

May 2017

## **A workable roadmap for Australia's climate change policies**

Grattan Institute submission to the Review of climate change policies

**Climate change policy review: Submission from Tony Wood, Energy Program Director, Grattan Institute and David Blowers, Energy Fellow, Grattan institute**

**Primary Contact:**

**Name: Tony Wood**

**Title: Program Director, Energy**

**Organisation: Grattan Institute**

**Email: [tony.wood@grattan.edu.au](mailto:tony.wood@grattan.edu.au)**

**Mobile: +61 419 642 098**

There are no restrictions on publication of this submissions or requirements for anonymity. The submission contains no personal information of third party individuals.

## Summary points

- The Government should make its commitments to address climate change a matter of legislated policy:
  - Australia's 2030 target of 26-28 per cent emissions reduction below 2005 levels will be updated and rolled forward every five-years from 2020, consistent with the review of our Nationally Determined Contribution.
  - Australia is committed to the global goal of net zero emissions in the second half of the century. Our long-term goals will be set as pathways consistent with that global goal.
  - While recognising the uncertainties inherent in emissions projections, the government will undertake and publish, as part of the five-year review process, an assessment of domestic climate change policies against the 2030, and future targets.
- The Government should adopt a credible and scalable domestic climate change policy roadmap that begins with the current Emissions Reduction Fund and Safeguard Mechanism. The roadmap should follow the subsequent steps:
  - Reset existing historical baselines to address inherent anomalies and potential unfairness.
  - Tighten the baselines by linking to the 2030 target and expand the range of ERF activities and link with the Safeguard Mechanism to make the policy self-funding.
  - Consistent with current policies and legislation, apply an intensity baseline scheme to electricity and absolute baseline reductions to other sectors. Adopt emission standards to transport, buildings and appliances etc., while driving the national energy productivity plan.
  - Expand coverage to a wider range of businesses, fuel suppliers and others sectors as robust methodologies are developed.
- A sectoral approach to targets is workable, but inherently arbitrary and inefficient. Australia's climate change policies must not preclude a future transition to an economy-wide approach to deliver targets at lowest cost.
- This policy roadmap can begin and be credible within the current political constraints that preclude carbon trading schemes with explicit carbon prices. It can be progressed towards enhanced efficiency by future governments as climate science, technology and the political environment develop in coming years.

## Introduction

This submission responds to the Discussion paper issued in March 2017 by the Department of the Environment and Energy, *Review of climate change policies* (the “Review”).

The Review is consistent with the Australian Government’s previous commitments on its domestic climate change policy and its international commitments under the Paris Agreement that it both signed and ratified. It takes place in the context of events in the domestic energy sector that have strongly highlighted the critical interaction of energy and climate change policy and the current Independent Review into the Future Security of the National Electricity Market (“Finkel Review”).

Grattan Institute is an independent think-tank focused on Australian domestic public policy. We aim to improve policy outcomes by engaging with both decision-makers and the community. Our interest in the Review and the focus of this submission is primarily in how domestic climate change policies will be effective and efficient in achieving Australia’s targets and its international commitments and in integrating with other policy areas.

Climate change policies will ultimately fail to be effective and efficient if they adversely impact the reliability and security electricity supply via the National Electricity Market (NEM).

This submission addresses the overall focus of the Review as well as specific questions raised where we have supportable views or recommendations.

The submission draws extensively on the published work of the Grattan Institute in the area of energy and climate change policies, specifically our reports, *Post Paris: Australia’s climate policy options* and *Climate phoenix: A sustainable Australian climate policy*<sup>1</sup>.

---

<sup>1</sup> <https://grattan.edu.au/wp-content/uploads/2015/12/934-Post-Paris-Australia-climate-policy-options.pdf>. <https://grattan.edu.au/wp-content/uploads/2016/04/870-Climate-Phoenix.pdf>.

## Australia's climate policies

Australia has committed to the Paris Agreement. In terms of framing domestic climate change policy, the commitment includes:

1. An overarching goal to hold global average temperature increase to well below 2 degrees and pursue 1.5 degrees
2. Nett zero global emissions in the second half of this century
3. Consideration of a long-term emissions reduction goal for Australia beyond 2030.
4. A national contribution of 26-28% below 2005 levels by 2030 to be reviewed every five years from 2020 with each contribution to be a progression on the last.

It is very likely that national contributions will increase as the global total is not consistent with the first of these commitments.

