AUSTRALIAN COAL ASSOCIATION

14 September 2012

Senate Select Committee on Electricity Prices
Parliament House
Canberra ACT 2600
Australia
electricityprices.sen@aph.gov.au

Dear Senator Thistlethwaite,

The Australian Coal Association (ACA) welcomes the opportunity to make a submission to the Senate Select Committee on Electricity Prices, and would also be happy to give evidence to the Committee, particularly in light of the unusually short timeframe given to make written submissions.

The ACA represents Australia's black coal industry. Our members account for over 95 per cent of Australia's coal exports. ACA members also supply coal for domestic power generation and for the manufacture of iron, steel, alumina, manganese, mineral sands and cement. Currently, black coal fuels 51 per cent of electricity produced in Australia for public consumption, including 90 per cent of electricity in NSW and 77 per cent in Queensland.

Electricity prices not only reflect the cost of generating and transporting electricity, and running retail businesses at a profit; they also incorporate the cost of numerous green schemes imposed by Federal and State Governments, including both the Large and Small Renewable Energy Targets, and the carbon tax.

Public discussions of energy policy frequently overlook or understate the ongoing importance of coal as Australia's principal source of affordable, reliable, baseload power. This baseload power typically operates at a 75 to 90 per cent annual capacity factor, compared to peaking plant that operates at annual capacity factors of between 1 and 10 per cent. There is no other fuel – fossil or renewable – that can perform this vital competitive role in Australia's power generation mix.

The ACA considers that an open, competitive and integrated National Electricity Market underpins Australia's capacity to meet future projected energy needs in a secure, cost effective and sustainable manner. Federal and State Governments must work together to ensure that energy policy settings are nationally consistent and transparent, do not mandate particular fuels or technologies, and encourage additional investment in generation and transmission capacity, as well as low emissions technologies.

The ACA also argues that electricity prices should not be inflated by unnecessary or duplicative climate change measures. In particular, we recommend that the Renewable Energy Target be abolished, with existing property rights (including for waste coal mine gas used in electricity generation) to be grandfathered or otherwise compensated.

In addition, the Federal Government should instruct the Productivity Commission to conduct regular reviews of the full impact of Federal and State policy settings on Australia's energy market efficiency, energy security and cost of greenhouse gas abatement.

Australian Coal Association Limited ABN 11 095 274 472 6 National Circuit, Barton ACT 2600
T 02 6120 0200 **F** 02 6120 0222 **E** info@australiancoal.com.au **www.australiancoal.com.au**

The ACA would be happy to provide additional information should that be required.

Yours sincerely

Dr Nikki B. Williams
CHIEF EXECUTIVE OFFICER

AUSTRALIAN COAL ASSOCIATION

SUBMISSION TO THE SENATE SELECT COMMITTEE ON ELECTRICITY PRICING

14 SEPTEMBER 2012

About the Australian Coal Association

The Australian Coal Association (ACA) represents Australia's black coal industry. Its members account for over 95 per cent of Australia's coal exports, which are expected to add $48 billion to national income in 2011-12. Black coal is the most important export earner for NSW and Queensland, and Australia's second largest export industry.

The ACA's members also supply coal for domestic power generation and for the manufacture of iron, steel, alumina, manganese, mineral sands and cement. Currently, black coal fuels 51 per cent of electricity produced in Australia for public consumption, including 90 per cent of electricity in NSW and 77 per cent in Queensland.

1 INTRODUCTION

The Australian Coal Association (ACA) welcomes the opportunity to make a submission to the Senate Select Committee on Electricity Prices, and would also be happy to give evidence to the Committee, particularly in light of the unusually short timeframe given to make written submissions.

The arguments made here supplement the ACA's comments on the Draft Energy White Paper, which highlighted the importance of a strategic approach to energy policy and the maintenance of an open, competitive and integrated National Electricity Market (NEM). The ACA considers that an efficient NEM will underpin Australia's capacity to meet future projected energy needs in a secure, cost effective and sustainable manner.

