

# Application to IPART for pass through of 2010 regulatory change events (regulated electricity retail tariffs)

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## INTRODUCTION

### Purpose

This document represents Country Energy's formal cost pass through application to the Independent Pricing and Regulatory Tribunal (IPART) pursuant to Schedule Four (4) of the Tribunal's Final Determination in relation to regulated retail tariffs and charges for electricity for the period 2010-2013, dated March 2010 (Determination 2010-13). The present application relates to two regulatory change events:

1. A delay in the introduction of the Carbon Pollution Reduction Scheme (CPRS). This was announced by the Commonwealth Government on 27 April 2010 and the implications affected energy market prices almost immediately.
2. Change to the Mandatory Renewable Energy Target Scheme (RET).<sup>1</sup> This change was enacted by the Commonwealth Parliament on 24 June 2010 and received assent on 28 June 2010. The change came into effect on 1 January 2011.

### Timing

In a letter dated 22 December 2010, IPART agreed that the notification dates for these cost pass through applications would be 31 January 2011 rather than the previously set date of 10 January 2011. IPART's 22 December 2010 letter followed earlier correspondence on these matters, including a letter from Country Energy dated 7 July 2010 in which Country Energy advised IPART that the two above mentioned regulatory changes were expected to materially affect the cost-reflectivity of regulated retail tariffs. The timeline allows IPART to consider these cost pass through applications concurrently with the Annual Review of energy costs.

### Process

Country Energy understands that in response to Positive Pass Through Applications, IPART will determine:

1. Whether the two regulatory change events constitute Positive Pass Through Events.
2. The total amount to be passed through to customers in respect of each Positive Pass Through Event, including both:
  - a. The Annual Positive Pass Through Amount; and
  - b. The date from which Country Energy must commence passing through to customers the first Annual Positive Pass Through Amount.

Country Energy undertakes to provide additional information that IPART requires and to supply that information in accordance with timelines set by IPART. Country Energy understands that IPART will consider the present pass through application concurrently with the 2011 Annual Review of energy costs.

Country Energy understands that prior to making a determination under clause 3.2 of the Fourth Schedule to the Final Determination, IPART will consult with Standard Retailers, and that IPART will use its best endeavours to publish a final report and determination, including reasons, no later than 60 days after receiving a formal pass through event notification.

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<sup>1</sup> The term "RET" is used to refer to all obligations under the Commonwealth Government's Renewable Energy (Electricity) Act 2000, both before and after the 2010 RET regulatory change event. Retailers have additional obligations in relation to renewable energy purchases under voluntary, commercial, arrangements with end use customers. Associated renewable energy may also be traded through the RET clearing house, but the cost of voluntary purchases does not apply to regulated NSW retail electricity contracts.

Country Energy notes that under the Final Determination, Standard Retailers are required to lodge their annual pricing proposals by 15 May, for approval by 1 June in each year. This is to enable resulting tariff changes to be implemented from 1 July in each year.

### **Structure of submission**

There are four parts to this document.

- Part one sets out the relevant context and framework for consideration of pass through applications;
- Part two discusses the implications of the delay to the CPRS;
- Part three discusses the implications of the change to the RET; and
- Part four brings together the estimates of increases in costs in the provision of pass through services, alongside the net amount Country Energy proposes to pass through to customers in each year.

Country Energy's estimate of the increase in its costs as a result of the two change events relies on:

- inputs and calculations, including analysis of obligations and actual costs, undertaken by Country Energy, and
- a market analysis undertaken for NSW standard retailers, by Ernst and Young.

A copy of the Ernst and Young report is attached as an appendix to this document.

# FRAMEWORK FOR ASSESSMENT OF PASS THROUGH APPLICATIONS

## Scope of pass through application

In accordance with Schedule Four, the purpose of this document is to provide sufficient information for IPART to determine whether, in terms of the 2010 Final Determination:

1. A pass through event has occurred;
2. For each event, the event breaches the relevant materiality threshold; and
3. The event is Positive or Negative, as defined in the Final Determination.

This document therefore contains the following information in relation to each Pass Through Event:

1. The status and treatment of the relevant Pass Through Services in the 2010 Final Determination;
2. The details of the Positive Pass Through Event and the date the Positive Pass Through Event occurred; and
3. The increase in costs in the provision of Pass Through Services that the Standard Retail Supplier has incurred since 1 July 2010 and is likely to incur during the Term as a result of the Positive Pass Through Event, including supporting documentation demonstrating that the cost increase is efficient, incremental and justified (this includes a discussion of materiality).

Ordinarily, a pass through application would also include the total amount the Standard Retail Supplier proposes to pass through to Customers as a result of the Positive Pass Through Event; and the amount that the Standard Retail Supplier proposes to pass through to Customers in each Year as a result of the Positive Pass Through Event (Country Energy proposes the pass through would begin from 1 July in each year). As discussed below, Country Energy understands the present pass through applications will be addressed in conjunction with IPART's 2011 Annual Review of energy costs. Hence this application does not include specific pass through proposals for changes to the "black" component of the energy purchase cost allowance.

## Focus of pass through applications is 2010-11

The main focus of the present pass through applications is the 2010-11 period. This is on the basis that the 2011 and 2012 Annual Reviews of energy purchase costs determine the overall amounts that Standard Retail Suppliers pass through, in relation to the 2010 CPRS and RET change events, for the 2011-12 and 2012-13 periods.

Future Annual Reviews also provide an opportunity to take into account any further change events, such as future government decisions on the form and timing of a carbon price. While cost estimates for the second and third years of the regulatory period are provided to assist IPART deliberations, and inform customers, they should be viewed as indicative only.

## Nature of existing allowances for relevant pass through services

The weighted average price cap (WAPC) is calculated in accordance with a WAPC formula for each year of the price path period, as set out in Box 5.1 on page 64 of the Final Report. The term "C" refers to the regulated price control set by IPART. "C" represents the sum of "N" plus "R". "N" values relate to network costs and "R" values relate to retail costs. Relevant "R" values were set by IPART in its 2010 Final Determination. In terms of the form of control, the "R" values are made up of fixed retail costs (in \$ per customer) and variable retail costs (in \$ per MWh).

The calculation of the "R" values has three main components:

- The total Energy Cost Allowance;
- The Retail Cost Allowance; and
- The Retail Margin Allowance.

The total Energy Cost Allowance includes explicit allowances for the cost of complying with obligations under the RET, the NSW Greenhouse Gas Abatement Scheme (GGAS) and the NSW Energy Savings Scheme (ESS). Pass Through Service compliance costs may be addressed by an additional term in the WAPC formula: "PT" – the pass through amount allowed or required by IPART.

These arrangements reflect IPART's interpretation of the terms of reference for IPART's 2010 Review which stated:

*The Energy Purchase Cost Allowance should be set, using transparent and predictable methodology, at a level that would allow a Standard Retail Supplier to recover the efficient costs of managing the risks associated with purchasing electricity from the NEM (including the Carbon Pollution Reduction Scheme). Additionally, IPART should have regard to the efficient costs of meeting any obligations that Standard Retail Suppliers must comply with, including the costs of complying with greenhouse and energy efficiency schemes (including present and future State and Commonwealth schemes).*

Standard retailers including Country Energy are obliged to acquire Renewable Energy Certificates (RECs) in accordance with RET and detailed requirements set by the Office of Renewable Energy Regulator. Under the proposed CPRS, electricity generators would be allocated carbon emission permits at no charge, or obliged to acquire carbon emissions permits effective from 1 July 2011. Subject to competition from lower emissions sources, generators could be expected to seek to pass through the cost of acquiring carbon emissions permits in wholesale prices.

### **Methodology for assessing cost pass through applications**

In a letter to Country Energy dated 18 August 2010, IPART noted:

*"The same methodologies as were used in making the 2010 determination will be used to conduct the cost-pass-through reviews and the annual review. This means that the cost allowances for the RET and for schemes such as the GGAS that are affected by the delay in introducing the CPRS will be based on the LRMC of meeting the respective targets for these schemes."*

In preparing this document, Country Energy has sought to comply with IPART's requirements. The two main IPART documents referred to in this report are the:

- Final Report for the Review of regulated electricity retail tariffs and charges for electricity 2010-2013, dated March 2010 (henceforth the "Final Report"); and
- Final Determination for the Review of regulated electricity retail tariffs and charges for electricity 2010-2013, dated March 2010 (henceforth the "Final Determination").

### **Interactions between allowances**

Under the Final Determination, there are interactions between the level of allowances for "black" and "green" energy,<sup>2</sup> and within "green" energy between allowances for renewable energy and the effect of a price on carbon emissions permits. In the detailed discussions below, therefore, Country Energy considers the net impact of each regulatory change event on the overall WAPC, not merely the "PT" component.

For example, the expectation is that the CPRS would reduce the marginal cost of a REC by reducing the subsidy renewable generators require to recover their total costs.<sup>3</sup> It was expected this effect would occur in 2010/11 even before the introduction of the CPRS, as the RET allows "banking" and "borrowing" of RECs.

In addition, the estimate of "black" costs on which the energy purchase cost allowances is based is sensitive to estimates of REC costs under both the Long Run Marginal Cost (LRMC) and "market based" modelling approaches

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<sup>2</sup> In IPART's final determination in relation to regulated retail tariffs and charges for electricity for the period 2010-2013, 'Green Energy Outcome' refers to an increase in the amount of electricity generated from renewable energy sources or other sources of energy that provide improved environmental outcomes; additional investment in technologies that reduce or offset greenhouse gas emissions attributable to electricity generation; or reduced consumption of electricity" (page 42)

<sup>3</sup> Refer to discussion on page 101 -102 of the Final Report.

applied.<sup>4</sup> This is because wholesale models used for estimating allowances optimise generator despatch over both “black” and renewable wholesale markets.

Country Energy understands that energy cost allowances in the Final Determination assume the existence of a CPRS. By considering the net impact on the overall revenue allowance, there is then consistency in the estimation methodology across all three years within the Term.

To assist IPART in its deliberations, Country Energy has distinguished between incremental costs relating to the deferral of CPRS, on the one hand, and to changes to RET, on the other.

### Materiality threshold

The materiality threshold in the Final Determination is 0.25 percent of total regulated revenues – that is 0.25 percent of Network, Retail and Pass Through components as set in the Final Determination – ‘...for the Year in which the event occurs...’<sup>5</sup> In the Final Report the materiality threshold appears to refer to the previous year’s total regulated revenue:

*“...defined on a per event basis and equal to 0.25% of the Standard Retailer’s previous year’s proposed regulated retail revenue in NSW (including the network use of system component of retail tariffs).”<sup>6</sup>*

For present purposes, Country Energy has interpreted the intent of IPART’s 2010 Final Determination to be that the threshold applies to 0.25 percent of retail revenue in 2010-11. Country Energy has previously provided information to IPART regarding its total regulated revenue for 2009-10.

Country Energy’s allowed regulated revenue under the WAPC formula in the Final Determination is shown in the table below. The implied materiality threshold is also provided.