A notable development in recent years in the Australian context is widespread support for a sustainable policy. The first key step to meeting this need would be to embed these commitments in domestic policy, particularly since it is only the fourth of the above commitments that is generally discussed and debated.

There is much uncertainty about future developments in international and domestic climate change policy. In such an

environment, the best approach and second key step is to develop a policy roadmap that provides a credible link with specific targets, but includes predictable flexibility and scalability to deal with future commitments.

To develop this roadmap, the Government should consider the following recommendations:

1. Long-term reduction goals should be consistent with the Paris Agreement and specifically nett zero global emissions in the second half of the century. A goal of nett zero for Australia, and other developed economies, by 2050 may emerge from the Paris Agreement process and has been recommended by the Climate Change Authority and supported by some environmental advocates<sup>2</sup> and energy companies<sup>3</sup>.
2. Goals beyond the 2030 target should be set as pathways consistent with that global goal, including ranges as being adopted in the long-term low greenhouse gas emission development strategies of major economies.
3. Australia's 2030 target and longer-term reduction goals should be rolled forward by five years at every five-yearly review of our Nationally Determined Contribution.

---

<sup>2</sup> CCA (2015), Climate Institute (2015)

<sup>3</sup> <http://www.afr.com/news/energy-giants-target-zero-net-emissions-by-2050-20170504-gvyhev>

4. The Government's latest projections for Australia's emissions are inconsistent with our 2030 target<sup>4</sup>. However, these projections do not include the impact of several policy initiatives or the extension of existing policies that may emerge from the Review. A direct outcome of the review should be quantitative assessment of such policy changes against the target that will be updated in further reviews. This assessment should recognise the many uncertainties inherent in such projections and would provide real credibility to Australia's policies.

These targets and goals set the minimum level of emissions reduction that will be demanded by Australia's policies and thereby provides the first element of a credible and predictable climate change policy plan.

We are of the view that an economy-wide carbon price remains the ideal climate policy. But attempts to implement a carbon price in Australia have failed. Putting a price on carbon has not won the political and community support that is essential to any practical climate change policy.

In evaluating a range of emissions reduction policies, we propose the following criteria:

- **Credibility:** ability to meet the volume of emissions reductions required by current and future targets
- **Political viability:** capacity to evolve from current policy settings and achieve bipartisan support

---

<sup>4</sup> *Australia's emissions projections 2016*, Commonwealth of Australia 2016

- **Flexibility:** ability to adjust to changes in targets, political developments and technological change
- **Adaptability:** potential to move towards an economy-wide, market-based scheme over time
- **Public acceptability:** ability to be understood and accepted by the community
- **Low cost**

In 2017, the most pragmatic solution is to build on the existing policy mix and use elements of several different options to assemble a new roadmap capable of meeting current and future emissions reduction targets. This approach will involve a series of steps and trade-offs. In some cases, policies that are less than ideally efficient or equitable will be used in the short to medium term because they represent a pragmatic mid-point along the path that leads from current policies to the policies needed to achieve more ambitious emissions reductions in the future.

A sectoral approach has some attractions of apparent simplicity, technology focus and horses-for-courses. However, any examination of existing facility baselines under the Safeguards Mechanism and the challenges in setting reducing facility or sectoral baselines against a national target exposes the inevitable inefficiencies and higher cost that follow.

The Discussion Paper takes a sectoral approach to the Review. The policy recommendations from a sectoral review, whilst they

remain at that level, should be tested as part of the five-year reviews against the longer-term ideal of an economy-wide approach.

Australia's major political parties are committed to reducing greenhouse gas emissions and contributing to the global effort to address climate change. Currently there are barriers to adopting

an ideal climate policy roadmap. But pragmatism and urgency demand a practical, next-best approach as recommended in this submission.

## 1 An emissions reduction roadmap

This submission to the Review describes a roadmap<sup>5</sup> that begins with and builds on the current government's suite of climate change policies towards Australia's current emissions reduction targets and longer-term goals. We need to build on what is already in place rather than begin again from scratch, while satisfying the criteria for effective policy set out earlier in this submission.

The roadmap has been designed to be useful to current and future governments. It has the flexibility to accommodate political priorities and adapt to changes in future targets, technologies and climate change science. With each successive step, governments can strengthen Australia's ability to deliver emissions reductions. They can give more certainty to business, and give the community more confidence about the long-term direction of Australian climate change policies.