While electricity prices are a contentious and topical issue, the factors underpinning electricity price increases are generally not well understood. Electricity prices not only reflect the cost of generating and transporting electricity, and running retail businesses at a profit; they also incorporate the cost of numerous green schemes imposed by Federal and State Governments, including both the Large and Small Renewable Energy Targets, and the carbon tax. Further, since the standard of living of all Australians depends upon a reliable and affordable electricity supply, any significant increase in prices or disruption of service is felt most acutely.

The complexity and political sensitivity of electricity markets poses a serious challenge for policymakers. Federal and State Governments are often called upon to 'fix' electricity prices; yet any successful policy must have regard to the long-term benefits of free markets to investors and consumers alike. That is, if governments succumb to *ad hoc* interventions, whether to influence retail prices or to promote particular power sources, then the likely result will be lower (and/or more costly) current rates of investment, and higher future electricity prices, than would transpire under a more strategic, light-handed approach.

The large scale and capital intensity of the electricity sector, and its long investment lead-times, means that bad policies can lock in poor and costly outcomes for decades. The Renewable Energy Target (RET) is a striking example of this phenomenon. The RET requires energy retailers and large energy users to purchase a proportion of their energy requirements from renewable energy sources. In theory, at least, the RET allows all renewable energy technologies to compete for the market established by the scheme. In practice, however, the RET mandates the deployment of costly, mature technologies, notably wind, rather than supporting R&D for all low emissions technologies and leaving the market to deploy the most efficient options.

The RET was largely responsible for the sharp increase in green scheme costs in NSW. According to IPART, green schemes accounted for one third of the total increase in average regulated prices across the State in 2011-12.

Further, the environmental rationale of the RET – to reduce Australia's CO2 emissions – has been made redundant by the introduction of the federal government's carbon tax. The RET is simply adding to the cost of abatement that would be happening anyway, rather than improving the abatement outcome. Economists agree that this additional cost is far higher than the starting fixed carbon price of $23/tonne. In addition, while the policy objective of the RET is 45,000 GWh of renewable energy by 2020, it in fact locks in high-cost investments and prices until 2030. Accordingly, the ACA argues that the RET should be abolished, with existing property rights (including for waste coal mine gas used in electricity generation) being grandfathered or otherwise compensated.

Public discussions of energy policy frequently overlook or understate the ongoing importance of coal as Australia's principal source of affordable, reliable, baseload power. This baseload power typically operates at a 75 to 90 per cent annual capacity factor, compared to peaking plant that operates at annual capacity factors of between 1 and 10 per cent.[1] There is no other fuel – fossil or renewable – that can perform this vital competitive role in Australia's power generation mix.

Currently, black and brown coal provides 75 per cent of electricity produced in Australia for public consumption. Gas accounts for 16 per cent, hydro 7 per cent, wind 3 per cent and other renewables one-tenth of one per cent.[2] While modelling by the Bureau of Resource and Energy

[1] AGL, *Submission to the NSW Parliament's Public Accounts Committee Inquiry into energy generation,* 2012, p 2.
[2] Electricity Supply Association of Australia, *Electricity Gas Australia*, 2012, p. 28f.

Economics (BREE) points to a decline in the share of coal in domestic electricity generation, it will still be the largest single source of Australia's power in 2035.[3]

It is important to note that these projections by BREE assume that carbon capture and storage (CCS) is not commercially viable. CCS involves capturing CO_2 from a large emissions source, compressing it, transporting it to a suitable site, and injecting it into deep geological formations for safe and permanent storage. CCS is the only technology that can significantly reduce CO_2 emissions from the use of fossil fuels.[4] Australia's dependence on fossil fuels means that we have – as Professor Garnaut has described it – a 'strong comparative advantage' and a 'strong national interest' in applying CCS.[5] Nevertheless, CCS is discriminated against by the RET and other complementary climate change measures such as the Clean Energy Finance Corporation.

The current policy bias against CCS is extremely short-sighted, not only because Australia has an abundance of low-cost fossil fuels, but also because renewables cannot fully substitute for them. Because renewable fuel sources are generally intermittent and electricity cannot be stored at large-scale for future use, renewables must be backed up by conventional fuel sources – whether coal, gas, hydro or nuclear (which is currently not considered an option for Australia). In other words, there must be sufficient generation capacity to meet electricity demand when the contribution from wind or solar photovoltaic is low. If climate change policy settings fail to facilitate the deployment of coal and gas-fired electricity with CCS at scale, then other options, such as nuclear power, will have to be explored.