<b>Table 1 – implied materiality threshold</b>				
	<b>Unit</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>
Assumed annual CPI – Final Decision, Table 6.10	Per cent	2.4	2.7	2.7
Allowed increases (excluding CPRS)	Per cent	12.75	13	11
Regulated revenue (Final Decision)	Nominal \$000	1,214,273	1,360,027	1,488,269
Implied materiality threshold (0.25%)	Nominal \$000	3,036	3,400	3,721

Country Energy understands the materiality threshold applies to each regulatory change event separately rather than cumulatively. Accordingly, if the impact of either change event in a given year is found to be less than the values set out in the above table, then the materiality threshold will not have been reached.

### Sign of change event – Annual Pass Through Amount

Under the Final Determination, a change event may either be positive or negative. Under a positive change event, Standard Retailer incurs materially higher costs in providing Pass Through Services. Under a negative change event, Standard Retailers incur materially lower costs in providing Pass Through Services.

As detailed below, Country Energy suggests that each regulatory change event discussed in this document represents a positive change event and net impact of each change event materially increases efficient costs incurred. The following

<sup>4</sup> Refer to discussion on page 99 of the Final Report.

<sup>5</sup> Refer to Definitions to Schedule 4 of the Final Determination, at page 22.

<sup>6</sup> Refer to section 10.4.3 of the Final Report at page 163.

sections detail the reasons and evidence for these conclusions. Although the change events have a negative financial result for Country Energy's standard retail operations, since the sign is positive in terms of Schedule 4, they are represented as positive numerical values throughout the discussion below.

### **Time value of money**

There will be a delay between incurring the incremental effects of the regulatory change events and recovering these costs, since part of the costs are to be recovered in arrears. Country Energy understands a regulatory weighted average cost of capital (WACC) of 9.1 percent (pre-tax, real) is to be applied to the value and duration of outstanding recoveries, pursuant to page 233 of the Final Report.

### **Annual Review of Total Energy Cost Allowance**

In response to the level of uncertainty over total energy costs in anticipation of the CPRS and other factors such as the removal of the NSW Electricity Tariff Equalisation Fund, the 2010 Final Determination provides for an Annual Review of total energy costs, pursuant to Schedule 2 of the Final Determination. Standard Retailers are required to provide Annual Pricing proposals in accordance with the WAPC formula, taking into account matters such as actual or estimated quantities for the previous year. In addition, Annual Pricing proposals convert 2010 prices from real to nominal using updated inflation values.

Country Energy understands that total regulated revenues may be amended as a result of Annual Pricing Proposals and the Annual Review. It is therefore possible that the implied materiality threshold may vary from that set out in Table 1 above. This highlights the advantage of conducting the Annual Review concurrently with consideration of the present cost pass through applications.



## CARBON POLLUTION REDUCTION SCHEME DELAY

### Overview

The incremental cost of the CPRS delay relates to the extension of the NSW GGAS beyond 30 June 2011, the effect on the cost of compliance with RET and “black” energy costs. The extension of GGAS reflects NSW government policy intent to retain GGAS until such time as a national carbon price is in place.

The overall estimated effect of the CPRS regulatory change event, excluding the effect on “black” energy costs, is summarised in Table 2 below. This shows that the effect of deferral is an increase in costs of \$19.2 million relative to the Final Decision. This comfortably exceeds the threshold of 0.25 percent of allowed revenue. The remainder of this section sets out the basis for these estimates.

Note that the incremental RET compliance cost in table 2 below is distinct from the incremental cost of the RET change event, discussed below. Hence in this section, Country Energy does not address the incremental effect of the change in RET costs (associated with the CPRS delay) relative to the RET allowance in the Final Determination.

	<b>Unit</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>
Total allowed revenue (Final Decision)	Nominal \$m	1,214	1,360	1,488
CPRS delay - GGAS incremental change	Nominal \$m	13.2	12.7	11.6
CPRS delay - RET incremental change	Nominal \$m	6	4.6	4.8
Combined effect (under-recovery)	Nominal \$m	19.2	17.3	16.3
Combined change as percentage of revenue	Per cent	1.58	1.27	1.10

### CPRS Pass Through Event in the 2010 Final Determination

At the time of the Final Determination, under the Carbon Pollution Reduction Scheme Bill 2009 (No 2), the CPRS was proposed to commence on 1 July 2011, the second year of the 2010 Final Determination.

Direct CPRS compliance costs were not included in the “PT” term in the WAPC formula. The Final Determination includes estimates of the cost of compliance with the CPRS in years two and three of the Term. In Country Energy’s case, the expectation was that the direct impact of the CPRS would be to increase retail prices incrementally by 22 percent (nominal) over the price path period.<sup>7</sup>

In addition, the CPRS was assumed to be in place for the second and third years of the Term for the purpose of modelling “black” energy purchase costs forming a component of the “R” term in the WAPC formula. For consistency, anticipated effects of the CPRS on “black” energy costs were assumed for the first year of the regulatory period. It appears the incremental impact of the CPRS on allowed “black” energy purchase costs may not have been made explicit in the Final Determination and supporting documents. As noted earlier, the main focus is on costs incurred in 2010-11.

In the first year of the Term, an explicit allowance within the total energy cost allowance was made with respect to the NSW Greenhouse Gas Abatement Scheme (GGAS). The value of this allowance was set at zero.<sup>8</sup>

<sup>7</sup> See Table 1.2 on page six of the Final Report.

<sup>8</sup> See for example Table 6.10 Final Decisions on cost allowances for complying with MRET, GGAS and ESS on page 100 of the Final Report.

The decision to set the allowance at zero reflected advice there was a surplus of NSW Greenhouse Gas Abatement Certificates (NGACs) in the expectation of the introduction of the CPRS. It also reflected IPART's methodology that considered the resource cost of meeting the scheme, rather than the financial or commercial value of NGACs.<sup>9</sup>

For 2011-12 and 2012-13, no cost allowance was made for GGAS. This reflected the expectation based on statements from the NSW government that GGAS would cease when the CPRS came into effect.

For 2010-11, 2011-12 and 2012-13, a cost allowance was made for RET which reflected the introduction of the CPRS. The expectation was the CPRS would reduce the marginal cost of a REC by reducing the subsidy renewable generators require to recover their total costs.<sup>10</sup> It was expected this effect would occur in 2010-11 even before the introduction of the CPRS, as the RET allows "banking" and "borrowing" of RECs.

### **Details of the Positive Pass Through Event**

On 27 April 2010 the Commonwealth Government announced that the CPRS would be delayed and would not be implemented until the end of the current commitment period of the Kyoto Protocol (which ends in 2012).<sup>11</sup> The Commonwealth government has established a multi-party climate change committee to consider the introduction of an emissions reduction scheme. The details of any revisions to the CPRS, along with the timing of the introduction of an emissions reduction scheme are currently unknown.

On 4 November 2010 the NSW government announced that it would review the NSW GGAS.<sup>12</sup> Options include reviewing benchmark targets from 2012 onwards depending on the timing, form and scope of a national carbon pricing mechanism. Country Energy has been unable to ascertain timeframes for the GGAS review from publicly available information.

GGAS key factors have been published for the 2011 compliance year.<sup>13</sup> Country Energy understands the GGAS continues to operate until either the implementation of a national carbon emissions reduction scheme or the outcome of the NSW government review of GGAS.

### **Consequential incremental cost increases**

The consequential effects of the CPRS regulatory change event are as follows:

1. GGAS costs are not zero, on a resource cost as well as financial basis;
2. The incremental costs of the delay in the introduction of CPRS on RET compliance; and
3. "Black" energy costs (including for 2010/11) change to the extent allowances in the Final Decision were influenced by the assumed introduction of the CPRS from 1 July 2011.

The first of these effects is detailed in the table below.

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<sup>9</sup> Ibid., page 106

<sup>10</sup> Refer to discussion on page 101 -102 of the Final Report.

<sup>11</sup> See official notification available at: <http://www.climatechange.gov.au/government/initiatives/cprs/latest-news.aspx>

<sup>12</sup> See official notification available at: [http://www.greenhousegas.nsw.gov.au/Documents/GGAS\\_Review\\_041110.pdf](http://www.greenhousegas.nsw.gov.au/Documents/GGAS_Review_041110.pdf)

<sup>13</sup> See Issue 18 of the GGAS/ESS Newsletter dated 18 December available at:

<http://www.greenhousegas.nsw.gov.au/documents/Newsletter%20-%20Issue%2018%20-%20December%2010.pdf>

<b>Table 3 incremental effect of CPRS delay – GGAS</b>				
	<b>Unit</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>
CE Purchase Rate	\$/MWh	2.52	2.46	2.28
IPART Allowance	\$/MWh	-	-	-
CE Rate variance to IPART Allowance	\$/MWh	2.52	2.46	2.28
Regulated portfolio - estimated incremental cost	Nominal \$m	13.18	12.68	11.56

This shows that the incremental cost relating to the extension of GGAS following the deferral of the CPRS for 2010-11 is estimated to be \$13.18 million.

Country Energy believes that retaining the existing zero allowance for GGAS following the deferral of the CPRS would not be consistent with IPART's final assessment criteria for its 2010 review. On an LRMC basis, deferral of the CPRS resulted in an effective extension of the GGAS beyond the previously expected date of 30 June 2011. This has been associated with increases in forward NGAC prices.<sup>14</sup> The increase in prices indicates additional demand for GGAS instruments, which in turn reflect additional real emissions activity, not merely a movement in financial markets for reasons other than the underlying resource cost of emissions abatement activities.

Moreover, there is ongoing uncertainty around the timing, form and scope of national carbon pricing arrangements. In addition, there is uncertainty over the outcome and timing of the NSW Government review.

Country Energy anticipates that issues arising from the 2010 changes to GGAS, and expectations around the timing and nature of a successor to the CPRS, will be addressed in further detail as part of the 2011 and subsequent Annual Reviews of the Total Energy Cost. (As noted elsewhere, the scope of the present application (relating to deferral of CPRS) is limited to the 12 month period between 1 July 2010 and 30 June 2011.)

The second consequential effect of the CPRS regulatory change event is detailed in the table below.

<b>Table 4 Incremental effect of CPRS delay - RET</b>				
	<b>Unit</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>
Incremental effect of CPRS delay - RET compliance cost	\$/MWh	1.15	0.89	0.94
IPART Allowance	\$/MWh	-	-	-
Incremental effect of CPRS delay - RET compliance cost variance to IPART Allowance	\$/MWh	1.15	0.89	0.94
Regulated portfolio - estimated net cost	Nominal \$m	6.04	4.58	4.77

This shows that the incremental cost relating to the delay in the introduction of CPRS on RET compliance for 2010-11 is estimated to be \$6.04 million. The incremental cost associated with the removal of carbon price estimates from the LRMC methodology in the Determination is explored in greater detail in Section 4. in Appendix I.

<sup>14</sup> See discussion in Ernst and Young report under Section 4.4.

