



# Submission to the Climate Change Authority

## Special review second draft report: Australia's climate policy options

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### Contact Details

Adrian Enright

Policy Manager - Climate Change

WWF-Australia

[aenright@wwf.org.au](mailto:aenright@wwf.org.au)

Kellie Caught

National Manager - Climate Change

WWF-Australia

[kcaught@wwf.org.au](mailto:kcaught@wwf.org.au)

# Introduction

WWF-Australia welcomes the opportunity to make this submission to the Climate Change Authority's special review on Australia's climate policy options.

WWF-Australia is part of the WWF International Network, the world's largest and most experienced independent conservation organisation. We have over 300,000 active supporters in Australia and a global network active in more than 100 countries. WWF's mission is to stop the degradation of the planet's natural resources and to build a future in which humans live in harmony with nature.

WWF has been an advocate for national and international action to avoid dangerous climate change for more than two decades.

This submission provides a brief introduction around Australia's climate mitigation efforts in view of the recent Paris Agreement. It is then divided according to the specific questions outlined in the review document:

- Policy principles
- Policy options
  - Mandatory carbon pricing
  - Voluntary carbon pricing
  - Renewable energy targets and energy efficiency targets
  - Regulation
  - Information programs
  - Innovation support

WWF would welcome the opportunity to discuss the details of our submission further as part of the process of stakeholder consultations following the written submission stage.

# Key Points & Recommendations

Australia's most recent National Greenhouse Gas Inventory quarterly results show growth in the volume of absolute emissions generated from the economy, despite the abatement task of meeting 2020 emission reduction commitments being downgraded<sup>i</sup>. This growth needs to be curbed to ensure Australia meets future emissions reduction targets in line with limiting warming to 1.5 degrees, and to take advantage of lower cost early-action. A suite of stable, long-term policy mechanisms will be fundamental to driving this change.

Australia can build a cleaner, more sustainable, healthier, safer and prosperous future by transitioning to a zero carbon economy and doing our fair share to ensure world governments limit warming to 1.5 degrees.

Modelling shows we can achieve net zero emissions in Australia before 2050 using current technologies and without major impacts on our sectors, all we need to do is accelerate the transformation. But the crucial period is between now and 2030. So we need to get going straight away.

**Policy principles:** WWF supports the key policy criteria proposed by the Climate Change Authority (CCA) Review, and recommends strengthening the principles with the inclusion of two new criteria around 'Transparency', and 'Scalable'. In addition, the existing 'Environmental effectiveness' principle should be expanded to ensure policies deliver net benefits, or at least no net adverse impact in terms of other environmental indicators.

**Mandatory carbon pricing:** WWF advocates the use of a mandatory price and limit on carbon pollution, such as a cap and trade scheme as a central pillar of Australia's efforts to tackle climate change. A price on carbon emissions is widely recognized by economists as the most cost effective way of driving down economy-wide emissions. Carbon pricing has tripled in its global coverage over the last decade. Carbon pricing mechanisms are a key policy under 90 country's Intended Nationally Determined Contributions (INDCs).

International experience with mandatory carbon pricing can provide useful lessons for Australia to help design a more effective scheme here, including: linking carbon pricing to national carbon budgets, carbon revenue recycling, international cooperation and linkages, and compensation to trade exposed industries.

- **Voluntary carbon pricing:** WWF recognizes the role that voluntary carbon pricing and carbon offsets can play in supporting a mandatory carbon price. However, without a mandatory carbon pricing scheme, relying primarily on voluntary pricing such as the Emissions Reduction Fund (ERF) as the foundation of Australia's climate policy toolkit will not deliver on the emissions reductions needed to do our fair share to limit warming to 1.5 degrees. WWF recommends that the ERF and the Safeguard mechanism is strengthened to form the foundation of a mandatory carbon price scheme, such as a cap and trade ETS.
- **Renewable energy and energy efficiency targets:** Renewable energy and energy efficiency targets provide pragmatic supporting policies to a suite of country's long-term plans to drive deep emissions reductions. Renewable energy targets can work to provide investor confidence and help to support the emergence of affordable clean technology. Energy efficiency measures have been widely recognized as some of the lowest cost options to drive major energy productivity improvements. WWF notes more needs to be done in transport area to accelerate uptake of electric vehicles, solutions for airlines and shipping, and industrial energy. WWF recommends that a renewable energy target (for all energy) of at least 50% by 2030 is established. Policies to achieve this target should include:
  - Increasing the Renewable Energy Target (RET) mechanism for the electricity sector: The RET has been very effective to date, and should remain as an important part of the policy infrastructure in Australia. The RET should be retained and increased to support the target of achieving at least 50% renewable energy by 2030. As other policies take effect, the RET could be scaled-back accordingly.

- Close coal-fired power stations: A measured transition plan in place in the next term of government to close old inefficient coal power stations and also facilitate the transition of workers and regional communities. Emissions performance standards and/or options presented by Jotzo and Mozouz (2015) could be considered alongside of other regulatory tools to facilitate the smooth and just transition away from coal fired generation.
- Modernize electricity network: Make changes to regulatory environment including the National Energy Market, network pricing, and network access.
- Renewable transport sector: develop plans and incentives to electrify the transport sector, support third generation biofuels for shipping and airlines, and options for industrial energy process.
- More efficient and productive economy: Initiatives which promote greater energy efficiency, including standards on vehicles and fuels, new buildings, and incentives for existing infrastructure retrofits.

**Regulation:** WWF supports the use of direct regulation, which can play an important role in supporting market-based instruments especially in the case where certain market failures within a sector prevent market instruments from driving the necessary change. For example, regulation will likely be an important facilitator of the necessary transition out of coal fired electricity generation in Australia in particular.

**Innovation:** The Government's National Innovation and Science Agenda (NISA) program offers an important vehicle to support the development of clean technology in Australia, alongside of ARENA and CEFC. WWF recommends the programs within the NISA be considered as key supporting mechanisms for the development and commercialisation of clean technology in Australia.

# Domesticating the Paris Agreement

The recent Paris Agreement included the significant inclusion of commitment to "holding the increase in the global average temperature to well below 2 degrees above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees above pre-industrial levels...". The inclusion of 1.5 degrees goal in the Agreement recognises that this would significantly reduce the risks and impacts of climate change. This also mandates country's to take stronger, more immediate action to cut carbon pollution in-line with this commitment.