Historically, the electricity market has responded in a timely manner to forecast shortfalls in supply, building generation capacity to meet demand and avoiding breaches of reliability standards. However, uncertainty over climate change policies in the past decade has adversely affected investor confidence, which is delaying additional investment in generation capacity or leading to suboptimal rates of investment. Significant amounts of new capacity will be needed over the longer term, as more emissions-intensive coal plants are retired from service, particularly in NSW with its ageing fleet.

While the requirement for new capacity over the next eight to ten years is likely to be met in NSW, in Queensland the available options are being constrained by the mandated requirements for electricity generation investment. The lack of a level playing field means policy settings are favouring more costly open cycle gas peaking plant (with limited environmental benefit over black coal) and renewable generation, despite the State's comparative advantage in black coal. It is vital these settings are changed to ensure a level playing field for future investment options.

While it is inevitable that competition in electricity markets will be structured and constrained by social and environmental policies, these interventions should be strategic and coordinated nationally to ensure that electricity prices are not inflated by unnecessary or duplicative measures. Accordingly, Federal and State energy policies should set out a series of consistent priorities to give investors, consumers and planners a clear sense of direction and confidence in Australia's energy future. Regular assessment of these priorities, and the overall policy framework, will be essential to ensure prospective investment outcomes are delivered and to encourage governments at all levels to deliver open markets.

[3] Bureau of Resources and Energy Economics (BREE), *Australian Energy Projections to 2034-35,* December 2011, pp. 36 and 42. Black and brown coal are projected to account for 38 per cent of total gross electricity generation output in the low gas price scenario, and 52 per cent in the high gas price scenario.
<http://bree.gov.au/documents/publications/energy/Australian-Energy-Projections-report.pdf>

[4] National CCS Council, Carbon Capture and Storage (CCS) in Australia – Contributing to a Clean Energy Future, 7 December 2011, p. A-1.
<http://www.ret.gov.au/energy/Documents/ewp/draft-ewp-2011/submissions/215.%20NationalCCSCouncilpart2.pdf >

[5] Ross Garnaut, *The Garnaut Review 2011: Australia in the global response to climate change, Final Report,* 31 May 2011, p 122.
<http://www.garnautreview.org.au/update-2011/garnaut-review-2011/garnaut-review-2011.pdf>

Recommendations:

The ACA recommends that the Federal Government seek to alleviate electricity price increases by:

(1) Establishing a mechanism for the States and Territories to develop complementary energy policy frameworks to the forthcoming Energy White Paper that are:

   (a) Nationally consistent in their regulation of generation, transmission and distribution to promote efficiency and eliminate unnecessary costs and risks

   (b) Transparent, with no artificial barriers to entry

   (c) Non-discriminatory between energy sources

   (d) Free of mandated targets, fuels or technologies

   (e) Attractive to further investment in world's best practice generation and transmission capability

   (f) Attractive to additional investment in low emissions technologies (including carbon capture and storage) to allow Australia to meet the burgeoning energy demands of the future while reducing greenhouse gas emissions.

(2) Abolishing the Renewable Energy Target, with existing property rights (including for waste coal mine gas used in electricity generation) to be grandfathered or otherwise compensated

(3) Instructing the Productivity Commission to conduct regular reviews of the full impact of Federal and State policy settings on Australia's energy market efficiency, energy security and cost of greenhouse gas abatement

