

# **Compliance and Operation of the NSW Greenhouse Gas Reduction Scheme during 2012**

Report to Minister

**NSW Greenhouse Gas Reduction Scheme**  
December 2012



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The Tribunal delegated its functions as Scheme Administrator and Compliance Regulator under the *Electricity Supply Act 1995* to a GGAS Committee comprising:

Mr James Cox PSM, Chief Executive Officer and Full Time Member

Mr Eric Groom, Principal Adviser and Committee Member

Mr Peter Egger, Committee Member

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## Foreword

GGAS, the world's first mandatory carbon trading scheme, closed on 1 July 2012 after nine and a half years of successful operation.

The closure of GGAS was the direct result of the commencement of a Commonwealth scheme with similar objectives to GGAS, namely the national Carbon Pricing Mechanism that was introduced on 1 July 2012.

Our focus in 2012 was to ensure that all liable parties and participants in the scheme were kept informed of their remaining compliance obligations. We were concerned to finalise these obligations correctly and in a timely manner.

To achieve this objective, we needed the engagement, co-operation and understanding of all parties, including auditors, certificate creators, liable parties and IPART staff. Due to this co-operative effort, I am pleased to report that the closure of GGAS has been orderly and effective. Our risk management approach emphasised audits of higher risk activities and audit exemptions for activities where the risk of invalid certificate creation was minor, negligible or identified as low risk.

At the commencement of 2012, 74 parties were eligible to create certificates under the Scheme. An additional 43 parties were required to meet obligations through the surrender of certificates.

At the time of writing, only 8 accreditations remain to be cancelled. All Benchmark Participants have fully complied with their obligation to surrender certificates for the 2012 period. We will require the remaining accredited parties to meet their compliance obligations until their accreditations are cancelled or the GGAS legislation is repealed.

There remain approximately 10.7 million certificates available for voluntary surrender. The voluntary surrender market, although a minor part of the scheme during its mandatory phase, has steadily grown since scheme inception. I hope that it will continue to expand into the future. Each certificate represents a tonne of verified abatement of emission of carbon dioxide or equivalent. To assist this voluntary surrender market the GGAS Registry will continue to be supported into the future to allow trade and surrender of certificates by interested parties.

I would like to thank my colleagues on the Committee, Peter Egger and Eric Groom for their contributions and wise counsel over the life of GGAS. I would also like to thank past and present members of the GGAS Secretariat and all stakeholders for their engagement and cooperation over the period of almost a decade that GGAS was in operation.

James Cox PSM  
Chief Executive Officer  
and Full Time Member



# 1 Executive summary

The Independent Pricing and Regulatory Tribunal of NSW (IPART) was both the Compliance Regulator and Scheme Administrator for the NSW Greenhouse Gas Reduction Scheme (GGAS) for the life of the scheme. As part of this dual role, we monitored and reported annually to the Minister for Resources and Energy on scheme participants' compliance, and other aspects of the scheme's performance and operation.

This annual report covers the 6 months of operation during 1 January to 30 June 2012 and the activities of the Scheme Administrator and Compliance Regulator to manage all final compliance related obligations prior to final reporting. This was the 10th and final year of operation as GGAS closed on 30 June 2012 with the commencement of the national carbon pricing mechanism.

## 1.1 Overview of GGAS

GGAS was a mandatory greenhouse gas emissions trading scheme, established under Part 9 of the NSW *Electricity Supply Act 1995* (the Act). It commenced in NSW on 1 January 2003 and in the Australian Capital Territory on 1 January 2005. It was legislated to operate until either a national scheme to reduce greenhouse gas emissions was introduced, or until 2021.

The objectives of GGAS were to reduce greenhouse gas emissions associated with the production and use of electricity, and to develop and encourage the reduction of emissions from non-electricity-related activities. To achieve this objective, the Act established annual state-wide benchmarks for the reduction of greenhouse gas emissions. It also:

- ▼ Obligated all NSW and ACT electricity retail suppliers and certain other parties to meet individual benchmarks that together met the respective jurisdictional benchmark. These parties were known as Benchmark Participants.
- ▼ Provided for large electricity customers<sup>1</sup> and parties carrying out State Significant Developments<sup>2</sup> to elect to meet an individual benchmark target. These parties were known as elective Benchmark Participants.

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<sup>1</sup> A large electricity customer is defined as a customer other than a retail supplier, that on its own or together with certain related entities has an electricity load within NSW of over 100GWh per annum at one site or multiple sites owned or occupied by the customers, as long as one of the sites uses over 50GWh per annum.

- ▼ Provided for Abatement Certificate Providers to be accredited to carry out greenhouse gas abatement projects that were eligible under one of the GGAS Rules, and to create abatement certificates in respect of those projects. Each certificate represents one tonne of carbon dioxide equivalent emissions. These certificates include:
  - NSW Greenhouse Abatement Certificates (NGACs), which are tradeable certificates, and
  - Large User Abatement Certificates (LUACs), which are non-tradable.<sup>3</sup>

Benchmark Participants complied with their GGAS obligations primarily by purchasing and surrendering NGACs, or by creating and surrendering LUACs. However, they could also claim credit for a limited number of Renewable Energy Certificates (RECs) they surrendered under the Commonwealth Government's Renewable Energy Target (RET) Scheme in relation to electricity purchases associated with NSW.<sup>4</sup>

GGAS targets were set on a per capita basis. The target progressively decreased from 8.65 tonnes of carbon dioxide equivalent (tCO<sub>2</sub>-e) per capita in 2003 when GGAS commenced to 7.27 tCO<sub>2</sub>-e in 2007. From 2007, the target remained constant at 7.27 tCO<sub>2</sub>-e per capita.

In 2007, the Commonwealth Government committed to establishing a national scheme with the objective to reduce greenhouse gas emissions. Since then, the closure of GGAS has been anticipated, with the timing being contingent on the commencement of the national scheme. In light of this, GGAS was closed to new participants from 31 December 2009.

In February 2011, the Commonwealth Government announced it would introduce a carbon pricing mechanism in mid-2012 which was passed through Parliament on 8 November 2011. In addition, the *Carbon Credits (Carbon Farming Initiative) Act 2011* was passed in Commonwealth Parliament on 23 August 2011.

On 5 April 2012, the NSW Minister for Resources and Energy announced the closure of GGAS effective 1 July 2012. This decision was formalised via gazettal of the GGAS closure *Proclamation and Regulation* on 11 May 2012. The ACT Government also announced it would close its GGAS scheme effective 1 July 2012.

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<sup>2</sup> State Significant Development has the same meaning as it has in the *Environmental Planning and Assessment Act 1979*. No State Significant Developments elected under the Scheme.

<sup>3</sup> LUACs are non-tradeable and can only be created by Abatement Certificate Providers that are elective Benchmark Participants.

<sup>4</sup> RECs may be counted towards meeting the greenhouse gas benchmark, or to abate a greenhouse gas shortfall, if certain criteria are satisfied pursuant to clauses 73DA and 73DB of the *Electricity Supply (General) Regulation 2001*.

## 1.2 IPART's role as Scheme Administrator and Compliance Regulator

As both the Scheme Administrator and Compliance Regulator of GGAS, IPART's role was to:

- ▼ monitor and report on Benchmark Participants' compliance with their obligations
- ▼ accredit Abatement Certificate Providers to undertake abatement projects that were eligible under the GGAS Rules and create certificates in respect of these projects
- ▼ monitor and report on Abatement Certificate Providers' compliance with the conditions of their accreditation and the GGAS Rules
- ▼ conduct independent audits to ensure the integrity of the scheme
- ▼ track the registration, ownership and surrender of certificates through the GGAS Registry<sup>5</sup>
- ▼ monitor and publish annual reports on the supply of and demand for certificates, and
- ▼ host the GGAS website.

As allowed under the Act,<sup>6</sup> the Tribunal delegated its functions as Scheme Administrator and Compliance Regulator to a GGAS Committee comprising Mr James Cox as Full Time Member, and Mr Peter Egger and Mr Eric Groom. The GGAS Committee met a total of 9 times in 2012.

## 1.3 Overview of GGAS's performance and operation in 2012

Overall, the performance and operation of GGAS was very good in 2012. All participants complied fully with their obligations, and all instances of non-compliance were relatively minor in nature. There was a significant decrease in the number of GGAS certificates created, due to the commencement of the carbon pricing mechanism and the closure of GGAS. Despite this decrease in supply, the oversupply of certificates during earlier years assisted in meeting projected demand for the 2012 compliance period. GGAS closed with a surplus of 10.7 million unsurrendered certificates that can be surrendered to recognise voluntary abatement (ie, beyond regulatory or statutory requirements).

<sup>5</sup> See <https://www.ggas-registry.nsw.gov.au>

<sup>6</sup> Section 97HA(6) of the Act allows IPART, with the approval of the Minister, to delegate the exercise of its functions to another person or body.

## 1.4 The administration of GGAS closure

As a result of the introduction of the national carbon pricing mechanism, our focus during 2011 and 2012 was to prepare for, and efficiently manage, the closure of GGAS. We managed final obligations of participants to reduce their costs of compliance and set in place procedures to mitigate the risk of invalid certificate creation, particularly for those accreditations that were transitioning to the Carbon Farming Initiative (CFI).

## 1.5 Compliance of Benchmark Participants

There were 43 Benchmark Participants in GGAS in 2012, including 11 elective Benchmark Participants. All Benchmark Participants fully met their compliance obligations. Together, they surrendered just under 7 million GGAS certificates, including 6.6 million NGACs and 0.3 million LUACs. They also received credit for approximately 2.7 million RECs in lieu of surrendering certificates to meet their benchmarks. The credit claimed for RECs represented around 28% of the total number of certificates required for compliance, an increase from 17% in 2011.

Since GGAS began in 2003, Benchmark Participants have surrendered a total of approximately 128.4 million certificates, including 121.5 million NGACs and 6.9 million LUACs<sup>7</sup>. This number increases to just under 150 million certificates when credit claimed for RECs is also taken into account.

## 1.6 Compliance of Abatement Certificate Providers

Our primary focus in 2012 was managing final compliance obligations of Abatement Certificate Providers and cancellation of accreditations.

Abatement Certificate Providers were accredited to undertake and create certificates in respect of 151 abatement activities during all or part of 2012. Among these, there were 11 instances of contravention of conditions of accreditation, resulting in improper creation of certificates. All non-compliance issues were resolved and where relevant, the providers voluntarily agreed to forfeit the improperly created certificates.

We cancelled 143 accreditations during the year after all obligations had been met. Most of these were accreditations under the Generation Rule<sup>8</sup>. At the end of 2012, 8 Abatement Certificate Providers remained accredited under GGAS and will remain accredited until they request cancellation or there is a breach of accreditation conditions.

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<sup>7</sup> These figures are relevant for NSW Benchmark Participants and do not include surrenders by Benchmark Participants in the ACT or surrenders by voluntary participants (refer Sections 6.4 and 6.5).

<sup>8</sup> *Greenhouse Gas Benchmark Rule (Generation) No. 2 of 2003*.

## 1.7 Audit activities

IPART managed 39 independent audits of Abatement Certificate Providers and their activities during 2012, which covered a total of 109 accreditations.

We also managed 23 independent audits of benchmark statements submitted by Benchmark Participants. This represented all the benchmark statements submitted except for those where the participant had nil or very low electricity sales. In these instances, the Benchmark Participant sought an exemption from the audit requirement.

## 1.8 Registration, ownership and surrender of certificates

During 2012, certificate registration declined significantly from 12.5 million certificates in 2011 to 1.9 million in 2012. This was in response to the introduction of the national carbon pricing mechanism. Over the life of GGAS, more than 144 million certificates were registered, the majority from accreditations under the Generation Rule.

At the end of GGAS, 10.7 million certificates remain available for surrender in the voluntary surrender market. The GGAS Registry will remain in its current form for the foreseeable future allowing voluntary participants to transfer (where relevant) and surrender certificates for voluntary offset purposes. We will monitor the use of the GGAS Registry during 2013 and will consider options for its ongoing support.

## 1.9 Supply and demand for certificates

Earlier this year, we reported that although supply had fallen below, or just met, demand during 2009-2011, the oversupply during earlier years would more than assist in meeting projected demand for the 2012 compliance period. This projection was realised, despite a significant (85%) decrease in supply during 2012, primarily due to commencement of the national carbon pricing mechanism and options offered to Abatement Certificate Providers to avoid final audits of certificate creation.

During 2012, the oversupply of certificates and considerable uncertainty in the market affected the NGAC spot price, with the price declining to a historical low of \$0.15 in May 2012. The spot price did not recover and ranged between \$0.15 and \$0.20 for reported trades over the final months of GGAS activity.

## 1.10 What does the rest of this report cover?

The rest of this report discusses the performance and operation of GGAS during 2012 in detail:

- ▼ Chapter 2 details our administration of GGAS closure
- ▼ Chapters 3 and 4 focus on the performance of Benchmark Participants and Abatement Certificate Providers
- ▼ Chapter 5 discusses our auditing activities
- ▼ Chapter 6 provides key statistics on the registration, surrender and transfer of certificates recorded in the GGAS Registry, and
- ▼ Chapter 7 provides a wrap-up of demand and supply during 2012, and over the life of GGAS.

The appendices provide detailed information on Abatement Certificate Providers, accreditations and certificates registered since 2003. The glossary defines terms used in this report.

For a comprehensive overview of GGAS, and the functions of the Scheme Administrator and Compliance Regulator, and a description of the calculation methodologies and other legislative provisions, refer to earlier Compliance and Operation reports or the IPART website.<sup>9</sup>

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<sup>9</sup> [www.ipart.nsw.gov.au](http://www.ipart.nsw.gov.au)

## 2 The administration of GGAS closure

Closure of GGAS was widely anticipated following the announcement of a national carbon pricing mechanism to take effect from 1 July 2012. As a result, our focus during 2011 and 2012 was to prepare for the orderly closure of GGAS, one that would be acceptable to all stakeholders. We were particularly concerned to ensure that scheme participants met their compliance obligations and that certificate creation represented valid abatement.

This chapter details our activities to ensure efficient administration of GGAS closure. We discuss our management of final compliance obligations of participants, our strategy for managing risks of invalid certificate creation, and the future of the GGAS Registry. We will report on the challenges and lessons learned during GGAS's nine and a half years of successful operation in a subsequent and separate IPART report to be released in early 2013.

### 2.1 Managing final obligations of participants

Following the NSW Government's announcement that GGAS would close upon commencement of the national carbon pricing mechanism on 1 July 2012, we assisted participants to finalise their obligations under the scheme in a number of ways.

For Benchmark Participants, we allowed exemptions from audits of benchmark statements where electricity purchases were straightforward and did not involve purchases from embedded generators (including photovoltaic systems).

For Abatement Certificate Providers we:

- ▼ offered exemptions from audits where an Abatement Certificate Provider had either not created certificates, or had forfeited all certificates created, since the previous audit
- ▼ offered to bundle audits of certificate creation wherever possible to minimise costs
- ▼ agreed to delay commencement of some audits where bundling of multiple accreditations was a consideration, and
- ▼ processed cancellation of accreditations in response to requests from Abatement Certificate Providers.

## 2.2 Risk management

The integrity and verification of final certificate creation was a crucial aspect of administering GGAS closure. In preparing for closure, each accreditation was subject to an analysis to measure the level of risk of invalid certificate creation. The level of risk combined with previous compliance history determined whether the Abatement Certificate Provider was required to conduct a final audit of their accreditation.

Classification of risk was based on a risk matrix adapted from our risk assessment strategy for the NSW Energy Savings Scheme<sup>10</sup> (refer Table 2.1 below). The risk matrix compared the 'Consequence' of invalid certificate creation (minor - moderate - severe) against the 'Likelihood' of invalid certificate creation occurring (low - medium - high) to identify the risk of invalid certificate creation as either low, medium, high or very high.

**Table 2.1 Risk matrix**

		Consequence – quantum of invalidly created certificates		
		Minor	Moderate	Severe
Likelihood of invalid certificate creation occurring	High	Medium Risk	High Risk	Very High Risk
	Medium	Low Risk	Medium Risk	High Risk
	Low	Low Risk	Low Risk	Medium Risk

The 'Consequence' categories of risk were determined on the basis of:

- ▼ the size of the unaudited certificate claim and the potential value of that claim (based on a spot market NGAC value of \$1.00 at commencement of 2012), and
- ▼ whether the claim was for an individual accreditation or multiple accreditations.

The 'Likelihood' categories of risk were determined on the basis of:

- ▼ the Abatement Certificate Provider's compliance history to date
- ▼ the complexity of the accreditation's certificate creation calculations
- ▼ whether a detailed management system is required to manage the accreditation or portfolio of accreditations
- ▼ whether the accreditation was accredited under another State or Commonwealth scheme (eg, Queensland Gas Scheme (QGS) or RET), and
- ▼ whether the accreditation is potentially eligible under the CFI (refer Section 2.3 below).

<sup>10</sup> IPART, *ESS Compliance and Performance Management Strategy*, p 11.



Based on the identified risk category outcome (low to very high), Abatement Certificate Providers were either required to conduct a final audit of their accreditation or be exempt from audit as follows:

- ▼ accreditations identified as high or very high proceeded directly to a final audit of certificate creation
- ▼ accreditations identified as medium risk could request audit exemption provided that they had previous, and recent, audit exposure with no identified issues, and
- ▼ accreditations identified as low risk were exempt from audit.

### 2.3 The Carbon Farming Initiative

As part of the Clean Energy Future Plan passed by the Commonwealth Senate on 8 November 2011, the Australian Government committed to a number of complementary land sector measures, including the CFI. The CFI is a national carbon offsets scheme that allows farmers and land managers to create carbon credits by storing carbon or reducing greenhouse gas emissions on the land. These credits can then be sold to people and businesses to offset their emissions.

As part of our risk assessment we identified that a number of Abatement Certificate Providers might seek to transition their projects to the CFI and potentially claim for CFI carbon credits from 1 July 2010 (as allowed for under the provisions of the CFI legislation). Accreditations we identified as being potentially eligible under the CFI included those involving carbon sequestration, landfill gas, and perhaps biogas or sewage gas.<sup>11</sup>

In all, we identified 49 accreditations as potentially eligible for transition to the CFI introducing a risk of double-counting of certificates. To address this risk, we wrote to these Abatement Certificate Providers in late 2011, to ascertain their intentions in regard to the CFI. The responses were factored into the audit risk matrix (see Section 2.2) for the respective accreditation(s).

Of the 49 accreditations identified, all but 7 were subsequently audited. The 7 exceptions were granted on the basis of a low risk outcome due to zero or minimal certificates having been created since the time of the previous audit.

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<sup>11</sup> It should be noted that the CFI provisions had not yet been legislated at time of our initial risk assessment.

## 2.4 The future of the GGAS Registry

In accordance with the Act,<sup>12</sup> we established and have maintained the registers of Abatement Certificate Providers and certificates since GGAS was established in 2003. These registers are assembled in the GGAS Registry which is publicly accessible on the internet.<sup>13</sup> The GGAS Registry provides participants with the functionality to create, transfer ownership and surrender certificates.

Following the closure of GGAS and completion of obligations by Abatement Certificate Providers and Benchmark Participants, there remains 10.7 million un-surrendered certificates that continue to represent tonnes of CO<sub>2</sub>-e of abated greenhouse emissions (refer Table 6.2). These certificates can be used to participate in voluntary offset schemes.<sup>14</sup>

Although GGAS has closed, we will continue to maintain the GGAS Registry in its current form (that is, allowing the transfer and surrender of NGACs) as long as it is practical and feasible to do so. In addition, un-surrendered LUACs held by previous elective Benchmark Participants can be voluntarily surrendered. To date<sup>15</sup>, voluntary participants have surrendered 2.1 million NGACs over 8 years (refer Section 6.5).

We will monitor the use of the GGAS Registry during 2013 and consider options for its ongoing support. All holders of certificates will be consulted prior to any changes being introduced to the operation of the GGAS Registry.

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<sup>12</sup> Sections 97G and 97GA.

<sup>13</sup> <https://www.ggas-registry.nsw.gov.au>

<sup>14</sup> With the exception of just over 953,000 LUACs created by Large Users. LUACs are non-transferable and can only be used for surrender against the Large User's own voluntary target, if applicable.

<sup>15</sup> As at 30 November 2012.

### 3 NSW Benchmark Participants' compliance performance

All Benchmark Participants were required to lodge an Annual Greenhouse Gas Benchmark Statement (benchmark statement) with IPART by no later than 30 September 2012.<sup>16</sup> In most cases, we also required them to provide an independent audit report with this statement.<sup>17</sup>

The benchmark statement sets out the Benchmark Participant's individual greenhouse gas benchmark (ie, abatement obligation) and the number of certificates surrendered to meet this obligation. If a participant surrendered insufficient certificates to meet its benchmark, it incurred a financial penalty. For the 2012 compliance year, this penalty was \$17.00 per tonne of carbon dioxide equivalent.<sup>18</sup> In previous years, Benchmark Participants could choose to carry forward to the following year a greenhouse shortfall of up to 10% of their individual benchmark without having to pay a penalty. As 2012 was the final year for the scheme, the option to carry forward a shortfall to 2013 did not apply.

During 2012, there were 43 Benchmark Participants in NSW. These included 28 licensed electricity retailers, 2 market customers and 2 generators,<sup>19</sup> plus 11 large users of electricity that had voluntarily elected to be Benchmark Participants. The section below summarises these participants' compliance performance. The subsequent sections provide detailed information on this performance, including the number of certificates surrendered, the types of abatement for which these certificates were created, and the greenhouse gas penalties paid.

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<sup>16</sup> Covering the 6-month compliance period of 1 January to 30 June 2012.

<sup>17</sup> The exceptions are when Benchmark Participants submit a nil return or have a very simple statement and have been granted an audit exemption.

<sup>18</sup> The calculation of the penalty and CPI adjustment is made pursuant to section 97CA of the Act and section 73C of the Regulation. The penalty is adjusted annually in line with CPI movements. However, during periods of low inflation the penalty is not adjusted due to a rounding mechanism in the formula. For the 2012 compliance year, the penalty rate of \$17.00 per tCO<sub>2</sub>-e increased from the 2011 level of \$15.50.

<sup>19</sup> Delta Electricity is a prescribed generator under s73(B) of the *Electricity Supply (General) Regulation 2001*. However, Delta Electricity is also a licensed NSW electricity retailer. To avoid double counting, Delta Electricity is counted only once as a Benchmark Participant in the total figure.

### 3.1 Summary of Benchmark Participants' compliance performance in 2012

All Benchmark Participants fully met their individual greenhouse gas benchmarks, including any remaining obligations for the 2011 compliance year. Table 3.1 lists all participants, grouped according to their compliance status:

- ▼ 32 surrendered sufficient certificates to meet their individual greenhouse gas benchmark
- ▼ 11 did not directly purchase or sell electricity in NSW and so were not required to surrender certificates.

