.4 |
| United States | n.a. | -6 | -0.4 |
| European Union | -34 | -41 | -0.6 |
| Russia and CIS | -33 | -33 | -5.3 |
| World | | | -0.9 |

Source: Australian Government submission to UNFCCC 2009

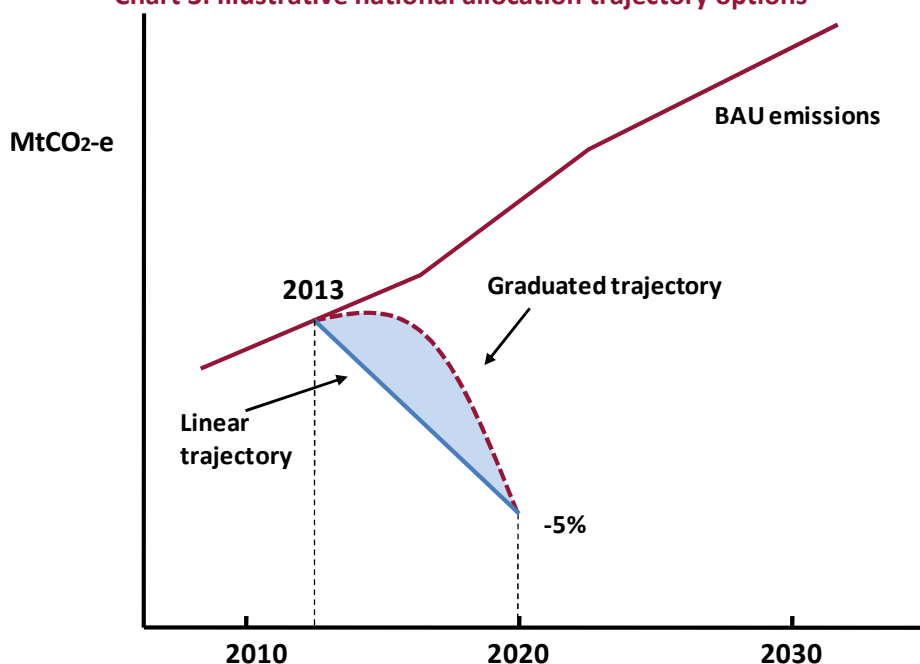
Australia's national allocation budget or trajectory: 2013 to 2020

While the Government has nominated to the UNFCCC possible national allocation amounts or 'targets' for the year 2020, it has not identified the allocation budget or annual trajectory that would constitute a 'comparable effort' from 2013 to 2020. This is the central matter for the negotiations, at least in terms of national commitments to meet a global emission outcome.

While the year 2020 national allocation is important, far more significant in terms of comparable effort will be the national allocation budgets for the period 2013 to 2020, incorporating an annual trajectory of allocations. The annual trajectory would specify the rate and timing of the allocations negotiated to reach the long term goal (whatever that may be). Importantly, many national allocation trajectories are possible and each will have different economic cost consequences, as well as implications for intergenerational equity and the preservation of options to alter policy settings and attendant future commitments.

An illustrative example of two national allocation trajectories is shown in Chart 3. Again, it is important to understand that this is not the actual national emissions trajectory since that trajectory will be influenced by banking and borrowing of permits, creation of sequestration credits and the import (or export) of international permits.

Chart 3: Illustrative national allocation trajectory options



The Government has indicated it will establish an Australian Emission Unit (known in the public debate as emissions permits) trajectory under the CPRS, which covers 75% of Australia's emissions, out to 2015-16 and indicative gateways out to 2025-26 following the Copenhagen meeting.

While the Government, for illustrative purposes, has drawn a simple linear trajectory in some publications³, it has yet to negotiate Australia's national allocation budget that would represent a comparable effort with other advanced countries. There is, however, a lead from the proposed emissions trading scheme in the USA (the Waxman-Markey Bill), which covers about 85% of USA emissions. The Waxman-Markey Bill proposes a gradual national allocation trajectory with a softer, rising commencement period followed by a steeper trajectory in subsequent years (see Box 3).

