

Compliance and Operation of the NSW Greenhouse Gas Abatement Scheme during 2005

Report to Minister



Greenhouse Gas
Abatement Scheme

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June 2006

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1 EXECUTIVE SUMMARY

The Greenhouse Gas Abatement Scheme (the Scheme) commenced on 1 January 2003 and at the time was one of the first, if not the first, mandatory emissions trading schemes in the world. This is now the third annual report on the Scheme and covers the 2005 calendar year.

During 2005 the Scheme continued to grow and develop. Most notably, the Scheme has been extended to become a joint Scheme with the Australian Capital Territory joining formally on the 1st January 2005.

Under the Scheme, the Independent Pricing and Regulatory Tribunal (IPART) has two key roles – it accredits abatement projects and administers the Scheme (Scheme Administrator) for NSW and the ACT. It also ensures that NSW benchmark participants comply with the Scheme (compliance regulator). The functions of compliance regulator for the ACT are exercised by the Independent Competition and Regulatory Commission (ICRC).

The growth, extension and development of the Scheme is reflected by the fact that there were 33 benchmark participants in 2005, of whom 24 were compulsory participants. For the 2005 compliance year benchmark participants surrendered over nine million abatement certificates.

For 2005, all NSW electricity retailers and other benchmark participants reduced or offset their emissions through the surrender of abatement certificates to their benchmark levels or carried forward a small shortfall, within the permitted 10 per cent buffer. Given that the benchmark target has continued to rise in accordance with the Scheme design from 2003, through 2004 and 2005, this was a strong performance.

At the end of 2005, there were 146 accredited projects eligible to create abatement certificates for undertaking activities to reduce emissions or enhance removal of greenhouse gases, a significant increase on the 93 accredited at the end of 2004.

There has been a notable increase in the number of abatement certificates created through the implementation of energy efficiency projects to offset emissions. However, as with previous years a high proportion of total certificates created result from low or reduced emission electricity generation activities. For the first time, a large customer of electricity has been able to create sufficient large user abatement certificates through reductions in industrial process emissions to fully meet its 2005 abatement certificate surrender requirements.

Many of the abatement projects accredited by the Tribunal have benefits beyond the primary benefit of greenhouse gas emissions reduction or carbon sequestration. For example, some forestry sequestration projects have the potential to also assist in addressing salinity, erosion and biodiversity challenges. Demand side abatement projects involving the fitting of low flow showerheads have the additional benefit of reducing water usage.

For the Tribunal, the task of assessing a significant number of applications for accreditation in a rigorous but efficient manner has been a challenge. The continued growth in the number of accredited abatement certificate providers has also resulted in a growing task of monitoring ongoing compliance with Scheme legislation, rules and accreditation conditions. The audit and monitoring framework has evolved to meet this challenge.

As in 2004, there were more abatement certificates created than required to meet the obligations of the benchmark participants for compliance in 2005. As abatement certificates are bankable, these are available to meet compliance obligations in future years. Each year the 'crossover point' when expected demand starts to exceed supply has moved further out. Whether this will continue depends on growth in supply of certificates from existing and new abatement projects continuing as the tightening benchmarks and population growth increase demand from benchmark participants.

On 1 January 2005, the ACT Government formally introduced the ACT Greenhouse Gas Abatement Scheme modelled on the existing NSW Scheme with the intention that they would be partially run together with the Tribunal as the Scheme Administrator. The compliance regulator function for the ACT Scheme is performed by the Independent Competition and Regulatory Commission (ICRC) which will report ACT Benchmark Participant Compliance outcomes to the relevant ACT Minister. A close working relationship has been established between the ICRC and the Tribunal as compliance regulator for the NSW Scheme.

In June 2005 the former Premier of NSW, The Honourable Bob Carr MP announced the extension of the Scheme from its current legislated end date of 2012 to 2020 and beyond on a rolling 15 year basis. In November 2005 the NSW Greenhouse Plan confirmed the extension of the Scheme to 2020 if agreement on a national approach to emissions trading is delayed.

The Tribunal has sought to contribute to the work being undertaken on behalf of all Australian states and territories to develop a national emissions trading scheme. The project to develop a national scheme has acknowledged the need to harmonise with and/or allow transition from existing schemes such as this Scheme.

The Tribunal has also sought to both contribute to and learn from, the development of similar emissions trading schemes in both other Australian jurisdictions and overseas with a view to enhancing its effectiveness. This collaboration also assists in ensuring that the development of the Scheme harmonises, to the maximum practicable extent, with international protocols and standards.