TABLE OF CONTENTS

2 CAUSES OF RECENT ELECTRICITY PRICE INCREASES

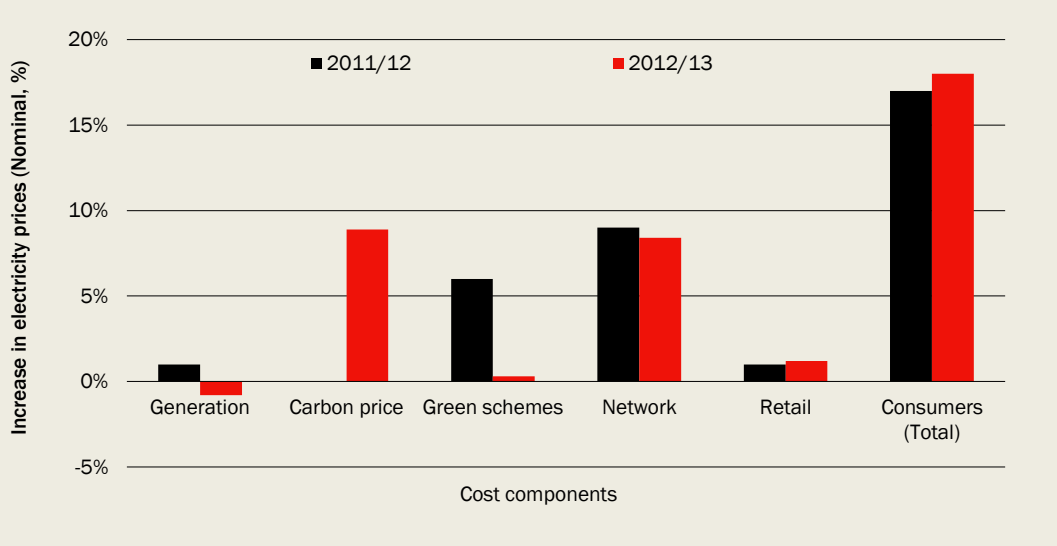
Retail electricity prices have been on the rise over the past few years in Australia. These price increases can be attributed to a number of factors, the most prominent of which include rising network costs, the costs of complying with green schemes and the advent of the carbon pricing mechanism. It is therefore important to understand the various cost components of supplying electricity to end users. Each component in the supply chain ultimately influences the final retail price paid by consumers.

The cost components of supplying electricity include:

- Network costs – the transport of electricity from the generators to customers via the transmission and distribution networks.
- Energy costs including:
  - the purchasing of electricity from the generators on the wholesale electricity market
  - compliance with several green (or climate change mitigation) schemes as required by Federal and State governments
  - the introduction of the Federal Government's carbon pricing mechanism, which commenced on the 1st of July 2012 at a fixed price of $23 per tonne of CO_2 emissions, will increase wholesale electricity costs.
- Retail costs – operating costs of the retail business (including call centre costs, billing costs, etc.) and making an appropriate return on capital.

Chart 2.1 summarises the contribution of each of these components to total price increases in 2011-12 and 2012-13.

Chart 2.1: Drivers of increase in average regulated retail electricity prices across NSW



Data source: IPART 2011 and 2012

2.1 Network costs

Network costs reflect the charges incurred by retailers to transport electricity from the generator to the customer premises using the transmission and distribution networks. Rising network costs over the last two years have contributed significantly to the increase in average regulated retail electricity prices. According to IPART (2011) network costs added 9.6 per cent to regulated retail electricity prices and were the largest component of electricity bills for residential customers in 2011-12. In 2012-13, network costs will add around 8 per cent to average regulated electricity prices across NSW (IPART 2012). This means that nearly half of the regulated retail price increase will come from the rise in network costs.

The increases in network costs are primarily driven by the major capital investment programmes that network businesses are undertaking to:

- deal with growing loads and meet rising peak demand;
- replace aging assets; and
- meet more rigorous licensing conditions intended to improve network security and reliability (IPART 2011).

These investment programmes are expected to continue over the next few years and will continue to drive network costs up.

2.2 Energy and green scheme costs

Energy purchase costs reflect the costs incurred by retailers in buying electricity from generators to meet the load and demand of its customers on regulated prices. In 2011-12, these costs increased only modestly and accounted for a small proportion of the total increase in regulated electricity prices. In contrast, green scheme costs increased sharply. Green scheme costs refer to the costs of complying with various mandated government schemes designed to mitigate the growth in carbon emissions. After network costs, the increases in green scheme costs were responsible for the largest increase in average regulated prices in 2011-12 (6 per cent). That is, one third of the total increase in average regulated prices came from the increase in green scheme costs (IPART 2011).