### **Efficiency of estimated cost increases**

The estimates of cost increases above have been prepared by applying the findings of the analysis of an independent review by Ernst and Young, as well as applying Country Energy-specific inputs and other parameters. For further discussion of these estimates, refer to the Ernst and Young report.

The inputs and parameters applied are identical to those applied in the Final Determination, exclusive of the impact of the CPRS delay. As noted earlier, the estimates do not address any indirect effects of the CPRS delay on allowances for “black” energy purchase costs.

### **Proposed Pass Through**

As noted above, this document does not address proposals regarding pass through of the CPRS change event. Proposals will be addressed concurrently with the 2011 Annual Review.

## CHANGE TO RENEWABLE ENERGY TARGET SCHEME

### Overview

The direct net incremental effect of the June 2010 changes to the Commonwealth RET is to substantially increase the cost of complying with the requirements of the scheme relative to the RET allowance provided for in the 2010 Final Determination. This is summarised in Table 5 below, which shows that the total incremental cost is \$23.55 million. The incremental cost exceeds the threshold of 0.25 percent of allowed revenue. The remainder of this section sets out the basis for these estimates.

	Unit	2010-11	2011-12	2012-13
Regulated revenue (Final Decision)	Nominal \$m	1,214	1,360	1,488
RET - (LRET) incremental change	Nominal \$m	4.22	5.15	8.6
RET - SRES incremental change	Nominal \$m	19.33	28.36	26.34
Combined effect (under-recovery)	Nominal \$m	23.55	33.51	34.94
Combined change as percentage of revenue	Per cent	1.94	2.46	2.35

### RET Pass Through Services in the 2010 Final Determination

Section 40 of the Renewable Energy (Electricity) Act 2000 sets the annual targets for the required of renewable energy (GWh) for 2001 to 2010 years. Under the RET, Standard Retailers are obliged to create or purchase Renewable Energy Certificates (REC) each year in line with relevant mandated targets.

The Final Decision provided for a REC cost of between \$29.70 and \$32.10 per REC (for 1 MWh of renewable energy). This is detailed in Table 6.10 of the Final Decision and extracted in the table below.

	Unit	2009-10	2010-11	2011-12	2012-13
RET allowance	2009-10 \$/MWh	1.7	1.8	2.2	2.5

In Country Energy's case, the allowance for the pass through of RET costs contributed an additional \$9.64 million for 2010-11.

	Unit	2010-11	2011-12	2012-13
RET allowance	\$m (nominal)	9.64	11.89	13.7

## Details of the Positive Pass Through Event

As of 1 January 2011, the RET was split into two parts:

- the Large-scale Renewable Energy Target (LRET) and
- the Small-scale Renewable Energy Scheme (SRES).<sup>15</sup>

This reflects the Renewable Energy (Electricity) (Small-scale Technology Shortfall Charge) Act 2010.<sup>16</sup> This Act received assent on 28 June 2010.

Both parts of the scheme have been established to encourage additional generation of electricity from renewable energy sources by providing a mechanism by which small-scale systems and renewable energy sources can create and sell certificates based on how much renewable electricity they generate or displace.

The SRES creates a financial incentive for owners to install eligible small-scale installations such as solar water heaters, air sourced heat pumps and small generation units.

- Eligible systems are entitled to a certain number of small-scale technology certificates (STCs) based on the amount of renewable electricity the system produces or displaces. These STCs can be created and sold to buyers (usually liable entities).
- The SRES places an obligation on liable entities (typically electricity retailers) to purchase an amount of small-scale technology certificates (STCs) each year.

## Consequential incremental costs

The consequential effects of the RET regulatory change event are as follows:

1. The net cost of complying with the RET/LRET and SRES obligations is greater than under the previous RET, and as provided for in the Final Decision; and
2. Black energy costs (to the extent allowances in the Final Decision were influenced by assumptions regarding the RET).

The first of these effects is summarised in the table below. This shows that the changes result in significant incremental increases in the cost of passing through compliance with RET requirements of \$23.55 million. This increase comfortably exceeds the 0.25 percent materiality threshold.

	Unit	2010-11	2011-12	2012-13
RET allowance	Nominal \$m	9.64	11.89	13.7
REC/LGC	Nominal \$m	13.86	17.04	22.3
STC	Nominal \$m	19.33	28.36	26.34
Total	Nominal \$m	33.19	45.4	48.64
Incremental effect of change to RET	Nominal \$m	23.55	33.51	34.94
RET change as percentage of revenue	Per cent	1.94	2.46	2.35

<sup>15</sup> See Office of Renewable Energy Regulator information available here:

<http://www.orer.gov.au/publications/pubs/LRET-SRES-the%20basics%200111.pdf>

<sup>16</sup> A copy of the Act is available here: <http://www.comlaw.gov.au/Details/C2010A00071>

In summary, REC/LGC and SRES costs to 30 June 2011 are forecast to sum to \$33.19 million. REC costs for the six months to 31 December 2010 are included under the LRET line, as RECs are convertible to LGCs through the REC registry.

The pass through cost of compliance with REC/LRET is summarised in the table below. This shows that for 2010-11, the estimated incremental cost of compliance with the REC/LRET is \$4.22 million. This amount includes the RPP associated with the LRET from 1 January 2011.

	Unit	2010-11	2011-12	2012-13
CE REC/LGC Purchase Rate	\$/MWh	2.65	3.31	4.39
Regulated portfolio - estimated net cost	Nominal \$m	4.22	5.15	8.6

The pass through cost of compliance with the SRES is summarised in the table below. This shows that for the first six months of calendar year 2011, the estimated total cost of compliance with the SRES is \$19.33 million.

Note the STC purchase rate for the first six months is significantly higher than in the outer years. This is due to a requirement of the scheme that 60 per cent of the scheme costs are incurred in the January to June half year, with the commencement date of 1 January 2011.

	Unit	2010-11	2011-12	2012-13
CE STC Purchase Rate	\$/Mwh	7.19	5.51	5.19
CE STC time value of money	\$/Mwh	0.37	n/a	n/a
Regulated portfolio - estimated net cost	Nominal \$m	19.33	28.36	26.34

Country Energy has used its specific load profile data to calculate the incremental costs relating to the introduction of SRES. These will differ slightly to average market based costs.

The changes to the RET have several features that lead to substantial cost increases relative to the previous RET. The implied quantity of renewable energy under both LRET and SRES has increased to 20.42 per cent in calendar 2011 relative to the equivalent RPP expectation of 6.7 percent for the 2011 calendar year, at the time of the IPART Final Determination, and is up substantially from the RPP of 5.98 per cent in the 2010 calendar year.

As could be expected, the increase in the quantity of the renewable energy target compared with earlier expectations has increased demand and resulted in higher overall prices for LGCs and STCs than prior to the RET change. The higher than previously expected quantity of REC purchases requires higher cost renewable energy supply options to be undertaken. Hence, other things being equal, the increase in market prices reflects increases in the average unit costs of renewable energy on a "resource basis".

In addition, as discussed in the EY report, there is "front loading" of the SRES. Retailers are obliged to surrender 60 percent of their STCs for Calendar 2011 in the first half year. Further, as noted earlier, RECs cannot be converted to STCs, whereas they can be converted to LGCs.

A key feature of the revised RET is the "uncapped" quantity of the SRES obligation associated with a guaranteed price of \$40 per STC available through the STC clearing house. To the extent there is a supply response to increased demand for

small scale renewable energy,<sup>17</sup> the price guarantee through the STC clearing house could result in significant further increases in the quantity of renewable energy under the enhanced RET.

Country Energy anticipates that issues arising from the 2010 changes to RET will be addressed in further detail as part of the 2011 and subsequent Annual Reviews of the total Energy Cost.

The incremental effect on purchase rates of the changes to RET relative to the final determination is detailed in the table below. For 2010-11, this shows a net increase in the rate per MWh of electricity sold of \$8.37/MWh.

	Unit	2010-11	2011-12	2012-13
CE purchase rate – REC/LGC	Nominal \$/MWh	2.65	3.31	4.39
CE purchase rate –STC	Nominal \$/MWh	7.56	5.51	5.19
LRET+SRES	Nominal \$/MWh	10.21	8.82	9.58
RET IPART allowance - FD (nominal)	Nominal \$/MWh	1.84	2.31	2.7
Difference (incremental effect)	Nominal \$/MWh	8.37	6.51	6.88

#### **Efficiency of estimated cost increases**

The estimates of cost increases above have been prepared by applying the findings of the analysis of an independent review by Ernst and Young, applying Country Energy-specific inputs and other parameters. Long term cost of compliance under the RET is a function of long term marginal costs required to enable renewable energy projects to be financially viable. The long term marginal costs of renewable power projects has been higher than market prices in recent years as a result of the oversupply of solar RECs which contributes to the portfolio specific costs.

For further discussion of the market based estimates, refer to the Ernst and Young report.

The inputs and parameters applied are identical to those applied in the Final Determination, exclusive of the impact of the changes to the RET.

#### **Proposed Pass Through**

As noted above, this document does not address proposals regarding pass through of the RET change event. Proposals will be addressed concurrently with the 2011 Annual Review.

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<sup>17</sup> This is where some small scale renewable energy options reduce in cost due to economies of scale, as occurred in NSW in response to the solar feed in tariff.



## COMBINED DIRECT INCREMENTAL EFFECTS OF CHANGES

### Combined effects

The table below sets out the combined, incremental effects of the CPRS delay and RET change events discussed above is \$42.77 million for 2010-11. This highlights that total projected under-recoveries are significant relative to the 5.4 percent retailer margin provided for in the Final Determination.<sup>18</sup> In the absence of an increase in the pass through, Country Energy would be unable to recover its efficient costs and prices would not recover efficient costs over the determination period.