Under the relevant provisions of the *Electricity Supply Act 1995*, the Tribunal may, with the approval of the Minister, delegate the exercise of its functions as Scheme Administrator to another person or body. The Tribunal has delegated these functions to a Committee. For all of the 2005 calendar year the Committee comprised Mr James Cox and Mr Peter Egger.

2 OVERVIEW OF THE SCHEME

The Scheme is one of the first mandatory greenhouse gas emissions trading schemes established in the world. Its objectives are to reduce greenhouse gas emissions associated with the production and use of electricity; and to develop and encourage activities to offset the production of greenhouse gas emissions.

The Scheme commenced on 1 January 2003 in NSW and, following passage of complementary legislation in the ACT Legislative Assembly, it commenced in the Territory on 1 January 2005.¹

The Scheme requires NSW and ACT electricity retailers and certain other parties, collectively referred to as benchmark participants, to meet mandatory targets for reducing or offsetting the emission of greenhouse gases from the production of the electricity they supply or use.

Enforceable annual emissions reduction targets have been set for calendar years 2003 to 2012². Benchmark participants can reduce the average emissions intensity of the electricity they supply or use by purchasing abatement certificates³ and surrendering these to IPART or Independent Competition and Regulatory Commission (ICRC) in their capacities as compliance regulators. Benchmark participants can also claim credit for the surrender of Renewable Energy Certificates (RECs) under the Commonwealth's Mandatory Renewable Energy Target (MRET).⁴

In its role as Scheme Administrator, IPART accredits organisations undertaking abatement of greenhouse gas emissions as abatement certificate providers under one of the Scheme Rules. An audit panel assists in ensuring the integrity and validity of the certificates registered within the Scheme. The Scheme Registry evidences the creation, transfer and ultimate surrender of the abatement certificates. Once surrendered, the certificates cannot be reused. The Registry does not provide a trading function.

2.1 Legislative framework

The NSW Scheme is created by a legal and technical framework through amendments to the *Electricity Supply Act 1995* (the Act), the *Electricity Supply (General) Regulation 2001* (the Regulation), and five Greenhouse Gas Benchmark Rules⁵ (the Rules) approved by the Minister for Energy.

¹ The NSW Government has previously announced its intention to extend the Scheme to 2020 in the absence of a national emissions trading scheme. Details on how the Scheme will be extended are currently being considered.

² See Figure 2.2 NSW State Benchmark targets.

³ There are two types of abatement certificate that can be surrendered in NSW; NSW Greenhouse Abatement Certificates (NGAC) and Large User Abatement Certificates (LUAC).

⁴ The Office of the Renewable Energy Regulator (ORER) is a statutory authority established to oversee the implementation of the Commonwealth Government's Mandatory Renewable Energy Target.

⁵ The five Rules are: No. 1 - Compliance, No. 2 - Generation, No. 3 - Demand Side Abatement, No. 4 - Large User Abatement Certificates, No. 5 - Carbon Sequestration.

The ACT Government introduced a Greenhouse Gas Abatement Scheme by passing the *Electricity (Greenhouse Gas Emissions) Act 2004* (ACT). This legislation mirrors the equivalent NSW legislative provisions and facilitates the operation of what is, in many respects, a single Scheme across both jurisdictions.

The functions of Scheme Administrator for the Scheme in both NSW and the ACT are undertaken by IPART. This means that a single Registry operated by IPART as Scheme Administrator tracks creation, ownership and surrender of certificates. All applications for accreditation as an abatement certificate provider are considered by IPART as Scheme Administrator and are assessed against the relevant rules made under the (NSW) *Electricity Supply Act 1995*.