The Federal Government's Renewable Energy Target (RET) scheme is largely responsible for the increase in green scheme costs. The scheme, which has been split into a large scale Renewable Energy Target (LRET) and a small scale Renewable Energy Scheme (SRES), is designed to ensure that 20 per cent of Australia's electricity supply is met by renewable sources by 2020. The costs of abatement and thus complying with the scheme have increased significantly since 2010 (raising electricity prices by 6 per cent in 2011-12). These costs are influenced by small-scale solar subsidies offered by State and Federal Governments and include subsidies under the RET (financial incentives such as renewable energy certificates). Importantly, the RET scheme is paid for through higher electricity prices and therefore places a significant burden on consumers as well.

While the costs of complying with green schemes increased significantly over the past two years, they will remain relatively stable in 2012-13. However, the RET scheme will continue to be a substantial cost to electricity retailers and their customers. In the coming year, they will be required to surrender renewable energy certificates equivalent to 33.1% of their total electricity sales – a cost that will be passed on to customers in the form of higher retail prices.

In 2012-13, however, the increase in electricity prices is primarily being driven by the continuing rise in network costs (responsible for nearly half of the average 18 per cent increase) and the carbon price. The Federal Government's carbon pricing mechanism increases wholesale electricity costs. As these costs comprise a major component of the Standard Retailers' energy costs, IPART estimates that the carbon pricing mechanism will add 9 per cent to average regulated retail electricity prices across NSW in 2012-13 (IPART 2012).

2.3 Retail costs

Retail costs and margin have maintained fairly stable over the years, adding 0.9 per cent to average regulated retail electricity prices in 2011-12 and 1.2 per cent in 2012-13 (IPART 2011 and IPART 2012). The cost of abatement under the Renewable Energy Target

3 THE RENEWABLE ENERGY TARGET

3.1 Key elements of the Renewable Energy Target

The Renewable Energy Target (RET) was established by the Federal Government to encourage additional investment in renewable energy sources, in order to support the Federal Government's policy commitment that by 2020, at least 20 per cent of Australia's electricity supply would come from renewable sources. This was an expansion from the previous Mandatory Renewable Energy Target (MRET) of 9,500 GWh of renewable energy generation to 45,000 GWh of renewable energy generation by 2020 (AEMC 2011). The targets under the expanded RET scheme will be extended to 2030, after which the scheme will end.

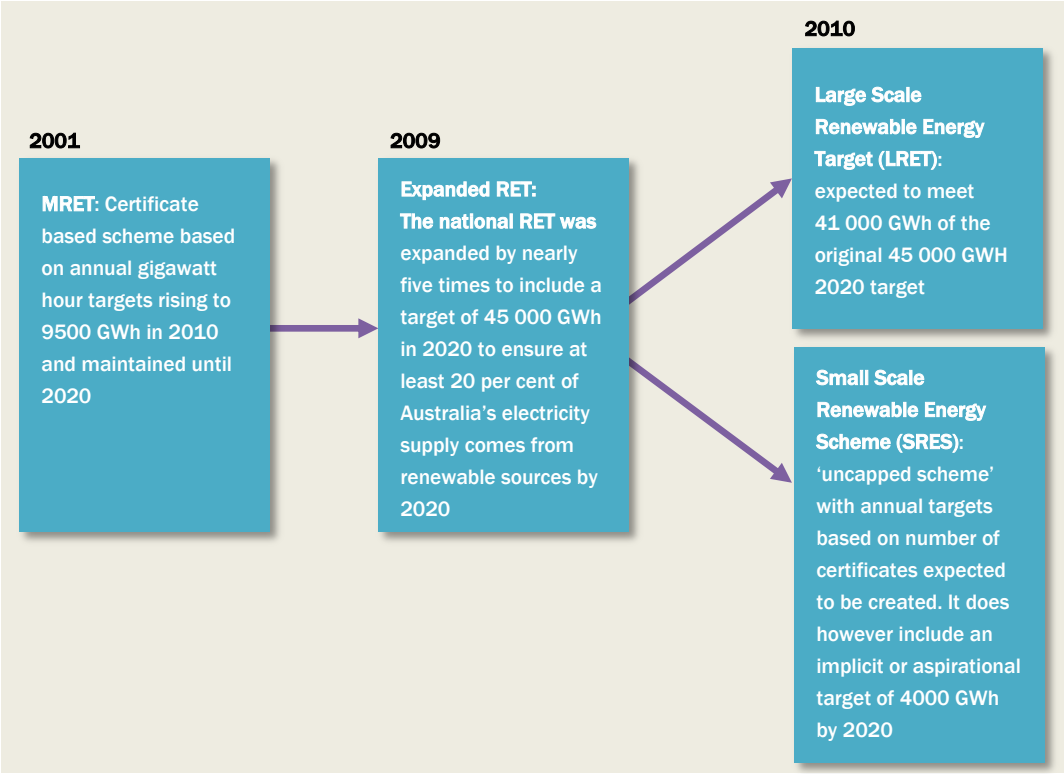
Under the RET, tradable certificates or Renewable Energy Certificates (RECs) are issued to renewable electricity generators for the units of electricity that they produce. Each certificate is equivalent to one MWh of eligible renewable electricity generated. An obligation is then placed on liable entities and wholesale purchasers of electricity (primarily retailers) to obtain and surrender these certificates to a regulator (representing a proportion of their electricity purchases from renewable sources) to meet the renewable energy target or pay the penalties for non-compliance.