The starting point for this roadmap is the existing Safeguard Mechanism which currently operates like a one-sided absolute baseline scheme. Penalties can apply if a facility exceeds its baseline, but there is no incentive for a facility to reduce its emissions below its baseline.

At least two aspects of the Safeguard Mechanism will need to evolve for it to be an effective, central mechanism for reducing emissions. First, baselines will need to be progressively reduced in line with Australia's emissions reduction target. Second, the

mechanism will need to cover a larger number of facilities or sources of emissions. The following steps would transform the Safeguard Mechanism into an effective emissions reduction policy. The remainder of this section outlines the steps to apply to all emissions covered by the Safeguard Mechanism, with the exception of those produced in the electricity sector. The component of the roadmap dealing with the electricity sector is discussed in Section 2.

The roadmap consists of the following steps:

### 1.1 Tighten Safeguard Mechanism baselines

Existing facility baselines have been set by reference to historical emissions or calculated on a set formula related to production levels and emissions intensity. There is a high degree of arbitrariness about this approach, although that is inherent in the baseline methodology. The result is that some facilities have already sought revised baselines and others are considerably below their baselines mostly due to changes in activity and little to do with intent to reduce emissions. It is highly desirable that all baselines be reviewed and probably reset on a calculated basis to avoid windfall gains as baselines are reduced as described below. Whilst impacted facility owners will be unhappy about such a move, there is little argument of substance against it.

Once this is done, the Government should take the following actions:

---

<sup>5</sup> Wood et al (2016)

- Link aggregate baselines to the national emissions reduction trajectory
- Expand the range of activities that can create ACCUs, to increase their supply. To avoid double counting, facilities covered by the Safeguard mechanism should not be able to create ACCUs.
- Phase out government purchasing of ACCUs, meaning that the ERF then becomes funded through the Safeguard Mechanism, placing no further burden on the budget.
- Allow facilities to purchase international offsets to acquit their liability as discussed in Section 7.
- Implement an annual review of penalty provisions to ensure they are effective in deterring non-compliance.

We suggest that aggregate baselines begin to decrease from 2020 as Australia's is projected to meet its 2020 target and there is time to adjust to the new regime, recognising that most facility owners will have been anticipating a change of this sort.

### 1.2 Increase incentives for low-cost emissions reduction

The second step is to increase incentives for low-cost emissions reduction by introducing tradeable emissions permits into the system.

This step increases incentives for low-cost abatement by presenting businesses with a choice: whether to emit at their baseline or purchase permits which the government will sell under

an auction. If it is cheaper for businesses to meet the baseline, they will do so. Those who find reducing their own emissions expensive have the option of purchasing permits, ACCUs or international offsets.

### 1.3 Replace baselines with permits and increase coverage

Step 3 is to fully replace baselines in the scheme with permits. Baselines would be reduced to zero more sharply than Australia's overall emissions reduction trajectory. The government would then auction permits to make up the gap. The volume of permits auctioned should be consistent with what is required to achieve Australia's emissions reduction target. In addition to permits, covered facilities can continue to use ACCUs and international offsets to meet their liabilities.

The advantage of the proposed roadmap is that it can drive emissions reductions to meet Australia's targets as long as the baselines are consistent with those targets.

Ideally, the scheme would cover all sources of emissions. An all-encompassing solution would minimise the need for additional policies, and maximise the chance of achieving lowest cost abatement. Yet some sources of emissions may not currently be conducive to such a scheme.

Bearing in mind these various factors, the following should apply to respect of scheme coverage:

- Maintain the Safeguard Mechanism's annual minimum threshold of 100,000t CO<sub>2</sub>-e while individual baselines apply.



- Once full auctioning of permits is introduced, coverage should be expanded to include:
  - Businesses emitting 25,000t CO<sub>2</sub>-e per year; and
  - Suppliers of liquid and gaseous fuels (for example petrol, diesel, LPG and natural gas).

The agriculture sector should initially be excluded due to both the size of individual emissions sources and potential measurement problems. Reducing emissions from the agriculture sector is a challenge for policymakers worldwide, and effective policy coverage will depend on the emergence of effective solutions.