	Unit	2010-11	2011-12	2012-13
Total allowed revenue (Final Decision)	Nominal \$m	1214	1360	1488
CPRS delay	Nominal \$m	19.22	17.26	16.34
RET change	Nominal \$m	23.55	33.51	34.94
Combined effect (under-recovery)	Nominal \$m	42.77	50.77	51.27
Combined change as percentage of revenue	Per cent	3.52	3.73	3.45

### Summary

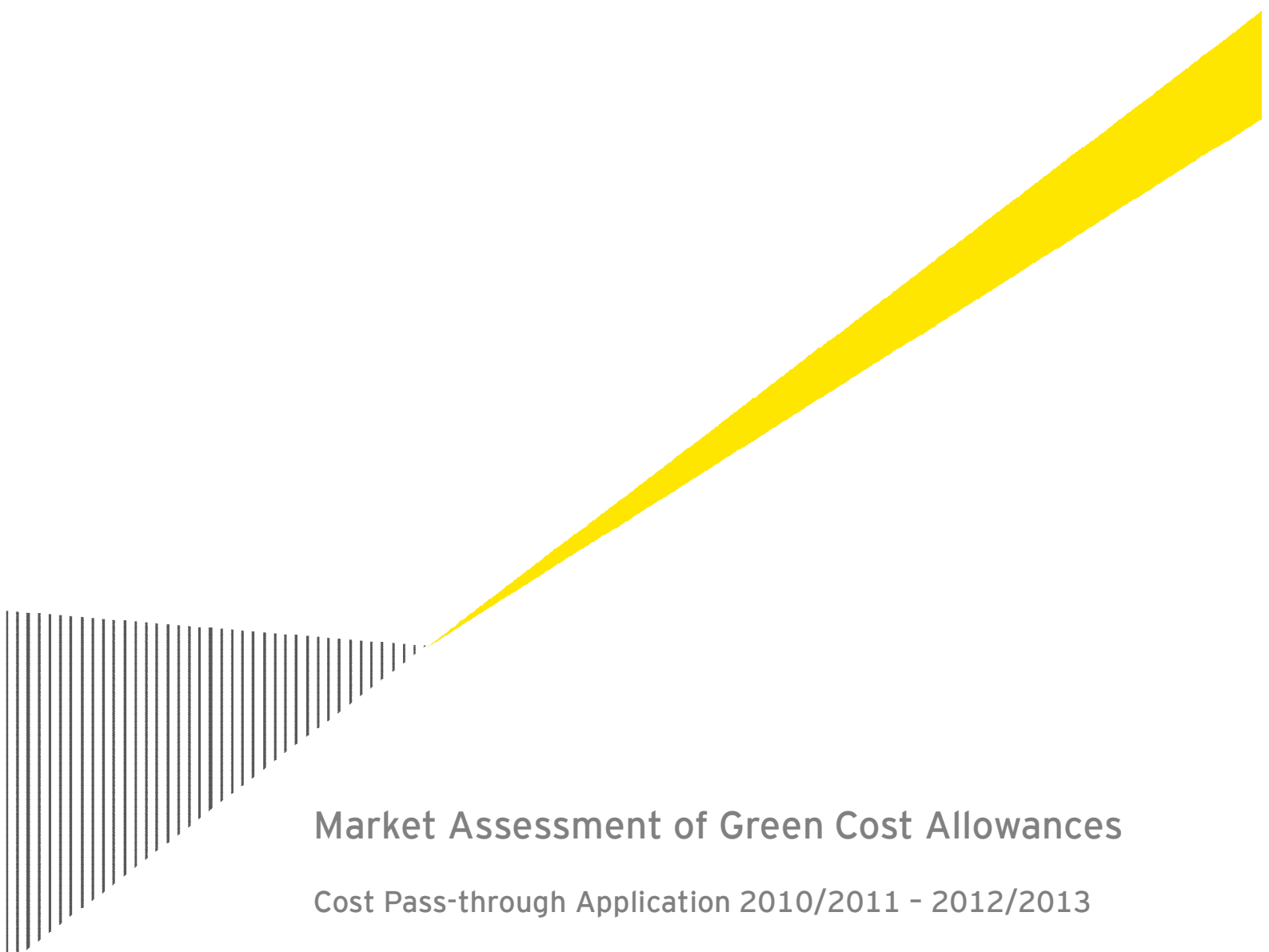
Subject to the outcome of the 2011 Annual Review of the allowed energy purchase cost, and IPART's consideration of Country Energy's pricing proposal for 2011/12, this projection suggests that Standard Contract (regulated) retail prices will need to be increased in order to ensure that:

- Small retail customers are protected by:
  - Prices that recover the efficient cost of supplying small retail customers on regulated tariffs over the determination period.
  - Facilitating the development of effective retail competition.
- The package of regulatory measures covers all the efficient costs and relevant risks Standard Retailers are likely to face without double counting.
- The package facilitates reliable provision of electricity by setting prices that would allow an efficient retailer to be financially viable.

Country Energy would be pleased to provide further information or assistance to IPART in support of this submission.

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<sup>18</sup> Note that the denominator for the 3.52 percent is total revenue, whereas the denominator for the 5.4 percent is the total cost of goods sold plus retail operating costs, hence the two values are not exactly equivalent.



# Market Assessment of Green Cost Allowances

Cost Pass-through Application 2010/2011 - 2012/2013

January 2011

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Our report may be relied upon by Country Energy pursuant to the terms of our engagement letter dated 10 November 2010. We disclaim all responsibility to any other party for any loss or liability that the other party may suffer or incur arising from or relating to or in any way connected with the contents of our report, the provision of our report to the other party or the reliance upon our report by the other party.

# 1. Executive summary

You have engaged Ernst & Young to advise you on the incremental costs of complying with new and existing Green Schemes pursuant to the two following recent and separate regulatory changes. These are:

- The introduction of the Small-scale Renewable Energy Scheme (SRES) by the Commonwealth Government enacted 24 June 2010; and
- The delay in the introduction of the Carbon Pollution Reduction Scheme (CPRS) by the Commonwealth Government announced 27 April 2010.

Both of these changes present incremental costs for Standard Retail Suppliers who are seeking IPART's approval to pass through these costs to their Small Retail Customers. Specifically incremental costs arise from:

- The introduction of the SRES which presents a new Green Scheme for Standard Retail Suppliers to comply with; and
- The delay in the introduction of the CPRS which commits the Standard Retail Suppliers to comply with existing and ongoing Green Schemes including the Commonwealth Government's Large-scale Renewable Energy Target (LRET) and their obligations under the NSW Greenhouse Gas Reduction Scheme (GGAS).

This report outlines the details of the regulatory changes listed above, which impact the Standard Retail Suppliers, the dates they occurred, and the increase in costs for each year of the Determination period. We have based our estimates of incremental costs on a market based assessment. We note that the Standard Retail Suppliers' incremental costs may differ from our cost estimates on an individual basis.

The following table provides a summary of the incremental cost estimates.

**Table 1.1 - Summary of Incremental Costs on Standard Retail Suppliers (presented in 2010/11 dollar terms)**

		2010/11	2011/12	2012/13
<i>Introduction of SRES</i>	<i>SRES Cost (including time value of money)</i>	\$7.52 per MWh	\$5.64 per MWh	\$4.85 per MWh
	<i>LRET Cost</i>	\$0.33 per MWh	\$0.68 per MWh	\$1.40 per MWh
<i>Delay in introduction of CPRS</i>	<i>LRET Cost</i>	\$1.15 per MWh	\$0.89 per MWh	\$0.94 per MWh
	<i>GGAS Cost</i>	\$1.95 per MWh	\$2.00 per MWh	\$2.18 per MWh

The remainder of the report provides details of the incremental cost estimates and the assumptions that have been applied.

## 2. Introduction

### 2.1 Background

The Independent Pricing and Regulatory Tribunal (IPART) released its 'Review of regulated retail tariffs and charges for electricity 2010 - 2013' Final Determination in March 2010. Standard Retail Suppliers are provided a Green Cost Allowance for the recovery of costs directly associated with purchasing electricity in the National Electricity Market (NEM). These costs involve complying with and meeting obligations under existing Green Schemes including:

- The Commonwealth Government's expanded Renewable Energy Target (RET); and
- The NSW Greenhouse Gas Reduction Scheme (GGAS).

You have engaged Ernst & Young to advise you on the incremental costs of complying with new and existing Green Schemes pursuant to two recent and separate regulatory changes. These are:

- The introduction of the SRES by the Commonwealth Government; and
- The delay in the introduction of the CPRS by the Commonwealth Government.

In providing our advice and preparing this report we have reviewed the following documentation:

- 'Review of regulated retail tariffs and charges for electricity 2010 - 2013', Electricity - Final Determination from IPART, March 2010;
- 'Review of regulated retail tariffs and charges for electricity 2010 - 2013', Electricity - Final Report from IPART, March 2010;
- 'Energy purchase costs' - A Final Report Prepared for IPART by Frontier Economics, March 2010;
- 'AGL Submission to the Essential Services Commission of SA', 2010 Review of Retail Electricity Standing Contract Price Path, 19 October 2010;
- 'LRET/SRES updates' - Office of Renewable Energy Regulator (ORER) website at <http://www.orer.gov.au/lret-sres-updates/index.html#liable>;
- 'Small-scale technology certificates data modelling for 2011 to 2013', Green Energy Markets Report to ORER, November 2010;
- 'Small-scale Technology Certificates Data Modelling - Projected take-up of small-scale renewable technologies over calendar years 2011 to 2013', ACIL Tasman Report prepared for ORER, 15 November 2010;
- 'Small-scale Technology Certificates Data Modelling for 2011 to 2013, SKM-MMA Final Report to ORER, 29 November 2010;

- 'Compliance and Operation of the NSW Greenhouse Gas Reduction Scheme during 2009' - IPART Report to Minister, July 2010;
- 'Annual Report 2009 - Increasing Australia's renewable electricity generation' - ORER report;
- 'Fuel resource, new entry and generation costs in the NEM' - ACIL Tasman 2009 Report Prepared for the Inter-Regional Planning Committee;
- 'The calculation of energy costs in the BRCI for 2010-11' - ACIL Tasman 2009 Report for the Queensland Competition Authority;
- 'Greenhouse Gas Benchmark Rule (Compliance) No. 1 of 2003';
- 'AEMO - 2010 Electricity Statement of Opportunities';
- 'Electricity Supply Amendment (Greenhouse Gas Emission Reduction) Act 2002 No 12'; and
- 'Fact Sheets and Compliance Spreadsheets (GGAS Scheme Website)' at <http://www.greenhousegas.nsw.gov.au/>.

We have also informed the report with targeted industry stakeholder consultation to capture the commercial and practical aspects facing electricity retailing operations in the NEM.

## 2.2 Recent Regulatory Changes

There are two recent and separate regulatory changes affecting Green Schemes that Standard Retail Suppliers must comply with. These are:

- The introduction of the SRES which presents a new Green Scheme for Standard Retail Suppliers to comply with; and
- The delay in the introduction of the CPRS which commits the Standard Retail Suppliers to comply with existing and ongoing Green Schemes including the Commonwealth Government's LRET and their obligations under the NSW GGAS.

Both of these changes present incremental costs for Standard Retail Suppliers who are seeking IPART's approval to pass through these costs to Small Retail Customers.

This report outlines the details of the regulatory changes, the dates they occurred, and the increase in costs they imply for each year of the Determination period.

## 2.3 Structure of this Report

Our report is structured as follows:

- Section 3 addresses the SRES and the incremental costs of compliance for each year of the Determination period;
- Section 4 addresses the impact of the delay in the introduction of the CPRS, and the incremental costs of complying with the existing Commonwealth Government LRET and obligations under the ongoing NSW GGAS for each year of the Determination; and
- Section 5 provides a summary.