3.2 The enhanced Renewable Energy Target Scheme

In 2010, the Federal Parliament passed amendments to separate the 2009 expanded RET into two parts, the Large Scale Renewable Energy Target (LRET) and the Small Scale Renewable Energy Scheme (SRES). Together, the LRET and the SRES form the enhanced RET and aim to support the Commonwealth Government's target of 45,000 GWh of renewable energy generation by 2020. The new enhanced RET, operating in two parts, commenced on 1 January 2011. Certificates issued under the LRET are known as Large Scale Generation Certificates (LGCs) while small-scale technology certificates (STCs) are issued under the SRES. These certificates, equivalent to one MWh of renewable electricity generated, act as financial incentives for renewable energy generators. Large scale renewable power stations such as wind, solar and hydro-electric power stations are covered under the LRET. The LRET employs annual targets that increase each year until it reaches a target of 41,000 GWh in 2020. The price of LGCs is determined by the supply and demand for those certificates.

The SRES covers small scale renewable energy projects such as the purchase of eligible solar water heaters, small-scale solar PV panels and small wind and micro-hydro systems. While the SRES does not have annual targets like the LRET and does not place a limit on certificate creation, it does have an implicit target of 4,000 GWh of renewable energy generation by 2020. The price of STCs is set at $40 (excluding GST) when purchased through the Office of the Renewable Energy Regulator's (ORER's) Clearing House (AEMC 2011). However, STCs may also be bought and sold in the open market, where the price is determined by supply and demand.

Chart 3.1: Evolution of the Renewable Energy Target



Data source: The Centre for International Economics

3.3 The cost of abatement under the RET

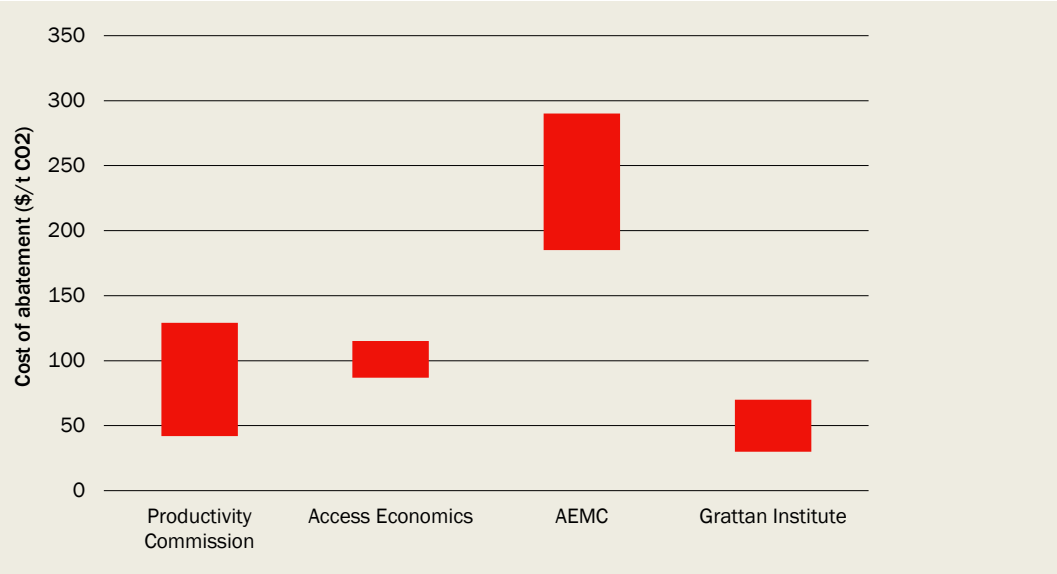
Essentially, the cost of abatement under the RET scheme is equal to the resource cost of producing renewable generation capacity per unit of abatement induced by the scheme. Both of these elements are uncertain.