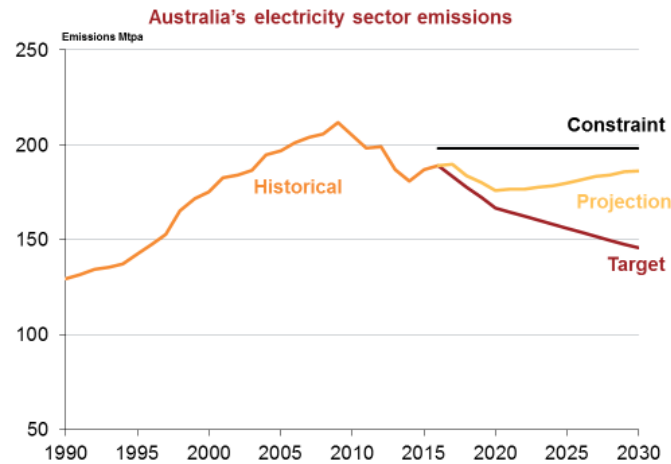
But effective solutions must be found, and soon. The government, together with affected sectors, should work at overcoming the barriers that prevent uncovered sources of emissions – including those from agriculture – being included in the scheme.

The government should aim to have emissions that are currently not covered by the scheme included by 2030. This is not to say that government should wait until 2030 to include these sectors, nor that it will take this long to overcome the barrier. For instance, in 2008, the Rudd Government's Carbon Pollution Reduction Scheme envisaged agriculture being included in the scheme by 2015.

Sectors should be brought into the scheme as and when methodologies for measurement and implementation become available. The more emissions that are covered by the scheme, the greater the opportunity to achieve least cost emission reductions.

## 2 The electricity sector

Electricity accounted for 35 per cent of Australia’s emissions in 2030, the largest sector contribution. As shown in the chart below, the sector’s emissions are projected to be 190Mt in 2017 and 186 Mt by 2030. Under the current Safeguards Mechanism, the sector baseline is 198million tonnes of CO<sub>2</sub>-e and on a pro-rata basis these emissions should reduce to 145 million tonnes by 2030 to meet Australia’s 2030 target. The current climate policies do not currently include mechanisms that will deliver this result.



An economy-wide carbon price is currently not for consideration. In the previous section, we have recommended building on the Emissions Reduction Fund and Safeguards Mechanism to reduce

<sup>6</sup> Wood et al (2016)

absolute baselines for individual facilities in line with the 2030 target. In electricity, the most efficient approach is to encourage switching from high-emissions generation to low-emissions generation. This is unlikely to occur under the absolute baseline approach.

Emissions from electricity generation depend on both the amount of electricity produced and the emissions intensity of the source of generation. In the electricity sector, switching from coal to gas would reduce emissions. If absolute baselines were applied to individual generation facilities, gas generators would exceed their baselines and face penalties because of increased production. An alternative and better approach is to set an intensity baseline for the electricity sector.

Under this approach, the following steps would be taken for the electricity sector:

1. Strengthen the Safeguard Mechanism
2. Move to an intensity baseline mechanism
3. Evolve into a scheme with full auctioning of credits

We have described this approach in some detail in a 2016 Grattan institute report<sup>6</sup> and an emissions intensity trading scheme (EIS) for the electricity sector has been advocated by a wide range of businesses, industry associations, environmental organizations and others. However, the Government has ruled out any form of explicit carbon pricing, and an EIS in particular.

There are two alternative models that the Review should consider.

The first model would be to set an emissions intensity level and trajectory in line with the sector target. Generators that exceed this intensity would be allowed to meet their liability through the purchase of ACCUs or international offsets. As with the reducing baselines approach described in the following section, this model contributes to ensuring the ERF is self-funding and independent of the federal budget. An annual review would take place to ensure that the emissions intensity baseline was consistent with the sector's 2030 absolute emissions reduction target if set on a pro rata basis, and then consistent with future targets as described in the previous section of this submission.

This "baseline and offset" model is likely to be less efficient than an EIS. However, it would require no changes to existing legislation or policy and would establish a credible and scalable pathway for emissions reduction, would be integrated with the NEM and could subsequently evolve to more efficient alternatives.

The second model would be to set an emissions intensity target and declining trajectory as above. Electricity retailers and major purchasers of electricity in the NEM would have an obligation to ensure the electricity it purchased is, on average, in line with the annual, declining emissions intensity for the sector. If an electricity purchaser exceeded the baseline, it could purchase ACCUs or international credits to make up the difference. The annual emissions intensity level would be reviewed each year in the light of actual emissions, changes in Australia's target etc.

This "electricity emissions obligation" model would have similar benefits and weaknesses as the baseline and offset model. It

would, however, share the same weakness as the Renewable Energy Target in that it would not be integrated with the NEM.