For Australia, the Paris Agreement will require a significant increase in its current rate of effort. Existing commitments of reducing carbon pollution by 5% below 2000 levels by 2020, and 26-28% below 2005 levels by 2030 will not be sufficient to put Australia on a pathway to doing its fair share of keeping to the international commitment<sup>1</sup>. The latest National Greenhouse Gas Inventory update for Australia also shows that although Australia may be on track to meeting its 2020 targets, the volume of absolute emissions across the economy are growing.

The recent growth in absolute emissions sends two important signals to Australia about its current abatement efforts in view of the Paris Agreement.

Firstly, Australia will need to begin rapidly curbing emissions to prevent continued growth and to avoid the higher costs associated with delaying action. Delaying action will be costly, both in terms of missing out on early transition and technology opportunity's, and also in terms of the risk of stranded assets and risking adverse trade responses from major trading partners already implementing measures to lower carbon pollution.

Secondly, Australia's current policy mix will need significant improvements to meet future emission reduction targets. The recent growth in emissions suggests Australia's current policy mix will be inadequate to delivering stronger abatement effort in future.

For Australia to position itself in-line with the effort needed to meet the Paris Agreement commitments a portfolio of stable, long-term policies are needed. Such policies will send the right signals for Australian businesses to take advantage of the huge array of mitigation opportunities across the economy by breaking down barriers to accessing clean technology, providing incentives to drive cleaner production and encouraging investment into science and technology to position Australia as a lead thinker in innovative solutions.

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<sup>1</sup> WWF-Australia recommend that to provide a 75-80% chance of staying below 2 degrees, Australia's targets would need to be:

- 25% below 2000 levels by 2020
- 45-55% by 2025, and 65-80% by 2030 from a 2005 baseline
- Net-zero emissions before 2050

# Policy Principles

**Q.1. The Authority proposes assessing policies primarily on their cost effectiveness, environmental effectiveness and equity. Are these principles appropriate? Are there any other principles that should be applied, and if so, why?**

WWF supports the three key policy principles proposed. WWF would also recommend small additions to 'environmental effectiveness' criteria, and several additional principles to strengthen the decision making process around the most appropriate future policy mix.

## **Environmental effectiveness**

The principle as currently defined appropriately focuses on ensuring the additionality of carbon sequestration efforts and avoids the risk of emissions leakage. However, this principle could be strengthened to ensure that activities which deliver emissions reductions are also 'environmentally effective' in terms of providing a net benefit, or at least no net adverse impact in terms of other environmental indicators. This recognizes that some abatement activities may deliver important emission reductions, but run the risk of adversely impacting on biodiversity, water flows, soil health or other important ecosystem functions - examples include monoculture plantations, non-native vegetation plantings, construction of infrastructure in areas of high-value biodiversity.

## **Transparency**

Successful carbon pricing policies must be clear in design and implementation. Achieving this will require regular and meaningful engagement with affected stakeholders about the rationale, desired outcome, and shared benefits helps to generate support for carbon pricing and to manage the associated change in the structure of the economy<sup>ii</sup>. These processes also build public trust in the policy mechanisms, providing reassurance that the mechanism is delivering on its intended purpose.

## **Scalable**

Global agreements to keep global warming well below 2 degrees will necessitate a tightening of current country emission reduction targets. As targets become tighter and aligned with global commitments, policies will need to be flexible to account for stronger national and international efforts. This will require policies to be scalable to adapt to tighter targets.

Policies must also be flexible to technological change and innovation. The rapid pace of renewable energy technology over the last decade, for example illustrates the need for policies which promote greater uptake of renewable energy to adapt to this growth and ensure that the policies continue to play a cost effective role in facilitating their uptake. For example, this submission details WWF's support for an ongoing RET out to 2030 which could be phased-out depending on the pace at which new capacity is added and the sliding cost of renewable energy relative to fossil fuels (see section 'Renewable energy targets and energy efficiency targets').

# Policy Options

## Mandatory carbon pricing

**WWF supports the use of a mandatory pricing mechanism on carbon pollution that caps and limits pollution as a central pillar of Australia’s efforts to tackle climate change. A mandatory price on carbon emissions is widely recognized by economists as the most cost effective way of driving economy-wide emissions. Carbon pricing has tripled in its global coverage over the last decade and will be a key policy mechanism under 90 country’s INDCs<sup>iii</sup>.**

### Q.2. What lessons can be learned from Australia and overseas on the effectiveness of mandatory carbon pricing, and its interaction with other climate policies?

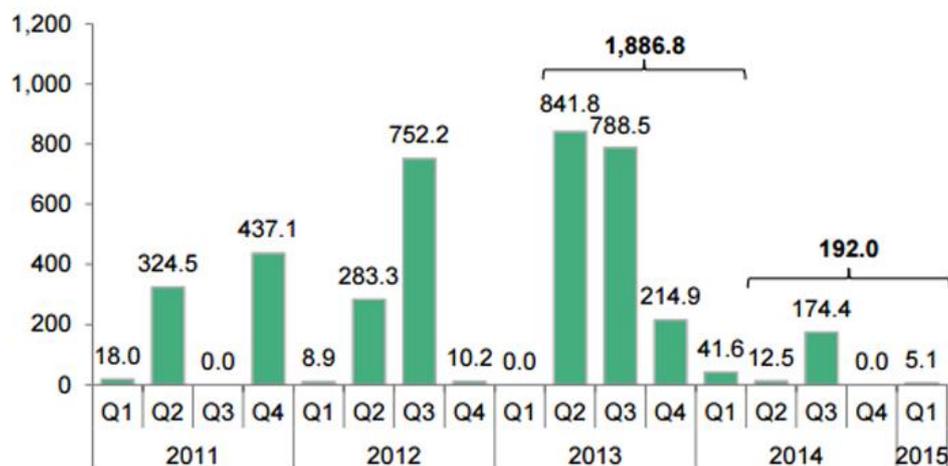
Experience in Australia and abroad shows that well-designed mandatory pricing can be economically efficient, drive significant abatement effort and designed to support the transition of individuals, communities and businesses to a low-carbon economy.

A mechanism that puts a price and limit on pollution, such as an internationally linked cap and trade mechanism, is considered by respected international economic institutions and leading economists as the most cost effective and efficient way to reduce greenhouse gas emissions in line with the global goal of reducing global warming well below 2 degrees. Mandatory pricing also has significant support across countries and across a broad spectrum in the business community. However, for emissions pricing to have its full effect, a stable, long-term policy framework is critical.