## 3. Introduction of SRES

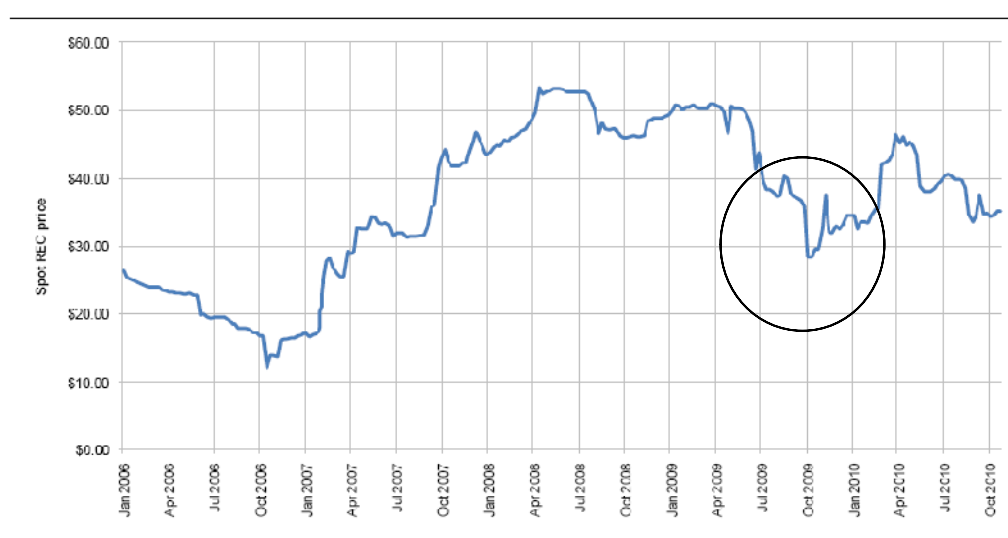
### 3.1 Background - Restoration of Investment Signals for Renewables

The proliferation of small scale renewable generation across the NEM States in the last 18 months is to a large extent a response to State and Commonwealth Government financial incentives for households to install small-scale generation units (SGUs), typically solar Photo-Voltaic (PV) units and solar hot water units. An increasing number of Renewable Energy Certificates (RECs) were registered as a consequence<sup>1</sup>. In addition, prevailing constraints on capital markets impacted the ability of installers to access working capital and RECs were used as collateral. This ultimately led to a sharp reduction of spot REC prices around mid to late 2009.

The unintended impact of these events had a dampening effect on forward investment signals for large-scale renewable projects (i.e. wind). The Commonwealth Government identified the need to restore these investment signals in order for it to reach the expanded RET by 2020. The impending policy response involved enhancements to the 'Renewable Energy (Electricity) Bill 2010'. These were enacted into law on 24 June 2010.

In broad terms these enhancements act to restore the investment signals for large-scale renewable generation by separating small-scale RECs from large-scale RECs into two distinct schemes; the SRES and the LRET. The prevailing market price of RECs increased substantially in February/March 2010 in response to the restoration of investment signals for large-scale renewable projects. Figure 3.1 shows the impact of the policy on REC prices during the relevant time period.

Figure 3.1 - REC Prices



Data source: AFMA Environmental Products Curve (mean of mids, excluding outliers).

<sup>1</sup> ORER's 'Annual Report 2009 - Increasing Australia's renewable electricity generation' states that the number of Solar Water Heaters (SWH) and Small-scale Generation Unit (SGU) installations have increased in 2009 from the level of installations in 2008. In particular approximately 4,000 SGU installations were installed each month compared to approximately 1,000 per month in 2008.



The previous legislated expanded RET scheme encompassed both small-scale RECs from SGU's and solar water heaters and large-scale RECs (e.g. from wind). The new legislation requires compliance under both the SRES and LRET schemes.

Table 3.1 compares the LRET profile for each year of the schemes operation with the previous expanded RET profile. The yearly targets for the LRET are lower than the targets of the expanded RET. This difference is explained and accounted for by the estimated creation of Small-scale technology certificates (STCs) from Small-scale generators. The actual creation of STCs may potentially lead to a combined LRET/SRET that exceeds the previous expanded RET. As the number of RECs at 2010 year end has exceeded 34.5 million, the annual LRET targets have been adjusted. The target has increased by 0.5 of the 2010 excess for both 2012 and 2013. The target has reduced by 0.25 of the 2010 excess for 2016 to 2019.

**Table 3.1 - LRET and expanded RET targets over the life of the schemes**

<i>Year</i>	<i>LRET Target (GWh) - As Adjusted<sup>2</sup></i>	<i>Expanded RET Target (GWh)</i>
<b>2010</b>	12,500	12,500
<b>2011</b>	10,600	14,825
<b>2012</b>	16,338	17,150
<b>2013</b>	18,238	19,050
<b>2014</b>	16,100	20,950
<b>2015</b>	18,000	22,850
<b>2016</b>	20,581	27,450
<b>2017</b>	25,181	32,050
<b>2018</b>	29,781	36,650
<b>2019</b>	34,381	41,250
<b>2020-2030</b>	41,000	45,000

## **3.2 SRES compliance**

The SRES came into effect on 1 January 2011. The scheme is distinct and separate from the LRET in that it incorporates a fixed price and no cap on certificate creation. Under the SRES liable parties making 'relevant acquisitions' are required to surrender small-scale technology certificates (STCs) on a quarterly basis. STCs are created by accredited SGUs and solar water heaters.

<sup>2</sup> The legislated LRET Targets have been adjusted in accordance with regulatory guidelines: (<http://www.orer.gov.au/rpp/index.html>).

The SRES has the following attributes:

- Eligible installations under the SRES create STCs;
- There is a fixed price of \$40 per STC which may be obtained from the STC clearing house at this fixed STC price or from registered creators of STCs;
- Liable parties are required to surrender an amount of STCs in accordance with the quarterly timetable published by the ORER; and
- The calculation required by ORER involves the Determination of a Small-scale Technology Percentage (STP) by 31 March each year (2011 figure was released by ORER on 1 December 2010). The STP is determined from:
  - An estimate of the number of STCs to be created in the given year (forecasts for 2012 and 2013 have also been released);
  - An estimate of electricity acquired under 'relevant acquisitions'; and
  - An estimate of 'partial exemptions' for customers operating in Emissions-Intensive Trade Exposed (EITE's) industries.

The following table outlines the SRES reporting and surrendering process for liable entities commencing 1 January 2011:

**Table 3.2 - Timeline of SRES Requirements.**

Quarter	Dates	SRES Requirements (ORER & Liable Entity)
1/2011	Before 31 March 2011	ORER: <ul style="list-style-type: none"> <li>➤ 2011 STP published</li> <li>➤ Estimates for 2012/13 STP published</li> </ul>
	Before 15 April 2011	ORER: <ul style="list-style-type: none"> <li>➤ Provide Liable Entities with estimate of required surrender amounts for quarters 1 - 3 so that correct amount of STCs are surrendered based on previous years reduced acquisitions (from Annual Energy Acquisition Statement (AEAS)).</li> </ul> Liable Entity: <ul style="list-style-type: none"> <li>➤ May apply to ORER for another required surrender amount.</li> </ul>
	15 February 2011 - 28 April 2011	Liable Entity: <ul style="list-style-type: none"> <li>➤ STC surrender for quarter 1 SRES compliance based on 35 per cent of previous year's reduced acquisitions from AEAS</li> </ul>

		<p>including Surrender Fee (report and pay any Small-scale Technology Shortfall Charge STSC in quarter 4 2011).</p> <p>ORER:</p> <ul style="list-style-type: none"> <li>➤ Accept STCs within 2 weeks after 28 April 2011.</li> </ul>
2/2011	29 April 2011 - 28 July 2011	<p>Liable Entity:</p> <ul style="list-style-type: none"> <li>➤ STC surrender for quarter 2 SRES compliance based on 25 per cent of previous year's reduced acquisitions from AEAS including Surrender Fee (report and pay any STSC in quarter 4 2011).</li> </ul> <p>ORER:</p> <ul style="list-style-type: none"> <li>➤ Accept STCs within 2 weeks after 28 July 2011.</li> </ul>
3/2011	29 July 2011 - 28 October 2011	<p>Liable Entity:</p> <ul style="list-style-type: none"> <li>➤ STC surrender for quarter 3 SRES compliance based on 25 per cent of previous year's reduced acquisitions from AEAS including Surrender Fee (report and pay any STSC in quarter 4 2011).</li> </ul> <p>ORER:</p> <ul style="list-style-type: none"> <li>➤ Accept STCs within 2 weeks after 28 October 2011.</li> </ul>
4/2011	29 October 2011 - 14 February 2012	<p>Liable Entity:</p> <ul style="list-style-type: none"> <li>➤ STC surrender for quarter 4 (annual) SRES compliance from AEAS including Surrender Fee (report and pay any STSC in quarter 4 2011).</li> </ul> <p>ORER:</p> <ul style="list-style-type: none"> <li>➤ Assesses and Finalises SRES assessments.</li> </ul>

Table 3.2 shows that liable parties are required to surrender 60 per cent of their STCs in the first two quarters of 2011. This has implications for Standard Retail Suppliers in that the majority of the SRES costs for 2011 will incur in the first two quarters of 2011 impacting the 2010/11 Determination year. This is addressed in section 3.4.

### 3.3 STC estimates for 2011/12 - 2012/13

ORER commissioned three separate reports to provide estimates of STC creation over 2010, 2011, and 2013. These reports were published on ORER's website in December 2010. Each report incorporates a unique methodology for estimating STC creation (i.e. uptake of SGU technology and assumptions of STC creation from solar water heaters). The Lower-estimate of STC creation in each report is based on the revised 'Solar Multiplier' which reduces to 4 from 5 on 1 July 2012.

The STC estimates using both the historical time series based methodologies and forward looking methodologies of STCs (i.e. pay-back period modelling) rely on the set of assumptions used in each report. Furthermore the inherent uncertainties surrounding State and Commonwealth Government policy responses regarding financial incentives for solar uptake will impact these estimates. For this reason ORER will revise STC estimates as it sees fit going forward.

Section 3.4 incorporates these estimates for determining Standard Retail Suppliers SRES incremental costs for 2011/12 and 2012/13.

### 3.4 Incremental costs of SRES compliance

As a consequence of the introduction of SRES the Standard Retail Suppliers will face incremental costs of compliance in terms of the uplift on STCs. We understand that they will seek to pass these costs on to their Small Retail Customers. This section outlines an estimate of these costs.

On 1 December 2010, the Minister for Climate Change and Energy Efficiency announced a STP of 14.8% for 2011<sup>3</sup>, which is equivalent to 28 million STCs as a proportion of total estimated electricity consumption for 2011.