**Table 3.1 NSW Benchmark Participant by compliance performance in 2012**

<b>Surrendered sufficient certificates to meet 2012 greenhouse benchmark:</b>	
AGL Sales (Mandatory)	Lumo Energy Pty Ltd (Mandatory)
AGL Sales (Qld Electricity) Pty Ltd (Mandatory)	Macquarie Generation (Mandatory)
Aurora Energy (Mandatory)	Momentum Energy Limited (Mandatory)
Australian Power & Gas (NSW) (Mandatory)	Norske Skog Paper Mills (Aust) (Elective)
Amtcor Packaging Australia (Elective)	OneSteel Manufacturing (Elective)
BlueScope Steel (AIS) (Elective)	Orica Australia (Elective)
Boral Limited (Elective)	Origin Energy Electricity (Mandatory)
Centennial Coal (Elective)	Powerdirect Pty Ltd (Mandatory)
Cogent Energy Pty Ltd (Mandatory)	Red Energy (Mandatory)
Dodo Power and Gas (Mandatory)	Sanctuary Energy Pty Ltd (Mandatory)
Endeavour Energy (Mandatory)	Stanwell Corporation (Mandatory)
ERM Power Retail (Mandatory)	Sun Retail Pty Ltd (Mandatory)
Honan Holdings (Elective)	Tomago Aluminium <sup>a</sup> (Mandatory)
Hydro Aluminium Kurri Kurri (Elective)	TRUenergy (Mandatory)
Infigen Energy Markets Pty Ltd (Mandatory)	TRUenergy Yallourn Pty Ltd (Mandatory)
	Visy Industries Holdings (Elective)
	Xstrata Coal NSW (Elective)
<b>Did not directly purchase or sell electricity in NSW and therefore were not required to surrender certificates:</b>	
ActewAGL Retail <sup>a</sup> (Mandatory)	GridX Power (Mandatory)
Ausgrid <sup>b</sup> (Mandatory)	Metered Energy (Mandatory)
Delta Electricity <sup>b</sup> (Mandatory)	Simply Energy (Mandatory)
Diamond Energy Pty Ltd (Mandatory)	Tarong Energy Corporation (Mandatory)
Eraring Energy <sup>c</sup> (Mandatory)	WINenergy (Mandatory)
Essential Energy <sup>b</sup> (Mandatory)	

<sup>a</sup> All electricity purchases for ActewAGL were included in AGL Sales Pty Ltd's benchmark statement.

<sup>b</sup> This participant purchased electricity directly from the national electricity grid but on-sold the entire purchase amount to an elective participant and was therefore not required to surrender certificates.

<sup>c</sup> Registered with Australian Energy Market Operator (AEMO) as a market customer, that is, an electricity customer taking supply directly from the national electricity grid.

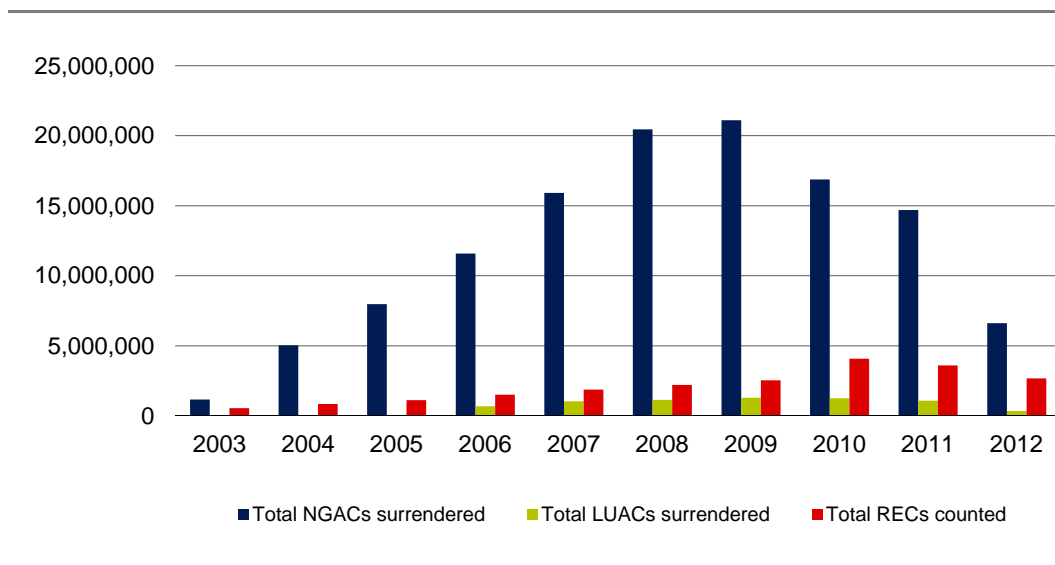
### 3.2 Number of GGAS certificates surrendered and RECs counted

Together, Benchmark Participants had a total compliance obligation of 9,662,858<sup>20</sup> certificates for 2012. To meet this obligation, they:

- ▼ surrendered 6,641,969 NGACs
- ▼ surrendered 337,537 LUACs, and
- ▼ claimed credit for 2,749,336<sup>21</sup> RECs.

As Figure 3.1 shows, NGACs comprised the bulk of the certificates surrendered or counted in 2012, as they have done in previous years. LUACs comprised only 3.5% of the total certificates surrendered or counted. This was lower than in 2011 (5.3%), reflecting a general economic downturn in industries with large individual energy users, such as steelmaking and aluminium production, and a reduction in creation of LUAC Rule certificates as a response to the GGAS closure.

**Figure 3.1 Number of GGAS certificates surrendered and RECs counted**



Of the 12 Benchmark Participants that were large electricity users (11 elective and one mandatory participant), 7 surrendered LUACs to meet a portion of their obligations in 2012. Table 3.2 shows LUACs surrendered as a proportion of total abatement in 2012 and previous years.

<sup>20</sup> Total abatement certificates required for compliance is a total of NGACs/LUACs required to meet obligations plus RECs counted toward compliance (expressed as an equivalent number of NGACs).

<sup>21</sup> 2,749,336 RECs are equivalent to 2,683,352 NGACs.

**Table 3.2 Percentage of LUACs surrendered in 2010, 2011 and 2012 by individual large users<sup>a</sup>**

Large Users	LUACs surrendered (as a % of total abatement)		
	2010	2011	2012 <sup>b</sup>
Arcor Packaging (Australia)	63%	90%	95%
BlueScope Steel	21%	24%	0%
Boral Limited	83%	80%	64%
Centennial Coal (Aust.)	0%	0%	0%
Honan Holdings	n/a	0%	0%
Hydro Aluminium Kurri Kurri	84%	78%	68%
Norske Skog Paper Mills (Australia)	11%	15%	11%
Onesteel Manufacturing	0%	0%	0%
Orica Australia	81%	79%	53%
Tomago Aluminium <sup>c</sup>	50%	58%	61%
Visy Industries Holdings	0%	0%	0%
Xstrata Coal NSW	81%	79%	62%
<b>Total</b>	<b>6%</b>	<b>5%</b>	<b>4%</b>

<sup>a</sup> Individual total abatement for the year is calculated by the number of certificates required to attain a zero greenhouse shortfall including any greenhouse shortfall carried forward from the previous year.

<sup>b</sup> For the 6 month period to 30 June 2012 rounded to the nearest whole number.

<sup>c</sup> Mandatory Benchmark Participant.

In the period from 1 January 2003 (when GGAS began) to the 30 June 2012, a total of 121,509,831 NGACs were surrendered by Benchmark Participants. When LUACs are included, this number increases to 128,396,249 certificates.<sup>22</sup> When equivalent RECs are also taken into account, it increases to over 148,565,859 certificates.

Table 3.3 provides a detailed breakdown of the certificates offered for surrender and accepted in each year since 2003, compared to the total number of certificates required to completely meet the GGAS abatement obligations (including any greenhouse shortfalls that were carried forward to the next year). Note that this table has been prepared by adding penalties as an equivalent number of NGACs. Based on this methodology, the 2012 greenhouse abatement obligation totals 9,662,858 certificates. Table 3.4 presents this information in percentage terms.

<sup>22</sup> Represents surrenders by Benchmark Participants in NSW only. Surrenders by Benchmark Participants in the ACT and voluntary participants are not included.

**Table 3.3 NSW Total Abatement and Renewable Energy Certificates offered for surrender and accepted since GGAS began**

	Compliance year										Total
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012 <sup>a</sup>	
Total NGACs surrendered	1,166,866	5,037,847	7,982,204	11,592,583	15,922,727	20,907,783	20,660,236	16,876,212	14,721,404	6,641,969	<b>121,509,831</b>
Total LUACs surrendered	0	0	64,401	686,560	1,040,462	1,141,096	1,295,496	1,258,099	1,062,767	337,537	<b>6,886,418</b>
RECs counted	544,518	841,194	1,117,907	1,512,006	1,878,514	2,205,601	2,535,679	4,083,772	3,603,144	2,749,336	<b>21,071,671</b>
NGAC equivalent (REC co-efficient) <sup>b</sup>	488,432	762,122	1,020,649	1,404,653	1,767,682	2,104,143	2,452,002	3,973,510	3,513,065	2,683,352	<b>20,169,610</b>
Actual total certificates surrendered to meet compliance obligations for the year	1,655,298	5,799,969	9,067,254	13,683,796	18,730,871	24,153,022	24,407,734	22,107,821	19,297,236	9,662,858	<b>148,565,859</b>
Total certificates required to meet compliance obligations for the year <sup>c</sup>	1,699,941	5,897,234	9,150,547	13,802,181	18,387,285	24,153,022	23,960,969	22,721,512	18,241,452	8,513,584	<b>146,527,727</b>
Total shortfalls carried forward to next compliance year	44,643	141,908	225,201	343,586	0	446,765	446,956	1,055,784	1,149,274	0	<b>n/a</b>

<sup>a</sup> For the 6 month period to 30 June 2012.

<sup>b</sup> RECs are not directly equivalent to NGACs. To calculate the NGAC equivalent the number of RECs is multiplied by the pool coefficient for that year (for 2012 that number is 0.976 tCO<sub>2</sub>-e/MWh).

<sup>c</sup> Total certificates required to meet compliance obligations for the year is a total of NGACs and LUACs required to meet obligations plus RECs counted toward compliance expressed as NGAC equivalents plus shortfalls carried forward to the following year minus the shortfall carried forward from the previous year. Total = NGACs + LUACs + RECs + shortfall current year – shortfall previous year.

**Note:** Previously reported figures for 2008, 2009 and 2011 have been adjusted to account for amendments that have occurred subsequent to the reporting deadline for the compliance years.

**Table 3.4 Components of abatement since GGAS began (expressed as total surrenders plus carry forward to following year)**

	Compliance Year										TOTAL
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012 <sup>a</sup>	
NGACs surrendered	68.6%	84.8%	85.9%	82.6%	85.0%	85.0%	83.1%	72.9%	72.0%	68.7%	<b>81.8%</b>
LUACs surrendered	0.0%	0.0%	0.7%	4.9%	5.6%	4.6%	5.2%	5.4%	5.2%	3.5%	<b>4.6%</b>
RECs taken into account (NGAC equivalent)	28.7%	12.8%	11.0%	10.0%	9.4%	8.6%	9.9%	17.2%	17.2%	27.8%	<b>13.6%</b>
Greenhouse shortfall <sup>b</sup>	2.6%	2.4%	2.4%	2.4%	0.0%	1.8%	1.8%	4.6%	5.6%	0.0%	<b>n/a</b>
Total abatement obligations	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	<b>100.0%</b>

<sup>a</sup> For the 6 month period to 30 June 2012.

<sup>b</sup> In 2007, no shortfall was allowed to be carried forward to ensure that NSW met its target in line with the Kyoto protocol.

**Note:** Some of the data in this table differs slightly from data published in tables in previous *Compliance and Operation of the NSW Greenhouse Gas Reduction Scheme* reports. Previous components have generally been expressed as a percentage of total abatement which includes any obligation carried forward from the previous year. These figures are now expressed as a percentage of surrenders plus obligations elected to be carried forwards to the following year. Total abatement obligations = NGACs surrendered + LUACs surrendered + RECs accounted + shortfall obligations.

**Note:** Previously reported figures for 2008, 2009 and 2011 have been adjusted to account for amendments that have occurred subsequent to the reporting deadline for the compliance years.



### 3.3 Types of certificates surrendered

In 2012, the NGACs surrendered were created from abatement projects accredited under the Generation Rule, the DSA Rule<sup>23</sup> and the CS Rule,<sup>24</sup> while all the LUACs surrendered were created under the LUAC Rule. As in previous years, the Generation Rule was the largest source of certificates surrendered.

Table 3.5 provides a detailed breakdown of types of certificates offered for surrender and accepted for each year of GGAS operation.

**Table 3.5 Types of certificates (NGACs/LUACs) offered for surrender and accepted each year**

	Generation Rule	DSA Rule	CS Rule	Total NGACs	LUAC Rule	Total
<b>2003</b>	1,114,174 95.5%	52,692 4.5%	0 0.0%	1,166,866 100.0%	0 0.0%	<b>1,166,866</b> <b>100.0%</b>
<b>2004</b>	4,432,113 88.0%	605,734 12.0%	0 0.0%	5,037,847 100.0%	0 0.0%	<b>5,037,847</b> <b>100.0%</b>
<b>2005</b>	7,599,850 94.4%	382,354 4.8%	0 0.0%	7,982,204 99.2%	64,401 0.8%	<b>8,046,605</b> <b>100.0%</b>
<b>2006</b>	9,291,261 75.7%	2,251,272 18.3%	50,050 0.4%	11,592,583 94.4%	686,560 5.6%	<b>12,279,143</b> <b>100.0%</b>
<b>2007</b>	9,739,237 57.4%	6,158,491 36.3%	24,999 0.1%	15,922,727 93.9%	1,040,462 6.1%	<b>16,963,189</b> <b>100.0%</b>
<b>2008</b>	10,866,268 50.3%	9,407,377 43.6%	182,803 0.8%	20,456,448 94.7%	1,141,096 5.3%	<b>21,597,544</b> <b>100.0%</b>
<b>2009</b>	12,860,969 57.4%	7,543,680 33.7%	706,922 3.2%	21,111,571 94.2%	1,295,496 5.8%	<b>22,407,067</b> <b>100%</b>
<b>2010</b>	15,276,095 84.2%	1,031,111 5.7%	569,006 3.1%	16,876,212 93.1%	1,258,099 6.9%	<b>18,134,311</b> <b>100%</b>
<b>2011</b>	13,192,166 83.6%	275,682 1.7%	1,246,606 7.9%	14,714,454 93.3%	1,062,767 6.7%	<b>15,777,221</b> <b>100.0%</b>
<b>2012<sup>a</sup></b>	6,419,259 91.9%	61,548 0.9%	168,112 2.4%	6,648,919 95.2%	337,537 4.8%	<b>6,986,456</b> <b>100.0%</b>

<sup>a</sup> For the 6 month period to 30 June 2012.

**Note 1:** Percentage totals may not add due to rounding.

**Note 2:** Data reflects actual surrenders in the GGAS Registry, including amended assessments

<sup>23</sup> Greenhouse Gas Benchmark Rule (Demand Side Abatement) No. 3 of 2003.

<sup>24</sup> Greenhouse Gas Benchmark Rule (Carbon Sequestration) No. 5 of 2003.

### 3.4 Greenhouse Gas penalties

All Benchmark Participants surrendered sufficient certificates to meet their greenhouse gas benchmarks and none were assessed as owing a penalty in respect of their resultant greenhouse shortfalls.

Table 3.6 shows the total penalties incurred by Benchmark Participants due to greenhouse shortfalls in dollar and tCO<sub>2</sub>-e terms for each year since 2003.

**Table 3.6 Penalties incurred due to greenhouse shortfalls**

Year	Dollar amount	tCO <sub>2</sub> -e
2003	\$0	0
2004	\$21	2
2005	\$0	0
2006	\$0	0
2007	\$204	17
2008	\$1,152	96
2009	\$15,287	1,223
2010	\$68,082	4,863
2011	\$93 <sup>a</sup>	6 <sup>a</sup>
2012 <sup>b</sup>	\$0	0

<sup>a</sup> In October 2012, Sanctuary Energy applied for an amended assessment of its 2011 liability to rectify its 2011 shortfall and surrender certificates in lieu of paying a penalty. As a result, these amounts are less than previously reported.

<sup>b</sup> For the 6 month period to 30 June 2012.

**Note:** Complete payment has not been received from Sanctuary Energy and IERS for 2010 penalties and IERS for its 2011 penalty.

## 4 Abatement Certificate Providers' compliance performance

Abatement Certificate Providers were voluntary participants in GGAS. They applied for accreditation to undertake eligible abatement projects under the GGAS Rules<sup>25</sup>. The GGAS Rules set out the additional eligibility criteria and the calculation methods used to determine the number of certificates (NGACs or LUACs) that could be created. Each certificate represented the abatement of one tonne of carbon dioxide equivalent emissions.

With the closure of GGAS, our primary focus in 2012 was managing final compliance obligations of Abatement Certificate Providers and cancellation of accreditations. We took a risk based approach in managing final compliance obligations and cancellations of accreditation to mitigate the risk of invalid certificate creation (refer Section 2.2).

The section below summarises Abatement Certificate Providers' compliance performance during 2012 and the key accreditation statistics for the year. The subsequent sections discuss the compliance outcomes and the accreditations we amended and cancelled in more detail. Appendix B provides historical data on Abatement Certificate Providers.

### 4.1 Summary of Abatement Certificate Providers' compliance performance and key accreditation statistics

In 2012, Abatement Certificate Providers' overall level of compliance with the Act, Regulations, Rules and accreditation conditions remained generally good. There were 11 instances of contravention of compliance obligations. All instances were relatively minor in nature and involved the improper creation of 33,259 certificates. The Abatement Certificate Providers involved agreed to forfeit the over-created certificates.

The GGAS Committee sitting as Scheme Administrator met 9 times during 2012. It made 14 amendments to accreditation, and cancelled 143 accreditations. At the end of 2012, 8 accreditations remained to be cancelled.

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<sup>25</sup> In anticipation of the introduction of the national carbon pricing mechanism, GGAS was closed to new applications for accreditation from the start of 2010. The only exception was for applications for activities that were accredited before the end of 2009 but which had subsequently changed ownership or corporate structure and therefore needed to be re-accredited.

## 4.2 Compliance outcomes

The Act identified the following ways in which Abatement Certificate Providers could contravene their compliance obligations under GGAS:

- ▼ contravening the conditions of accreditation (section 97DD)
- ▼ improper creation of certificates (section 97J)
- ▼ obstructing the Scheme Administrator (section 97JA)
- ▼ supplying false or misleading information (section 97JB).

The integrity and verification of final certificate creation was a crucial aspect of managing final compliance obligations of Abatement Certificate Providers during 2012. We took a risk based approach in managing final compliance obligations, subjecting each accreditation to a risk analysis to mitigate the risk of invalid certificate creation (refer Section 2.2).

Among the 151 accreditations that were accredited for all or part of the year, there were 11 instances of contravention. All instances were relatively minor in nature and involved the improper creation of certificates. The contraventions were discovered either through voluntary declaration by the Abatement Certificate Provider, by our administration processes, or the compliance audit process. The sections below provide more detail on the contraventions and how they were addressed.

### 4.2.1 Improper creation of certificates

All of the 11 instances of improper creation of certificates involved the over-creation of certificates. These instances involved 11 Abatement Certificate Providers. Table 4.1 lists the different causes of these instances. It indicates that all of the instances of over-creation were minor in nature, resulting from some form of data input error, incorrect calculation of calculation method or lack of attention to detail on the part of the Abatement Certificate Provider.

**Table 4.1 Contraventions involving improper creation of certificates in 2012**

Cause of improper creation	Number of accreditations	Number of certificates
Use of incorrect data (eg, default factor, other related data inputs)	3	24,199
Incorrect application of calculation method	1	7,417
Transcription errors	2	1,419
Both input and transcription errors	1	159
Administrative error (eg, the incorrect number of certificates or the incorrect vintage)	4	65
<b>2012 Totals</b>	<b>11</b>	<b>33,259</b>

All of the Abatement Certificate Providers involved agreed to forfeit the over-created certificates. This ensured that the number of certificates created and reported represents valid abatement.

#### 4.2.2 Voluntary forfeiture of certificates

Abatement Certificate Providers registered certificates on the GGAS Registry following completion of abatement activities. Certificates were restricted from trade or surrender until payment for certificate registration<sup>26</sup> was received. During 2012, a number of Abatement Certificate Providers chose to forfeit certificates that had been registered on the GGAS Registry in order to either avoid paying the certificate registration fee,<sup>27</sup> void an audit requirement, or to correct an error made while creating certificates. As a result, an additional 258,621 certificates were voluntarily forfeited by 5 Abatement Certificate Providers. These events do not represent improper creation of certificates.

#### 4.3 Accreditations approved in 2012

There were no accreditations approved during 2012 due to the closure of the scheme. Appendix B provides a detailed breakdown of the 348 accreditations approved since 2003.

#### 4.4 Accreditations amended in 2012

During 2012, we approved 14 amendments to existing accreditations. Most of these amendments were to Generation Rule accreditations and included one or more of the following:

- ▼ changes to the nominated number of certificates that could be created
- ▼ the addition or removal of Special Accreditation Conditions
- ▼ changes to the application of equations and/or methods used
- ▼ updating the description of generating systems
- ▼ for CS Rule accreditations, the removal of forests from sequestration pools.

#### 4.5 Accreditations cancelled in 2012

Due to the closure of GGAS, the majority of our work during 2012 was to manage the cancellation of 143 accreditations (Table 4.2). The majority of cancellations were accredited under the Generation Rule.

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<sup>26</sup> The Registry imposed a \$0.15 charge for the registration of each certificate (refer Section 6.1).

<sup>27</sup> Abatement Certificate Providers with outstanding registration fees were given the option to forfeit certificates, rather than pay the registration fee and complete the registration process.

Accreditations could be cancelled for several reasons, including one or more of the following:

- ▼ a corporate restructure or sale<sup>28</sup>
- ▼ the accredited activity is completed and has finished reducing greenhouse gas emissions
- ▼ an accreditation ceases to be eligible
- ▼ a request for cancellation from the Abatement Certificate Provider, and
- ▼ a breach of accreditation conditions.

In all cases, accreditations were cancelled following a request by the Abatement Certificate Provider.

**Table 4.2 Accreditations cancelled in 2012 by Rule**

<b>Rule and type</b>	<b>Accreditations cancelled</b>
Generation Rule	118
DSA Rule	15
LUAC Rule	9
CS Rule	1

#### 4.6 Accreditations remaining at the end of 2012

At the end of 2012, 8 Abatement Certificate Providers remained accredited under GGAS. With one exception,<sup>29</sup> these Abatement Certificate Providers advised that they were seeking, or intending to seek, accreditation under the CFI (refer Section 2.3) and preferred to remain accredited under GGAS.

These Abatement Certificate Providers and their accreditations are:

- ▼ Australian Forest Corporation Pty Ltd: The Rainforest Carbon Sink
- ▼ Blue-Leafed Mallee Limited: Blue-Leafed Mallee Carbon Sequestration Pool
- ▼ Boral Recycling Pty Ltd: Landfill Gas to Energy Facility, Deer Park
- ▼ CO2 Australia Limited: CO2 Australia Carbon Sequestration Pool
- ▼ Forestry Commission of NSW: Forests NSW Carbon Pool
- ▼ Go-Gen Australia Pty Ltd: Go-Gen Australia Sequestration Pool
- ▼ Mallee Carbon Limited: Mallee Carbon Sequestration Pool, and
- ▼ Woodlawn Bioreactor Energy Pty Ltd: Woodlawn Bioreactor.

<sup>28</sup> This often required a new accreditation for the same project under the new owner or generator's name.