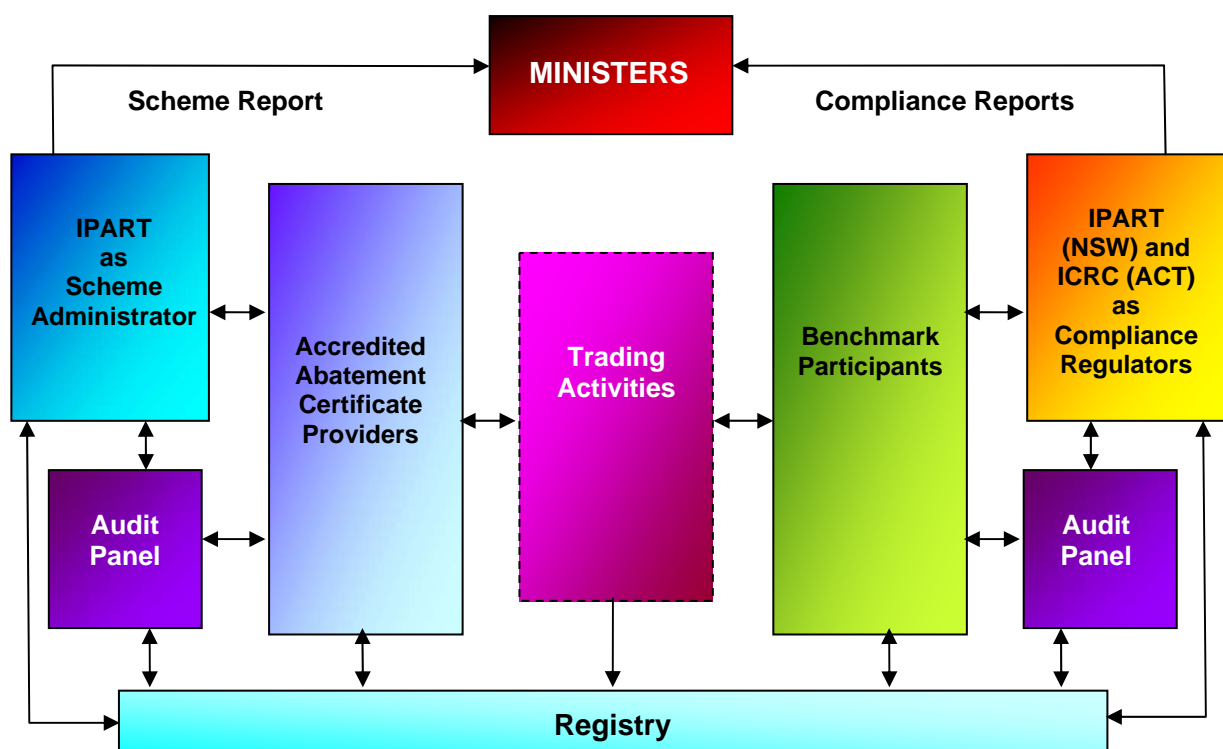
The relevant ACT and NSW legislation specifies the functions of compliance regulator for the Scheme (the ICRC in the ACT and IPART in NSW). These include ensuring that electricity retailers in the ACT and NSW meet legislated targets to surrender certificates to offset emissions and reporting on compliance outcomes to the relevant jurisdictional Ministers.

In NSW the Department of Energy, Utilities and Sustainability has responsibility for developing the policy framework for the Scheme, consulting on proposed changes to the Rules and implementation of those changes. The Tribunal then applies those Rules in its roles as Scheme Administrator and compliance regulator.

2.2 Structure of the Scheme

Figure 2.1 illustrates the structure of the Scheme and its key participants.

Figure 2.1 Structure of the Scheme and key participants



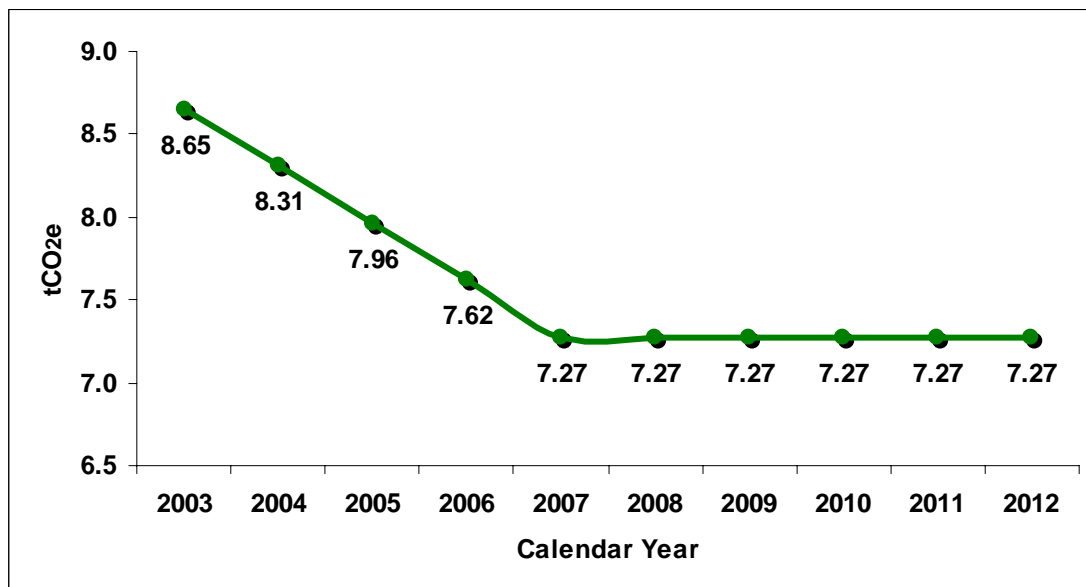
2.3 Greenhouse gas benchmarks

The Scheme establishes annual per capita benchmarks for greenhouse gas emissions by the NSW electricity sector as a whole (the Electricity Sector Benchmarks). It also establishes rules for converting these electricity sector benchmarks into annual benchmarks, expressed in permitted tonnes of emissions each year, for each benchmark participant.⁶