The uplift for each year of Determination can be calculated as the "STP x Fixed STC Cost x Adjustment Factor<sup>4</sup>". Each of these variables is discussed below:

- Where available published figures for the STP have been utilised. Otherwise the STP can be estimated using the following approach:
  - $STP = STC / [Relevant\ Electricity\ Acquisitions\ (REAs) - Partial\ Exemption\ Certificates\ (PECs)]$ ;
  - The STC (2012) and STC (2013) forecasts are 26,862,250 and 22,636,250, respectively. These forecasts were calculated as an average of the reduced solar multiplier scenario STC modelling outputs published by Green Energy Markets and SKM-MMA (i.e. average of Time Series and DOGMA approaches) for the respective year. The ACIL Tasman STC modelling output has been excluded from the average, as the outputs from that modelling have been determined using a basis (i.e. best estimate) which differs to the other reports;
  - The REAs and PECs for 2012 and 2013 are forecast using the following approach:

<sup>3</sup> <http://www.climatechange.gov.au/en/minister/greg-combet/2010/media-releases/December/mr20101201.aspx>

<sup>4</sup> To account for the upfront cost of SRES compliance as explained in table 3.2.

- Source the REAs (2011) and PECs (2011) from the 'AGL Submission to the Essential Services Commission of SA - 2010 Review of Retail Electricity Standing Contract Price Path, 19 October 2010' report<sup>5</sup>; and
  - Escalate the 2011 forecasts for both REAs and PECs by the medium energy projections annual growth rate of 2.1% for NEM sourced from the 'AEMO - 2010 Electricity Statement of Opportunities' report.
    - The calendar STP figures have been averaged<sup>6</sup> to account for the fact that the Determination years are in financial years.
- Legislated fixed price of \$40 per STC across all Determination years; and
- An adjustment factor of 120% for the 2010/11 Determination is required to account for the reporting and compliance procedures for SRES as specified in table 3.2. As the SRES will be in effect for the entirety of the 2011/12 and 2012/13 Determination years, no adjustment factors are needed.

The resulting uplifts for each of the Determination years are presented in table 3.4 below. The table breaks down the incremental cost into its key variables, as explained in the earlier part of this section.

In addition to the actual calculated incremental cost, the table below also estimates the time value of money due to the mismatch of costs incurred and cost recovery.

**Table 3.4 - Incremental Cost of SRES on Standard Retail Suppliers (presented in 2010/11 dollar terms<sup>7</sup>)**

	<i>2010/11</i>	<i>2011/12</i>	<i>2012/13</i>
<i>STP</i>	14.80%	14.46%	12.74%
<i>Fixed Cost per STC (ex GST)</i>	\$40	\$40	\$40
<i>Adjustment Factor</i>	120%	n.a.	n.a.
<i>Incremental Cost of SRES</i>	\$7.10 per MWh	\$5.64 per MWh	\$4.85 per MWh
<i>Time Value of Money<sup>8</sup></i>	\$0.41 per MWh	n.a.	n.a.
<i>Incremental Cost of SRES (including time value of money)</i>	\$7.52 per MWh	\$5.64 per MWh	\$4.85 per MWh

### 3.5 Incremental costs of LRET compliance

<sup>5</sup> 2011 REAs of 223,812,000 MWh and 2011 PECs of 39,000,000 MWh.

<sup>6</sup> A weighted average has been applied to account for the 60% and 40% compliance requirements for the first half and second half of the calendar years, respectively.

<sup>7</sup> A CPI of 2.5% (midpoint of RBA's inflation target range) has been applied.

<sup>8</sup> The WACC of 9.10% (Retail) used by Frontier in their "Energy Purchases - Final Report" has been applied.

As a consequence of the introduction of the SRES the Standard Retail Suppliers face incremental costs of LRET compliance due to two factors:

- Changes in the target under the LRET;
- Changes in LRET costs since the Determination.

The incremental cost of a change in targets can be calculated as the difference between the Renewable Power Percentage (RPP) based on the LRET and the RPP based on the previous expanded RET (refer to table 3.1), multiplied by the REC Forward Price. This calculation is set out below:

- $[RPP (LRET) - RPP (expanded RET)] \times REC \text{ Forward Price}$ , where:
- RPP (LRET) is the RPP based on the LRET. This has been determined as follows:
  - ORER is responsible for setting the RPP each year. The Renewable Energy (Electricity) Act 2000 specifies the default calculation for the RPP for future years;
  - RPP (2010) of 5.98% and RPP (2011) of 5.62% have been set by ORER<sup>9</sup>;
  - $RPP (2012) = RPP (2011) \times LRET \text{ Target } (2012) / LRET \text{ Target } (2011)$ ;
  - $RPP (2013) = RPP (2012) \times LRET \text{ Target } (2013) / LRET \text{ Target } (2012)$ ; and
  - The calendar RPP figures have been averaged appropriately to account for the fact that Determination years are in financial years.
- RPP (expanded RET) is the RPP calculated based on the expanded RET. These have been sourced from Frontier's 'Energy Purchases Cost - Final Report (March 2010)'; and
- REC Forward Prices have been sourced from market data as at end January 2011.

The incremental cost of LRET compliance due to changes in LRET costs since the determination can be calculated as follows:

- Current RET Cost (\$/MWh) - RET Cost Allowance (\$/MWh), where:
- Current RET Cost = RPP (MRET) x REC Forward Price; and
- RET Cost Allowance is sourced from 'Review of regulated retail tariffs and charges for electricity 2010 - 2013', Electricity - Final Report from IPART, March 2010.

The total resulting incremental costs of LRET for each of the Determination years are presented in table 3.5. The table breaks down the incremental cost into the two factors outlined above.

**Table 3.5 - Incremental Cost of LRET compliance on Standard Retail Suppliers (presented in 2010/11 dollar terms<sup>10</sup>)**

<sup>9</sup> <http://www.orer.gov.au/rpp/index.html>

<sup>10</sup> A CPI of 2.5% (midpoint of RBA's inflation target range) has been applied.

	2010/11	2011/12	2012/13
<i>RPP (expanded RET - Frontier)</i>	6.10%	7.20%	8.10%
<i>RPP (LRET)</i>	5.80%	7.14%	9.17%
<b>Impact of Change in Targets</b>			
<i>Difference in RPP</i>	-0.30%	-0.06%	1.07%
<i>Forward Price</i>	\$37.50	\$41.03	\$43.20
<i>Incremental Cost of Change in Targets</i>	-\$0.11 per MWh	-\$0.02 per MWh	\$0.46 per MWh
<b>Impact of Change in Costs since the Determination</b>			
<i>Current RET Cost</i>	\$2.29 per MWh	\$2.95 per MWh	\$3.50 per MWh
<i>RET Cost Allowance</i>	\$1.85 per MWh	\$2.26 per MWh	\$2.56 per MWh
<i>Incremental Cost of Changes in LRET Costs</i>	\$0.44 per MWh	\$0.70 per MWh	\$0.94 per MWh
<b>Net Impact</b>			
<b>Total Incremental Cost of LRET</b>	<b>\$0.33 per MWh</b>	<b>\$0.68 per MWh</b>	<b>\$1.40 per MWh</b>

## 4. Delay in introduction of CPRS

### 4.1 Background - existing/ongoing Green Schemes

The delay in the introduction of the Commonwealth Government's CPRS was announced on 27 April 2010. This delay commits Standard Retail Suppliers to continue complying and meeting the obligations of the following existing and ongoing Green Schemes:

- The Commonwealth Government's LRET; and
- The NSW GGAS.

Ongoing compliance with these schemes, brought about by the delay, presents incremental costs for Standard Retail Suppliers because:

- The Long Run Marginal Cost (LRMC) Methodology used to estimate Large-scale Generation Certificate (LGC) costs (previously REC costs) for 2010/11 and 2011/12 in the Determination assumes the CPRS will be in place from 1 July 2011 (2012/13 uses the market-based approach). The estimated LGC costs with CPRS in place from 1 July 2011 produce LGC costs for 2010/11 and 2011/12 that are lower than the LGC costs in the absence of CPRS; and
- The Green Cost Allowance for NSW GGAS costs in the Determination was zero due to the assumption:
  - That the CPRS will be in place and that the NSW GGAS will cease on 1 July 2011; and
  - That there was an oversupply of NSW Gas Abatement Certificates (NGACs) in the lead up to 1 July 2011.

The delay implies that NSW GGAS will continue throughout the Determination period and Standard Retail Suppliers will incur ongoing costs of compliance without being provided a Green Cost Allowance to account for the costs.

**Table 4.1- Comparison of Green Cost Allowance for LGCs (previously RECs) and NGACs in the Determination and prevailing market prices as at January 2011:**

<b>LGCs/NGACs<sup>11</sup></b>	<b>2010/11 - LRMC</b>	<b>2011/12 - LRMC</b>	<b>2012/13 -Market Based</b>	<b>Market Prices (Jan 2011)</b>
<b>LGCs (Previously RECs)</b>	\$29.68	\$30.86	\$32.10	Spot \$37.50 Cal 11 \$40.46 Cal 12 \$43.66 Cal 13 \$47.11
<b>NGACs</b>	Zero	Zero	Zero	Spot \$7.20

<sup>11</sup> LRMC and market based prices of LGCs for 2010/11, 2011/12 and 2012/13 have been sourced from Frontier Economics "Energy Purchases Cost - Final Report". These values have been presented in 2009/10 dollar terms.



				Cal 11 \$7.31
				Cal 12 \$8.38
				Cal 13 \$9.04

Sections 4.2 and 4.3 outline the LRET and the NSW GGAS incremental costs for each year of the Determination.

## 4.2 LRET Compliance

The spot market for LGCs is a compliance market where liable parties surrender an appropriate number of LGCs on an annual basis in accordance with the ORER timetable. LGCs are created from eligible and registered renewable energy power stations as of 1 January 2011 based on 1 MWh of renewable electricity generated above baseline levels of output. Individual LGC liabilities depend on the Renewable Power Percentage (RPP). The RPP determines the number of LGCs to be surrendered by liable parties for compliance with the LRET.

The Green Cost Allowance for LGCs (RECs) for 2010/11 and 2011/12 in the Determination is derived using the co-optimised LRMC methodology assuming CPRS is introduced on 1 July 2011. Using this methodology, the resulting LGC cost estimate for 2010/11 is lower than would prevail in the absence of the CPRS. This is because the estimated LGC cost for 2010/11 in the absence of CPRS does not subsidise the 2010/11 LRET allowance for the Net Present Value (NPV) of carbon passed through in black electricity prices from 1 July 2011. Specifically:

- The estimated LGC cost estimate for 2010/11 needs to be adjusted for the \$10 per tonne of carbon price assumption for 2011/12. In addition, the incremental carbon price pass through of \$26 per tonne of carbon for 2012/2013 should apply to the LGC cost estimate for 2010/11 (i.e. \$26 - \$10 per tonne of carbon and the assumed pass through rates); and
- The incremental carbon price pass through of \$26 per tonne of carbon for 2012/2013 should apply to the LGC cost estimate for 2010/11 (i.e. \$26 - \$10 per tonne of carbon and the assumed pass through rates).

Both of these adjustments are required because the estimated LGC cost allowance in the Determination for 2010/11 and 2011/12 is lower than that would prevail in the absence of CPRS. This subsidy needs to be recovered in a higher LGC LRMC estimate. The difference in the LGC LRMC cost with and without the introduction of the CPRS is the incremental cost.