In Australia, the carbon price over the period between 1 July 2012 and 30 June 2014 helped to reduce emissions by 17 million tonnes. The most significant reductions were made in the electricity sector, which is the largest contributor to Australia’s emissions profile<sup>iv</sup>. In particular, O’Gorman and Jotzo (2014) estimate the combined impact attributable to the carbon price is estimated as a reduction of between 5 and 8 million tonnes of CO<sub>2</sub> emissions (3.2 to 5 per cent) in 2012/13 and between 6 and 9 million tonnes (3.5 to 5.6 per cent) in 2013/14, and between 11 and 17 million tonnes cumulatively<sup>v</sup>.

The carbon price also helped trigger a reduction in demand from consumers as a result of higher electricity prices and also reduced the emissions intensity of electricity supply over the period as more carbon intensive power generation was eased-off. For example, emissions-intensive brown coal and black coal generators were measured to have reduced output and 4GW of emissions-intensive generation capacity was taken offline<sup>vi</sup>. This coincided with a period of record levels of investment into new renewable energy capacity, highlighting the way in which the carbon price worked in conjunction with the Renewable Energy Target (RET).

Figure 1 shows the considerable growth of large-scale renewable energy capacity over 2012-13 which was facilitated by the carbon price alongside of the RET.



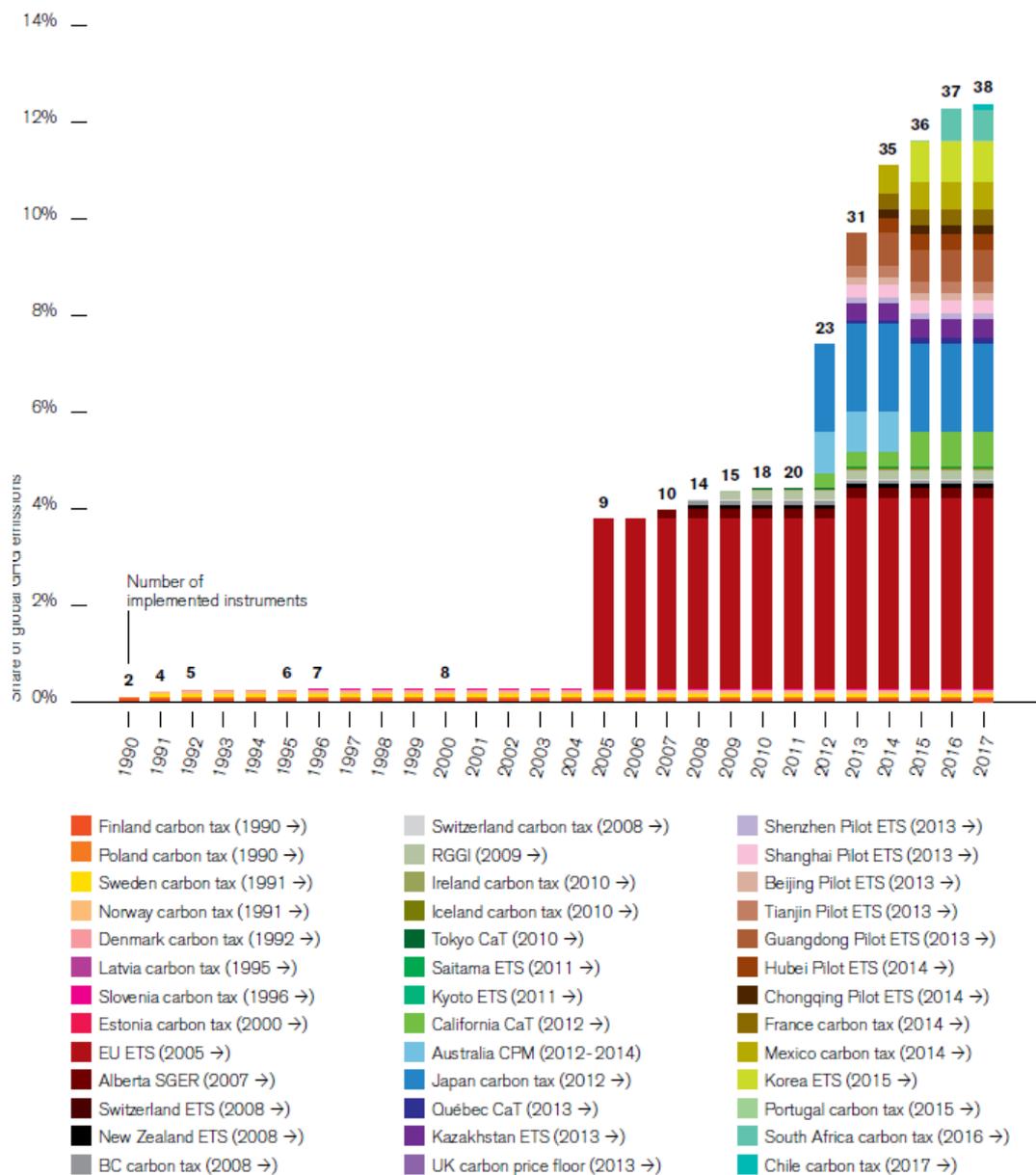
Source: Bloomberg New Energy Finance

Figure 1: Total large-scale renewable energy investment in Australia

However, the effectiveness of the carbon price in Australia and its role alongside other supporting policy mechanisms such as the RET was ultimately limited by its short policy tenure. The carbon price was discontinued in July 2014 and replaced with the Emissions Reduction Fund (ERF). This has created a degree of uncertainty among market participants around the future policy instruments used to drive emissions reductions. Australia’s experience therefore highlights the importance of long-term certainty of carbon pricing mechanisms, and other supporting climate policy.

International experiences can also be drawn from the growing number of countries with mandatory carbon pricing as a key policy lever to meet national climate change targets.

About 40 governments and 23 cities, states and regions already have carbon pricing mechanisms covering about 12 percent of annual global greenhouse gas emissions (Figure 2) <sup>vii</sup>. This number is expected to grow, with more than 90 Intended Nationally Determined Contributions (INDCs) outlined prior to the Paris COP including proposals for emissions trading, carbon taxes, and other pricing mechanisms<sup>viii</sup>. Furthermore, seventy-four countries, 23 subnational jurisdictions, and more than 1,000 companies and investors expressed support for a price on carbon ahead of the UN Secretary-General’s Climate Summit. Of the group, 347 institutional investors signed the investor statement, which includes a call for governments to “Provide stable, reliable and economically meaningful carbon pricing that helps redirect investment commensurate with the scale of the climate change challenge” and around 450 now use an internal carbon price to guide investment decisions, up from 150 companies in 2014<sup>ix</sup> x.