<sup>29</sup> The accreditation of Australian Forest Corporation Pty Ltd will be cancelled once documentation from Australian Forest Corporation Pty Ltd is completed.

These Abatement Certificate Providers will remain accredited under GGAS until they request cancellation or there is a breach of accreditation conditions<sup>30</sup>, or the GGAS legislation is repealed. While they remain accredited, they must continue reporting their accreditation obligations to the Scheme Administrator as specified in their accreditation conditions.

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<sup>30</sup> Clause 73HC of the *Electricity Supply (General) Regulation 2001* specifies the grounds for cancellation of an accreditation.

## 5 | Audit activity

Legislation provided us with wide auditing powers in exercising the functions of Scheme Administrator and Compliance Regulator. The audit and compliance framework helped provide assurance that GGAS operated in accordance with the relevant legislation, that information provided by GGAS participants was reliable, and that certificate creation was backed by real greenhouse gas reductions.

For audits of Abatement Certificate Providers, we used a risk-based approach to determine the audit regime for a particular company. We considered a range of factors, including the company's size and previous compliance history, the complexity of the project, the calculation methodology to be used, and the number of certificates to be created.

For audits of Benchmark Participants, there were fewer variables within the risk assessment. We adopted a stringent approach by requiring that all benchmark statements were audited, with exemptions given on a case-by-case basis.

The section below provides a summary of audit activity in 2012. The subsequent sections describe the key features of the audit and compliance framework – including the Audit and Technical Services Panel, the selection and management of audits, and the compliance and audit monitoring strategy adopted for Abatement Certificate Providers.

### 5.1 Summary of audit activity

In managing final obligations of Abatement Certificate Providers, we applied a risk matrix to each accreditation that compared the consequence of invalid certificate creation against the likelihood of invalid certificate creation. Based on the risk category outcome, Abatement Certificate Providers were required to conduct a final audit of their accreditation (high risk outcome) or were exempt from an audit (medium risk outcome but with a good compliance history or low risk outcome) (refer Section 2.2).



Although we offered exemptions and bundled audits wherever possible (refer Section 2.1), the number of audits conducted during the final year of GGAS operation from 1 January to 30 June was similar to the full year period of 2011. This was primarily due to the outcomes of our risk assessment strategy (refer Section 2.2) and the requirement of most Abatement Certificate Providers to conduct an audit within 3 months of scheme closure.

During 2012, we managed 62 audits, including audits of benchmark statements, audits of accreditations initiated by us as Scheme Administrator (eg, pre-registration audits or spot audits), and audits of accreditations initiated by Abatement Certificate Providers to comply with their conditions of accreditation. These audits included 23 benchmark statements and 109 accreditations (Table 5.1).

As Scheme Administrator, we initiated 3 audits comprising one Performance Improvement Testing Regime (PITR) review audit, one NGAC creation audit and one pre-registration audit. The total cost of these audits was approximately \$43,000.

**Table 5.1 Number of audits undertaken in 2012**

	2011	2012 <sup>a</sup>
<b>Benchmark statement audits</b>		
Number of audits	24	23
Number of benchmark statements covered	24	23
<b>Accreditation audits initiated by the Scheme Administrator</b>		
Number of audits	4	3
Number of accreditations covered	4	3
<b>Accreditation audits initiated by Abatement Certificate Providers</b>		
Number of audits	42	36
Number of accreditations covered	107	106
<b>Total number of audits</b>	70	62
<b>Total benchmark statements and accreditations covered</b>	135	132

<sup>a</sup> Represents the 6 months period from 1 January to 30 June 2012.

## 5.2 Audit and Technical Services Panel

The Audit and Technical Services Panel (the panel) was established to undertake audit activities for GGAS participants, the Compliance Regulator and the Scheme Administrator, and to provide technical services to the GGAS Committee as required. In March 2012, one new firm was added to the panel, increasing the number of members to 27 (Table 5.2). There are 2 categories of panel members:

- ▼ Audit and Technical Service providers, which were approved by the GGAS Committee to perform audits under GGAS, and could also provide technical services.

- ▼ Technical Services providers, which provided technical services only.

Firms could apply to become a member of the panel at any time, and their applications assessed against specific selection criteria. Once appointed, they could be engaged to provide specific services and undertake these services in accordance with an Audit and Technical Services Panel Agreement (the panel agreement).

**Table 5.2 Membership of the Audit and Technical Services Panel during 2012**

<b>Audit and Technical Services providers</b>	<b>Technical Services providers</b>
Aurecon (formerly Connell Wagner)	Abatement Solutions - Asia Pacific
Beca Pty Ltd	BES Australia Pty Ltd
Clear Environment	Energeering Pty Ltd
Deloitte Touche Tohmatsu	Energy Futures Australia
DNV Certification	Energy Strategies
Energetics	George Wilkenfeld & Associates
Environ Australia Pty Ltd	HRL Technology
Environmental Resources Management	Power Visions
Ernst & Young	WorleyParsons
GHD	
Hyder Consulting	
KPMG	
Perenia	
PriceWaterhouse Coopers	
Protiviti	
Queensland Environment Pty Ltd (trading as PAEHolmes)	
Sinclair Knight Merz	
URS Australia	

### 5.3 Selection and management of auditors

Depending on the type of audit being conducted, IPART (as Scheme Administrator), the Abatement Certificate Provider or the Benchmark Participant were responsible for selecting and engaging the auditor.

As Scheme Administrator, we normally selected and engaged auditors for audits associated with applications for accreditation (pre-accreditation audit), where a significant change to an accreditation was requested by an Abatement Certificate Provider, or where a non-compliance event resulted in a tightening of audit requirements (eg, where an audit was required before NGACs can be registered).

In these cases, we selected the auditor on a competitive basis, by seeking a detailed scope of works and fixed quotes from up to 3 panel members. We then engaged the selected the auditor to perform the required audit, and the Abatement Certificate Provider or applicant was required to pay the agreed audit fee prior to the commencement of the audit.

More generally, the participant selected and engaged the auditor for audits of certificate creation and annual greenhouse gas benchmark statements. However, in these cases, the engagement was subject to our approval of the detailed scope of works for the audit and the selected auditor.

All audits were undertaken to provide assurance that GGAS was operated in accordance with the relevant legislation and that information provided by GGAS participants was verified.

The panel agreement also established a unique arrangement for the conduct of audits whereby, regardless of who engaged the auditor, the auditor's primary duty of care was to conduct the audit on our behalf as the Scheme Administrator or Compliance Regulator. This was done via a deed poll (signed by the scheme participant) which identified the auditor and scope of services, and nominated IPART as the primary client for the audit. In comparison, under usual contractual arrangements, the duty of care is owed to the engaging party.

The *Electricity Supply (General) Regulation 2001* (the Regulation) stated that GGAS participants bear the cost of audits, even in the circumstance where we, as Scheme Administrator, selected and engaged the auditor.

#### **5.4 Compliance and performance monitoring strategy**

The *Compliance and Performance Monitoring Strategy for Abatement Certificate Providers* was developed to:

- ▼ provide transparency in the administration of GGAS
- ▼ help Abatement Certificate Providers understand their obligations under GGAS
- ▼ minimise the incidence of invalid creation of certificates
- ▼ provide cost-effective compliance options
- ▼ encourage a culture of compliance among participants
- ▼ provide for credible enforcement options in the event of non-compliance.

The strategy set out how we monitored Abatement Certificate Providers' performance through a combination of annual reports and audit requirements tailored to the individual provider's circumstances. The strategy was designed to be risk-based and flexible so that, over time, we were able to recognise good compliance performance and, if appropriate, relax an Abatement Certificate Provider's compliance monitoring regime.

Following the announcement of GGAS closure, Abatement Certificate Providers were given a number of options depending on individual accreditation conditions and certificate creation. Abatement Certificate Providers could choose to:

- ▼ include 2012 vintage certificates in audits of 2011 vintage certificates
- ▼ forego creation of 2011 and 2012 vintage certificates and seek exemption from audit obligations
- ▼ voluntarily forfeit all 2011 and 2012 vintage certificates and seek exemption from audit obligations.

Twelve Abatement Certificate Providers chose not to create 2011 and 2012 vintage certificates and were therefore not required to perform audits of their activities.

## 6 GGAS Registry – registration, ownership and surrender of certificates

Under the Regulations, IPART (as Scheme Administrator) was required to maintain a register of Abatement Certificate Providers and certificate registration and ownership. When the scheme commenced in 2003, we engaged Logica to design a registry that would enable us to fulfil this function. We also appointed Logica to operate the GGAS Registry. Since then, Logica has continued to work with us, and has managed numerous upgrades to the GGAS Registry.

The sections below provide an overview of certificate registration and surrender activity during 2012, and over the life of GGAS. With the closure of GGAS, certificate registration data represent final and complete data for GGAS, current as at 30 November 2012.

### 6.1 What is the GGAS Registry?

The GGAS Registry is an online database, which was an important tool for administering GGAS and a valuable source of information for participants. It can be found at <https://www.ggas-registry.nsw.gov.au>, and can be accessed by all GGAS participants and members of the public. Its basic functions include:

- ▼ listing details of accreditations and projects in both GGAS and the ESS
- ▼ facilitating registration and transfer of certificates
- ▼ listing details and tracking ownership of certificates
- ▼ allowing all participants to surrender certificates to meet mandatory obligations or personal offset schemes.

The GGAS Registry records information about each certificate, including the entity, Rule and project type associated with it, the vintage and registration date. It also tracks the certificate status (live, surrendered, forfeited) and ownership history. Each certificate represents 1 tonne of carbon dioxide equivalent emissions. All certificates are equal and once surrendered, cannot be reused.

The GGAS Registry imposed a \$0.15 charge for the registration of each certificate. This charge was intended to cover the cost of establishing, operating and maintaining the GGAS Registry over the life of GGAS, as well as to partially and indirectly fund some of our administration activities. For the first half of 2012, our net cost of administering both GGAS and ESS was approximately \$1.4

million. This cost is offset through certificate registration fees which amounted to \$3.6 million and was paid to Consolidated Revenue.

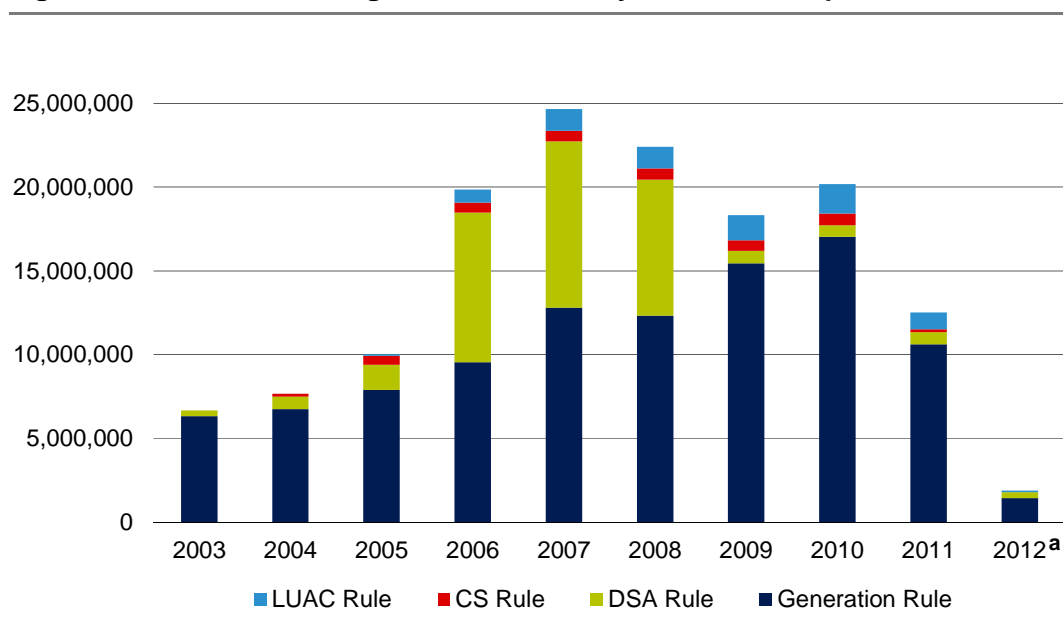
## 6.2 Trends in certificate registration

The first GGAS certificate was registered under the DSA Rule on 25 November 2003. Over the life of GGAS, the majority of certificates were registered from projects under Generation Rule, representing almost 70% of all certificates (Table 6.1). With the exception of 2006-08, Generation Rule certificates represented at least 75% of the certificates registered each year. The large numbers of certificates under the DSA Rule in 2006-08 were the result of significant growth in energy efficiency activity, creating a peak in certificate supply during these years (refer Section 7.1). Figure 6.1 shows the certificate registration for each year of GGAS operation.

Due to the commencement of the national carbon pricing mechanism, certificate registration declined significantly in 2011 and 2012 (Table 6.1). This 18-month period represented just under 10% of total certificates registered over the life of GGAS.

The last certificate was registered on 31 August 2012 – the closing date for certificate registration. Over the life of GGAS, over 144 million certificates were registered (Table 6.1) for both NSW and ACT schemes.

**Figure 6.1 Certificate registration for each year of GGAS operation**



<sup>a</sup> Represents 6 months of activity from 1 January to 30 June 2012.

**Table 6.1 Number of certificates registered since 2003 by rule**

Vintage	Generation Rule	DSA Rule	CS Rule	LUAC Rule	Total
2003	6,317,835	345,141	0	0	6,662,976
2004	6,744,232	742,233	166,005	0	7,652,470
2005	7,879,171	1,509,199	538,471	94,277	10,021,118
2006	9,548,179	8,932,172	587,601	790,460	19,858,412
2007	12,813,319	9,925,197	632,561	1,285,645	24,656,722
2008	12,328,328	8,114,957	669,192	1,298,033	22,410,510
2009	15,454,992	743,644	623,020	1,517,237	18,338,893
2010	17,028,839	690,046	702,644	1,759,380	20,180,909
2011	10,618,360	723,322	161,614	1,010,588	12,513,884
2012 <sup>a</sup>	1,424,483	364,537	0	86,068	1,875,088
<b>Total</b>	<b>100,157,738</b>	<b>32,090,448</b>	<b>4,081,108</b>	<b>7,841,688</b>	<b>144,170,982</b>
% of total	69.5%	22.3%	5.4%	2.8%	100%

<sup>a</sup> Represents 6 months of activity from 1 January to 30 June 2012.

**Note:** Amounts may be less than previously reported due to forfeiture of certificates.

### 6.2.1 Source of Generation Rule certificates

Under GGAS, generating systems are assigned to certain categories (A, B, C or D), which dictate the approach to NGAC creation and the accordant NSW Production baseline. (For information on these categories, see Appendix A.)

Over the life of GGAS, Category A projects were a steady source of Generation Rule certificates, but declined in 2010 due to legislation to cease this abatement activity under GGAS from 1 July 2010. In contrast, Category D became an increasingly significant source of Generation Rule certificates, and over the life of GGAS represented the majority of Generation Rule certificates at 42%. Category B was the lowest source of Generation Rule certificates (Figure 6.2).

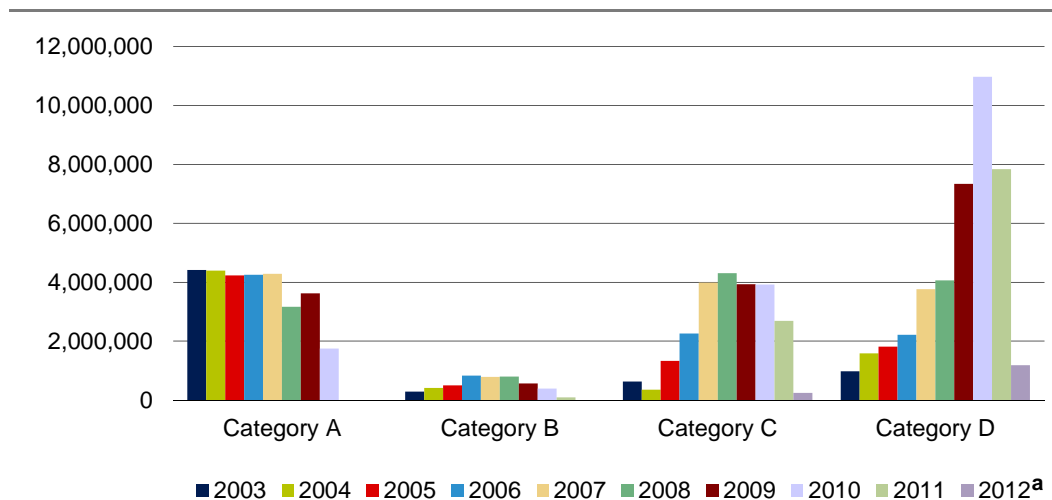
Fuels used in generating systems range from biomass (including bagasse), hydropower, natural gas, coal, and methane derived from coal mines or landfill. Figure 6.3 shows Generation Rule certificate registration for the 4 most common fuel types. It shows generation projects that involve natural gas<sup>31</sup> were the dominant source of Generation Rule certificates in recent years. The reasons for this are threefold:

1. Natural gas has historically been used as a peaking fuel for generation, but in recent times it has been increasingly used to provide mid to base load power generation.
2. The extraction of natural gas as fuel, particularly coal seam methane in South East Queensland, has increased substantially in recent years resulting in additional plants being commissioned.

<sup>31</sup> Coal seam methane is treated as natural gas under GGAS.

- Gas generators in Queensland have the option of either participating in the QGS<sup>32</sup> or GGAS, as long as they do not claim benefits from both schemes for the same MWh of generation. When prices for GECs<sup>33</sup> were above the trading price for NGACs, companies will create GECs. Historically, NGACs have generally traded at higher spot prices than GECs, although this was not the case from mid-July 2011 onwards, when the situation was reversed.

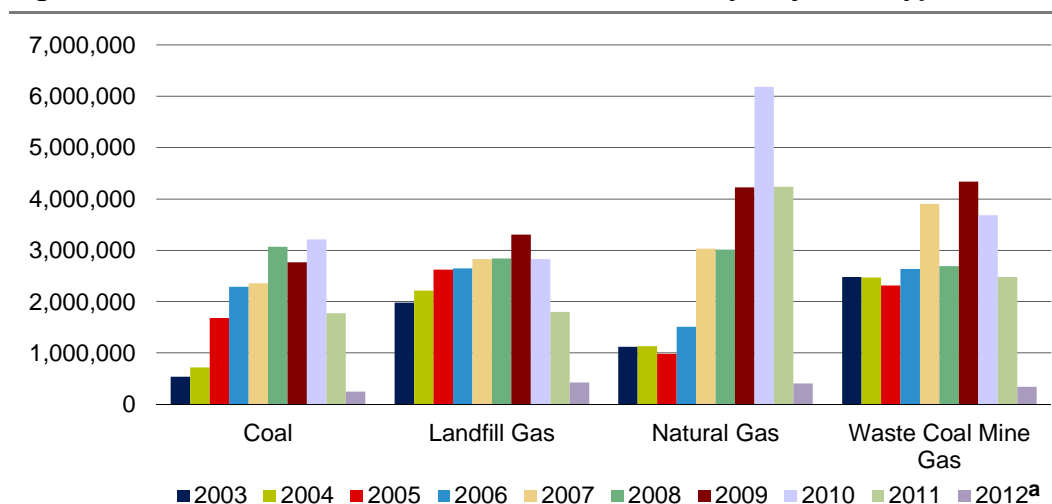
**Figure 6.2 Source of Generation Rule certificates by category**



<sup>a</sup> Represents 6 months of activity from 1 January to 30 June 2012.

**Note:** See Appendix A for a description of the Generation Rule categories.

**Figure 6.3 Source of Generation Rule certificates by major fuel types**



<sup>a</sup> Represents 6 months of activity from 1 January to 30 June 2012.

Table B.8 in Appendix B provides data on certificate registration by category of generator and fuel type over the life of GGAS.

<sup>32</sup> Queensland Gas Scheme.

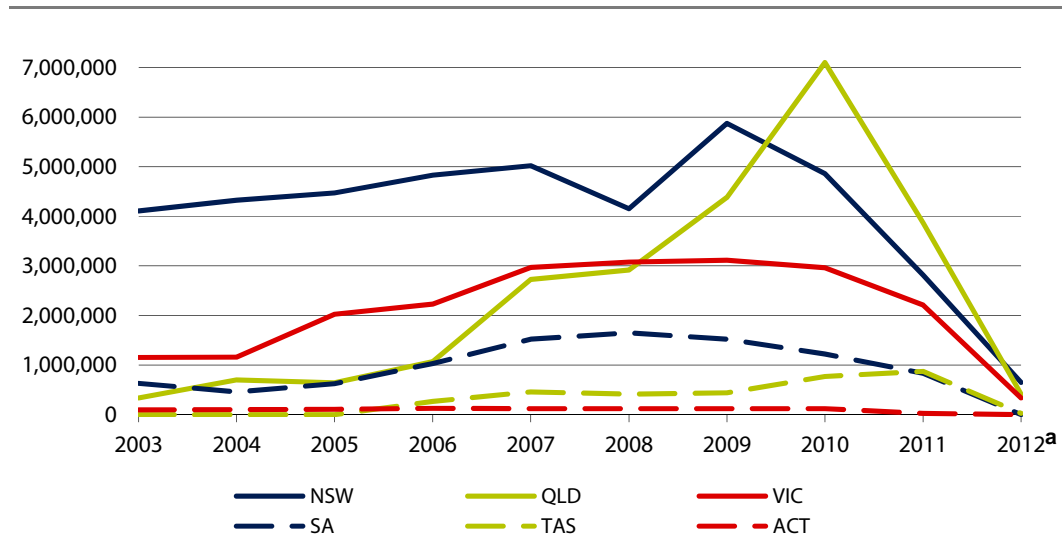
<sup>33</sup> Gas electricity certificates created under QGS.



Generation Rule certificates can be created and registered for abatement activities outside of NSW and the ACT if the generating system involved is connected to the NSW and ACT electricity grids via the national electricity grid. Figure 6.4 shows Generation Rule certificates by the jurisdiction in which the abatement activities took place. With the exception of 2010-11, NSW was the highest source of Generation Rule certificates each year. Overall the majority of Generation Rule certificates were sourced from activities in NSW, representing 41% of all certificates, followed by Queensland with 24% and Victoria with 21%.

Table B.9 in Appendix B provides data on certificate registration by category of generator and jurisdiction.

**Figure 6.4 Source of Generation Rule certificates by jurisdiction**



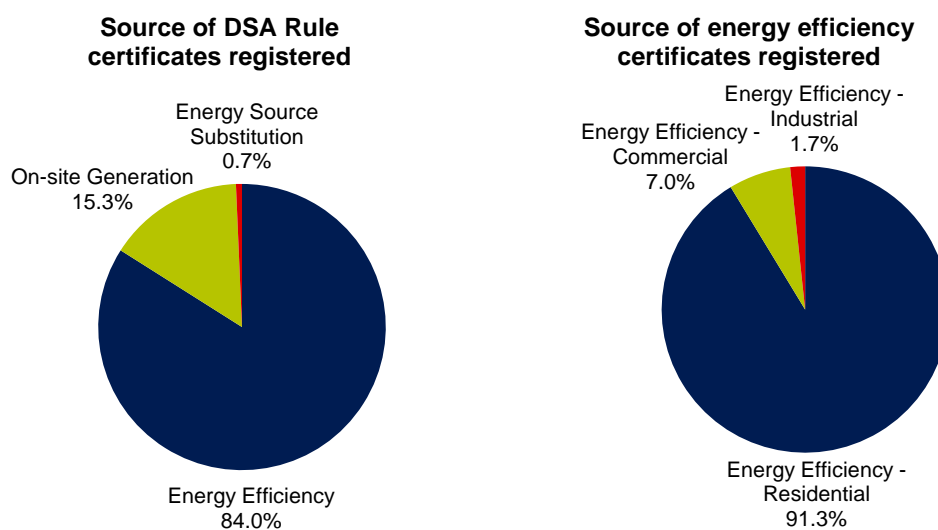
<sup>a</sup> Represents 6 months of activity from 1 January to 30 June 2012.