The allowance for the 2012/13 in the Determination uses the market-based approach and we have provided the difference between this estimate and prevailing REC forward prices for 2012/13 (refer to table 4.2.2).

Finally, the Determination makes note of the bankability and borrowing of LGCs (RECs) to and from future years respectively. Irrespective of bankability and borrowing Standard Retail Suppliers face real costs of compliance with the LRET. This cost is reflected in prevailing market prices for the LGCs. In practice a prudent retailer will incorporate a 'short-fall' risk measure of insufficient LGCs within inventory for current year surrender. The worst case scenario of this is the penalty price of LGCs (i.e. \$92.86)<sup>12</sup> for a short-fall.

<sup>12</sup> After adjusting the \$65 by the corporate tax rate.

Given the Determination uses a non-market based LRMC methodology, the following approach has been used to estimate the incremental costs of the delay in the introduction of CPRS on LRET compliance:

- Determine the RPP for each year of Determination (refer to section 3.5);
- Determine a carbon price for each year of the Determination. The following carbon prices have been sourced from the “Energy Purchase Costs - Final Report” prepared by Frontier Economics:
  - Carbon Price (2010/11) = \$0 / tCO<sub>2</sub>-e;
  - Carbon Price (2011/12) = \$10 / tCO<sub>2</sub>-e; and
  - Carbon Price (2012/13) = \$26 / tCO<sub>2</sub>-e.
- Determine the impact of the delay in the introduction of CPRS in terms of the assumed carbon price for each year of the Determination by Frontier (i.e. carbon cost of delay). Based on the assumption of a 1 year delay in the introduction of CPRS, the following can be calculated:
  - Carbon Cost of Delay (2010/11) = \$25 / tCO<sub>2</sub>-e. This comprised of \$10 / tCO<sub>2</sub>-e from 2011/12 and \$15 / tCO<sub>2</sub>-e from 2012/13 (i.e. \$16 / tCO<sub>2</sub>-e discounted using Frontier’s Generation WACC of 8.0%); and
  - Carbon Cost of Delay (2011/12) = \$16 / tCO<sub>2</sub>-e.
- Estimate the level of carbon pass through for each year in the Determination period. The following carbon pass through figures have been approximated<sup>13</sup> as follows:
  - Carbon Pass Through (2010/11) = 80% (for the purposes of the calculation we have adopted the 2011/12 carbon pass through under the LRMC approach);
  - Carbon Pass Through (2011/12) = 80% (under the LRMC approach); and
  - The Carbon Pass Through (2012/13) is not needed as the incremental cost is determined from a market based approach.
- The incremental LGC cost due to the delay of the introduction of CPRS can be determined as:
  - RPP x Carbon Cost of Delay x Carbon Pass Through (for 2010/11 and 2011/12 under the LRMC approach); and
  - RPP x [Forward Price - Frontier’s Price] (for 2012/13 under the market based approach).

The resulting incremental cost for each year of the Determination period due to the delay in the introduction of CPRS on LRET compliance is presented in table 4.2.2. The table breaks down the incremental cost into its key variables, as explained in the earlier part of this section.

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<sup>13</sup> Refer to Chapter 6 of the “Energy Purchase Costs - Final Report” prepared by Frontier Economics.

Table 4.2.2 - Incremental Cost of delay in CPRS on LRET compliance for the Standard Retail Suppliers (presented in 2010/11 dollar terms<sup>14</sup>)

	2010/11	2011/12	2012/13
<i>Approach</i>	LRMC	LRMC	Market Based
<i>Carbon Cost of Delay<sup>15</sup></i>	\$25 per tCO <sub>2</sub> -e	\$16 per tCO <sub>2</sub> -e	n.a.
<i>Carbon Pass Through</i>	80%	80%	n.a.
<i>Frontier's REC Price</i>	n.a.	n.a.	\$32.90
<i>Forward Price</i>	n.a.	n.a.	\$43.20
<i>Incremental Cost per REC</i>	\$19.85	\$12.80	\$10.29
<i>RPP</i>	5.80%	7.14%	9.17%
<i>Incremental Cost</i>	\$1.15 per MWh	\$0.89 per MWh	\$0.94 per MWh

<sup>14</sup> A CPI of 2.5% (midpoint of RBA's inflation target range) has been applied.

<sup>15</sup> The WACC of 8.00% (Generation) used by Frontier in their "Energy Purchases - Final Report" has been applied.

### 4.3 NSW GGAS Compliance

The NSW GGAS is a 'baseline and credit' compliance scheme where participants ('Benchmark Participants') meet emissions benchmarks through the surrender of NGACs, non-tradeable Large-User Abatement Certificates (LUACs) or LGCs (RECs). The scheme was established in NSW in 2003 and rolled out to the Australian Capital Territory in 2005.

The amount of certificates that Benchmark Participants need to surrender depends on their relevant market share of the NSW/ACT electricity market. Table 4.3.1 shows the percentage of surrendered certificates by type for 2009:

**Table 4.3.1 - Percentage of surrendered certificates of Total Surrendered Certificates by Benchmark Participants under the GGAS for 2009; source IPART.**

<i>Certificate Type</i>	<i>Percentage Surrender of Total Certificates</i>
<i>NGACs</i>	83.4
<i>LUACs</i>	5.1
<i>RECs (NGAC Equivalent)</i>	9.7
<i>Shortfall</i>	1.8

NGACs are the dominant surrendered certificate by Benchmark Participants and can be purchased from Abatement Certificate Providers (ACPs) from three main sources. These are:

- Creation from low emission generation;
- Creation through improved efficiency of existing conventional generation; and
- Creation through carbon sequestration from NSW forests.

The penalty price for NGACs in 2009 was \$12.50 per tonne of Carbon Dioxide equivalent above the 10 per cent allowable shortfall. This penalty is escalated by the prevailing inflation rate each year. There is also a \$1.00 penalty charge for 2010 through to 2013.

There have been significant changes to the scheme in the past 12 months. These changes are:

- New applications for GGAS accreditation closed after 31 December 2009;
- Category A generation creation (i.e. through Power Purchase Agreements (PPAs)) ceased after 30 June 2010; and
- Eligibility for End-Use energy efficiency activities removed after 30 June 2009.

The changes were made to assist Benchmark Participants prepare for the then intended introduction of the CPRS on 1 July 2011. In the absence of the CPRS the NSW GGAS scheme is scheduled to operate for the foreseeable future or until a national scheme is introduced.

The changes to the scheme have affected the supply of NGACs by decreasing the accreditation of Demand Side Abatement (DSA) given transition to the Energy Efficiency Scheme (ESS). Table 4.3.2 shows the percentage of total surrendered NGACS by type from Benchmark Participants in 2009:

**Table 4.3.2 - Percentage of total NGACs surrendered by Benchmark Participants by type for 2009; source IPART**

<i>Certificate Type</i>	<i>Per cent Surrender of Total NGACS 2009</i>
<i>Generation Rule</i>	57.4
<i>DSA Rule</i>	33.6
<i>LUAC Rule</i>	5.8
<i>Carbon Sequestration Rule</i>	3.2

Surrendered DSA Rule type certificates decreased by 10 per cent between 2008 and 2009. Surrendered Generation Rule type certificates increased by 7 per cent between 2008 and 2009. This trend of increasing Generation Rule type surrender is expected to dominate the GGAS going forward. Table 4.3.3 shows the creation of total NGACs by type.

**Table 4.3.3 - Creation of NGACs by type 2009; source IPART**

<i>Certificate Type</i>	<i>Creation of Total NGACS 2009 (%)</i>
<i>Generation Rule</i>	84.2
<i>DSA Rule</i>	4.1
<i>LUAC Rule</i>	8.2
<i>Carbon Sequestration Rule</i>	3.5

Given the trends outlined above the Generation Rule will dominate the creation of NGACs. There are four categories of generation that may create NGACs. These are:

- Category A: Generators with PPAs with electricity retailers under previous NSW voluntary benchmarks;
- Category B: Base-load NSW 'pool' generators;
- Category C: Generators pre-dating announcement of GGAS in January 2002; and
- Category D: Generators with operations after 2002 GGAS announcement, small conventional generators and all renewable plant post January 1997.

The cessation of the contribution of Category A generators leads to Category C and D creating the main supply of NGACs. Under these two Categories NGACs will be created by:

- Non-NSW based conventional generation;

- Generation from Landfill Gas Projects (including methane reduction);
- Natural Gas Generation; and
- Waste Coal Mine Gas;

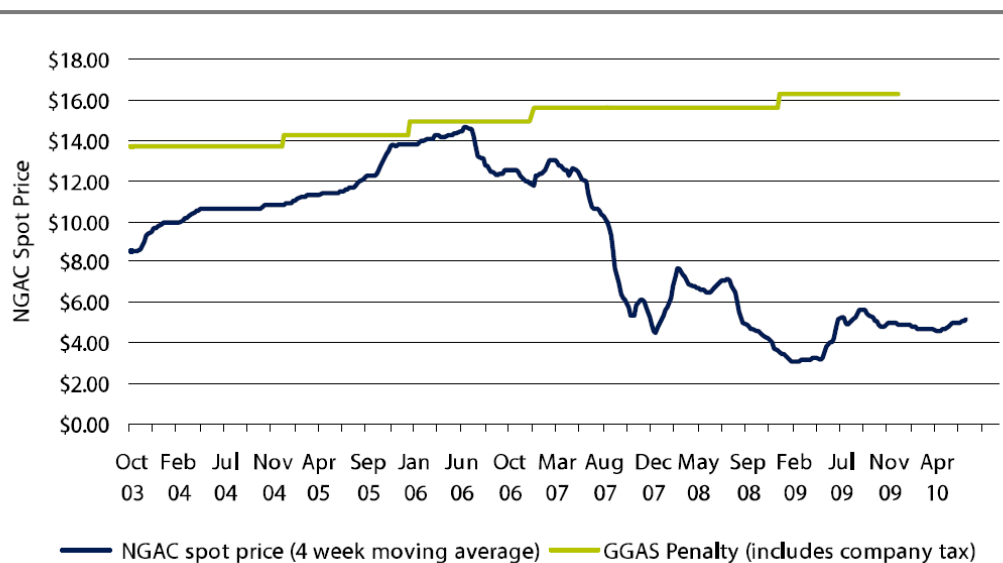
Certificates under the GGAS are bankable so those created under the previous scheme design can be used for surrender in future years. Table 4.3.4 shows the combined creation, surrender and balance of NGACs for the 2009 compliance year:

**Table 4.3.4 - Created, Surrendered and Banked Certificates for 2009 compliance year; source IPART**

<i>Created, Surrendered or Banked</i>	<i>Amount of Certificates for 2009 compliance year</i>
<i>Created</i>	18,412,251
<i>Surrendered</i>	23,297,876
<i>Deficit</i>	4,885,625
<i>Cumulative Balance (Banked)</i>	19,453,221

Although there were less certificates created than surrendered for the 2009 compliance year there is a substantial certificate balance for future compliance year surrender. It is unclear whether the balance banked is mainly held by generators or retailers however the prevailing market price of NGACs indicates a non-zero cost. IPART is currently undertaking a separate review of the GGAS scheme. Figure 4.1 shows the movements in NGAC spot prices and NGAC penalty prices for the last 7 years.