Note: Only the introduction or removal of an ETS or carbon tax is shown. Emissions are given as a share of global GHG emissions in 2012. Annual changes in global, regional, national, and subnational GHG emissions are not shown in the graph. Data on the coverage of the city-level Kyoto ETS are not accessible; its coverage is therefore shown as zero.

Figure 2: Sectoral scope and global coverage of different national and sub-national carbon pricing mechanisms<sup>xi</sup>

Several important lessons can be drawn from the experiences of existing mandatory carbon pricing mechanisms that should be considered in developing an effective Australian scheme:

### **International cooperation and linkages**

- There are significant benefits from internationally linking carbon pricing mechanisms. Most of the roughly 20 cap-and-trade schemes in operation have established or proposed at least one international linkage with another cap-and-trade or credit system;
  - California and Quebec linked their carbon pricing schemes in 2014, and Ontario will soon join them.
  - The EU ETS already links 31 countries, with potential to be extended to other neighbouring countries.
  - The Regional Greenhouse Gas Initiative (RGGI) links nine US states whose economies and energy systems are interconnected<sup>xii</sup>.
- Broader international cooperation in the design and operation of mandatory carbon pricing can also help to reduce the significant price differences across different jurisdiction's pricing mechanism and help to minimise the real or perceived impacts on competitiveness of unilateral action<sup>xiii</sup>. Internationally coordinated approaches can also be more successful in reducing leakage concerns.
  - As of April 2015, allowances in the EU ETS were trading at around US\$8 per tonne of CO<sub>2</sub>e, and in California, at around US\$13 per tonne. Price floors, as used in the UK, California and in the seven Chinese pilot schemes, can ensure a minimum price level in emissions trading, providing greater certainty and more consistent policy signals<sup>xiv</sup>.
- Broader international cooperation is also necessary in policy areas which will interact (positively and negatively) with mandatory carbon pricing. For example, fossil fuel subsidies act to counter the impact of prices on pollution. Existing levels of fossil fuel subsidy support has been estimated at \$55-90 billion per year in developed nations<sup>xv</sup>. Scaling back this support alongside of measures to introduce carbon pricing can be the most effective way to reinforce signals to drive down emissions.

### **Flexibility to market changes**

- Mandatory pricing mechanisms must be responsive to changes in global and domestic economy conditions. For example, the EU ETS was largely exposed to the economic downturn after the financial crash in 2008 which led to downward adjustments to emissions caps. However, because the policy design did not allow this, subsequent surplus permits helped to drive a decline in the price of EU credits. The EU ETS is currently being reformed to ensure it remains more flexible to future economic adjustments<sup>xvi</sup>.
- Carbon prices and complementary policies must also be well aligned and integrated, both within the policy package itself and across the wider economy. For example, policies supporting the development of renewable energy capacity in the EU have had the effect of driving down the price of carbon credits due to an excess of supply of additional credits generated by renewable energy projects. As a result, changes needed to be made in many countries to either cap the level of support for renewable energy, or put in place price floors on carbon credits (e.g. UK).

### **Carbon pricing and economic growth can go hand-in-hand**

- International experience shows that carbon pricing can help to drive significant emissions reductions alongside of maintaining strong economic growth;
  - Sweden introduced its carbon tax in 1991; its economy grew by nearly 60% in 1990-2013 while emissions fell by 23%.
  - British Columbia, there was no evidence that the carbon tax adversely affected GDP growth over the five-year period following its introduction in 2008.
  - The nine US states in the Regional Greenhouse Gas Initiative (RGGI) grew their economies by 9.2% in 2009– 2013 – better than the other 41 states' 8.8% – while reducing their combined emissions by 18% (vs. 4% in the other states).<sup>xvii</sup>

### **Carbon revenue recycling**

- Carbon pricing can be an effective generator of revenue for government. This revenue can then be 'recycled' in a range of different ways, including funding clean innovation, compensating adversely affected individuals (e.g. low-income earners) and industry, and public infrastructure (e.g. health, education etc.)

- Chile’s carbon tax revenues have been invested into retraining of displaced workers and safety nets for those unable to retrain<sup>xviii</sup>.
- Quebec and California use revenues from their ETS auctions to invest in low-carbon technology funds.
- EU Member States are allocated revenue from the EU ETS which is used to fund innovation and climate- and energy-related activities<sup>xix</sup>.
- Collectively, RGGI has invested over US\$1 billion from the proceeds of its ETS in the energy future of participating states in New England and the Mid-Atlantic region<sup>xx</sup>.

### Compensation for trade-exposed industry’s

- Compensation for trade-exposed and other exceptionally exposed industries are often used to help smooth the transition of an economy towards the introduction of carbon pricing especially while the markets of major trading partners mature. Compensation can take many forms, including tax breaks, free-permits (see Table 1), retraining affected workers, energy efficiency incentives and investment into clean-tech development. However, compensation can weaken the carbon price signal and delay the necessary transition needed across industries to a low-carbon economy. For example, early lessons from the EU ETS highlighted the impact of providing overly generous compensation which resulted in suppression on permit prices and called into question the credibility of the scheme early on.
- If compensation is to be part of the transition plan into a carbon price, then careful consideration of the nature and size of this compensation is needed. International experience suggests that the level of compensation required to ensure an initial profit-neutral impact from carbon pricing is likely to around 15% of total carbon price revenues, according to some analyses<sup>xxi</sup>.

Table 1: Advantages and disadvantages of different industry assistance options in the early stages of carbon pricing design (adapted from World Bank 2015)

Option		Advantages	Disadvantages	Example
<b>Free allowance allocations</b>				
• <b>Grandfathering permits</b>	Firms receive free permits based on historical emissions	Easy to implement	Leakage potential; open to bias	EU ETS phases I & II, Korea ETS, Beijing
• <b>Output based allocation</b>	Free permits based on historical production	Effective at preventing leakage	Administratively complex	EU ETS Phase III
• <b>Fixed sector benchmarking</b>	Free allowances related to firm’s actual production and a product-specific benchmark of emission intensity of the whole sector	Favor most efficient firms, transparency, effective at preventing leakage		California, NZ, Korea, Shenzhen
<b>Administrative exemptions</b>	Exempting sectors completely or reducing their compliance	Easy to apply, politically popular	Undermines emission reduction objectives	EU, South African carbon tax
<b>Rebates</b>	Subsidies or tax breaks for exposed industries		Inefficient	UK climate levy, Swedish NOx charge
<b>Border carbon adjustments</b>	Pricing emissions intensive imports, providing rebates to exporters selling to a 3rd-party.	Environmentally robust, effective to reducing leakage	Administratively difficult, open to legal challenges	

### **Linking carbon pricing to national carbon budgets**

- It is important to link mandatory carbon pricing (alongside of other supporting climate policy's) to national carbon budgets. This can help in ensuring the credibility and effectiveness of a carbon price, as well as allowing for regular review of progress toward the budget. For example, the United Kingdom legislated for binding carbon budgets in its Climate Change Act 2008, legally committing the country to achieving a 50 percent reduction in emissions relative to 1990 levels by 2027<sup>xxii</sup>.