### 6.2.2 DSA Rule certificates

Over the life of GGAS, the majority of DSA Rule certificates (84%) were sourced from energy efficiency projects during 2006-08, creating a peak in certificate supply during these years (refer Section 7.1). The remainder were mainly on-site generation projects representing 15% of DSA Rule certificates registered (Figure 6.5).

Of the energy efficiency projects, nearly all (91%) certificates registered were from residential projects, mostly the installation of compact fluorescent lamps (Figure 6.5).

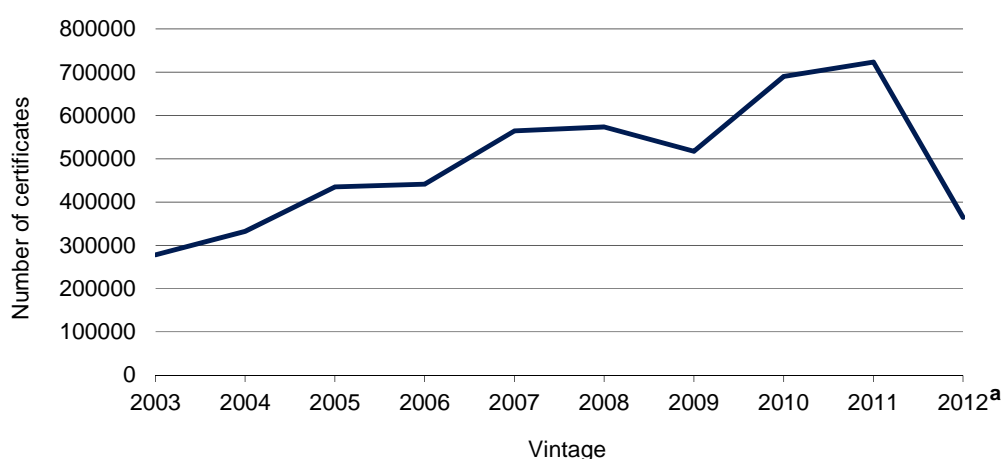
**Figure 6.5 Source of DSA Rule certificates**



Since 1 July 2009, certificate registration under the DSA Rule was only allowed under the Generation Emissions Method (on-site generation). The number of Generation Emissions Method certificates registered increased slightly each year until 2012 (Figure 6.6). Virtually all of these certificates have been created through on-site generation projects in the industrial sector.

Tables B.10 and B.11 in Appendix B provides data on certificate registration under the DSA Rule.

**Figure 6.6 Certificate registration under Generation Emissions Method of the DSA Rule**



<sup>a</sup> Represents 6 months of activity from 1 January to 30 June 2012.

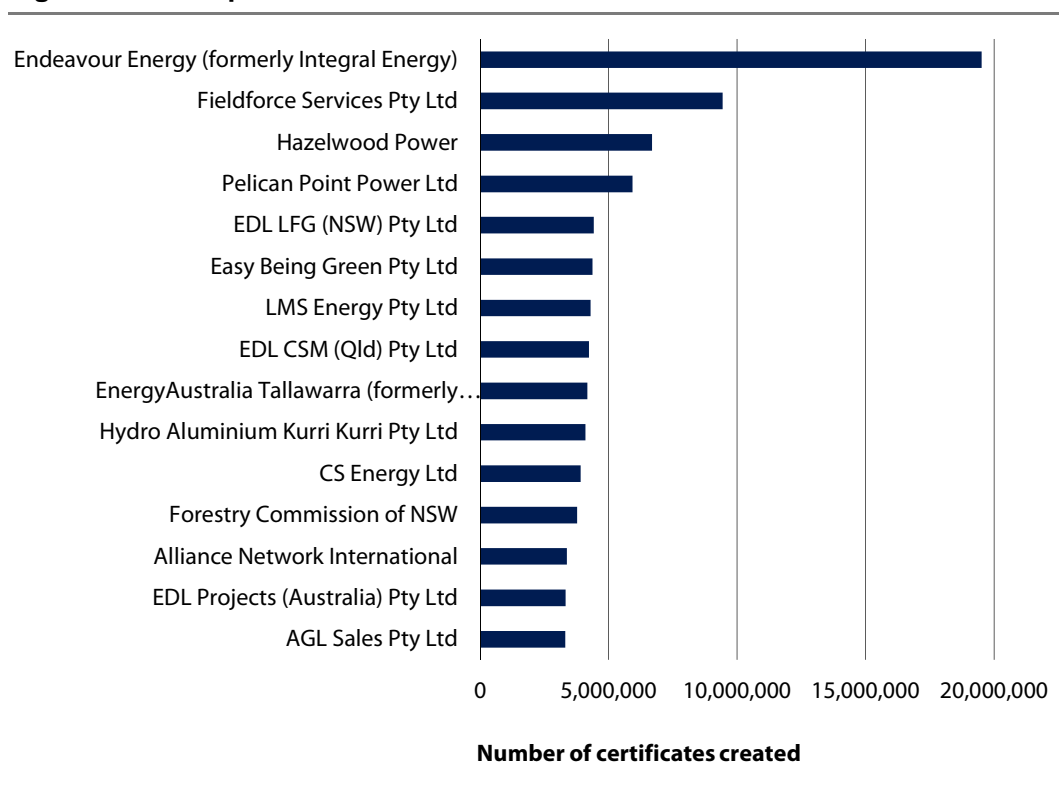
### 6.2.3 CS Rule and LUAC Rule certificates

With only a small number of Abatement Certificate Providers and consistent certificate registration each year, further breakdown of CS Rule and LUAC Rule registration is not included here. For certificate registration history by accreditations under these Rules, refer to Appendix B, Tables B.37 and B.38.

### 6.3 Certificate registration by Abatement Certificate Provider

Over the life of GGAS, Endeavour Energy registered just under 20 million certificates and was the Abatement Certificate Provider to register the most certificates. Fieldforce Services was the second highest provider, registering just under 10 million certificates from energy efficiency projects in the residential and commercial sectors. The third highest provider was Hazelwood Power with just under 7 million certificates, followed by Pelican Point with just under 6 million certificates registered (Figure 6.7).

**Figure 6.7 Top 15 creators of certificates**



## 6.4 Certificates surrendered

Table 6.2 shows the trends in certificates surrendered and the balance of certificates that were 'live' and available for surrender at the end of each year. Following GGAS closure, the balance of 10.7 million live certificates will remain available for surrender in the voluntary market for the foreseeable future (refer Section 6.5). However, of these certificates, just under 1 million are LUACs held by previous Benchmark Participants and are not transferrable.

**Table 6.2 Total certificates surrendered and balance to be surrendered by vintage/compliance year<sup>a</sup>**

<b>Certificate vintage/ Compliance year</b>	<b>Certificates registered</b>	<b>Certificates surrendered</b>	<b>Balance to be surrendered<sup>b</sup></b>
2003	6,662,976	1,166,866	5,496,110
2004	7,652,470	5,037,847	8,110,733
2005	10,021,118	8,322,356	9,809,495
2006	19,858,412	12,424,062	17,243,845
2007	24,656,722	17,336,184	24,564,383
2008	22,410,510	22,671,606	24,303,287
2009	18,338,893	23,297,876	19,344,304
2010	20,180,909	18,854,443	20,670,770
2011	12,513,884	16,828,906	16,355,748
2012 <sup>c</sup>	1,875,088	7,577,585	10,653,251
<b>Total</b>	<b>144,170,982</b>	<b>133,517,731</b>	<b>10,653,251</b>

<sup>a</sup> Includes surrenders to ACT Compliance Regulator and voluntary surrenders as shown in Table 6.3.

<sup>b</sup> Accumulated values.

<sup>c</sup> Represents 6 months of activity from 1 January to 30 June 2012.

## 6.5 Voluntary surrender market

The GGAS Registry allows any member of the public to own NGACs which can be surrendered to offset emissions – this process is referred to as voluntary certificate surrender. The reasons for voluntary surrender vary and are often undisclosed. However, in general certificates are surrendered to offset flight, vehicle and electricity emissions and to meet carbon neutrality benchmarks.

Since the start of GGAS, a total of 2,126,596 certificates have been voluntarily surrendered by 650 participants, including both organisations and individuals.

Organisations that voluntarily surrendered certificates in 2012<sup>34</sup> include:

- ▼ Carbon Banc Limited
- ▼ Green Pass Australia Pty Ltd
- ▼ Melbourne Water Corporation
- ▼ nlc Pty Ltd, and
- ▼ Sydney Water.

Table 6.3 shows how voluntary surrenders have varied from year to year.

**Table 6.3 Total certificates voluntarily surrendered**

Compliance year	Generation Rule	DSA Rule	CS Rule	Total
2003	0	0	0	<b>0</b>
2004	0	0	0	<b>0</b>
2005	5,000	100	0	<b>5,100</b>
2006	0	1,397	1,263	<b>2,660</b>
2007	10,853	32,593	6,452	<b>49,898</b>
2008	383,469	72,701	31,920	<b>488,090</b>
2009	120,211	130,585	3,801	<b>254,597</b>
2010	160,123	186,880	7,005	<b>354,008</b>
2011	306,875	231,982	89,831	<b>628,688</b>
2012 <sup>a</sup>	36,618	305,261	1,676	<b>343,555</b>
<b>Total</b>	<b>1,023,149</b>	<b>961,499</b>	<b>141,948</b>	<b>2,126,596</b>

<sup>a</sup> Represents surrenders as at 30 November 2012. 2012 figures are likely to change while the voluntary surrender window remains open.

Following the closure of GGAS, there were 9.7 million unsurrendered NGACs for use in the voluntary market. We will continue to maintain the GGAS Registry in its current form as long as it is practical and feasible to do so. This means that participants will be able to transfer and voluntarily surrender NGACs in the usual way into the future. In addition, previous elective Benchmark Participants are able to voluntarily surrender LUACs (Refer Section 2.4).

While the GGAS Registry remains in its current form, historical data will also remain available to view.

<sup>34</sup> As at 30 November 2012.

## 7 Supply and demand for certificates

Each year, we have reported on projected supply and demand for certificates. With the closure of GGAS, there is no further need for projections, however a wrap-up of demand and supply during 2012, and over the life of GGAS, provides an appropriate closing chapter to this last compliance and operation report.

In our 2011 report, we reported that although supply had fallen below, or just met, demand during 2009-2011, the oversupply during earlier years would more than assist in meeting projected demand for the 2012 compliance period.<sup>35</sup> This projection was realised, despite a significant (85%) decrease in supply during 2012, primarily due to commencement of the national carbon pricing mechanism (refer Section 1.1) and options offered to Abatement Certificate Providers to avoid final audits of certificate creation.

During 2012, the oversupply of certificates and considerable uncertainty in the market affected the NGAC spot price, with the price declining to a historical low of \$0.18 in June 2012. The spot price did not recover and ranged between \$0.15 and \$0.20 for reported trades<sup>36</sup> over the final months of GGAS activity. The surplus of certificates remaining at GGAS closure are available for use in the voluntary surrender market.

### 7.1 Demand and supply

Our projected supply of certificates for 2012 of approximately 2.5 million<sup>37</sup> was relatively close to the amount actually created of approximately 1.9 million and considerably less than 2011 supply of approximately 12.5 million (refer Table 6.1).

Despite this significant reduction in 2012 supply, the surplus of certificates created in previous years<sup>38</sup> resulted in approximately 10.7 million unsurrendered certificates at GGAS closure. These certificates (with the exception of 955,270

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<sup>35</sup> IPART, *Compliance and Operation of the NSW Greenhouse Gas Reduction Scheme during 2011*, p 40.

<sup>36</sup> Data source: NextGen's 'The Green Room' market reports, published by NGES (see [www.nges.com.au](http://www.nges.com.au)).

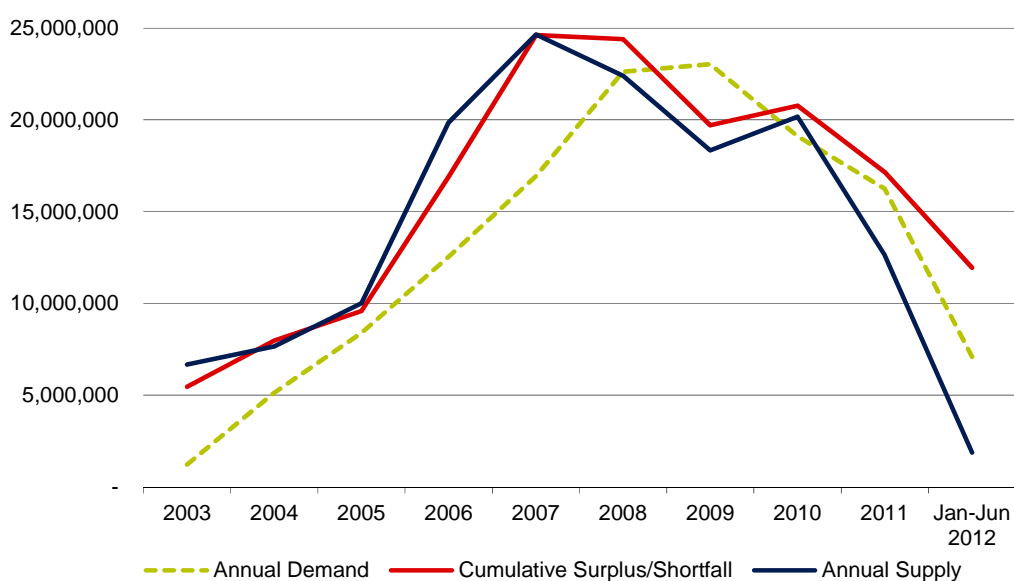
<sup>37</sup> IPART, *Compliance and Operation of the NSW Greenhouse Gas Reduction Scheme during 2011*, p 39.

<sup>38</sup> As certificates do not expire, those created for a particular vintage could be surrendered against a compliance obligation for any year thereafter. For example, a certificate of 2004 vintage could be surrendered against a compliance obligation in any year from 2005 onwards (including 2012).

unsurrendered LUACs that are non-transferable) will remain available for trade on the voluntary market for the foreseeable future (refer Sections 6.5 and 7.3).

Figure 7.1 shows the levels of supply (both actual and cumulative) and demand for certificates over the life of GGAS, concluding with the final 6-month period in 2012. The data include the NSW and ACT schemes combined.

**Figure 7.1 Supply and demand for certificates over the life of GGAS**



**Note:** As at 30 September 2012.

Over the life of GGAS, there were two peaks in supply of certificates. The first occurred in 2007 as a result of significant growth in energy efficiency activity under the DSA Rule, in particular the distribution of compact fluorescent lamps. This activity declined in late 2008 following an amendment the DSA Rule, also affecting supply. The second, smaller, peak in 2010 was predominantly due to commissioning of large gas plants in NSW (Tallawarra Power Station) and interstate (Moranbah & Darling Downs Power Stations). This peak occurred despite cessation of Category A generation after 1 July 2010. During the final years of GGAS, supply declined significantly as transition to a national carbon pricing mechanism and the continuing certificate surplus became increasingly clear.

Demand for certificates follows a similar pattern to supply with one peak in 2009 due to a combination of the:

- ▼ steady Greenhouse Gas Benchmark target at 7.27t CO<sub>2</sub>-e per capita from 2007,<sup>39</sup> and
- ▼ 2 year lag adjustment for energy savings from previous DSA Rule certificate registration in the calculation of annual GGAS compliance.<sup>40</sup> This adjustment effectively ceased after 2010 as a direct result of the decreasing level of DSA Rule certificate registration and subsequent cessation of all energy efficiency related activity after 1 July 2009.

In addition to projections of supply and demand, reported through our compliance and operation reports and quarterly newsletters, historical registration of certificates was publicly available on the GGAS Registry. The availability of this data assisted market participants to undertake their own projections of supply and demand.

## 7.2 NGAC spot price

Most NGAC trades were bilateral trades, where the price was agreed between parties and not publicly available. Although NGAC spot trades constituted only a small proportion of total NGAC trades, it provided a useful, publicly available, guide to broad movements in the NGAC price during the life of GGAS.

Figure 7.2 illustrates the NGAC spot price against the effective NGAC ceiling price over the life of GGAS. The ceiling price is equivalent to the greenhouse penalty in a given year inclusive of company tax (as payment of the penalty is not tax deductible, unlike the purchase of certificates).

Declines and intermittent recoveries in the NGAC spot price over recent years generally reflected the accumulated excess supply of certificates, and market uncertainty concerning the introduction of a national carbon price signal at that point in time.

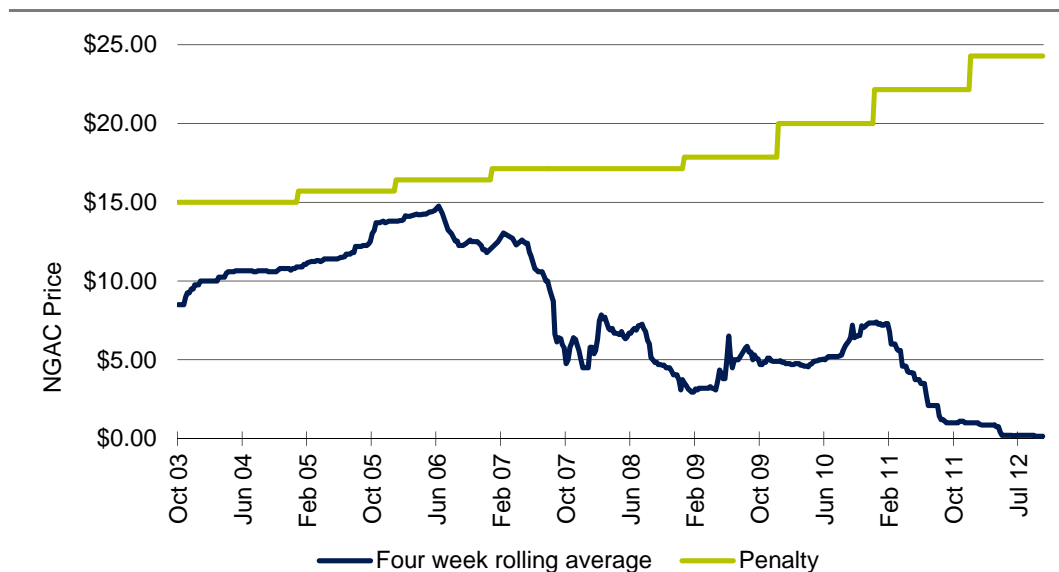
<sup>39</sup> Greenhouse Gas Benchmark targets progressively tightened from 8.65 tCO<sub>2</sub>-e per capita when GGAS commenced in 2003, to 7.27 tCO<sub>2</sub>-e per capita in 2007, after which it remained constant.

<sup>40</sup> The NSW electricity demand is adjusted by adding the electricity savings resulting from the creation of certificates under the DSA Rule 2 years earlier. For example, the savings associated with 2007 DSA Rule certificate creation are added to the 2009 NSW electricity demand. This adjustment was required to avoid Benchmark Participants claiming two separate benefits for the same energy savings from these DSA Rule projects. The benefits being that Benchmark Participants could surrender DSA Rule certificates to meet their targets, while future electricity demand is reduced, making future targets easier to achieve.



The first major NGAC spot price collapse occurred in April 2007 following the Commonwealth Government's announcement that a Carbon Pollution Reduction Scheme (CPRS) was to commence in July 2010. This resulted in the NGAC spot price declining from approximately \$13 to less than \$5. In contrast, there was a modest recovery in April 2010 following the announcement that the CPRS would be deferred until after 2012.

**Figure 7.2 Trends in the NGAC spot price – 2003 to 2012**



**Note 1:** This figure shows the historical 4 week rolling average of market spot prices for the period of October 2003 to September 2012 when NGACs were actively traded. This data accounts only for NGACs traded through NGES and may not reflect the price paid by NGAC buyers at the times shown.

**Note 2:** Ceiling price reflects the annual greenhouse penalty adjusted for company tax relative to NGAC price.

**Data source:** The Green Room, published by NGES (see [www.nges.com.au](http://www.nges.com.au)).

February 2011 marked the start of a consistent period of further decline. The spot price was \$7.30 at this point in time, when the Commonwealth Government announced its proposed national carbon pricing mechanism (to replace the CPRS). By mid-October 2011, the spot price had declined to a historical low of \$1.00, coinciding with the passage of carbon pricing legislation through the House of Representatives.

During the final GGAS period of 2012, the considerable uncertainty already existing in the market during 2011 was further exacerbated by additional concerns, such as:

- ▼ Whether GGAS would in fact cease upon commencement of a national scheme. This was confirmed by the NSW Government on 5 April 2012, via public announcement, with formal gazettal of the GGAS closure *Proclamation and Regulation* occurring on 11 May 2012.

- ▼ Whether compensation would be made available by the Commonwealth to holders of unsurrendered certificates at GGAS end (despite the Commonwealth having announced that this would not be the case).<sup>41</sup>
- ▼ The eligibility of, and extent to which, some accredited parties under GGAS could transition to the CFI, and whether abatement prior to 1 July 2012 could be recognised for credits under the CFI.
- ▼ The extent to which parties accredited under both GGAS and the QGS would create GECs (under the QGS) instead of NGACs. Historically, NGACs had traded at higher spot market prices than GECs, and as there can be no ‘double-dipping’ between schemes, NGACs had been preferred. However, from mid-July 2011 NGACs were trading below GEC prices on the spot-market.
- ▼ RECs could be surrendered in place of NGACs, reducing the demand for NGACs.

These considerations, coupled with an already oversupplied NGAC market, affected NGAC spot prices and certificate registration during 2012, with the spot declining to \$0.18 by June 2012. This value was considered to be the de-facto ‘floor price’, being almost equal to the cost of certificate registration of \$0.15. The spot price did not recover and ranged between \$0.15 and \$0.20 over the remaining period of GGAS activity.

### 7.3 Voluntary surrender market

Over the life of GGAS the voluntary surrender of certificates was a minor but important aspect of market activity. During this period, in excess of 2.1 million certificates were voluntarily surrendered by parties seeking to offset their own greenhouse gas emissions or meet their own individual targets (refer Table 6.3).

Following GGAS closure, the balance of live certificates remain available for trade (NGACs only) and surrender in the voluntary market for the foreseeable future. As such, the voluntary market will continue in its current form while certificates remain available for surrender.

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<sup>41</sup> GGAS legislation specifically stated that the NSW Government would not be liable for compensation to participants upon scheme closure – s.179A of the *Electricity Supply Act 1995*. Conjecture on compensation from the Commonwealth stemmed from previous arrangements proposed by the Commonwealth in regard to the earlier (but subsequently abandoned) proposal for a national scheme to start in mid-2010 (the CPRS).



## **Appendices**



## A Categories of the Generation Rule

Under GGAS, generating systems are assigned to certain categories, which dictate the approach to NGAC creation and the accordant NSW Production Baseline. Table A.1 details the types of generating systems by category and fuel source. Fuels used in generating systems range from biomass (including bagasse), hydropower, natural gas, coal, and methane derived from coal mines or landfill.