We have not undertaken further detailed design of the models beyond this submission and the cited reports and recommend that further such analysis could and should be undertaken if the Review deems appropriate.

These models and the explicit carbon pricing alternatives described above have been designed to deliver a credible, scalable approach to emissions reduction in the electricity sector. Several state and territory governments have objectives, policies or legislated mechanisms to contribute to national emissions reduction and/or to increase the adoption of renewable energy beyond the RET. These uncoordinated and possibly competing actions are regrettable.

It is likely that several of these actions exist primarily due to a perceived absence of credible and scalable climate change policy at the federal level. If the Review is able to deliver such a policy it is likely that some or all of these jurisdictions would either withdraw, or scale down their actions. A minimum agreement of the COAG Energy Council's ministers could be a requirement to assess any unilateral actions for adverse impacts on the overall security or affordability of electricity or the national emissions reduction targets.

Finally, the proposed models are also designed so that they could be adopted by a future Labor government in a way consistent with the Labor party's climate change policies. It is likely that bipartisan support around the core policy design could be achieved ahead of the next federal election.

### 3 Energy efficiency

Energy efficiency standards impose requirements that certain goods or buildings meet minimum levels of energy efficiency. Standards can apply to the construction of new buildings or to existing properties, and to a range of domestic appliances – from light globes to refrigerators.

Energy efficiency standards have been shown to reduce emissions while saving consumers and businesses money. Standards can complement a central emissions reduction policy by addressing certain market failures or barriers. They minimise the costs of reducing emissions overall.

Energy efficiency standards could continue to contribute to reducing emissions even after the introduction of a carbon price in the electricity sector. This is because they can help overcome barriers that prevent people making decisions that are best for the environment, such as information barriers (which, for example, make it difficult for consumers to assess the full carbon price inclusive of running costs of an appliance against its cheaper purchase price) and split incentives (where a landlord makes a purchase decision, while the tenant pays the running costs). However, in the medium to long term, as electricity generation decarbonises, energy efficiency measures as an instrument to reduce emissions will become less relevant.

## 4 Transport

Vehicle emissions standards reduce the average level of CO<sub>2</sub>-e emitted by vehicles per kilometre driven. Like energy efficiency standards, they can overcome barriers – such as a lack of good information – to the uptake of more efficient vehicles.

Emissions from light vehicles account for 10 per cent of Australia's total emissions. The Climate Change Authority estimates that emissions standards on light vehicles supplied in Australia can avoid 59 million tonnes of emissions by 2030. Its analysis indicates that this represents one of the lowest cost emissions reduction opportunities in the Australian economy.

As transport fuels will not be covered until step 3 of our roadmap, standards should be applied to reduce emissions from vehicles. Yet, like energy efficiency standards, vehicle emissions standards can co-exist with the central policy for reducing emissions. As such, they can continue to play a role in Australia's emissions reduction policy even after transport fuels are covered.

## 5 Uncovered sectors

The main sectors not covered by the central policy are agriculture and the land use, land-use change and forestry (LULUCF) sectors.

The reasons for excluding these sectors from the central policy are that measuring emissions from businesses in these sectors can be difficult and it is administratively complex to include very many small emitters in a broad-based scheme.

Delivering emissions reductions in these sectors will, therefore, require alternative measures, at least in the short term. These will include voluntary offset programs and/or regulation.

Under the Gillard Government's Clean Energy Future package, these sectors were dealt with through the Carbon Farming Initiative (CFI). Under the CFI, credits could be generated through a range of activities, including reforestation, savannah burning and reducing emissions from livestock. Many of these activities have subsequently been included in the ERF methodologies.

In the short term, the most feasible way of reducing emissions in uncovered sectors appears to be through the generation of credits. Carbon offsets not only help reduce emissions in uncovered sectors, but can potentially provide low-cost offsets that can be purchased by businesses covered by the central policy.

But offset schemes have shortcomings as drivers of emissions reductions. They are voluntary, and so rely on participation. They do not prevent emissions from rising across the sector as a whole. From an economy-wide perspective they are also inequitable: covered businesses face a liability for each tonne of carbon they emit, while uncovered businesses face no liability and are in fact paid to reduce their emissions.

In the long term an alternative will have to be found, preferably one that brings these sectors into the central policy. More advanced mechanisms for measuring emissions are needed in

the agriculture and LULUCF sectors. Policymakers will also have to consider where in the supply chain the liability should be placed. In the case of agriculture, this could be at the individual farm level or further downstream.