**Figure 4.1 - NGAC Prices<sup>16</sup>**



<sup>16</sup> Sourced from 'Compliance and Operation of the NSW Greenhouse Gas Reduction Scheme during 2009' - IPART Report to Minister, July 2010

NGAC prices started to decline in late 2006 due to the creation of a large number of NGACs from energy efficiency activities. Prices subsequently recovered on the announcement that energy efficiency will be separated into its own scheme (i.e. ESS) in mid 2009. The upward trend in NGAC prices has continued since mid 2010 on the announcement of a further delay in the introduction of CPRS (i.e. NGAC spot price as at January 2011 is \$7.20).

The Green Cost Allowance for NGACs in the Determination was zero. The reasoning for the zero allowance was based on:

- The impending introduction of the Commonwealth Government's CPRS leading to the cessation of the NSW GGAS; and
- The current significant balance of banked NGACs implying the market was oversupplied in the lead-up to the introduction of the CPRS.

This is no longer a relevant basis as the cumulative balance of certificates will not be as large as the annual deficit going forward, as table 4.3.4 indicates. Furthermore, the scheme is expected to continue for the foreseeable future. Therefore, current market prices appear to be the best guide to estimate cost of compliance for GGAS.

There was no estimation of NGAC costs in the Determination using the LRMC methodology for 2010/11 and 2011/12 (nor is there an allowance determined for 2012/13 using the market-based approach as per the LGC (REC) allowance). A LRMC methodology applied to the estimation of NGAC costs could draw on the fact that under the current scheme design the supply of NGACs going forward would be created from Category C and Category D generation. Demand for NGACs in each compliance year is largely driven by the forecast per capita demand growth along with other secondary factors that define the scheme. LRMC estimation would then proceed as per the co-optimised approach used for the LGC (REC) cost estimation with the output showing a cost estimate for NGACs.

In the absence of a cost estimate using the LRMC methodology, and in light of the CPRS delay, we have observed prevailing market price of NGACs and note the spot price of NGACs is \$7.20. This suggests a non-zero cost of compliance for Standard Retail Suppliers due to the delay in the introduction of the CPRS.

With established emissions trading schemes such as the NSW GGAS, the scarcity of certificates at the end of the scheme drives prices. Unless forecast emissions targets are met exactly, permit prices either tend to zero (surplus certificates) or to the penalty price (shortage of certificates). This was certainly the case for the first phase of the European Union's (EU's) Emissions Trading Scheme where carbon permits were not bankable across phases of the scheme. Phase one permits had no value given they were in surplus at the phase one end date.

The announced end date for the GGAS will have a large bearing on compliance costs for Standard Retail Suppliers. In the absence of an announced end date to the GGAS the non-zero market price of NGACs provides an indication that banked NGACs have a future surrender value which is the compliance cost for the Standard Retail Suppliers.

The incremental costs due to the delay in the introduction CPRS on GGAS compliance can be determined using the following information:

- "Greenhouse Gas Benchmark Rule (Compliance) No. 1 of 2003" - This specifies the legislated methodology for calculating GGAS compliance;
- "AEMO - 2010 Electricity Statement of Opportunities" - Provides estimates around the:

- Total electricity purchased (MWh) for NSW from 2010 to 2013;
- Medium energy projections annual growth rate for NSW; and
- Average forecasted population annual growth rate for NSW.
- “AGGBS-Comp-01-2010.xls (GGAS Scheme Website)” - Spreadsheet that specifies the total NSW electricity demand (MWh) and the total NSW population for 2010 and 2011;
- “Electricity Supply Amendment (Greenhouse Gas Emission Reduction) Act 2002 No 12” - Specifies the State Greenhouse Gas Benchmark (tCO<sub>2</sub>-e) for 2010 to 2012;
- “Fact Sheet - The NSW Pool Coefficient (GGAS Scheme Website)” - Provides forecasts of the NSW Pool Coefficient (tCO<sub>2</sub>-e/MWh); and
- Market data around NGAC spot price, NGAC forward prices and long term swap yield curves.

The above information combined with additional assumptions can be used to estimate the cost of the delay in the introduction of CPRS on GGAS compliance. This is as follows:

- GGAS compliance is determined using the following specified calculations:
  - If Attributable Emissions are less than equal to the Greenhouse Gas Benchmark then the participant is compliant. Otherwise the participant is deemed non-compliant;
  - In this report, the calculation has been performed on a State wide basis with the assumption that Attributable Emissions are equal to the Greenhouse Gas Benchmark (i.e. State is compliant);
  - Attributable Emissions (tCO<sub>2</sub>-e) = Total Electricity Purchased x NSW Pool Coefficient - NGACs Surrendered - (RECs Counted x NSW Pool Coefficient) - LUACs Surrendered; and
  - Greenhouse Gas Benchmark (tCO<sub>2</sub>-e) = [Total Electricity Sold / Total State Electricity Demand] x Electricity Sector Benchmark.
- To perform the above calculations the following necessary information has been sourced or assumed for each of year of the Determination:
  - Total Electricity Purchased (MWh) - Is sourced as the medium NSW projections from “AEMO - 2010 Electricity Statement of Opportunities” report;
  - NSW Pool Coefficient (tCO<sub>2</sub>-e/MWh) - Is sourced from “Fact Sheet - The NSW Pool Coefficient (GGAS Scheme Website)”:
    - 2010 is 0.973% (Actual);
    - 2011 is 0.975% (Actual);
    - 2012 is 0.980% (Forecast); and
    - 2013 is 0.982% (Forecast).



- Total Electricity Sold (MWh) - Is assumed to be equivalent to "Total Electricity Purchased (MWh)". On a state wide basis this is considered as a reasonable assumption;
  - Total State Electricity Demand (MWh) - The 2010 and 2011 figures are presented in the "AGGBS-Comp-01-2010.xls" compliance spreadsheet found on the GGAS Scheme website<sup>17</sup>. The 2012 and 2013 Total State Electricity Demand (MWh) is assumed to be equivalent to the 2011 value escalated by the medium energy projections annual growth rate for NSW of 1.8% sourced from "AEMO - 2010 Electricity Statement of Opportunities";
  - Total State Population - The 2010 and 2011 figures are presented in the "AGGBS-Comp-01-2010.xls" compliance spreadsheet found on the GGAS Scheme website. The 2012 and 2013 Total State Population is assumed to be equivalent to the 2011 value escalated by the average forecasted population annual growth rate for NSW of 0.95% sourced from "AEMO - 2010 Electricity Statement of Opportunities";
  - State Greenhouse Gas Benchmark (tCO<sub>2</sub>-e per capita) - This has been sourced from the "Electricity Supply Amendment (Greenhouse Gas Emission Reduction) Act 2002 No 12" for 2010 to 2012. Due to the absence of a published 2013 figure, it has been assumed that this is equivalent to the 2012 value;
  - Electricity Sector Benchmark (tCO<sub>2</sub>-e) - This is calculated as "Total State Population" multiplied by "State Greenhouse Gas Benchmark"; and
  - LUACs Surrendered (tCO<sub>2</sub>-e), NGACs Surrendered (tCO<sub>2</sub>-e) and RECs Counted (MWh) - In order to calculate the "Greenhouse Shortfall" (Attributable Emissions less Greenhouse Gas Benchmark) with the assumption that none of these certificates are surrendered for GGAS compliance.
- After determining the "Greenhouse Shortfall":
- It is necessary to average the following variables to account for the financial year basis in the Determination:
    - Total Electricity Purchased (MWh);
    - Greenhouse Shortfall (tCO<sub>2</sub>-e); and
    - Forward Prices of NGACs (\$ per NGAC).
  - The number of NGACs or NGAC equivalents required for GGAS compliance is equal to the "Greenhouse Shortfall"; and
  - The incremental cost of the delay in the introduction of CPRS on GGAS compliance is calculated as:
 

["Number of NGACs Needed for Compliance" x "Market Price (\$ per NGAC)"] / "Total Electricity Purchased (MWh)"

<sup>17</sup> <http://www.greenhousegas.nsw.gov.au/>

The resulting incremental cost for each year of the Determination period due to the delay in the introduction of CPRS on GGAS compliance is presented in table 4.3.5 below. The table breaks down the incremental cost into its key variables, as explained in the earlier part of this section.

**Table 4.3.5 - Incremental Cost of delay in CPRS on GGAS compliance for the Standard Retail Suppliers (presented in 2010/11 dollar terms<sup>18</sup>)**

	<i>2010/11</i>	<i>2011/12</i>	<i>2012/13</i>
<i>Total NSW Electricity Purchased</i>	77,739,750 MWh	79,775,750 MWh	81,032,250 MWh
<i>NGACs or NGAC equivalents needed for compliance</i>	21,072,887	20,217,116	21,305,792
<i>Forward Price of NGACs</i>	\$7.20	\$7.88	\$8.29
<i>Incremental Cost</i>	\$1.95 per MWh	\$2.00 per MWh	\$2.18 per MWh

<sup>18</sup> A CPI of 2.5% (midpoint of RBA's inflation target range) has been applied.

## 5. Summary

Ernst & Young was engaged to advise on the incremental costs of complying with new and existing Green Schemes pursuant to the two following recent and separate regulatory changes:

- The introduction of the SRES by the Commonwealth Government; and
- The delay in the introduction of the CPRS by the Commonwealth Government.

Both of these changes present incremental costs for Standard Retail Suppliers who are seeking IPART's approval to pass through these costs to their Small Retail Customers. Specifically:

- The introduction of the SRES presents a new Green Scheme for Standard Retail Suppliers to comply with; and
- The delay in the introduction of the CPRS commits the Standard Retail Suppliers to comply with existing and ongoing Green Schemes including the Commonwealth Government's LRET and their obligations under the NSW GGAS.

This report has outlined the details of the regulatory changes, the dates they occurred, and the incremental cost estimates they imply for each year of the Determination period.

A summary of incremental costs is presented in the following table.

**Table 5.1 - Summary on Incremental Costs on Standard Retail Suppliers (presented in 2010/11 dollar terms)**

		<i>2010/11</i>	<i>2011/12</i>	<i>2012/13</i>
<i>Introduction of SRES</i>	<i>SRES Cost (including time value of money)</i>	\$7.52 per MWh	\$5.64 per MWh	\$4.85 per MWh
	<i>LRET Cost</i>	\$0.33 per MWh	\$0.68 per MWh	\$1.40 per MWh
<i>Delay in introduction of CPRS</i>	<i>LRET Cost</i>	\$1.15 per MWh	\$0.89 per MWh	\$0.94 per MWh
	<i>GGAS Cost</i>	\$1.95 per MWh	\$2.00 per MWh	\$2.18 per MWh

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