First, the resource cost of producing renewable generation will be related to the RET certificate price, but will not necessarily be precisely reflected in that price. Other factors (including direct subsidies to some renewable production, including feed-in tariffs) mean that the resource cost may be significantly higher than the certificate price.

Secondly, the abatement induced by the scheme can be measured as the emissions avoided from the alternative generation that is displaced by the new renewable generation. The avoided emissions clearly depend on what form of generation is replaced by the renewables. It is not necessarily the case that the most emissions intensive generation is replaced.

Several recent reports have estimated the costs of abatement under the RET scheme. Chart 3.2 summarises the overall range for the total RET scheme while Table 3.1 provides more details of each of the calculations. While the methods used across the estimates vary slightly, they all to indicate a relatively high cost of abatement under the overall RET scheme, the LRET and particularly the SRES.

Chart 3.2: Ranges for the cost of abatement under the overall RET scheme



Data sources: See table 2.3.

Table 3.1: Comparison of the cost of abatement under the RET

	Productivity Commission (2011)	Access Economics (2011)	AEMC (2011)	Grattan Institute (2011)
Measure of cost of abatement	Implicit abatement subsidy[6]	Cost of purchasing RECs divided by total emissions abatement achieved	Cost relative to change in emissions[7]	Cost of complying with scheme relative to abatement achieved
Relevant year(s)	2009-10	2020	2011-2020[8]	2010
Cost/subsidy equivalent under LRET scheme (A$m)	283-459	n/a	320-495	
Abatement under LRET	4.1-7.6 Mt CO_2	n/a	4.0-9.0 Mt CO2-e	8.6 Mt CO_2-e
LRET cost of abatement ($/t CO_2)	**37-111**	**n/a**	**55-80**	
Cost/subsidy equivalent under SRES scheme (A$m)	52-98	n/a	50-750	
Abatement under SRES	0.2-0.3 Mt CO_2	n/a	0.1-2.5 Mt CO_2-e	0.2 Mt CO_2-e
SRES cost of abatement ($/t CO_2)	**152-525**	**n/a**	**300-500**	
Cost/subsidy equivalent under overall RET (A$m)	335-556	3,944-3,982[9]	n/a	
Abatement under RET	4.3-8.0 Mt CO_2	34.6- 45.3 Mt CO_2-e	4.1-11.5 Mt CO_2-e	8.8 Mt CO_2-e
Overall RET cost of abatement ($/t CO_2)	**42-129**	**87-115**	**185-290[10]**	**30-70**

Source: as shown in column headings

[6] The implicit abatement study is a measure of the cost effectiveness of an abatement option. It is calculated by dividing the subsidy equivalent by the abatement induced. The subsidy equivalent measures the outlays required to pay for certain amounts of abatement from particular sources and is therefore an 'upper-bound proxy' for the resource cost of a policy scheme.

[7] The AEMC estimated the cost of abatement by calculating the additional annualised operating and capital costs relative to the counter factual divided by the change in emissions.

[8] The cost of the schemes, the abatement achieved and the cost of abatement in terms of dollars per tonne are estimates for a given year (not cumulative) and therefore a range has been included to reflect differences over the years. All estimates are in 2010/11 dollars.