### Category A

Category A generating systems were those which pro-actively entered into power purchase agreements (PPAs) with electricity retailers under the previous NSW voluntary benchmarks scheme, and had a respective NSW Production Baseline as determined by the Generation Rule. In the case of Category A generating systems, the Deemed Retailer to the PPA (ie, the electricity retailer) was eligible for abatement for generation below the resultant baseline figure, while the generator (counter-signatory to the PPA) was eligible for abatement associated with generation above this baseline figure. Category A ceased to be an eligible activity, but was still defined in the Generation Rule.

### Category B

A Category B generating system was essentially an existing and prescribed NSW 'base-load' generating system, which in the case of a coal fired power station, effectively operated at an emissions intensity equal to, or greater than, the NSW Pool Coefficient. As such, it could not use the Relative Intensity Approach to create certificates, but could instead undertake efficiency improvements such as turbine upgrades or fuel switching, to improve the emissions intensity at which it operates. The extent to which the efficiency improvement was demonstrated (confirmed via performance monitoring and audit verification) determined the eventual numbers of certificates created.

### Category C

A Category C generating system was generally one that commenced operations prior to the announcement of GGAS and in the case of fossil fuel fired generating systems, had a NSW Production Baseline equal to its average annual output during the years 1997-2001. Under the Relative Intensity Approach, this category

## A Categories of the Generation Rule

of generation created certificates on the basis of each MWh (of lower emissions intensity generation) above its respective NSW Production Baseline Figure, reflecting the difference in emission intensity between the generation and the NSW Pool Coefficient.

### Category D

Category D generating systems (broadly, those commissioned after GGAS was first announced by the NSW Government in January 2002) were generally newer and ‘cleaner’ technologies and had a designated NSW Production Baseline of zero MWh. This effectively meant that using the Relative Intensity Approach, a generator for this category of power station could create certificates for each MWh (of lower emissions intensity generation) above its baseline, based on the difference in emission intensity between the generation and the NSW Pool Coefficient.

**Table A.1 Generating systems by fuel and source**

Category	Fuel source
Category A: Biomass	This type of plant burns biomass, including bagasse (sugar cane waste) and sawmill waste
Category A: Natural Gas	Natural gas (fossil fuel)
Category A: Waste Coal Mine Gas	Methane drained from mines as a result of coal mining operations (regardless of the period of time between draining the gas from the coal mine and use of the mine for coal mining operations) and includes coal seam gas drained from closed coal mines (fossil fuel)
Category A: Hydro	Hydropower
Category A: Landfill Gas	Gas derived from degradation of waste in landfills
Category B: Coal	Coal (fossil fuel)
Category C: Coal	Coal (fossil fuel)
Category C: Landfill Gas	Gas derived from degradation of waste in landfills
Category C: Natural Gas	Natural gas (fossil fuel)
Category C: Sewage Gas	Generation based on gas derived from sewage
Category D: Biomass	This type of plant burns biomass, including bagasse (sugar cane waste) and sawmill waste
Category D: Coal	Coal (fossil fuel)
Category D: Coal Seam Methane	Methane drained from (unmined) coal seams for the purposes of power generation (fossil fuel)
Category D: Landfill Gas	Gas derived from degradation of waste in landfills
Category D: Natural Gas	Natural gas (fossil fuel)
Category D: Waste Coal Mine Gas	Methane drained from mines as a result of coal mining operations (regardless of the period of time between draining the gas from the coal mine and use of the mine for coal mining operations) and includes coal seam gas drained from closed coal mines (fossil fuel)

## B GGAS Registry data

This section includes information on accreditations and certificates registered since 2003. This appendix contains 3 parts:

- ▼ Part B.1 provides accreditation statistics detailing numbers of new accreditations by Rule for each year that GGAS operated.
- ▼ Part B.2 provides a breakdown of certificates registered by categories of the Generation Rule and DSA Rule.
- ▼ Part B.3 provides a detailed breakdown of certificate registration for each accredited project in a given year. An asterisk (\*) beside the project name indicates that the project has been cancelled.

Data in this chapter are current as at 30 November 2012.

## B.1 Accreditation statistics

**Table B.1** Accreditations approved each year by rule

Rule	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Generation Rule	14	67	25	9	24	17	12	7	7	0	182
DSA Rule	3	48	43	17	19	10	1	8	0	0	149
LUAC Rule	1	0	1	2	4	1	1	0	0	0	10
CS Rule	0	1	3	1	1	1	0	0	0	0	7
<b>Total</b>	<b>18</b>	<b>116</b>	<b>72</b>	<b>29</b>	<b>48</b>	<b>29</b>	<b>14</b>	<b>15</b>	<b>7</b>	<b>0</b>	<b>348</b>

**Table B.2** Generation Rule accreditations approved each year by jurisdiction

Jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Australian Capital Territory	2	0	0	0	1	0	0	0	0	0	3
New South Wales	3	27	3	2	6	4	6	3	0	0	54
Queensland	0	14	4	4	3	6	3	0	5	0	39
South Australia	4	5	3	0	2	3	0	0	0	0	17
Tasmania	0	0	0	0	7	1	0	3	0	0	11
Victoria	5	21	15	3	5	3	3	1	2	0	58
<b>Total</b>	<b>14</b>	<b>67</b>	<b>25</b>	<b>9</b>	<b>24</b>	<b>17</b>	<b>12</b>	<b>7</b>	<b>7</b>	<b>0</b>	<b>182</b>



**Table B.3 Generation Rule accreditations approved each year by category and fuel type**

Category – type	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Category A – Biomass	0	3	0	0	0	0	0	0	0	0	3
Category A – Hydro	0	13	6	0	0	0	1	0	0	0	20
Category A – Landfill Gas	9	12	1	0	1	0	0	0	0	0	23
Category A – Natural Gas	0	2	3	0	0	0	0	0	0	0	5
Category A – Waste Coal Mine Gas	0	2	0	0	0	0	0	0	0	0	2
Category B – Coal	0	6	1	0	0	0	0	0	0	0	7
Category C – Biomass	0	0	0	0	0	1	0	0	0	0	1
Category C – Coal	0	2	0	2	2	1	0	0	1	0	8
Category C – Hydro	0	0	0	0	2	0	0	0	0	0	2
Category C – Landfill Gas	1	0	0	0	0	0	0	0	0	0	1
Category C – Natural Gas	0	2	6	0	2	4	0	1	0	0	15
Category C – Sewage Gas	0	1	0	0	0	0	0	0	0	0	1
Category D – Biomass	0	2	2	1	1	0	0	0	0	0	6
Category D – Coal	0	1	1	1	0	1	0	0	1	0	5
Category D – Coal Seam Methane	0	0	0	0	1	0	0	0	2	0	3
Category D – Landfill Gas	4	14	1	1	8	4	8	0	2	0	42
Category D – Natural Gas	0	3	3	2	5	5	2	5	1	0	26
Category D – Sewage Gas	0	0	1	0	0	0	0	1	0	0	2
Category D – Waste Coal Mine Gas	0	4	0	2	2	1	1	0	0	0	10
<b>Total</b>	<b>14</b>	<b>67</b>	<b>25</b>	<b>9</b>	<b>24</b>	<b>17</b>	<b>12</b>	<b>7</b>	<b>7</b>	<b>0</b>	<b>182</b>

**Table B.4 DSA Rule accreditations approved each year by calculation method**

Calculation method	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Generation Emissions Method	0	4	1	0	2	1	1	8	0	0	17
Default Abatement Factors Method	0	7	8	14	11	7	0	--	--	--	47
Metered Baseline Method - per unit of output	1	0	1	0	1	0	0	--	--	--	3
Metered Baseline Method - unaffected by output	0	0	1	1	0	0	0	--	--	--	2
Metered Baseline Method - NABERS scheme	0	1	1	0	1	1	0	--	--	--	4
Project Impact Assessment Method	2	36	31	2	4	1	0	--	--	--	76
<b>Total</b>	<b>3</b>	<b>48</b>	<b>43</b>	<b>17</b>	<b>19</b>	<b>10</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>149</b>

**Table B.5 DSA Rule accreditations approved each year by project type**

Calculation method	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
On-site Generation	0	4	1	0	2	1	1	8	0	0	17
Energy Efficiency	3	41	40	14	15	9	0	--	--	--	122
Energy Source Substitution	0	3	2	3	2	0	0	--	--	--	10
<b>Total</b>	<b>3</b>	<b>48</b>	<b>43</b>	<b>17</b>	<b>19</b>	<b>10</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>149</b>

**Table B.6 LUAC Rule accreditations approved each year by calculation method**

Calculation method	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Existing Plant Baseline Method	1	0	1	0	2	0	0	0	0	0	4
Plant Extension or New Plant Baseline Method	0	0	0	0	0	1	0	0	0	0	1
Specific Abatement Project	0	0	0	2	2	0	1	0	0	0	5
<b>Total</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>

**Table B.7 CS Rule accreditations approved each year**

Calculation method	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Carbon Sequestration Estimation Methodology	0	1	3	1	1	1	0	0	0	0	7

## B.2 Certificate registration statistics – Generation and DSA Rules

**Table B.8 Source of Generation Rule certificates by category and fuel type**

Category – fuel type	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Category A – Biomass	10,895	14,901	0	0	0	0	0	0	0	0	<b>25,796</b>
Category A – Hydro	132,869	123,844	148,176	160,941	77,148	94,977	120,164	50,504	0	0	<b>908,623</b>
Category A – Landfill Gas	1,216,141	1,327,350	1,379,695	1,319,360	1,284,691	1,228,279	1,222,469	600,524	0	0	<b>9,578,509</b>
Category A – Natural Gas	590,324	621,065	675,775	673,645	685,432	681,992	670,017	334,147	0	0	<b>4,932,397</b>
Category A – Waste Coal Mine Gas	2,468,419	2,301,104	2,029,783	2,096,753	2,235,167	1,156,935	1,611,392	762,919	0	0	<b>14,662,472</b>
Category B – Coal	286,985	418,581	498,952	831,451	784,624	794,859	562,143	387,913	91,762	0	<b>4,657,270</b>
Category C – Biomass	0	0	0	0	364,190	377,617	443,488	451,121	64,471	0	<b>1,700,887</b>
Category C – Coal	251,199	167,243	1,025,219	1,268,198	1,476,814	1,862,951	1,897,178	2,246,634	1,586,094	247,000	<b>12,028,530</b>
Category C – Hydro	0	0	0	80,000	0	0	0	0	0	0	<b>80,000</b>
Category C – Landfill Gas	31,571	0	0	0	0	0	0	0	0	0	<b>31,571</b>
Category C – Natural Gas	286,277	122,154	206,331	721,861	1,949,269	1,887,867	1,400,168	1,018,109	802,512	0	<b>8,394,548</b>
Category C – Sewage Gas	59,381	58,928	100,578	184,989	196,181	179,509	193,274	202,679	231,000	0	<b>1,406,519</b>
Category D – Biomass	542	10,976	30,521	35,165	40,562	38,298	42,297	41,817	21,160	0	<b>261,338</b>
Category D – Coal	0	130,665	159,493	191,641	94,889	409,428	304,311	576,039	96,302	0	<b>1,962,768</b>
Category D – Coal Seam Methane	0	0	0	0	12,978	29,744	16,575	376,914	4,816	2,370	<b>443,397</b>
Category D – Landfill Gas	732,187	889,934	1,241,413	1,329,685	1,545,181	1,612,264	2,080,422	2,229,742	1,799,452	425,634	<b>13,885,914</b>
Category D – Natural Gas	240,853	388,725	101,803	117,268	399,105	440,634	2,157,795	4,827,123	3,434,988	406,968	<b>12,515,262</b>
Category D – Sewage Gas	0	0	0	0	0	0	4,173	3,036	5,561	1,229	<b>13,999</b>
Category D – Waste Coal Mine Gas	10,192	168,762	281,432	537,222	1,667,088	1,532,974	2,729,126	2,919,618	2,480,242	341,282	<b>12,667,938</b>
<b>Total</b>	<b>6,317,835</b>	<b>6,744,232</b>	<b>7,879,171</b>	<b>9,548,179</b>	<b>12,813,319</b>	<b>12,328,328</b>	<b>15,454,992</b>	<b>17,028,839</b>	<b>10,618,360</b>	<b>1,424,483</b>	<b>100,157,738</b>

**Table B.9 Source of Generation Rule certificates by jurisdiction**

Jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Category A – New South Wales	3,272,785	3,129,409	2,911,523	2,992,008	3,134,325	2,062,179	2,543,517	1,222,833	0	0	<b>21,268,579</b>
Category A – Queensland	36,569	41,765	47,291	46,857	42,830	36,700	38,106	19,167	0	0	<b>309,285</b>
Category A – South Australia	334,162	372,471	410,540	392,389	354,894	310,464	298,255	148,032	0	0	<b>2,621,207</b>
Category A – Victoria	775,132	844,619	864,075	819,445	750,389	752,840	744,164	358,062	0	0	<b>5,908,726</b>
Category B – New South Wales	286,985	418,581	498,952	831,451	784,624	794,859	562,143	387,913	91,762	0	<b>4,657,270</b>
Category C – New South Wales	31,571	0	0	0	0	0	0	0	0	0	<b>31,571</b>
Category C – Queensland	0	48,351	86,290	198,094	704,017	716,997	747,332	794,088	135,572	0	<b>3,430,741</b>
Category C – South Australia	284,984	70,642	198,116	607,911	1,143,658	1,309,641	1,162,541	1,012,393	798,531	0	<b>6,588,417</b>
Category C – Tasmania	0	0	0	220,271	355,276	369,298	84,925	0	0	0	<b>1,029,770</b>
Category C – Victoria	311,873	229,332	1,047,722	1,228,772	1,783,503	1,912,008	1,939,310	2,112,062	1,749,974	247,000	<b>12,561,556</b>
Category D – Australian Capital Territory	94,198	99,268	110,062	126,431	120,976	123,250	122,471	121,000	25,435	0	<b>943,091</b>
Category D – New South Wales	517,184	775,677	1,060,731	1,003,320	1,101,578	1,295,840	2,768,948	3,246,608	2,726,041	651,652	<b>15,147,579</b>
Category D – Queensland	297,748	612,219	509,741	824,476	1,977,587	2,162,444	3,595,536	6,286,048	3,727,839	413,550	<b>20,407,188</b>
Category D – South Australia	12,135	17,524	17,780	32,480	22,819	27,005	60,180	62,346	35,083	0	<b>287,352</b>
Category D – Tasmania	0	0	0	45,121	103,810	41,909	356,436	769,721	870,582	23,332	<b>2,210,911</b>
Category D – Victoria	62,509	84,374	116,348	179,153	433,033	412,894	431,128	488,566	457,541	88,949	<b>2,754,495</b>
<b>Total</b>	<b>6,317,835</b>	<b>6,744,232</b>	<b>7,879,171</b>	<b>9,548,179</b>	<b>12,813,319</b>	<b>12,328,328</b>	<b>15,454,992</b>	<b>17,028,839</b>	<b>10,618,360</b>	<b>1,424,483</b>	<b>100,157,738</b>

**Table B.10 DSA Rule certificate registration by calculation method**

Calculation method	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Generation Emissions Method	278,397	332,221	435,216	441,440	564,204	573,773	517,267	690,046	723,322	364,537	<b>4,920,423</b>
Default Abatement Factors Method	7,741	334,562	1,002,992	8,377,582	9,200,268	7,375,518	116,691	–	–	–	<b>26,415,354</b>
Metered Baseline Method – baseline per unit of output	23,668	20,667	19,322	51,325	80,023	79,659	62,573	–	–	–	<b>337,237</b>
Metered Baseline Method – unaffected by output	0	1,615	4,187	5,910	6,111	5,997	4,122	–	–	–	<b>27,942</b>
Metered Baseline Method – normalised by NABERS	0	10,337	8,201	12,760	20,692	21,252	10,657	–	–	–	<b>83,899</b>
Project Impact Assessment Method	35,335	42,831	39,281	43,155	53,899	58,758	32,334	–	–	–	<b>305,593</b>
<b>Total</b>	<b>345,141</b>	<b>742,233</b>	<b>1,509,199</b>	<b>8,932,172</b>	<b>9,925,197</b>	<b>8,114,957</b>	<b>743,644</b>	<b>690,046</b>	<b>723,322</b>	<b>364,537</b>	<b>32,090,448</b>

**Table B.11 DSA Rule certificate registration by project type**

Project type	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
On-site Generation: Commercial	0	0	0	0	0	0	135	0	0	0	<b>135</b>
On-site Generation: Industrial	278,397	332,221	435,216	441,440	564,195	573,763	517,132	684,698	723,322	364,537	<b>4,914,921</b>
On-site Generation: Residential	0	0	0	0	9	10	0	0	0	0	<b>19</b>
Energy Efficiency: Commercial	22,720	40,249	47,924	67,755	868,049	809,682	32,509	–	–	–	<b>1,888,888</b>
Energy Efficiency: Industrial	35,572	32,867	36,814	66,818	99,709	103,155	77,177	–	–	–	<b>452,112</b>
Energy Efficiency: Residential	8,387	315,425	953,879	8,306,259	8,344,475	6,588,078	98,952	–	–	–	<b>24,615,455</b>
Energy Source Subs: Commercial	65	65	0	0	0	0	0	5,348	0	0	<b>5,478</b>
Energy Source Subs: Residential	0	21,406	35,366	49,900	48,760	40,269	17,739	0	0	0	<b>213,440</b>
<b>Total</b>	<b>345,141</b>	<b>742,233</b>	<b>1,509,199</b>	<b>8,932,172</b>	<b>9,925,197</b>	<b>8,114,957</b>	<b>743,644</b>	<b>690,046</b>	<b>723,322</b>	<b>364,537</b>	<b>32,090,448</b>

## B.3 Certificate registration statistics – by project

### B.3.1 Generation Rule certificate registration by type and project

**Table B.12 Category A: Biomass**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Essential Energy: Broadwater Generating System (NSW)*	10,895	13,178	0	0	0	0	0	0	0	0	24,073
Essential Energy: Harwood Cogeneration Plant (NSW)*	0	1,095	0	0	0	0	0	0	0	0	1,095
Essential Energy: Condong Cogeneration Plant (NSW)*	0	628	0	0	0	0	0	0	0	0	628

**Table B.13 Category A: Hydro**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Ausgrid: Glenbawn Hydro Generating System (NSW)*	10,735	10,843	10,926	11,114	1,243	1,326	9,497	8,130	0	0	63,814
EDL LFG (Vic) Pty Ltd: Clayton & Springvale LFG Generating System (VIC)*	0	0	0	0	0	0	5,820	0	0	0	5,820
EnergyAustralia (formerly TRUenergy Pty Ltd): Blue Rock Dam Hydro Generating System (VIC)*	0	0	6,717	4,433	2,025	4,093	4,234	2,254	0	0	23,756
EnergyAustralia (formerly TRUenergy Pty Ltd): Cardinia Dam Hydro Generating System (VIC)*	0	0	8,563	10,276	6,372	8,086	8,324	3,156	0	0	44,777
EnergyAustralia (formerly TRUenergy Pty Ltd): Eildon Pondage Hydro Generating System (VIC)*	0	0	2,357	12,424	3,998	6,883	6,721	4,545	0	0	36,928
EnergyAustralia (formerly TRUenergy Pty Ltd): Lake Glenmaggie Dam Hydro Generating System (VIC)*	0	0	2,972	2,315	714	6,289	6,278	2,650	0	0	21,218

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
EnergyAustralia (formerly TRUenergy Pty Ltd): Lake William Hovell Dam Hydro Generating System (VIC)*	0	0	3,107	266	3,971	3,567	4,038	1,485	0	0	16,434
EnergyAustralia (formerly TRUenergy Pty Ltd): Thomson Dam Hydro Generating System (VIC)*	0	0	7,786	15,850	7	369	0	0	0	0	24,012
Essential Energy: Copeton Hydro Generating System (NSW)*	20,206	1,538	12,054	18,971	14,360	15,683	16,066	4,256	0	0	103,134
Essential Energy: Burrendong Hydro Generating System (NSW)*	8,731	6,488	13,448	22,779	2,269	2,307	6,828	0	0	0	62,850
Essential Energy: Wyangala Hydro Generating System (NSW)*	3,934	0	448	0	0	0	0	0	0	0	4,382
Essential Energy: Oaky Hydro Generating System (NSW)*	2,700	2,346	2,366	6,778	5,402	12,008	12,172	2,594	0	0	46,366
Essential Energy: Nymboida Hydro Generating System (NSW)*	6,255	9,020	8,887	10,224	7,895	10,504	9,098	6,990	0	0	68,873
Origin Energy Electricity Ltd: Yarrawonga Hydro Generating System (VIC)*	37,487	40,934	44,727	45,511	28,892	23,862	31,088	14,444	0	0	266,945
TXU Electricity Ltd: Cardinia Dam Hydro Generating System (VIC)*	15,012	13,345	4,444	0	0	0	0	0	0	0	32,801
TXU Electricity Ltd: Thomson Dam Hydro Generating System (VIC)*	9,835	10,902	4,597	0	0	0	0	0	0	0	25,334
TXU Electricity Ltd: Blue Rock Dam Hydro Generating System (VIC)*	2,798	7,649	3,849	0	0	0	0	0	0	0	14,296
TXU Electricity Ltd: Lake Glenmaggie Dam Hydro Generating System (VIC)*	5,913	5,401	3,047	0	0	0	0	0	0	0	14,361
TXU Electricity Ltd: Eildon Pondage Hydro Generating System (VIC)*	5,478	11,555	7,135	0	0	0	0	0	0	0	24,168
TXU Electricity Ltd: Lake William Hovell Generating System (VIC)*	3,785	3,823	746	0	0	0	0	0	0	0	8,354

**Table B.14 Category A: Landfill gas**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
AGL Electricity Ltd: Broadmeadows Landfill Gas Power Plant (VIC)*	132,165	132,387	132,559	112,453	0	0	0	0	0	0	509,564
AGL Sales Pty Ltd: Clayton & Springvale LFG Generating System (VIC)*	347,713	386,035	408,065	389,938	370,801	373,618	374,655	179,163	0	0	2,829,988
AGL Sales Pty Ltd: Broadmeadows LFG Generating System (VIC)*	0	0	0	17,669	114,898	115,218	115,538	59,739	0	0	423,062
AGL South Australia Pty Ltd: Pedler Creek LFG Generating System (SA)*	60,630	60,731	60,810	60,991	61,126	52,855	53,002	36,409	0	0	446,554
AGL South Australia Pty Ltd: Tea Tree Gully LFG Generating System (SA)*	31,587	28,033	22,421	18,136	17,472	13,504	13,023	6,088	0	0	150,264
AGL South Australia Pty Ltd: Highbury LFG Generating System (SA)*	37,020	32,340	32,188	28,032	23,508	16,028	17,655	7,642	0	0	194,413
AGL South Australia Pty Ltd: Wingfield 1 & 2 LFG Generating System (SA)*	115,162	115,355	115,505	115,848	116,105	100,395	100,674	97,893	0	0	876,937
Ausgrid: Belrose Power Station (NSW)*	43,539	25,026	27,049	22,859	37,455	38,355	38,420	18,467	0	0	251,170
Ausgrid: Lucas Heights 1 Generating System (NSW)*	116,910	117,106	117,271	117,627	117,897	101,938	102,226	85,330	0	0	876,305
EDL LFG (NSW) Pty Ltd: Lucas Heights 1 LFG Generating System (NSW)*	0	46,414	56,675	59,728	66,117	76,332	67,801	0	0	0	373,067
EDL LFG (Qld) Pty Ltd: Brown Plains LFG Generating System (QLD)*	36,569	41,765	47,291	46,857	42,830	36,700	38,106	19,167	0	0	309,285
EDL LFG (SA) Pty Ltd: Wingfield 1 & 2 LFG Generating System (SA)*	88,631	127,501	166,071	153,465	123,845	108,233	96,853	0	0	0	864,599
EDL LFG (Vic) Pty Ltd: Berwick LFG Generating System (VIC)*	0	31,293	28,760	19,591	40,136	40,797	52,317	0	0	0	212,894
EDL LFG (Vic) Pty Ltd: Broadmeadows LFG Generating System (VIC)*	0	26,957	11,527	7,294	11,648	9,136	6,063	0	0	0	72,625
EDL LFG (Vic) Pty Ltd: Corio LFG Generating System (VIC)*	0	13,246	13,536	12,820	7,634	8,331	11,433	0	0	0	67,000
EDL LFG (Vic) Pty Ltd: Corio LFG Generating System - Deemed Retailer (VIC)*	0	888	24,892	24,892	24,892	21,635	21,635	18,318	0	0	137,152



Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
EDL Operations (Berwick) Pty Ltd: Berwick LFG Generating System (VIC)*	33,893	0	0	0	0	0	0	0	0	0	33,893
EDL Operations (Broadmeadows) Pty Ltd: Broadmeadows LFG Generating System (VIC)*	24,209	0	0	0	0	0	0	0	0	0	24,209
EDL Operations (Corio) Pty Ltd: Corio LFG Generating System (VIC)*	12,324	0	0	0	0	0	0	0	0	0	12,324
EDL Operations (Corio) Pty Ltd: Corio LFG Generating System - Deemed Retailer (VIC)*	24,818	23,723	0	0	0	0	0	0	0	0	48,541
EDL Operations (Pedler Creek) Pty Ltd: Pedler Creek LFG Generating System (SA)*	1,132	8,511	13,545	15,917	12,838	19,449	17,048	0	0	0	88,440
EnergyAustralia (formerly TRUenergy Pty Ltd): Berwick LFG Generating System (VIC)*	0	0	53,650	95,243	95,489	95,755	96,020	72,308	0	0	508,465
TXU Electricity Ltd: Berwick LFG Generating System (VIC)*	109,839	110,039	47,880	0	0	0	0	0	0	0	267,758

**Table B.15 Category A: Natural gas**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
AGL Sales Pty Ltd: Varnsdorf Cogeneration System (VIC)*	9,863	10,650	11,046	12,029	11,861	11,993	0	0	0	0	67,442
Endeavour Energy: Smithfield Energy Facility (NSW)*	580,461	594,623	632,616	625,175	646,520	646,791	670,017	334,147	0	0	4,730,350
Origin Energy Electricity Ltd: Royal Melbourne Hospital Cogeneration Plant (VIC)*	0	8,282	17,179	19,415	17,749	14,804	0	0	0	0	77,429
Origin Energy Electricity Ltd: St Vincents Hospital Cogeneration Plant (VIC)*	0	3,537	6,420	7,686	0	0	0	0	0	0	17,643
Origin Energy Electricity Ltd: Alfred Hospital Cogeneration Plant (VIC)*	0	3,973	8,514	9,340	9,302	8,404	0	0	0	0	39,533

**Table B.16 Category A: Waste coal mine gas**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Endeavour Energy: Appin Power Plant (NSW)*	1,731,215	1,462,384	1,473,011	1,553,810	1,373,685	530,423	1,011,062	453,357	0	0	9,588,947
Endeavour Energy: Tower Power Plant (NSW)*	737,204	838,720	556,772	542,943	861,482	626,512	600,330	309,562	0	0	5,073,525

**Table B.17 Category B: Coal**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Delta Electricity: Vales Point Generating System (NSW)*	66,894	65,431	46,329	102,252	20,072	3,104	3,625	570	0	0	308,277
Delta Electricity: Wallerawang Generating System (NSW)*	16,593	15,458	52,308	23,773	8,930	60,951	54,940	27,629	0	0	260,582
Delta Electricity: Mt Piper Generating System (NSW)*	11,050	19,777	52,097	187,838	116,886	85,469	0	56,462	0	0	529,579
Delta Electricity: Munmorah Generating System (NSW)*	0	3,500	1,016	0	0	0	0	0	0	0	4,516
Eraring Energy: Eraring Generating System (NSW)*	129,086	115,291	72,120	70,711	67,264	97,987	96,502	159,585	0	0	808,546
Macquarie Generation: Liddell Power Station (NSW)*	63,362	199,124	275,082	446,877	571,472	547,348	407,076	143,667	91,762	0	2,745,770
Redbank Project Pty Ltd: Redbank Power Greenhouse Gas Abatement Program (NSW)*	0	0	0	0	0	0	0	0	0	0	0

**Table B.18 Category C: Biomass**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Rocky Point Power Project Pty Ltd: Rocky Point Cogeneration Plant (QLD)*	0	0	0	0	364,190	377,617	443,488	451,121	64,471	0	1,700,887

**Table B.19 Category C: Coal**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
CS Energy Ltd: Swanbank B Power Station (QLD)*	0	0	0	0	145,162	145,437	106,916	129,937	71,101	0	598,553
EnergyAustralia Yallourn (formerly TRUenergy Yal.): Yallourn W Power Station (VIC)*	0	0	9,033	164,423	18,004	142,380	285,595	380,040	414,993	247,000	1,661,468
Flinders Operating Services Pty Ltd: Northern Power Station (SA)*	0	0	0	31,899	22,862	68,649	0	0	0	0	123,410
Hazelwood Power: Hazelwood Power Station (VIC)*	251,199	130,906	675,881	780,462	879,398	1,025,716	982,659	1,173,639	800,000	0	6,699,860
IPM Australia Ltd: Loy Yang B Power Station (VIC)*	0	0	0	6,775	216,723	286,826	258,325	279,115	300,000	0	1,347,764
Loy Yang Marketing Management Company Pty Ltd: Loy Yang A Power Station (VIC)*	0	0	254,015	86,545	0	0	66,755	70,873	0	0	478,188
Stanwell Corporation Limited: Stanwell Power Station (QLD)*	0	36,337	86,290	198,094	194,665	193,943	196,928	213,030	0	0	1,119,287
Stanwell Corporation Limited: Swanbank B Power Station (QLD)*	0	0	0	0	0	0	0	0	0	0	0

**Table B.20 Category C: Hydro**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Hydro Electric Corporation: Poatina Hydro Generating System (TAS)*	0	0	0	0	0	0	0	0	0	0	0
Hydro Electric Corporation: Gordon Hydro Generating System (TAS)*	0	0	0	80,000	0	0	0	0	0	0	80,000

**Table B.21 Category C: Landfill gas**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
EDL Operations (Lucas Heights) Pty Ltd: Lucas Heights 1 LFG Generating System (NSW)*	31,571	0	0	0	0	0	0	0	0	0	31,571

**Table B.22 Category C: Natural gas**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
AGL Hydro Partnership: Torrens Island A Power Station (SA)*	0	0	0	0	1,287	8,595	0	24,957	23,531	0	58,370
AGL Hydro Partnership: Torrens Island B Power Station (SA)*	0	0	0	0	40,701	0	0	0	0	0	40,701
AGL Hydro Partnership: Oakey Power Station (QLD)*	0	0	0	0	0	0	0	0	0	0	0
Alinta DEBO Pty Ltd: Bairnsdale Generating System (VIC)*	1,293	14,603	8,215	5,578	125,309	69,314	0	0	0	0	224,312
Aurora Energy (Tamar Valley) Pty Ltd: Bairnsdale Power Station (VIC)*	0	0	0	0	0	0	12,466	5,716	3,981	0	22,163
Bell Bay Power Pty Ltd: Bell Bay Power Station Units 1 and 2 (TAS)*	0	0	0	140,271	355,276	369,298	84,925	0	0	0	949,770
EnergyAustralia (formerly TRUenergy Pty Ltd): Newport Power Station (VIC)*	0	24,895	0	0	347,888	208,263	140,236	0	0	0	721,282
EnergyAustralia (formerly TRUenergy Pty Ltd): Torrens Island B Power Station (SA)*	0	70,642	0	0	0	0	0	0	0	0	70,642
EnergyAustralia (formerly TRUenergy Pty Ltd): Torrens Island A Power Station (SA)*	0	0	0	0	0	0	0	0	0	0	0
Enertrade: Townsville Power Station (QLD)*	0	8,451	0	0	0	0	0	0	0	0	8,451
Enertrade: Oakey Power Station (QLD)*	0	3,563	0	0	0	0	0	0	0	0	3,563
OneSteel Manufacturing Pty Ltd: OneSteel Whyalla Steelworks - By-product Turbines (SA)*	0	0	0	0	58,834	62,047	38,381	16,085	0	0	175,347
OneSteel Manufacturing Pty Ltd: OneSteel Whyalla Steelworks - Cogeneration (SA)*	0	0	0	0	0	0	0	0	0	0	0
Origin Energy Electricity Ltd: Ladbroke Grove Power Station (SA)*	0	0	3,182	30,015	33,954	55,372	59,861	0	0	0	182,384
Pelican Point Power Ltd: Pelican Point Power Station (SA)*	284,984	0	194,934	545,997	986,020	1,114,978	1,064,299	971,351	775,000	0	5,937,563

**Table B.23 Category C: Sewage gas**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
AGL Energy Sales & Marketing Ltd: Werribee Sewage Gas Generating System (VIC)*	59,381	58,928	100,578	184,989	196,181	179,509	193,274	202,679	231,000	0	1,406,519

**Table B.24 Category D: Biomass**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Diamond Energy Pty Ltd: Tatura Biogas Generating System (VIC)*	0	0	0	0	11,731	14,479	8,113	11,658	3,848	0	49,829
Diamond Energy Pty Ltd: Shepparton Biogas Generating System (VIC)*	0	0	0	0	0	556	11,642	3,895	4,058	0	20,151
EarthPower Technologies Sydney Pty Ltd: Camellia Bio-Digester Generating System (NSW)*	0	10,623	24,619	34,543	28,242	21,621	21,981	26,264	13,254	0	181,147
Green Pacific Energy Stapylton No.1 Pty Ltd: Stapylton No.1 Generating System (QLD)*	0	0	5,370	0	0	0	0	0	0	0	5,370
Integrated Forest Products Pty Ltd: Hume ACT Cogeneration Plant (Future Project) (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Visy Pulp & Paper Pty Ltd: Tumut Cogeneration Generating System (NSW)*	542	353	532	622	589	1,642	561	0	0	0	4,841

**Table B.25 Category D: Coal**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
CS Energy Ltd: Kogan Creek Power Station (QLD)*	0	0	0	0	0	70,001	7,026	153,289	0	0	230,316
Millmerran Energy Trader Pty Ltd: Millmerran Power Station (QLD)*	0	92,553	78,624	74,368	94,889	163,269	166,457	238,059	0	0	908,219
Queensland Alumina Limited: Additional Steam from Cogeneration (QLD)*	0	0	0	0	0	0	0	0	0	0	0
Stanwell Corporation Limited: Tarong North Power Station (QLD)*	0	0	0	0	0	0	0	0	0	0	0
Tarong Energy Corporation Ltd: Tarong North Power Station (QLD)*	0	38,112	80,869	117,273	0	176,158	130,828	184,691	96,302	0	824,233

**Table B.26 Category D: Coal seam methane**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Arrow (Generation) Pty Ltd: Daandine Power Station (NSW)*	0	0	0	0	12,978	29,744	16,575	5,351	4,816	2,370	71,834
QGC Sales Qld Pty Ltd: Condamine Power Station (QLD)*	0	0	0	0	0	0	0	11,177	0	0	11,177
RTA Yarwun Pty Ltd: Yarwun 2 Cogeneration (QLD)*	0	0	0	0	0	0	0	360,386	0	0	360,386

**Table B.27 Category D: Landfill gas**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
AGL Energy Services Pty Ltd: West Nowra LFG Generating System (NSW)*	16,595	23,896	23,892	27,414	33,791	0	19,291	23,143	19,895	0	187,917
AGL Energy Services Pty Ltd: Hobart LFG Generating System (TAS)*	0	0	0	23,423	29,308	0	21,924	21,092	13,634	0	109,381
AGL Energy Services Pty Ltd: Glenorchy LFG Generating System (TAS)*	0	0	0	18,333	39,992	0	31,259	27,525	18,885	0	135,994
AGL Energy Services Pty Ltd: Kincumber LFG Generating System (NSW)*	0	0	0	0	0	0	27,630	28,447	16,804	0	72,881
AGL Energy Services Pty Ltd: Woy Woy LFG Generating System (NSW)*	0	0	0	0	0	0	26,291	23,938	18,284	0	68,513
Boral Recycling Pty Ltd: Landfill Gas to Energy Facility, Deer Park (VIC)	0	0	0	25,243	26,258	54,653	74,447	81,758	95,660	8,421	366,440
EDL LFG (ACT) Pty Ltd: Belconnen LFG Generating System (ACT)*	33,656	30,541	29,973	27,870	25,256	21,008	21,373	19,803	4,937	0	214,417
EDL LFG (ACT) Pty Ltd: Mugga Lane LFG Generating System (ACT)*	60,542	68,727	80,089	98,561	95,720	102,242	101,098	101,197	20,498	0	728,674
EDL LFG (NSW) Pty Ltd: Lucas Heights 2 LFG Generating System (NSW)*	382,599	396,207	535,048	506,381	501,786	442,028	499,224	473,093	143,129	0	3,879,495
EDL LFG (NSW) Pty Ltd: Grange Avenue LFG Generating System (NSW)*	0	0	0	1,953	34,633	35,935	33,196	35,943	27,848	0	169,508
EDL LFG (Qld) Pty Ltd: Roghan Road LFG Generating System (QLD)*	0	12,001	27,315	22,196	14,230	16,618	17,851	13,707	3,117	0	127,035
EDL LFG (Vic) Pty Ltd: Brooklyn LFG Generating System (VIC)*	0	29,267	78,294	75,166	78,728	87,477	76,720	81,042	68,598	0	575,292
EDL Operations (Brooklyn) Pty Ltd: Brooklyn LFG Generating System (VIC)*	37,733	23,529	0	0	0	0	0	0	0	0	61,262
EDL Operations (Eastern Creek) Pty Ltd: Jacks Gully LFG Generating System (NSW)*	34,041	35,115	36,529	41,971	70,141	75,309	77,533	77,265	56,401	0	504,305
EDL Operations (Eastern Creek) Pty Ltd: Eastern Creek LFG Generating System (NSW)*	73,215	130,164	142,918	147,433	146,542	138,996	154,642	110,839	79,215	0	1,123,964

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Energy Impact Pty Ltd: Molendinar LFG Generating System (QLD)*	15,203	11,501	10,955	8,707	7,562	5,200	3,026	3,384	3,951	1,530	71,019
Energy Impact Pty Ltd: Reedy Creek LFG Generating System (QLD)*	6,446	811	0	0	0	0	0	0	0	0	7,257
Energy Impact Pty Ltd: Mornington LFG Generating System (VIC)*	10,157	8,801	18,109	16,929	18,210	12,804	11,372	8,299	7,500	0	112,181
Energy Impact Pty Ltd: Wyndham LFG Generating System (VIC)*	14,619	22,777	19,945	27,247	21,926	17,515	10,932	14,246	16,968	0	166,175
Energy Impact Pty Ltd: Stapylton LFG Generating System (QLD)*	20,361	23,250	26,701	21,297	31,578	18,488	37,324	43,108	22,031	6,564	250,702
Energy Impact Pty Ltd: Suntown LFG Generating System (QLD)*	27,020	45,309	50,551	36,089	29,853	20,429	8,513	13,766	29,769	20,279	281,578
Energy Impact Pty Ltd: Sleemans Sports Centre LFG Cogeneration System (QLD)*	0	0	0	0	0	9,789	7,160	7,767	4,417	0	29,133
LMS Energy Pty Ltd: Whitwood Road Renewable Energy Facility (QLD)*	0	13,727	39,497	40,459	40,616	34,260	33,973	33,806	31,434	17,188	284,960
LMS Energy Pty Ltd: Rochedale Renewable Energy Facility (QLD)*	0	14,311	121,597	123,592	123,800	104,050	106,048	126,421	141,143	65,913	926,875
LMS Energy Pty Ltd: Tweed Renewable Energy Facility (NSW)*	0	0	0	7,861	11,355	11,631	11,668	11,680	11,307	3,356	68,858
LMS Energy Pty Ltd: Wollert Renewable Energy Facility (VIC)*	0	0	0	31,560	70,520	110,322	123,583	148,685	160,694	54,133	699,497
LMS Energy Pty Ltd: Remount Renewable Energy Facility (TAS)*	0	0	0	0	34,074	35,409	39,794	75,269	71,595	23,332	279,473
LMS Energy Pty Ltd: Awaba Renewable Energy Facility (NSW)*	0	0	0	0	30,061	34,745	34,104	30,583	34,178	16,084	179,755
LMS Energy Pty Ltd: Hallam Road Renewable Energy Facility (NSW)*	0	0	0	0	29,241	53,354	83,921	117,642	155,252	47,199	486,609
LMS Energy Pty Ltd: Ballarat Renewable Energy Facility (VIC)*	0	0	0	0	0	14,525	16,148	17,025	18,727	9,096	75,521
LMS Energy Pty Ltd: Bendigo Renewable Energy Facility (VIC)*	0	0	0	0	0	8,293	19,041	18,773	21,167	0	67,274



Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
LMS Energy Pty Ltd: Eastern Creek 2 Gas Utilisation Facility (NSW)*	0	0	0	0	0	129,429	238,451	218,937	199,854	119,748	906,419
LMS Energy Pty Ltd: Shepparton Renewable Energy Facility (VIC)*	0	0	0	0	0	0	11,538	19,127	20,705	0	51,370
LMS Energy Pty Ltd: Summer Hill Renewable Energy Facility (NSW)*	0	0	0	0	0	0	26,288	64,440	70,311	0	161,039
LMS Energy Pty Ltd: Birkdale Renewable Energy Facility (QLD)*	0	0	0	0	0	0	0	16,479	24,445	0	40,924
LMS Energy Pty Ltd: Wyong Renewable Energy Facility (NSW)*	0	0	0	0	0	0	0	1,887	38,025	0	39,912
LMS Energy Pty Ltd: Albury Renewable Energy Facility (Future project) (NSW)*	0	0	0	0	0	0	0	0	0	0	0
LMS Energy Pty Ltd: Drysdale Renewable Energy Facility (Future project) (VIC)*	0	0	0	0	0	0	0	0	0	0	0
LMS Energy Pty Ltd: Wyndham Renewable Energy Facility (VIC)*	0	0	0	0	0	0	0	0	10,833	11,918	22,751
LMS Energy Pty Ltd: Mornington Renewable Energy Facility (VIC)*	0	0	0	0	0	0	0	0	5,649	5,381	11,030
Veolia Environmental Services (Australia) Pty Ltd: Ti Tree LFG (QLD)*	0	0	0	0	0	0	26,942	56,665	43,828	0	127,435
Woodlawn Bioreactor Energy Pty Ltd: Woodlawn Bioreactor (NSW)	0	0	0	0	0	17,755	48,117	62,961	68,764	15,492	213,089

**Table B.28 Category D: Natural gas**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
AGL Energy Services (Queensland) Pty Ltd: Moranbah Generating System (QLD)*	0	970	0	0	0	0	0	0	0	0	970
AGL Energy Services Pty Ltd: Symex Cogeneration System (VIC)*	0	0	0	2,907	12,267	12,883	12,237	12,072	13,221	0	65,587
AGL Hydro Partnership: Somerton Power Station (VIC)*	0	0	0	0	882	25,074	15,444	12,870	9,913	0	64,183
AGL South Australia Pty Ltd: Coopers Brewery Cogeneration Generating System (SA)*	6,593	6,106	6,421	6,711	6,457	6,793	8,350	7,658	7,887	0	62,976
Alinta EATM Pty Ltd: Tamar Valley Power Station (TAS)*	0	0	0	0	436	6,500	0	0	0	0	6,936
Aurora Energy (Tamar Valley) Pty Ltd: Bell Bay Three Power Station (TAS)*	0	0	0	0	0	0	14,381	12,155	6,997	0	33,533
Aurora Energy (Tamar Valley) Pty Ltd: Tamar Valley Peaking Power Station (TAS)*	0	0	0	0	0	0	30,800	5,063	7,560	0	43,423
Aurora Energy (Tamar Valley) Pty Ltd: Tamar Valley Combined Cycle Power Station (TAS)*	0	0	0	0	0	0	218,278	628,617	751,911	0	1,598,806
Bell Bay Power Pty Ltd: Bell Bay Three (TAS)*	0	0	0	3,365	0	0	0	0	0	0	3,365
Braemar Power Project Pty Ltd: Braemar Power Station (QLD)*	0	0	0	0	0	68,099	105,262	144,057	144,057	90,967	552,442
CS Energy Ltd: Swanbank E Power Station (QLD)*	228,718	359,674	68,262	73,598	84,336	121,715	495,639	1,065,171	591,230	0	3,088,343
Delta Electricity: Colongra Power Station (NSW)*	0	0	0	0	0	0	3,763	11,862	0	0	15,625
EnergyAustralia Tallawarra (formerly TRUenergy T.): Tallawarra Power Station Unit 1 (NSW)*	0	0	0	0	0	52,220	1,051,999	1,482,566	1,317,251	273,000	4,177,036
GridX Power Pty Ltd: GridX MiniGrid Cogeneration - Glenfield GEN (NSW)*	0	0	0	0	3	0	0	0	0	0	3
Narrabri Power Pty Ltd: Wilga Park Power Station (NSW)*	0	10,557	15,761	4,817	1,689	1,243	552	0	0	0	34,619

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
NewGen Braemar 2 Partnership: Braemar 2 Power Station (QLD)*	0	0	0	0	0	0	37,520	89,284	90,914	43,001	260,719
NewGen Power Pty Ltd: Braemar Power Station (QLD)*	0	0	0	0	84,162	62,809	0	0	0	0	146,971
Origin Energy Electricity Ltd: Quarantine Power Station (SA)*	5,542	11,418	11,359	25,769	16,362	20,212	51,830	54,688	27,196	0	224,376
Origin Energy Electricity Ltd: Mortlake Power Station (VIC)*	0	0	0	0	0	0	0	0	0	0	0
Origin Energy Electricity Ltd: Spring Gully Power Station (QLD)*	0	0	0	0	0	0	0	0	0	0	0
Origin Energy Electricity Ltd: Darling Downs Power Station (QLD)*	0	0	0	0	0	0	0	1,145,450	398,949	0	1,544,399
Origin Energy Electricity Ltd: Uranquinty Power Station (NSW)*	0	0	0	0	0	8,773	71,829	96,494	67,902	0	244,998
Snowy Hydro Ltd: Laverton North Generating System (VIC)*	0	0	0	101	139,280	41,537	30,600	55,450	0	0	266,968
Snowy Hydro Ltd: Valley Power Generating System (VIC)*	0	0	0	0	53,231	12,776	9,311	3,666	0	0	78,984
Stanwell Corporation Limited: Swanbank E Power Station (QLD)	0	0	0	0	0	0	0	0	0	0	0