### **Achieving public support and trust**

- Stakeholder consultation processes prior to the implementation of Ireland's carbon tax have been highlighted as exemplary. In particular, the process of engaging and understanding key stakeholder concerns, particularly farming groups, has been heralded as a key reason for the widespread public acceptance of the policy<sup>xxiii</sup>.

### **Q.3. How does mandatory carbon pricing perform against the principles of cost effectiveness, environmental effectiveness and equity? Which type of pricing scheme is likely to be more effective, and why?**

WWF recommends that an effective policy response to reduce greenhouse gas emissions in line with our national interest and international obligations should have at its core the following elements:

- Include annual carbon pollution limits;
- Be scalable to achieve stronger targets;
- Provides a long-term and stable framework to support long-term investment decisions;
- Designed to be economically efficient to minimise the cost to businesses and the economy as a whole, and to enable stronger targets to be set;
- Based on the polluter pays principle;
- Puts a price on carbon pollution to incentive emissions reductions;
- Have broad coverage to drive economy-wide abatement; and
- Be consistent with existing international rules.

A scheme that puts a price and limit on pollution embodies the elements listed above and can provide other benefits:

- Drives energy efficiency and large-scale abatement at least cost to the economy;
- Enables polluting business and the market to determine where pollution reduction will occur, this can drive innovation and efficiency throughout the economy; and
- Provides a revenue flow that can be reinvested in the economy to support the demonstration and commercialisation of clean technology, provide international finance to developing countries, and provide targeted assistance to households and energy intensive trade exposed industries.
- Linked to international schemes it can:
  - Promote technology transfers to developing countries;
  - Encourage other industrialised economies to also implement a price on pollution; and
  - Support for an efficient global response to climate change.
- A carbon price can reduce the cost of complementary measures such as grants, the Renewable Energy Target Scheme (RET), or a feed-in-tariff.

Recent analysis by international institutions has strongly supported the use of carbon pricing mechanisms. For example, the International Monetary Fund has suggested that 'Broad-based charges on greenhouse gas emissions, are the most effective instruments for reducing emissions throughout the economy'<sup>xxiv</sup>.

The OECD concluded that 'Explicit carbon pricing mechanisms, such as carbon taxes and emissions trading systems, are generally more cost-effective than most alternative policy options'<sup>xxv</sup>.

Market based mechanisms that price and limit pollution were also advocated in two seminal Australian reports to Government on climate change: the Prime Ministerial Task Force on Emissions Trading prepared under the Howard Government<sup>xxvi</sup>, also known as the Shergold Report, and the Garnaut Climate Change Review<sup>xxvii</sup> prepared under the Rudd and Gillard Governments.

For example the Shergold Report concluded:

*“The Task Group is firmly of the view that the most efficient and effective way to manage risk is through market mechanisms. An Australian emissions trading scheme would allow our nation to respond to future carbon constraints at least cost.....Other forms of government intervention would impose a far heavier burden on economic activity....Emissions trading enables the market – not government – to decide which new or existing technologies will reduce emissions at least cost... Emissions trading also encourages the development, for trade, of offsets... [and] will help new economic opportunities to emerge.”*

There is also strong international support for mandatory prices on carbon pollution. In addition to the large number of countries adopting or soon adopting carbon prices as a cornerstone policy, an unprecedented alliance of Heads of State and corporate leaders under the ‘Carbon Pricing Panel’ encouraged more countries to adopt carbon pricing. The leaders agreed carbon pricing as providing a triple dividend: providing environmental and people returns; raising revenue efficiently; and drives private sector innovation and in clean and low-emission technologies<sup>xxviii</sup>.

WWF-Australia has consistently argued that to help Australia achieve ambitious, science and equity based pollution reduction targets, a price and limit on carbon emissions, such as a cap and trade scheme, should be at the heart of Australia’s policy response.

## Voluntary carbon pricing

**WWF recognizes the role that voluntary carbon pricing and offsets can play in supporting other policy mechanisms. However, without a mandatory carbon pricing scheme, relying primarily on voluntary pricing such as the Emissions Reduction Fund (ERF) as the foundation of Australia’s climate policy toolkit will not deliver on the emissions reductions needed to do our fair share to limit warming to 1.5 degrees. The ERF Safeguard mechanism could provide a foundation which could be strengthened to provide a more effective voluntary mechanism in the short-term, and adapted to a future pricing mechanism.**

### Questions

#### **Q.4. What lessons can be learned from Australia and overseas on the effectiveness of voluntary carbon pricing, and its interaction with other climate policies?**

Domestic and international experience has shown that voluntary carbon pricing can play an important supporting role to other climate policies, and can facilitate the transition to mandatory carbon pricing.

The use of carbon offsets, for example provide an important option for businesses who either voluntarily or under legislated obligation offset emissions that they cannot otherwise avoid. This is important for industries where low or zero carbon alternatives are not available, are prohibitively expensive at the current time or are still technically immature. The use of credible international offsets also allows businesses to invest in emission reduction efforts overseas which can be a more cost effective means of adhering to climate targets.

Voluntary carbon offset schemes can also be an effective means of delivering additional co-benefits from emissions abatement activities. For example, South Africa’s carbon price mechanism illustrates how carbon offsets can help to deliver regional development opportunities. South Africa intends to allow company’s limited use offsets in lieu of paying some of their carbon price obligations. This provides businesses with the flexibility in meeting their obligations, and also has the potential to deliver flow-on employment and opportunities for regenerating degraded landscapes in rural areas where offset projects are established<sup>xxix</sup>.