[9] Refers to the REC liability under the RET scheme on its own ($3,944m) as well as the REC liability under the RET scheme together with a carbon price ($3,982m).

[10] Refers to the average cost per t/CO_2 for the overall enhanced RET scheme, where the average cost by 2020 is estimated to be $185. The CIE estimated that the average abatement cost in 2010/11 was approximately $290 based on AEMC data.

A number of important points emerge from these comparisons:

- the overall RET cost of abatement ranges from $30 to $290 per tonne of CO_2;
- the cost of the LRET is lower, ranging from $37 to $111 per tonne of CO_2;
- the cost of the SRES is considerably higher, ranging from $152 to $525 per tonne of CO_2.
- each of these costs is higher than either the current or expected carbon price. The presence of the RET therefore raises the cost of abatement to the Australian economy as a whole.

Looking at the individual studies:

- The Access Economics report on the impact of climate change policies estimates that abatement cost under the RET is approximately $87-115/t CO_2-e at 2020.
- The Productivity Commission also evaluated the 'effective' carbon price or the cost of reducing greenhouse gas emissions of different carbon emission policies. The Productivity Commission estimated that the cost of abatement under the RET scheme was in the range of $42-$129 in 2009 and 2010. Although the study does not explicitly estimate the cost of the LRET and the SRES, it does measure the cost of abatement under the large-scale and small-scale component of the RET as it existed in 2010.
- The relatively lower cost of abatement estimated by the Grattan Institute is based on certificate prices. The cost per tonne of CO_2-e abated has ranged from $30-$40/t CO_2-e when certificate prices have been low (reached as low as $15 near 2007) to around $70/t CO2-e when certificate prices have been high (reached a peak of $50 in 2008/09). The price of certificates collapsed by 2005 when the scheme was substantially over supplied with renewable energy and revived soon after 2007 when policy commitments were made to expand the target (Grattan Institute 2011).
- The cost of abatement for the overall RET scheme estimated by the Australian Energy Market Commission (AEMC) is significantly higher than other estimates. Importantly, the cost of abatement under the LRET estimated by the AEMC is in a similar range to that evaluated by the Productivity Commission, despite the use of entirely different approaches. However, as the AEMC takes an average of the abatement cost under the LRET and the SRES to estimate the cost of abatement under the overall enhanced RET, it is obvious that the SRES component of the RET is driving up abatement costs significantly.
- As AEMC note, estimating the cost of abatement under the SRES or other policies such as jurisdictional FiTs which support solar PV installations is difficult as it is not possible to entirely disaggregate the abatement or the cost that should be attributed to one particular policy. For this reason, the costs of abatement under the SRES have been based on the costs of abatement from solar PV installations, which reflect the cost premium borne by the economy as a whole when replacing solar PV with grid-based electricity (AEMC 2011). In this way, the cost of abatement is measured by the economic resource cost of PV installations divided by the abatement these installations manage to achieve. The costs range from around $500/ tonne CO_2-e in 2010-11 to around $300/ tonne CO_2-e in 2019-20, highlighting that solar PV offers a relatively expensive means of achieving abatement. The high cost associated with the SRES therefore translates to a relatively high average cost of abatement under the overall enhanced RET scheme.

REFERENCES

AEMC. 2011. *Impact of the enhanced Renewable Energy Target on energy markets*, Interim Report, 25 November 2011, Sydney.

Daley, J., Edis, T. and Reichl, J. 2011. *Learning the hard way: Australia's policies to reduce emissions -Detailed Analysis.* Grattan Institute, Melbourne.

Deloitte Access Economics. 2011. *Assessing the impact of key climate change policies on energy users,* Report for the Energy Users Association of Australia, June 2011, Canberra.

IPART. 2011. *Changes in regulated electricity retail prices from 1 July 2011.* Electricity – final report, June 2011, NSW.

IPART. 2012. *Changes in regulated electricity retail prices from 1 July 2012.* Electricity – final report, June 2012, NSW.

Productivity Commission. 2011. *Carbon Emission Policies in Key Economies,* Research Report, Canberra.