**Table B.29 Category D: Sewage gas**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Ausgrid: QAF Power Project - Generating System (Generation) (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Sydney Water Corporation: Bondi STP Cogeneration Plant (Generation) (NSW)*	0	0	0	0	0	0	4,173	3,036	5,561	1,229	13,999



### B.3.2 DSA Rule certificate registration by calculation method and project

**Table B.31 Default Abatement Factors Method**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
AGL Electricity Ltd: Gas Hot Water Systems - NSW (NSW)*	0	17,146	28,926	5,560	0	0	0	0	0	0	51,632
AGL Electricity Ltd: Gas Hot Water Systems - ACT (ACT)*	0	0	0	1,460	0	0	0	0	0	0	1,460
AGL Hydro Partnership: Gas Hot Water Systems Project - NSW (NSW)*	0	0	0	24,340	21,900	25,569	13,639	0	0	0	85,448
AGL Hydro Partnership: Gas Hot Water Systems Project - ACT (ACT)*	0	0	0	5,400	7,320	1,660	1,300	0	0	0	15,680
Alliance Network International: DRIP - Residential installations in NSW (NSW)*	0	0	0	0	525,146	2,520,371	0	0	0	0	3,045,517
Alliance Network International: DRIP - Residential installations in ACT (ACT)*	0	0	0	0	1,758	6,762	0	0	0	0	8,520
Alliance Network International: DRIP - Commercial installations in NSW (NSW)*	0	0	0	0	150,731	163,178	0	0	0	0	313,909
Alliance Network International: DRIP - Commercial installations in ACT (ACT)*	0	0	0	0	0	7,089	0	0	0	0	7,089
AMRS (Aust) Pty Ltd: Energy Efficiency Refit Program - Residential NSW (NSW)*	0	0	0	0	0	0	0	0	0	0	0
AMRS (Aust) Pty Ltd: Energy Efficiency Refit Program - Residential ACT (ACT)*	0	0	0	0	0	0	0	0	0	0	0
AMRS (Aust) Pty Ltd: Energy Efficiency Refit Program - Commercial NSW (NSW)*	0	0	0	0	0	0	0	0	0	0	0
AMRS (Aust) Pty Ltd: Energy Efficiency Refit Program - Commercial ACT (ACT)*	0	0	0	0	0	0	0	0	0	0	0
APP Corporation Pty Ltd: Pilot DOH Residential Energy Efficiency Program (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Ausgrid: Compact Fluorescent Lamp Promotion - NSW (NSW)*	0	182,295	3,016	1,256,576	47,258	47,569	0	0	0	0	1,536,714

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Ausgrid: Compact Fluorescent Lamp Promotion - ACT (ACT)*	0	0	0	29,755	5,835	271	0	0	0	0	35,861
Ausgrid: Residential Households in NSW (NSW)*	0	34,010	28,928	12,718	25,215	91,421	0	0	0	0	192,292
Ausgrid: Residential Households in ACT (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Ausgrid: Commercial Premises in NSW (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Ausgrid: Commercial Premises in ACT (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Ausgrid: Spare Fridge Retirement Program (NSW)*	0	0	0	8,016	0	0	0	0	0	0	8,016
Ausgrid: Electric to Gas Hot Water Conversion - NSW Res (NSW)*	0	0	0	160	2,980	100	460	0	0	0	3,700
Ausgrid: Electric to Gas Hot Water Conversion - ACT Res (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Ausgrid: Electric to Gas Hot Water Conversion - NSW Com (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Ausgrid: Electric to Gas Hot Water Conversion - ACT Com (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Ausgrid: EnergySave On Line Shop - NSW (NSW)*	0	0	0	3,798	212	0	0	0	0	0	4,010
Ausgrid: EnergySave On Line Shop - ACT (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Australian Heating Solutions Pty Ltd: NSW Electric to Gas Hotwater Upgrade Scheme (NSW)*	0	0	0	4,480	2,280	2,040	180	0	0	0	8,980
Australian Heating Solutions Pty Ltd: Installation of CFLs & flow restrictors - NSW Res (NSW)*	0	0	0	9,728	144,884	56,712	0	0	0	0	211,324
Australian Heating Solutions Pty Ltd: Installation of CFLs & flow restrictors - ACT Res (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Australian Heating Solutions Pty Ltd: Installation of CFLs & flow restrictors - NSW Comm (NSW)*	0	0	0	0	22,103	8,145	0	0	0	0	30,248

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Australian Heating Solutions Pty Ltd: Installation of CFLs & flow restrictors - ACT Comm (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Big Switch Projects: Installation of CFLs - NSW Residential (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Big Switch Projects: Installation of Gas Hot Water Systems - NSW Res (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Big Switch Projects: Sales of CFLs and Showerheads - NSW Res (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Biogy Pty Ltd: Electricity to Gas Hot Water Initiative (NSW)*	0	4,260	6,380	6,260	9,600	2,760	0	0	0	0	29,260
BTU Holdings Australia Pty Ltd: Replacing electric with gas hot water systems (NSW)*	0	0	60	0	0	0	0	0	0	0	60
Carbon Reduction Institute Pty Ltd: Installation of CFLs - NSW Residential (NSW)*	0	0	0	0	7,914	63,593	0	0	0	0	71,507
Carbon Reduction Institute Pty Ltd: Installation of Gas Boosted Solar HWS - ACT Res (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Carbon Reduction Institute Pty Ltd: Installation of Gas Boosted Solar HWS - NSW Com (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Carbon Reduction Institute Pty Ltd: Installation of Gas Boosted Solar HWS - ACT Com (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Carbon Reduction Institute Pty Ltd: Giveaway/Sale of CFLs and Showerheads - NSW (NSW)*	0	0	0	0	29	0	0	0	0	0	29
Carbon Reduction Institute Pty Ltd: Giveaway/Sale of CFLs and Showerheads - ACT (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Carbon Reduction Institute Pty Ltd: Installation of CFLs - ACT Residential (ACT)*	0	0	0	0	248	46	0	0	0	0	294
Carbon Reduction Institute Pty Ltd: Installation of CFLs - NSW Commercial (NSW)*	0	0	0	0	11,147	0	0	0	0	0	11,147
Carbon Reduction Institute Pty Ltd: Installation of CFLs - ACT Commercial (ACT)*	0	0	0	0	0	0	0	0	0	0	0

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Carbon Reduction Institute Pty Ltd: Installation of Gas Hot Water Systems - NSW Res (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Carbon Reduction Institute Pty Ltd: Installation of Gas Hot Water Systems - ACT Res (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Carbon Reduction Institute Pty Ltd: Installation of Gas Hot Water Systems - NSW Com (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Carbon Reduction Institute Pty Ltd: Installation of Gas Hot Water Systems - ACT Com (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Carbon Reduction Institute Pty Ltd: Installation of Gas Boosted Solar HWS - NSW Res (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Demand Manager Pty Ltd: Carbon Saver Project - NSW (NSW)*	0	0	0	0	0	9,534	0	0	0	0	9,534
Demand Manager Pty Ltd: Carbon Saver Project - ACT (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Easy Being Green Holdings Pty Ltd: Lighten Your Load (NSW)*	0	0	38,400	278,754	0	0	0	0	0	0	317,154
Easy Being Green Pty Ltd: Lighten Your Load NSW - NSW Residential (NSW)*	0	0	0	2,694,658	1,112,399	434,565	0	0	0	0	4,241,622
Easy Being Green Pty Ltd: Lighten Your Load NSW - ACT Residential (ACT)*	0	0	0	43,198	0	0	0	0	0	0	43,198
Easy Being Green Pty Ltd: Lighten Your Load NSW - NSW Commercial (NSW)*	0	0	0	0	95,496	0	0	0	0	0	95,496
Easy Being Green Pty Ltd: Lighten Your Load NSW - ACT Commercial (ACT)*	0	0	0	0	700	0	0	0	0	0	700
EcoSmart Programs Pty Ltd: EcoSmart Living Program Pilot - Western Sydney (NSW)*	0	0	0	2,348	5,864	0	0	0	0	0	8,212
Endeavour Energy: Home Lighting Efficiency Program (NSW)*	0	0	0	113,297	0	0	0	0	0	0	113,297
Endeavour Energy: Give-Away of CFLs and Showerheads (NSW)*	0	0	0	0	5,195	0	813	0	0	0	6,008
Endeavour Energy: Installation of CFLs (NSW)*	0	0	0	0	4,687	0	105	0	0	0	4,792



Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Envirocare & Savers Pty Ltd t/a Wellbeinggreen: Light Bulb & Flow Restrictor Installation program (NSW)*	0	0	0	0	0	0	20,447	0	0	0	20,447
Essential Energy: Countrygreen Town Energy Efficiency Program (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Essential Energy: Countrygreen Gas Hot Water Replacement (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Fieldforce Services Pty Ltd: Give Away to Reduce Demand Program - NSW (NSW)*	0	0	0	1,331,288	305,815	0	0	0	0	0	1,637,103
Fieldforce Services Pty Ltd: Give Away to Reduce Demand Program - ACT (ACT)*	0	0	0	79,964	34,658	0	0	0	0	0	114,622
Fieldforce Services Pty Ltd: Retrofit Program - Residential NSW (NSW)*	0	0	0	0	4,609,421	1,926,587	0	0	0	0	6,536,008
Fieldforce Services Pty Ltd: Retrofit Program - Residential ACT (ACT)*	0	0	0	0	262,340	123,885	0	0	0	0	386,225
Fieldforce Services Pty Ltd: Retrofit Program - Commercial NSW (NSW)*	0	0	0	0	314,501	425,876	0	0	0	0	740,377
Fieldforce Services Pty Ltd: Retrofit Program - Commercial ACT (ACT)*	0	0	0	0	20,299	2,388	0	0	0	0	22,687
Go Green Today Pty Ltd: Free Energy Saving Offer (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Koala Lamps Pty Ltd: Compact Lamp Supply to end users (NSW)*	0	0	13,747	21,423	19,982	18,762	0	0	0	0	73,914
Low Energy Supplies and Services Pty Ltd: Project #1/2003 (NSW)*	7,741	5,747	10,545	6,422	0	0	0	0	0	0	30,455
Low Energy Supplies and Services Pty Ltd: Direct Sales and Giveaways - NSW Residential (NSW)*	0	0	23,748	1,329,144	486,465	953,246	0	0	0	0	2,792,603
Low Energy Supplies and Services Pty Ltd: Direct Sales and Giveaways - ACT Residential (ACT)*	0	0	0	3,506	275	0	0	0	0	0	3,781

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Low Energy Supplies and Services Pty Ltd: Direct Sales and Giveaways - NSW Commercial (NSW)*	0	0	0	0	144,258	45,499	0	0	0	0	189,757
Low Energy Supplies and Services Pty Ltd: Direct Sales and Giveaways - ACT Commercial (ACT)*	0	0	0	0	7,042	0	0	0	0	0	7,042
Macquarie Generation: Staff CFL Issue Scheme (NSW)*	0	0	0	1,310	0	0	0	0	0	0	1,310
Murray Regional Development Board: Murray Energy Savings Program (NSW)*	0	0	0	0	5,148	31,328	10,661	0	0	0	47,137
Neco Group Pty Ltd: Showerheads and CFL Globe Sales - NSW Residential (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Neco Group Pty Ltd: Showerheads and CFL Globe Sales - ACT Residential (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Neco Group Pty Ltd: Showerheads and CFL Globe Sales - NSW Commercial (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Neco Group Pty Ltd: Showerheads and CFL Globe Sales - ACT Commercial (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Neco Hardware Pty Ltd: Showerheads & CFL Globe Sales - NSW Residential (NSW)*	0	0	311,200	310,416	250,484	0	0	0	0	0	872,100
Neco Hardware Pty Ltd: Showerheads & CFL Globe Sales - ACT Residential (ACT)*	0	0	0	22,788	75,402	0	0	0	0	0	98,190
Neco Hardware Pty Ltd: Showerheads & CFL Globe Sales - NSW Commercial (NSW)*	0	0	0	0	5,938	0	0	0	0	0	5,938
Neco Hardware Pty Ltd: Showerheads & CFL Globe Sales - ACT Commercial (ACT)*	0	0	0	0	14,836	0	0	0	0	0	14,836
Neco Holdings Pty Ltd: Showerheads and CFL Globe Sales - NSW Residential (NSW)*	0	0	0	0	0	113	0	0	0	0	113
Neco Holdings Pty Ltd: Showerheads and CFL Globe Sales - ACT Residential (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Neco Holdings Pty Ltd: Showerheads and CFL Globe Sales - NSW Commercial (NSW)*	0	0	0	0	0	0	0	0	0	0	0

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Neco Holdings Pty Ltd: Showerheads and CFL Globe Sales - ACT Commercial (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Neco Lifestyles: Showerheads & CFL Globes web sales (NSW)*	0	2	53,638	0	0	0	0	0	0	0	53,640
Next Energy Pty Ltd: Fridge Buyback Program (NSW)*	0	0	0	11,743	21,400	17,256	29,685	0	0	0	80,084
Origin Energy Electricity Ltd: CFL Giveaway (NSW)*	0	0	287,101	403,859	0	0	0	0	0	0	690,960
Origin Energy Electricity Ltd: LPG Boosted Hot Water Systems - NSW (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Origin Energy Electricity Ltd: LPG Boosted Hot Water Systems - ACT (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Philips Electronics Australia Limited: Light Globe Replacement - NSW (NSW)*	0	0	0	63,550	116,058	0	0	0	0	0	179,608
Philips Electronics Australia Limited: Light Globe Replacement - ACT (ACT)*	0	0	0	26	10,366	0	0	0	0	0	10,392
Rheem Australia Pty Ltd: Rheem Gas Hot Water - NSW (NSW)*	0	0	0	2,120	4,420	8,080	2,140	0	0	0	16,760
Rheem Australia Pty Ltd: Rheem Gas Hot Water - ACT (ACT)*	0	0	0	120	260	60	20	0	0	0	460
SkyNet Systems Pty Ltd: Installation of CFLs - NSW Residential (NSW)*	0	0	0	0	0	28,106	0	0	0	0	28,106
SkyNet Systems Pty Ltd: Installation of CFLs - ACT Residential (ACT)*	0	0	0	0	0	327	0	0	0	0	327
SkyNet Systems Pty Ltd: Installation of CFLs - NSW Commercial (NSW)*	0	0	0	0	0	1,179	0	0	0	0	1,179
SkyNet Systems Pty Ltd: Installation of CFLs - ACT Commercial (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Sydney Water Corporation: Residential Shower Retrofit Programme (NSW)*	0	91,102	197,303	191,532	126,104	40,148	6,572	0	0	0	652,761
Sydney Water Corporation: Washing Machine Rebate Program (NSW)*	0	0	0	39,237	91,494	103,051	27,615	0	0	0	261,397

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Sydney Water Corporation: DIY Water Saving Kit Program (NSW)*	0	0	0	58,628	57,401	20,561	3,054	0	0	0	139,644
Watts Green Pty Ltd: AAA Energy Efficiency Refit Program - NSW Residential (NSW)*	0	0	0	0	5,000	112,626	0	0	0	0	117,626
Watts Green Pty Ltd: AAA Energy Efficiency Refit Program - ACT Residential (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Watts Green Pty Ltd: AAA Energy Efficiency Refit Program - NSW Commercial (NSW)*	0	0	0	0	0	75,055	0	0	0	0	75,055
Watts Green Pty Ltd: AAA Energy Efficiency Refit Program - ACT Commercial (ACT)*	0	0	0	0	0	0	0	0	0	0	0

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**Table B.32 Generation Emissions Method**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Ausgrid: QAF Power Project (DSA) (NSW)*	0	0	0	0	0	0	0	0	0	0	0
BlueScope Steel (AIS) Pty Ltd: Steelworks Generation Project (DSA) (Future Project) (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Endeavour Coal Pty. Ltd: WestVAMP (NSW)*	0	0	0	0	168,755	210,643	144,042	202,473	226,100	129,650	1,081,663
Essential Energy: Tahmoor Power Station (DSA) (NSW)*	110,751	151,468	209,648	130,991	148,960	61,039	65,584	86,333	90,120	0	1,054,894
GridX Power Pty Ltd: GridX MiniGrid Cogeneration - Glenfield DSA (NSW)*	0	0	0	0	9	10	0	0	0	0	19
Macquarie University: Macquarie University Library Cogeneration Plant (NSW)*	0	0	0	0	0	0	135	0	0	0	135
Sydney Water Corporation: Malabar STP Cogeneration Plant (NSW)*	51,157	55,834	49,654	55,121	41,063	62,938	60,056	68,034	61,334	33,125	538,316
Sydney Water Corporation: Cronulla STP Cogeneration Plant (NSW)*	3,542	937	4,044	5,882	926	5,349	6,336	8,577	10,197	4,646	50,436
Sydney Water Corporation: North Head Cogeneration Plant (NSW)*	0	0	0	0	0	20,804	19,484	30,852	20,135	11,098	102,373
Sydney Water Corporation: Bondi STP Cogeneration Plant (DSA) (NSW)*	0	0	0	0	0	0	12,183	27,201	27,002	15,993	82,379
Sydney Water Corporation: Glenfield STP Cogeneration Plant (NSW)*	0	0	0	0	0	0	724	11,844	13,549	6,049	32,166
Sydney Water Corporation: Liverpool STP Cogeneration Plant (NSW)*	0	0	0	0	0	0	1,577	7,910	8,415	4,380	22,282
Sydney Water Corporation: Warriewood STP Cogeneration Plant (NSW)*	0	0	0	0	0	0	474	4,074	3,377	1,959	9,884
Sydney Water Corporation: Wollongong STP Cogeneration Plant (NSW)*	0	0	0	0	0	0	3,702	8,970	10,670	5,487	28,829
Sydney Water Corporation: North Head STP Hydro Generating System (NSW)*	0	0	0	0	0	0	0	6,859	6,521	5,417	18,797

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Visy Pulp & Paper Pty Ltd: Tumut On-site Cogeneration Plant (NSW)*	112,947	123,982	171,870	249,446	204,491	212,990	202,970	221,571	245,902	146,733	1,892,902
Waste Recycling and Processing Corporation (WSN): Ecolibrium Mixed Waste Facility (DSA) (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Western Sydney Local Health District: Energy Performance Contract and GEEIP (NSW)*	0	0	0	0	0	0	0	5,348	0	0	5,348

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GGAS Registry data**Table B.33 Metered Baseline Method – baseline per unit of output**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Carter Holt Harvey Australia Pty Ltd: Refiner Control (NSW)*	0	0	0	8,065	14,249	16,007	6,231	0	0	0	44,552
Hydro Aluminium Kurri Kurri Pty Ltd: Smelter upgrade and retrofit (NSW)*	0	0	0	22,623	40,439	40,038	44,260	0	0	0	147,360
Orica Australia Pty Ltd: Botany Chlorine Plant (NSW)*	23,668	20,667	19,322	20,637	25,335	23,614	12,082	0	0	0	145,325

**Table B.34 Metered Baseline Method – baseline unaffected by output**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Sutherland Shire Council: Sutherland Leisure Centre Energy Performance Contract (NSW)*	0	0	393	0	0	0	0	0	0	0	393
Western Sydney Local Health District: Energy Performance Contract and GEEIP (NSW)*	0	1,615	3,794	5,910	6,111	5,997	4,122	0	0	0	27,549

**Table B.35 Metered Baseline Method – normalised by NABERS scheme**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Charter Hall Asset Services Limited: Building Energy Consumption Reduction (NSW)*	0	0	190	4,544	6,223	7,501	4,504	0	0	0	22,962
Eureka Funds Management: Eureka ABGR Energy Efficiency Program (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Investa Properties Ltd: Office Buildings assessed using the ABGR (NSW)*	0	10,337	8,011	7,914	11,237	10,393	6,109	0	0	0	54,001
Investa Properties Ltd: Office Buildings assessed using the ABGR (ACT)*	0	0	0	133	121	84	44	0	0	0	382
Stockland Property Management Pty Ltd: ABGR Energy Monitoring and Modification (NSW)*	0	0	0	165	3,073	2,838	0	0	0	0	6,076
Stockland Property Management Pty Ltd: ABGR Energy Monitoring and Modification (ACT)*	0	0	0	4	38	436	0	0	0	0	478

**Table B.36 Project Impact Assessment Method**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Amcor Ltd: Skylight upgrade (Revesby) (NSW)*	0	54	0	0	0	0	0	0	0	0	54
Amcor Ltd: Upgrade of blowers with VSD conveyors (Revesby) (NSW)*	0	58	390	0	0	121	61	0	0	0	630
Amcor Ltd: Upgrade of blowers with conveyors (Revesby) (NSW)*	0	207	1,251	0	0	436	220	0	0	0	2,114
Amcor Ltd: Upgrade of pumps with VSD units (Matraville) (NSW)*	0	289	1,749	0	0	608	308	0	0	0	2,954
Amcor Ltd: Lighting voltage reduction (Botany & Smithfield) (NSW)*	0	104	627	0	0	217	110	0	0	0	1,058
Amcor Ltd: Air conditioning timers (Regents Park) (NSW)*	0	125	753	0	0	262	133	0	0	0	1,273
Amcor Ltd: Botany Mill Efficiency Initiatives (NSW)*	0	0	0	709	0	3,420	1,655	0	0	0	5,784
Ausgrid: Residential Energy Efficiency Refit Pilot Program (NSW)*	646	2,269	0	0	0	0	0	0	0	0	2,915

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Ausgrid: Power Factor Correction (NSW)*	2,140	2,898	0	0	0	0	0	0	0	0	5,038
BOC Ltd: Port Kembla LMPC (NSW)*	0	0	3,288	1,358	0	4,369	0	0	0	0	9,015
Boral Ltd: Berrima Kiln 6 Upgrade (NSW)*	0	0	0	6,589	14,818	7,884	8,651	0	0	0	37,942
Commonwealth Bank of Australia: Voltage reduction in branch network lighting (NSW)*	0	315	624	633	607	548	268	0	0	0	2,995
Commonwealth Bank of Australia: Branch network BMS upgrade (NSW)*	0	263	511	510	544	523	259	0	0	0	2,610
Commonwealth Bank of Australia: Lighting controls (NSW)*	0	252	510	518	524	533	270	0	0	0	2,607
Commonwealth Bank of Australia: VSD upgrade on cooling fans & condenser pump (NSW)*	0	53	106	108	109	110	56	0	0	0	542
Continental Carbon Australia Pty Ltd: Installation of VSD on boiler fan (NSW)*	0	123	0	252	0	259	0	0	0	0	634
Demand Manager Pty Ltd: Lighting Aggregation Project (NSW)*	0	0	0	8,024	12,590	14,022	7,315	0	0	0	41,951
Demand Manager Pty Ltd: PFC Aggregation Project (NSW)*	0	0	0	0	1,650	325	0	0	0	0	1,975
Demand Manager Pty Ltd: PFC Aggregation Project (NSW)*	0	0	0	0	1,865	0	0	0	0	0	1,865
Demand Manager Pty Ltd: PFC Aggregation Project (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Demand Manager Pty Ltd: PFC Aggregation Project (ACT)*	0	0	0	0	0	0	0	0	0	0	0
Demand Manager Pty Ltd: PFC Aggregation Project (NSW)*	0	0	0	0	0	709	0	0	0	0	709
Demand Manager Pty Ltd: PFC Aggregation Project (NSW)*	0	0	0	0	0	359	0	0	0	0	359
Illum-a-Lite Pty Ltd: Fluorescent Lighting Energy Efficiency Project (NSW)*	0	713	1,991	0	0	0	0	0	0	0	2,704
Manildra Starches Pty Ltd: Spray dryer exhaust fan replacement at Manildra (NSW)*	0	284	286	291	0	299	0	0	0	0	1,160



Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Merck Sharp & Dohme (Australia) Pty Ltd: Lighting voltage reduction (NSW)*	0	193	1,170	0	0	0	0	0	0	0	1,363
Norske Skog Paper Mills (Aust) Ltd: Deckers Feed Pump Bypass (NSW)*	0	0	0	0	0	2,297	2,017	0	0	0	4,314
Panthers Rugby League Club Ltd: Lighting upgrade at Panthers (NSW)*	0	1,048	0	0	0	0	0	0	0	0	1,048
Rema Industries and Services Pty Ltd: New air compressor installation (NSW)*	0	356	789	0	789	0	0	0	0	0	1,934
Rheem Australia Pty Ltd: Air compressor PLC control (NSW)*	0	671	0	0	0	0	0	0	0	0	671
Riverina Wool Combing Pty Ltd: Air conditioning timers (NSW)*	0	222	0	0	0	0	0	0	0	0	222
Roads and Maritime Services: Upgrade of Traffic Lights (NSW)*	0	0	193	1,753	0	389	349	0	0	0	2,684
South Tweed Bowls Club Pty Ltd: Upgrade of lighting at South Tweed Bowls Club (NSW)*	0	348	0	348	0	0	91	0	0	0	787
Stamford Hotels and Resorts Pty Ltd: Carbon Monoxide Monitor (NSW)*	0	220	0	0	0	0	0	0	0	0	220
Stamford Hotels and Resorts Pty Ltd: Airport Lamp Replacement (NSW)*	0	254	0	0	0	0	0	0	0	0	254
Stamford Hotels and Resorts Pty Ltd: Lighting voltage reduction (Airport) (NSW)*	0	99	0	0	0	0	0	0	0	0	99
Stamford Hotels and Resorts Pty Ltd: North Ryde lighting upgrade (NSW)*	0	108	0	0	0	0	0	0	0	0	108
Stamford Hotels and Resorts Pty Ltd: Circular Quay lighting upgrade (NSW)*	0	169	0	0	0	0	0	0	0	0	169
Stamford Hotels and Resorts Pty Ltd: Double Bay lamp replacement (NSW)*	0	147	0	0	0	0	0	0	0	0	147
State Records of New South Wales: Stage 2 lighting upgrade (NSW)*	0	41	0	0	0	0	0	0	0	0	41
Sydney Harbour Marriott Hotel: Dimming control at Sydney Harbour Marriott Hotel (NSW)*	0	31	0	0	0	0	0	0	0	0	31

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
The Sustainable Energy Development Authority: SEDA Big W lighting project (NSW)*	1,298	249	0	0	0	0	0	0	0	0	1,547
The Sustainable Energy Development Authority: Mercure Hotel - Project 03/006 (NSW)*	99	50	0	0	0	0	0	0	0	0	149
The Sustainable Energy Development Authority: Colonial First State Property CBA - Project 03/022 (NSW)*	256	128	0	0	0	0	0	0	0	0	384
The Sustainable Energy Development Authority: Colonial First State Property CBA - Project 03/024 (NSW)*	328	164	0	0	0	0	0	0	0	0	492
The Sustainable Energy Development Authority: Colonial First State Property CBA - Project 03/033 (NSW)*	43	86	0	0	0	0	0	0	0	0	129
The Sustainable Energy Development Authority: Colonial First State Property CBA - Project 03/020 (NSW)*	147	147	0	0	0	0	0	0	0	0	294
The Sustainable Energy Development Authority: Colonial First State Property CBA - Project 03/023 (NSW)*	191	96	0	0	0	0	0	0	0	0	287
The Sustainable Energy Development Authority: Colonial First State Property CBA - Project 03/021 (NSW)*	177	89	0	0	0	0	0	0	0	0	266
The Sustainable Energy Development Authority: Colonial First State Property CBA - Project 03/019 (NSW)*	92	46	0	0	0	0	0	0	0	0	138
The Sustainable Energy Development Authority: West's Leagues Club - Project 03/026 (NSW)*	154	132	0	0	0	0	0	0	0	0	286
The Sustainable Energy Development Authority: BOC - Port Kembla LMPC (NSW)*	3,375	2,095	0	0	0	0	0	0	0	0	5,470
The Sustainable Energy Development Authority: SEDA Telstra outside air economy cycle project (NSW)*	0	0	0	0	0	0	0	0	0	0	0
The Sustainable Energy Development Authority: AMCOR Matraville - Project 03/002 (NSW)*	277	139	0	0	0	0	0	0	0	0	416

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
The Sustainable Energy Development Authority: AMCOR Revesby - Project 03/013 (NSW)*	107	54	0	0	0	0	0	0	0	0	161
The Sustainable Energy Development Authority: AMCOR Revesby - Project 03/015 (NSW)*	410	205	0	0	0	0	0	0	0	0	615
The Sustainable Energy Development Authority: AMCOR Matraville - Project 03/003 (NSW)*	135	116	0	0	0	0	0	0	0	0	251
The Sustainable Energy Development Authority: AMCOR Botany - Project 03/012 (NSW)*	108	54	0	0	0	0	0	0	0	0	162
The Sustainable Energy Development Authority: AMCOR Smithfield - Project 03/001 (NSW)*	53	38	0	0	0	0	0	0	0	0	91
The Sustainable Energy Development Authority: AMCOR Revesby - Project 03/014 (NSW)*	67	57	0	0	0	0	0	0	0	0	124
The Sustainable Energy Development Authority: AMCOR Regents Park - Project 03/031 (NSW)*	235	124	0	0	0	0	0	0	0	0	359
The Sustainable Energy Development Authority: West's Leagues Club - Project 03/025 (NSW)*	65	65	0	0	0	0	0	0	0	0	130
The Sustainable Energy Development Authority: Phoenix Sports Club - Project 03/028 (NSW)*	322	161	0	0	0	0	0	0	0	0	483
The Sustainable Energy Development Authority: Phoenix Sports Club - Project 03/029 (NSW)*	207	178	0	0	0	0	0	0	0	0	385
The Sustainable Energy Development Authority: West's Leagues Club - Project 03/027 (NSW)*	588	294	0	0	0	0	0	0	0	0	882
The Sustainable Energy Development Authority: Marriott Hotel - Project 03/011 (NSW)*	35	35	0	0	0	0	0	0	0	0	70
The Sustainable Energy Development Authority: Mercure Hotel - Project 03/008 (NSW)*	74	37	0	0	0	0	0	0	0	0	111
The Sustainable Energy Development Authority: Mercure Hotel - Project 03/005 (NSW)*	112	56	0	0	0	0	0	0	0	0	168
The Sustainable Energy Development Authority: Merck Sharp & Dohme - Project 03/017 (NSW)*	281	192	0	0	0	0	0	0	0	0	473
The Sustainable Energy Development Authority: Rema Industries - Project 03/032 (NSW)*	568	434	0	0	0	0	0	0	0	0	1,002

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
The Sustainable Energy Development Authority: Continental Carbon - Project 03/016 (NSW)*	183	122	0	0	0	0	0	0	0	0	305
The Sustainable Energy Development Authority: State Records Authority of NSW - Project 03/018 (NSW)*	92	46	0	0	0	0	0	0	0	0	138
The Sustainable Energy Development Authority: Marriott Hotel - Project 03/009 (NSW)*	207	125	0	0	0	0	0	0	0	0	332
The Sustainable Energy Development Authority: Mercure Hotel - Project 03/004 (NSW)*	41	42	0	0	0	0	0	0	0	0	83
The Sustainable Energy Development Authority: Marriott Hotel - Project 03/010 (NSW)*	319	274	0	0	0	0	0	0	0	0	593
Tomago Aluminium Company Pty Ltd: Fume Treatment Centre VSD Project (NSW)*	6,386	6,747	6,996	4,016	1,585	385	780	0	0	0	26,895
University of Technology Sydney: Building 2 Lighting Upgrade (NSW)*	0	0	0	543	0	0	0	0	0	0	543
University of Wollongong: Voltage reduction for lighting control (NSW)*	0	149	150	0	150	157	105	0	0	0	711
University of Wollongong: Occupancy sensors for lighting controls (NSW)*	0	771	777	0	777	464	226	0	0	0	3,015
Visy Pulp & Paper Pty Ltd: Cooling Water Pumps Efficiency Project (NSW)*	0	0	0	525	629	1,841	320	0	0	0	3,315
Woolworths Ltd: Supermarket After Hours Lighting Controls (NSW)*	15,517	17,120	17,120	16,978	17,262	18,221	9,140	0	0	0	111,358

### B.3.3 CS Rule certificate registration by accreditation

**Table B.37 CS Rule certificate registration by accreditation**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Australian Forest Corporation Pty Ltd: The Rainforest Carbon Sink (NSW)	0	0	0	0	0	0	0	0	0	0	0
Blue-Leafed Mallee Limited: Blue-Leafed Mallee Carbon Sequestration Pool (NSW)	0	0	0	0	32	250	850	69,767	117,419	0	188,318
CO2 Australia Limited: CO2 Australia Carbon Sequestration Pool (NSW)	0	0	0	146	759	2,842	11,230	22,885	30,532	0	68,394
Forestry Commission of NSW: Forests NSW Carbon Pool (NSW)	0	166,005	538,471	587,231	630,303	660,382	600,264	596,822	0	0	3,779,478
Go-Gen Australia Pty Ltd: Go-Gen Australia Carbon Sequestration Pool (NSW)	0	0	0	0	0	0	0	0	0	0	0
Landcare CarbonSMART Pty Ltd: Landcare CarbonSMART Carbon Sequestration Pool (NSW)*	0	0	0	0	0	0	0	0	0	0	0
Mallee Carbon Limited: Mallee Carbon Sequestration Pool (NSW)	0	0	0	224	1,467	5,718	10,676	13,170	13,663	0	44,918

### B.3.4 LUAC Rule certificate registration by accreditation

**Table B.38 LUAC Rule certificate registration by accreditation**

Company, project and jurisdiction	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Arcor Packaging (Australia) Pty Ltd: Botany Mill Whole of Site Emissions Reduction (NSW)*	0	0	3,631	13,175	18,128	22,992	23,423	22,557	23,285	0	127,191
Carter Holt Harvey Australia Pty Ltd: Tumut Particleboard Plant (NSW)*	0	0	0	3,432	4,418	2,832	1,319	1,267	0	0	13,268
Hydro Aluminium Kurri Kurri Pty Ltd: Kurri Kurri Primary Aluminium Smelter (NSW)*	0	0	0	516,146	644,404	662,220	708,038	716,860	702,004	0	3,949,672
Tomago Aluminium Company Pty Ltd: Greenhouse Gas Reduction Project (NSW)*	0	0	0	0	102,489	146,803	146,787	141,510	158,061	78,103	773,753
Orica Australia Pty Ltd: Kooragang Island Ammonia Plant (NSW)*	0	0	0	0	122,155	106,220	104,096	88,760	42,679	0	463,910
BlueScope Steel (AIS) Pty Ltd: Modifications to #25 Boiler (NSW)*	0	0	0	77,574	93,267	81,149	32,733	68,623	59,691	0	413,037
Boral Ltd: Berrima Works Clinker Production Upgrade Kiln 6 (NSW)*	0	0	78,690	157,082	232,563	163,172	0	203,441	0	0	834,948
Norske Skog Paper Mills (Aust) Ltd: TMP Heat Recovery Project (NSW)*	0	0	11,956	6,551	15,322	18,505	19,240	23,047	24,868	7,965	127,454
Xstrata Coal NSW Pty Ltd: Flaring Project (NSW)*	0	0	0	16,500	52,899	47,151	60,636	0	0	0	177,186
Xstrata Coal NSW Pty Ltd: Bulga Coal Flaring Project (NSW)*	0	0	0	0	0	46,989	420,965	493,315	0	0	961,269

## Glossary

This glossary provides a general guide to the terminology used in GGAS. It is designed to be read in conjunction with the Act, Regulation and GGAS Rules. This glossary should not be relied upon as a substitute for legal advice, and does not override the true definitions of these terms in the Act, Regulations or GGAS Rules.

Abator	The person contractually liable for the energy consumed in the installation or site that is the subject of a greenhouse abatement activity, or the person nominated to be the abator in respect of greenhouse abatement activity by written agreement. This particularly applies for demand side abatement activities.
Abatement Certificate Provider	A person accredited by the Scheme Administrator under one of the Greenhouse Gas Abatement Rules in respect of an abatement activity.
Accreditation	Authorisation given by the Scheme Administrator to an abatement certificate provider to create abatement certificates in respect of a specified activity, once eligibility against the Greenhouse Gas Benchmark Rules is satisfied.
Act	<i>NSW Electricity Supply Act 1995 (Part 9).</i>
AEMO	Australian Energy Market Operator.
Attributable Emissions	Determined for each Benchmark Participant each year by multiplying the total electricity purchased (at the transmission node ie, from AEMO plus any other purchases adjusted to the transmission node) by the NSW pool coefficient, less any abatement certificates (ie, NGACs and, if appropriate, LUACs) surrendered and RECs taken into account.
Australian Energy Market Operator (AEMO)	The body corporate responsible for the administration and operation of the wholesale national electricity market in accordance with the National Electricity Rules.

Baselines	The required level of activity undertaken, or the degree of greenhouse intensity which must be bettered, by an accredited abatement certificate provider before it is permitted to create abatement certificates.
Benchmark Participant	A person who is required or has elected to comply with a greenhouse gas benchmark.
Carbon Dioxide Equivalent (CO <sub>2</sub> -e)	Carbon dioxide equivalent of greenhouse gas emissions means the mass of carbon dioxide measured in tonnes that has the same global warming potential as the unit mass of the gas emissions. Each abatement certificate represents one tonne of carbon dioxide equivalent abated.
Carbon Sequestration	The process of removing carbon from the atmosphere and storing it within an eligible planted forest in NSW.
Carbon Sequestration Rule	<i>Greenhouse Gas Benchmark Rule (Carbon Sequestration) No. 5 of 2003.</i>
Certificate	A certificate represents one tonne of carbon dioxide equivalent (tCO <sub>2</sub> -e) of greenhouse gas emissions, the release of which into the atmosphere was avoided, or which was removed from the atmosphere by the activity in respect of which it was created. See also NGAC and LUAC.
Compliance Rule	<i>Greenhouse Gas Benchmark Rule (Compliance) No. 1 of 2003.</i>
Compliance Year	The period 1 January to 31 December of each year, for which Benchmark Participants must report compliance by 18 March in the following year.
Confidence Factor	Under the DSA Rule and the Large User Rule, the type of engineering assessment of reduced energy consumption undertaken determines the level of accuracy for the calculation of abatement certificates and hence the confidence factor. The more accurate the calculation, the higher the confidence factor, and the more NGACs that can be created for a given level of estimated abatement.
Consumer Price Index (CPI)	Under GGAS, the greenhouse penalty is adjusted each year by the consumer price index (CPI – All Groups Index), on and from 1 July in each year.
Deemed End User Purchases	The total of the <i>exempt sales</i> of a mandatory Benchmark Participant to an elective Benchmark Participant multiplied by the DLF listed in Table 7 of the Compliance Rule.



Deemed Retailer	An accredited abatement certificate provider that is an electricity retailer to which the electrical output of a Category A generating system is allocated pursuant to a Power Purchase Agreement to which the retailer is a party (see definition for Emissions Workbook).
Demand Side Abatement	Activities that reduce emissions by reducing electricity consumption through eligible on-site electricity generation.
Distribution Loss Factor (DLF)	The distribution loss factor is the value of the electrical losses calculated for various points in the electricity distribution network.
DSA Rule	<i>Greenhouse Gas Benchmark Rule (Demand Side Abatement) No. 3 of 2003.</i>
Efficiency Improvement Approach	A method used under the Generation Rule to measure greenhouse gas emission reductions. Can be used by certain types of generators that make improvements in the efficiency of electricity production (and thereby reduce their emission intensity).
Elective Benchmark Participant	An eligible large customer or a person engaged in carrying out a State significant project, who has chosen to manage its own greenhouse gas benchmark, and whose election is in force.
Electricity Sector Benchmark	Total allowable greenhouse gas emissions from the electricity sector in NSW calculated by multiplying the Total State Population by the State Greenhouse Gas Benchmark per head of population for that compliance year. The Electricity Sector Benchmark is announced by the Tribunal prior to each compliance year (by 30 November each year).
Embedded Generator	An embedded generator or an embedded generating system means a generating system that is connected to the distribution network as defined in the National Electricity Code.
Emissions Workbook	The document entitled <i>Greenhouse Gas Emissions from Electricity Supplied in NSW: Emissions Workbook</i> published by the Ministry of Energy & Utilities in October 2000.
Exempt Sales	The total electricity sold to an elective Benchmark Participant by another mandatory Benchmark Participant during the Compliance Year.

Fugitive Emissions	Greenhouse gases that are discharged into the air as a result of the extraction, transport or production of fossil fuels. Fugitive emissions also include greenhouse gas emissions from landfill sites, sewage treatment works and some industrial processes.
Generation Rule	<i>Greenhouse Gas Benchmark Rule (Generation) No. 2 of 2003.</i>
GGAS Registry	An online registry of Abatement Certificate Providers and Abatement Certificates.
Greenhouse Gas	A generic term for gases such as carbon dioxide, methane, nitrous oxide, perfluorocarbon or sulphur hexafluoride, as defined in the Act and the Regulation.
Greenhouse Gas Benchmark	This is the individual target which must be met by Benchmark Participants each compliance year and represents their individual share of the overall emissions target for NSW (the Electricity Sector Benchmark).
Greenhouse Gas Benchmark Rules	These set out how Benchmark Participants will measure their compliance and how accredited abatement certificate providers are to calculate the number of certificates that they are entitled to create. The Rules are amended from time to time by the Minister for Energy. The most current version of the Rule should be used when calculating entitlements or for compliance.
Greenhouse Penalty	The amount a Benchmark Participant is liable to pay (subject to CPI adjustments) per tonne of carbon dioxide equivalent in respect of excess emissions if they fail to comply with their greenhouse gas benchmark.
Greenhouse Shortfall	The difference between a Benchmark Participant's attributable emissions and its individual greenhouse gas benchmark; if the greenhouse shortfall does not exceed 10% of a Benchmark Participant's greenhouse gas benchmark for that year, it may be carried forward to the following year (except in 2007) and a penalty will not apply.
Large Customer	A customer under an electricity supply contract, other than a retail supplier, who uses 100 GWh or more of electricity at a single site or uses 100 GWh or more of electricity at more than one site, at least one of which uses 50 GWh or more of electricity in NSW.
Large User Rule	<i>Greenhouse Gas Abatement Rule (Large User Abatement Certificate) No. 4 of 2003.</i>

Loss Factor	The value of electrical energy losses incurred in the conveyance of electricity over a distribution or transmission system.
LUAC	A Large User Abatement Certificate; a non-tradeable certificate in the NSW Greenhouse Gas Reduction Scheme.
RET	The Renewable Energy Target (RET) Scheme. Introduced through the <i>Renewable Energy (Electricity) Act 2000</i> , the RET places a legal liability on wholesale purchasers of electricity to proportionately contribute towards the generation of an additional 41,000GWh of renewable energy per year by 2020.
National Greenhouse Gas Inventory (NGGI)	As part of commitments under the United Nations Framework Convention on Climate Change (UNFCCC), Australia, through the Australian Greenhouse Office, has produced an annual listing of national greenhouse gas emissions since 1990 known as the National Greenhouse Gas Inventory.
NGAC	A Greenhouse Abatement Certificate; a tradeable certificate in the Greenhouse Gas Reduction Scheme.
Office of the Renewable Energy Regulator (ORER)	The Commonwealth Regulator of the Renewable Energy Target Scheme.
Penalty Unit	Each unit is currently \$110; it is defined in Section 17 of the <i>Crimes (Sentencing Procedure) Act 1999</i> .
Pool Coefficient	The average emissions per unit of electricity delivered at transmission nodes for all generating systems supplying the notional NSW pool, as determined in accordance with the Compliance Rule; this factor is announced by the Tribunal by 30 November each year.
Regulation	<i>Electricity Supply (General) Regulation 2001</i> (part 8A).
Relative Intensity Approach	A method used under the Generation Rule to measure greenhouse gas emission reductions. Can be used by generators that produce electricity of lower emission intensity than the pool coefficient.
Renewable Energy Certificate (REC)	A Commonwealth certificate surrendered under the Renewable Energy Target (RET) Scheme that may be brought to account against a Benchmark Participant's benchmark in the NSW Greenhouse Gas Reduction Scheme, based on NSW sales.

Renewable Power Percentage (RPP)	The percentage of electricity sold which NSW retailers must surrender equivalent RECS to ORER each year, under the RET scheme.
Retail Supplier	A mandatory Benchmark Participant under the Greenhouse Gas Reduction Scheme. Includes all holders of an electricity retail licence in NSW.
Rules	<p><i>Greenhouse Gas Benchmark Rule (Compliance) No.1 of 2003</i></p> <p><i>Greenhouse Gas Benchmark Rule (Generation) No. 2 of 2003</i></p> <p><i>Greenhouse Gas Benchmark Rule (Demand Side Abatement) No. 3 of 2003</i></p> <p><i>Greenhouse Gas Benchmark Rule (Large User Abatement Certificates) No. 4 of 2003</i></p> <p><i>Greenhouse Gas Benchmark Rule (Carbon Sequestration) No. 5 of 2003.</i></p>
Scheme Administrator	The body administering functions such as accrediting abatement certificate providers, verifying abatement activity and maintaining a registry of certificates; this is IPART, in the first instance.
Sequestration Pool	One or more Eligible Forests which are planted on Eligible Land on which Carbon Sequestration Rights are registered, and which are managed to provide carbon sequestration pursuant to those Carbon Sequestration Rights. The Eligible Forests, the Eligible Lands, and the Carbon Sequestration Rights over the Eligible Lands, may be owned or controlled by more than one entity.
Sequestration Pool Manager	A person who manages a Sequestration Pool, and exercises sufficient control over it to be able to enforce the Carbon Sequestration Rights registered on the Eligible Land on which the Eligible Forests in that pool are planted.
Specific Abatement Project (SAP)	A specific project in which a change to an industrial process results in an identifiable and measurable reduction in greenhouse gas emissions, as defined under the Large User Rule.
State Significant Development	A development that the Minister for Planning has determined is of State or regional significance.

Total Electricity Purchased	This is the total amount of electricity purchased from AEMO, measured at transmission nodes, and embedded generators, measured at the point of generation, by all Benchmark Participants for use in NSW through the compliance year. For a detailed description of the calculations, see Clause 7 of the Compliance Rule.
Total State Electricity Demand	The projected electricity consumption in NSW, as determined in accordance with the Compliance Rule; this factor is announced by IPART by 30 November each year.
Total State Population	The projected total number of persons in NSW, as determined in accordance with the Compliance Rule, this factor is announced by IPART by 30 November each year.