## 6 Research and development

Putting a price on carbon through the central policy will encourage the take-up of existing low-cost, low-emissions technologies. But the government will need to pursue action now to ensure the take-up of low-emissions technologies that will be lowest cost in the longer term. Without government action it is unlikely that sufficient capital will be invested in the short term to make this investment happen.

Why? Because of two market failures. First, there may be what is called *carbon market risk*. Investors require a reliable, long-term carbon price to underpin their investments. But such a credible carbon price relies on consistent decision-making by government. That has not been the case in Australia. That's why investment in low-emissions technologies is likely to remain inadequate for some time.

The second market failure is the *spillover effect*. Early movers face higher costs than those that follow. Finance costs are higher for new or unfamiliar technologies and there are a range of costs associated with being the first to do something in Australia. Costly new infrastructure or a new regulatory framework may be needed.

The problem for investors is that the rewards of paying for new infrastructure, or managing uncertainty around regulation, do not flow to the first movers. They spillover to those who follow. The result is that investors are unwilling to take the risk of going first. To reap the long-term benefits of investment and innovation, the government will need to intervene.

The government currently provides support to research, development and deployment in the electricity sector through the Australian Renewable Energy Agency and the Clean Energy Finance Corporation. Government should continue to support research and development, both in the electricity sector and in other sectors that face difficulties in making the transition to a low-carbon economy. These include agriculture, industrial processes such as steel and cement-making, and transport.

One option for government would be to adopt the mechanism outlined in Grattan's 2012 report *Building the bridge*. Under this proposal the government selects projects by reverse auctions and guarantees the future price of electricity for emerging technologies, thereby providing certainty to investors. Whatever approach the government chooses will require funding, either from the government's budget or via other sources, such as consumers' energy bills.

## 7 International units

Under the schemes proposed in this report, covered businesses would be allowed to meet their liabilities through the purchase of international units. International units may be either:

- the right to emit one tonne of carbon (i.e. a permit) issued by a scheme in another country; or
- an offset that represents one of tonne of carbon avoided or sequestered in another country, which has been certified under international protocols (e.g. a CER).

Allowing international units in an Australian scheme can achieve the same environmental outcomes at lower cost. This is because reducing one tonne of emissions in Australia has the same environmental value as reducing one tonne of emissions anywhere else. Moreover, cheaper abatement opportunities are likely to exist overseas: at present, some types of international units can be purchased for less than \$1.

This is not to say that international units will always be a cheaper option. Estimates of future global carbon prices suggest that units might cost as much as US\$100 by 2030.

An Australian scheme should initially place limits on the types of international units allowed. Some CERs, for instance, might not be acceptable because the underlying projects raise social, environmental or strategic issues. The Climate Change Authority has previously suggested restrictions based on these considerations.

There should also be a limit on the quantity of international units permitted by the scheme. Allowing international units will mean that emissions can go above the nominal limit on emissions associated with a given supply of emissions permits. For example, assume the government auctions 100 Mt CO<sub>2</sub>-e worth of permits.

If covered businesses are allowed to meet a share of their liabilities using international units, say 50 per cent, then these businesses can actually emit up to 200 Mt CO<sub>2</sub>-e in total. It may not be politically palatable for emissions to significantly exceed the nominal limits associated with permits, particularly when these limits are linked to national targets. Delaying domestic emissions reduction may also have longer-term negative economic impacts.

Setting the 'right' quantitative limit on international units is a trade-off between flexibility for covered businesses in meeting their liabilities and the costs of higher emissions. A limit that is close to zero provides no material flexibility to businesses. A limit of 50 per cent or above allows emissions to be twice the limit allowed by permits, and this could be considered politically unacceptable. Therefore, a quantitative limit around 20 per cent may be appropriate initially. This limit could be lowered or raised in the future depending on developments domestically and in the markets for international units.

For any queries, please contact:

Tony Wood

Program Director, Energy

Grattan Institute

[Tony.wood@grattan.edu.au](mailto:Tony.wood@grattan.edu.au)

Mobile: 0419 642 098

## 8 References

Climate Change Authority (2015) *Final report on Australia's future emissions reduction targets*, July 2015

Climate Institute (2015) *Government climate targets fail key test*, August 2015. <http://www.climateinstitute.org.au/articles/media-releases/government-climate-targets-fail-key-tests.html>

Wood, T, Blowers, D and Moran, G. 2016 *Climate phoenix: a sustainable Australian climate policy*, Grattan Institute