However, Australia’s experience through the Emissions Reduction Fund (ERF) illustrates the weaknesses of having voluntary carbon pricing as a central pillar of efforts to cut carbon pollution. Several early lessons can be drawn from the current design of the ERF and the two auctions to date. These include:

- The current ERF and proposed safeguard mechanism does not provide a framework that puts an annual limit or cap on emissions. Because of this, it is difficult to assess the effectiveness of the ERF in bringing about the necessary emissions reductions in-line with Australia's national targets.
- The ERF is not scalable to achieve future science and equity based targets and does not provide long-term certainty that it will effectively drive the economy-wide emissions reductions needed for Australia to play its fair share of keeping global warming well below 2 degrees. Even under the current 2030 emissions reductions targets, the Government has modelled the ERF as driving less than half of the abatement effort. This leaves significant room for other policy's to deliver the necessary emissions reductions.
- The ERF is not based on a polluter pays principle, but rather relies on tax-payer funding to drive voluntary abatement effort. This design fails to provide major polluters with incentives to curb greenhouse gas emissions and relies on money being drawn from annual budgets to pay for abatement activities. The reliance on public funding also means that ongoing funding for abatement projects will rely on budgetary cycles. This can create uncertainty around the long-term viability of the policy. For example, the suggestions that the ERF funding of \$2.55bn will not be extended in the upcoming budget raises questions around the ongoing funding opportunities under the ERF, especially given that around 50% of the fund has already been spent within the first year of the policy<sup>xxx</sup>.
- The level of 'flexibility' offered to facilities in setting carbon emissions baselines is currently very generous. There is reason for concern around the establishment of the initial baselines and the process of adjustment at the point of breaching already generous baseline levels. This creates significant 'wiggle room' for facilities to avoid enforcement, and ultimately risks emissions growing rather than being capped and reduced over time.
- The ERF fails to appropriately manage the risk of emissions rising in uncovered sectors of the economy. For example, emissions from land clearing in Queensland alone over 2013-14 have been estimated to be around 35.8MTCO<sub>2e</sub><sup>xxxi</sup>. This is roughly 80% of the volume of abatement purchased under the second ERF auction, suggesting that a large proportion of this abatement has already been lost due to weak signals in uncovered sectors of the economy to reduce emissions. This fails both in terms of the environmental integrity of the policy, as well as the cost effectiveness since the tax-payer funded abatement effort has been lost due to other activities across the economy.
- There are concerns that the 90+ million tonnes purchased under the ERF will occur over a long time frame of up to 10 years. This provides uncertainty around the ability of the policy to drive the emissions reductions needed to meet Australia's 2020 emission reduction targets.
- Understanding and properly costing the compliance obligations of participants bidding for ERF funding can also be difficult. In particular, consultations with small-scale farmers interested in participating in the ERF reveals the challenges associated with understanding the complex accounting methodologies to be applied to their area. The costs of continued compliance can also be prohibitively high for many smaller operators, therefore risking creating a bias towards funding larger operators. This may not necessarily be the most cost-effective outcome.

Based on this experience, the ERF will be an inadequate cornerstone policy mechanism for Australia going forward.

As a second option to a mandatory carbon pricing mechanism such as a cap and trade ETS and interim measure, would be a well-designed safeguard mechanism with appropriate penalties for facilities that breach their given baseline (which declines over time). If designed properly such a scheme could act as a defacto price signal and cap on economy wide emissions. If the baselines are sufficiently strong and the penalty price sufficiently high, a baseline and penalty mechanism should be capable of preventing emissions from growing and incentivizing shifts to lower emissions production over time.

The ERF could also be used as a foundation for the design of other policies, including a baseline and credit ETS. Although WWF considers inferior to a mandatory cap and trade ETS, the current design of the ERF Safeguard emissions baselines could be used as a platform to design a baseline and credit ETS. This would require adaptations to the existing provisions to ensure more strict baselines in-line with national emission targets and more stringent requirements for industry to comply with these baselines. Existing ERF contracts awarded could also be sold as offsets to businesses unable avoid part of their emissions compliance. This could allow the Government to re-coup some of the expenditure of the ERF auction rounds to then re-invest in complementary mechanisms, including the development and commercialization of innovative clean technology.

## **Q.5. How does voluntary carbon pricing perform against the principles of cost effectiveness, environmental effectiveness and equity?**

Government purchases of emissions reductions through the ERF can be argued to perform poorly against the three criteria. Key concerns include:

- Cost effectiveness: the reliance of the ERF on public funding to pay for emissions reductions as opposed to a ‘polluter pays’ mechanism which allows for revenue raising and recycling;
- Environmental effectiveness: key concerns include the additionality of ERF funded activities, and the long delay between the awarding of ERF contracts and when measurable emissions reductions will actually occur (especially in certain forestry projects); and
- Equity: the ERF places the cost of emissions purchases on tax payers rather than a polluter pays model.

Unless various changes are made to the design of the ERF and supporting Safeguard mechanisms, the ERF is at risk of continuing to underperform against all key policy criteria.

## **Renewable energy targets and energy efficiency targets**

**Renewable energy targets and energy efficiency targets provide pragmatic supporting policies to a suite of country’s long-term plans to drive deep emissions reductions. Renewable energy targets can work to provide investor confidence and help to support the emergence of affordable clean technology. Energy efficiency measures have been widely recognized as some of the lowest cost options to drive major energy productivity improvements. WWF recommends a renewable energy target of at least 50% by 2030 is established. Policies to achieve this target should include: Increasing the Renewable Energy Target (RET) mechanism; closing coal-fired power stations, and modernising electricity network**

## **Q.6. What lessons can be learned from Australia and overseas on the effectiveness of renewable energy targets and energy efficiency targets, and their interaction with other climate policies?**

Minimum targets for renewable energy and energy efficiency can be effective ‘low regrets’ policy mechanisms to help support the transition towards low-carbon economies <sup>xxxii</sup>.

### *Renewable energy targets*

The OECD and World Bank (2015) illustrate that renewable energy targets can be effective in helping Government’s transition from ‘sub-optimal’ low-carbon price mechanisms to more stringent pricing over time. By driving investment into clean technology and energy efficiency, targets can effectively reduce the emissions gap between a low and high mandatory price policy. Such measures can also be more politically palatable and are shown to have lower impacts on short-term consumption as opposed to higher mandatory pricing by itself. By targeting investment into new, clean technology such renewable energy and energy efficiency targets have also been shown to be more effective than standalone policies which place moratoriums on fossil fuels. For example, moratoriums on coal plants can lead to a substitution effect towards other fossil fuels (namely, gas) if not supported with other mechanisms which stimulate investment in clean energy alternatives.

The use of renewable energy targets are common place among international climate policy toolkits. For example, over 130 countries currently have renewable energy targets in place. Scotland has set a target of 100% by 2020, Denmark has set a target of 50% by 2020 and 100% by 2035, California recently announced target of 50% of electricity from renewables by 2030, and Germany has committed to 40-45% renewable energy by 2020, and 55-60% by 2035.