The lead shown in the Waxman-Markey Bill is an important benchmark in the context of the Copenhagen meeting. From an Australian perspective, it represents a key consideration for determining an international negotiating position, particularly in reference to 'comparable effort'.

This form of allocation trajectory can help lower the overall economic costs of meeting a national commitment. It provides important transitional advantages by allowing time for businesses and consumers to adjust to an emissions trading scheme (for example, by making necessary capital investments) and helps minimise any potential economic shocks. By gradually increasing the allocation trajectory, such a pathway also recognises that technological innovation is likely to accelerate over time, helping to lower the costs and

³ *Tracking to Kyoto and 2020: Australia's Greenhouse Emission Trends 1990 to 2008-12 and 2020*, Department of Climate Change, August 2009

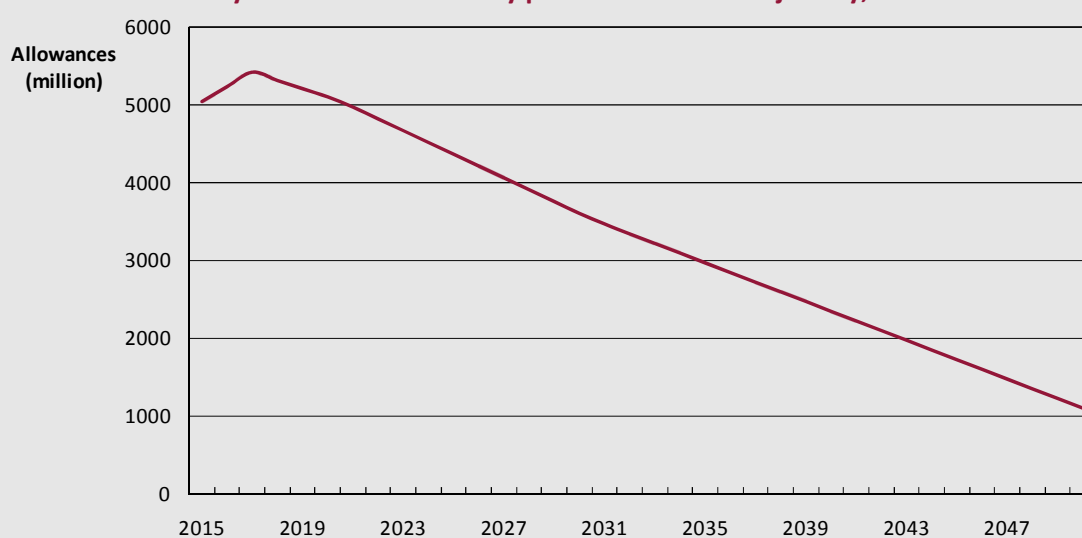
increase the scope of abatement opportunities in the future. Indeed, economic policy measures designed to place a cost on carbon emissions, such as the CPRS, will improve the profitability of low-emission production technologies and incentivise related innovation activities over time.

Box 3: The Waxman-Markey allocation trajectory

The proposed emissions trading scheme in the USA (the Waxman-Markey Bill) would create a national cap-and-trade scheme with national allocations of -17% in 2020 and -83% in 2050 relative to 2005 emissions levels. Around 85% of emissions would be covered by the scheme by 2016.

An important aspect of the scheme is its national allocation trajectory which allows for a gentle start followed by more rapid reductions in allocations in out years (see Chart 4). Allocations actually increase in the early years with a reduction from current levels achieved around 2023.

Chart 4: Stylised Waxman-Markey permit allocation trajectory, 2015-2050



There can be advantages in pursuing an allocation trajectory similar to that proposed in the Waxman-Markey Bill. Among other things, it may allow a smoother transitional period by providing time for businesses and consumers to adjust to a carbon price and recognise that induced technological innovation is likely to accelerate over time helping to lower costs.