Targets have also been established as part of Australia’s ambitions to support the uptake of renewable energy in the electricity sector. A principle mechanism to achieve these ambitions have been driven by the Renewable Energy Target (RET) which was first installed under the Howard government and is currently in place until 2020.

The RET policy has been successful in driving:

- an expansion of renewable energy jobs in Australia to around 21,000 employees;

- greater competition in the electricity market, which has been modelled by the Government's own Warburton Review to drive down the costs of electricity over time and has had little impact on household energy prices to date; and
- significant emissions reductions. Under the previous 41,000GWh target, 76 million tonnes of emission reductions would have been delivered by 2020 – about 18 per cent of Australia's minimum five per cent target .

However, Australia's recent experience with the RET has highlighted some important key lessons underpinning the successful implementation of policies which support minimum targets. Most significantly, the uncertainty generated from the review of the 41,000GWh RET over the period 2014/15 led to a sharp fall in investor confidence and a subsequent stalling of new capacity that persists today. In 2014 the global renewable energy sector grew by 16 per cent while Australia's investment contracted by 88 per cent in light of the RET uncertainty. In 2015, sluggish growth in large-scale renewable energy capacity materialized as a result of drawn-out negotiations which saw an eventual bi-partisan compromise to cut the RET to 33,500GWh by 2020.

Australia's experience highlights the importance of putting in place a new renewable energy target out to 2030 as a way to help signal Australia's intentions to develop clean, modern energy systems in-line with broader efforts to keep global warming to 1.5 degrees. In particular, Australia should set a target to achieve at least 50% renewable energy (including electricity, transport and other non-stationary energy) by 2030. To support this, the RET should be extended out to 2030. A renewed RET would help restore investor confidence and can be designed to complement a future price on carbon and other supporting climate policies. For example, a RET out to 2030 could be put in place and reduced over time as the effect of a carbon price filters through the economy. As the price of carbon becomes more effective (as caps on emissions become tighter), this would reduce the demand for Renewable Energy Certificates, and promote more renewable energy through the adjustment of industry to the carbon price. This would essentially allow the RET to be reduced over time while renewable energy continues to grow. In this way, the RET would act as a safety-net for investment – i.e. a 'safety-RET'.

WWF notes that there has been little policy develop to support the transition to renewable energy in the transport sector, this is a massive gap that needs to be urgently addressed. The transport sector contributes around 17% of Australia's total emissions<sup>xxxiii</sup>. Federal and state governments should develop plans and incentives to electrify the transport sector, support third generation biofuels for shipping and airlines, and options for industrial energy process.

#### *Energy efficiency targets*

Energy efficiency measures have been consistently shown to be among some of the largest and cheapest forms of abatement available across the economy. In Australia, recent modelling by ClimateWorks Australia for WWF-Australia showed that energy efficiency accounts for a large proportion of the abatement pathway to 2030 (132 MtCo<sub>2e</sub>) that would be consistent with achieving net-zero emissions by 2050 (see Figure 3)<sup>xxxiv</sup>. Of this amount, 44 MtCo<sub>2e</sub> reductions would be derived from industry, 35 MtCo<sub>2e</sub> from residential and commercial buildings and 51 MtCo<sub>2e</sub> abatement from transport.

Policies which are underpinned by targets to promote greater energy efficiency, including standards on vehicles and fuels, new buildings, and incentives for existing infrastructure retrofits have been introduced in Australia and will be important going forward. Specific measures are detailed under the 'Regulation' section of this submission.

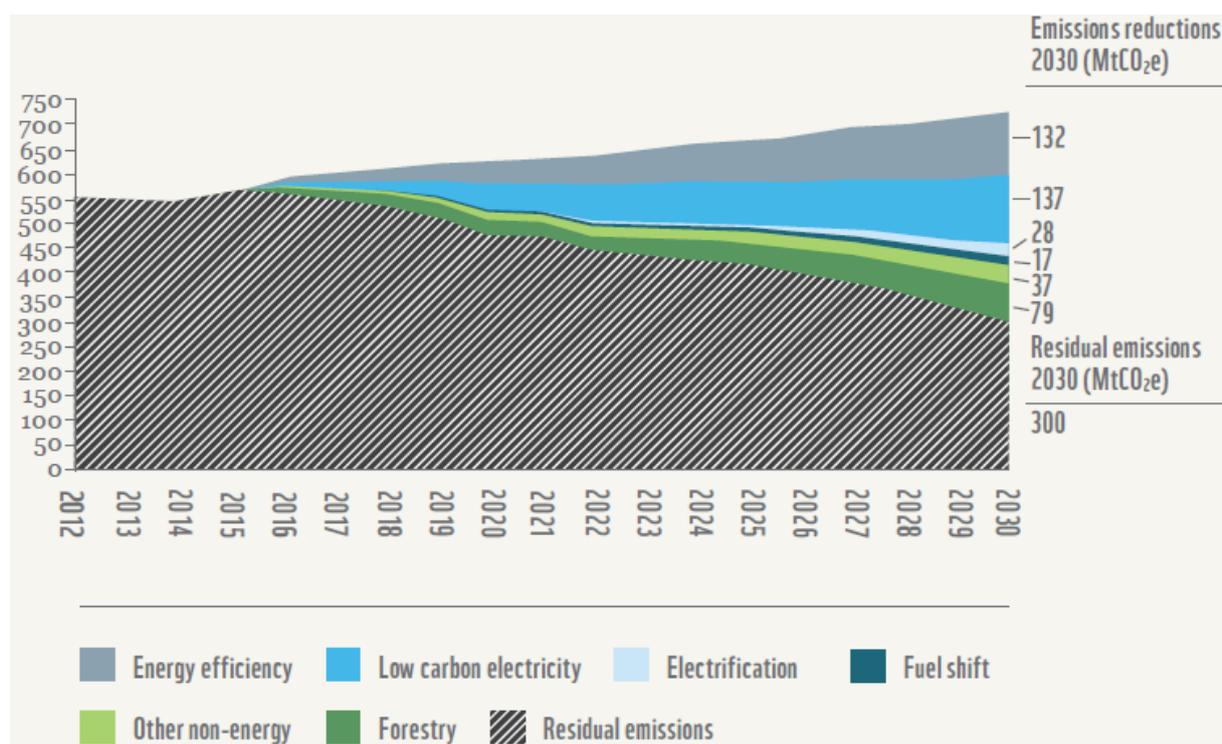


Figure 3: Potential abatement to 2030 in Australia for a net-zero emissions pathway by 2050

### Q.7. How do renewable energy targets and energy efficiency targets perform against the principles of cost effectiveness, environmental effectiveness and equity?

Experience from Australia has shown that the RET as a key policy lever to deliver long-term targets can perform well against measures of cost and environmental effectiveness. In particular, the RET has played an important role in reducing emissions from the energy sector, delivering significant growth in renewable-related employment and has been delivered at a moderate cost.

Already with only a 13.5% share of the market, around 21,000 Australian's are employed in the renewable energy industry. Increasing the target out to 2030 will drive new investment in Australia, jobs and deliver other co-benefits associated with air quality and health. Recent analysis has shown that a 50% renewable energy goal by 2030 would drive more than \$90 billion in investments and create thousands of new jobs. Extended targets will also provide greater investor certainty and will empower families and business to manage their energy. This is especially important during times where price signals for reducing carbon across the economy are low.

However, the impact of the RET on household electricity costs has drawn most attention and concern as to the performance of the policy against measures of equity.

Experience in Australia suggests that the RET effectively drives down wholesale prices, but the net impact on retail prices varies across the country depending on the conditions set by regulatory bodies. Various modelling exercise have downplayed the impact of the RET on electricity prices. Modelling by Jacobs in 2014 found reducing the RET would raise retail electricity prices and benefit fossil-fuel generators in the order of \$8 billion additional profit to coal and \$2 billion to gas generators. The Government's own Warburton Review found that the RET created more competition in the electricity sector and had the net effect of driving down the costs of electricity over time and has had little impact on household energy prices to date. AGL modelling also recently found that average residential electricity bills in New South Wales, south-east Queensland and South Australia may decrease by 11% to 15% in real terms between 2015 and 2020 with the existing RET in place<sup>xxxv</sup>. This work also concluded that the 'green schemes' (including the RET) had negligible impact on power prices in recent years and that the majority of retail price spikes could be attributed to capital expenditure on network upgrades.

Although the future impact of the RET on retail prices will depend on a number of different factors, options are available to Government to help negate any related electricity prices rises, especially for low-income earners and renters who may be unable to put in place measures to improve energy efficiency or invest in renewables on their retail property. For example, revenues generated from a carbon pricing mechanism could be used to directly compensate price rises associated with the RET. The RET can also be effectively phased-out as other policy and market instruments help to drive down the cost of renewable energy relatively to fossil fuel alternatives.

## Regulation

**Direct regulations can play an important role in supporting market-based instruments especially in the case where certain market failures within a sector prevent market instruments from driving the necessary change. Regulation for example will likely be an important facilitator of the necessary transition out of coal fired electricity generation in Australia, and continuing to drive the uptake of more efficient building and transport options.**

### **Q.8. What lessons can be learned from Australia and overseas on the effectiveness of regulation, and its interaction with other climate policies?**

Direct regulations can support market-based instruments where there are market failures (e.g. information asymmetries), institutional barriers such as a lack of incentives for research and development; behavioral change, high-value infrastructure assets; or a lack of finance. This makes regulation often best suited to particular sectors rather than economy-wide regulations which can be inflexible and costly to adapt.

International experience highlights the importance of aligning regulatory measures with broader climate policy. For example, a suite of energy efficient standard regulations targeted at buildings and power generation in China, Europe and North America have been criticized for providing weak signals to industry to adopt these measures<sup>xxxvi</sup>. Used in conjunction with a carbon pricing mechanism, the regulations have become more 'binding' as the price adds to the compliance incentive.

However, in certain cases direct regulation may be appropriate to act in isolation. For example, local emissions from energy and industrial installations in the EU are regulated by Best-Available Technology (BAT) provisions and emission standards and not carbon pricing<sup>xxxvii</sup>. The introduction of similar regulations in Australia may also be appropriate, particularly with respect to coal-fired power stations.

It is widely recognised that a large piece of the puzzle for Australia's mitigation efforts will need to come from the transition away from a heavy dependence on coal-fired power stations to renewables. For this to happen existing coal-fired power stations will need to close to create room for new renewable energy capacity. However, a carbon price by itself may either be insufficient, or require such a high price on emissions that it alone would not be a viable option in the near term.

One innovative solution to this policy challenge developed by Jotzo and Mazouz (2015) is worthy of further consideration. This involves supporting the closure of coal-fired power stations through a competitive bidding process in which power stations place bids on the basis of the amount needed to compensate for the closure of the station. Compensation for the 'winner' of the auction would come from other power stations on the basis of their emissions intensity<sup>xxxviii</sup>. This model has the potential to address current barriers to exit where some power stations remain operational in anticipation of future payment for closure payments. It could also address information asymmetries around the appropriate 'exit payments' needed by some of the most heavily emitting stations to close.

Other key roles for regulation across the Australian economy could include initiatives which promote greater energy efficiency, including standards on vehicles and fuels, new buildings, and incentives for existing infrastructure retrofits. This could include:

- introducing a streamlined approval process for new or amended appliance standards;
- improving the compliance and enforcement of existing energy efficiency standards in buildings and establishing a clear pathway for strengthening standards over time;
- upgrading minimum standards on new buildings, and phasing-in minimum efficiency standards on existing buildings;
- implementing fuel efficiency standards in-line with other developed nations (e.g. Euro-6); and
- changes to regulatory environment including the National Energy Market, network pricing, and network access.

**Q.9. How could various types of regulation perform against the principles of cost effectiveness, environmental effectiveness and equity?**

The use of regulatory instruments needs to be considered in view of their interaction with other key policies.

Proposals such as that from Jotzo and Mozouz (2015) appear to present important options which could perform well in terms of; cost effectiveness, by encouraging payments for closure to be financed by other competitor power stations rather than Government; environmental effectiveness, by shutting the most pollution stations down first, and incentivizing a more immediate closure of power stations relative to what may come through a carbon price; and equity, by clearly signaling the Government's intentions and allowing for appropriate regional transition plans to be made.

## Information programs

### Questions

**Q.10. What lessons can be learned from Australia and overseas on the effectiveness of information programs and innovation support, and their interaction with other climate policies?**

To capitalise on Australia's opportunities to innovate, modernise and reduce the carbon intensity of the economy, there is a need to establish infrastructure and financing mechanisms, in addition to ARENA and CEFC, to foster an innovation economy and accelerate innovation, development, commercialization of low and zero carbon technology, products and services.

The launch of the Government's National Innovation and Science Agenda (NISA) program offers an important vehicle to support these developments. Various programs within the NISA could be shaped to support particular areas of clean technology development where Australia has an existing or future competitive advantage. For example, the Incubator Support Programme is one mechanism which could be geared towards accelerating new and emerging clean technology.

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