The Government has set a State-wide benchmark of reducing greenhouse gas emissions from electricity generation and use in NSW to 7.27 tonnes of carbon dioxide equivalent (tCO₂-e) per capita by 2007. This target is five per cent below the equivalent NSW per capita emissions in 1990, which is the baseline measurement year used in the Kyoto Protocol.

To ensure continual progress towards this target, progressively tighter targets have been set for each year leading to the final 2007 level. The 7.27 tCO₂-e benchmark level will then be maintained until at least 2012, with 2008 to 2012 being the first measurement period under the Kyoto Protocol. In 2005, the target was set at 7.96 tCO₂-e per capita.

Figure 2.2 NSW Benchmark target



2.4 NSW benchmark participants

The Act imposes benchmark targets on all NSW electricity retail suppliers, market customers which take electricity supply in NSW directly from the National Electricity Market and generators which supply electricity directly to large customers in NSW. These companies are known as benchmark participants. In addition, organisations carrying out State significant developments⁷ and large customers⁸ can elect to manage their own greenhouse gas benchmarks. These are called elective benchmark participants.

⁶ Greenhouse Gas Benchmark Rule (Compliance) No. 1 of 2003.

⁷ State significant development has the same meaning as it has in the *Environmental Planning and Assessment Act 1979*. At this stage, no State significant developments have elected under the Scheme.

⁸ A large 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.

The Scheme allows electricity retailers to pass on to their customers the costs of meeting abatement obligations. Large electricity customers that elect into the Scheme may be able to minimise the abatement costs incurred by finding other more competitive sources. Large customers who have elected into the Scheme can become accredited to reduce on-site emissions from industrial processes at sites which they own and control and are thereby able to offset abatement and other operating costs.

Each benchmark participant is responsible for its contribution to reducing the NSW electricity sector benchmark. For example, if an electricity retailer sells 5 per cent of total electricity sales in NSW, it is responsible for meeting 5 per cent of the required reduction applied to the NSW electricity sector benchmark. Elective participants, having nominated which company sites are part of the Scheme, must meet the benchmark reduction targets for those sites.

2.5 Abatement Certificate Providers

The principal way in which benchmark participants can reduce their per capita emissions is by purchasing NSW greenhouse abatement certificates (known as abatement certificates or NGACs) and surrendering these to IPART or the ICRC when they lodge their compliance reports.

Abatement certificates are created by parties carrying out greenhouse gas abatement projects that are accredited under the Scheme's Rules. Parties are eligible to seek accreditation for demand side abatement activities, reduced or low emission generation or for carbon sequestration. Parties carrying out these activities are referred to as Abatement Certificate Providers (ACPs). Further detail about the activities of ACPs is provided in Section 4.

The Scheme also allows some large electricity customers to claim credit for reducing on-site emissions of greenhouse gases from (non-electricity related) industrial processes at sites which they own and control. These large users can create Large User Abatement Certificates (LUACs) for these activities. These certificates are not tradeable.

Eligible demand side abatement projects must be undertaken in NSW or the ACT. At this stage carbon sequestration activities can only be undertaken in NSW. However, because NSW and the ACT are part of the National Electricity Market, interstate generators also provide electricity from various fuel sources to NSW and ACT customers. Therefore, generation projects from the states connected to the National Electricity Market may apply for accreditation.

The Rules set out the eligibility criteria and greenhouse gas accounting methods which participants must use to determine how much abatement, and hence how many abatement certificates, each project creates.

3 BENCHMARK PARTICIPANTS

There were thirty-three benchmark participants in 2005; all twenty-one licensed electricity retailers in NSW, one market customer, two generators and nine large users of electricity who have voluntarily elected into the Scheme. Currently, no State significant developments have elected under the Scheme (refer to Table 3.1 for the list of all mandatory and elective benchmark participants).

During 2005, IPART approved applications from five large electricity customers seeking to manage their greenhouse gas abatement in 2006. Three of these applications were from companies that sought to extend their already existing elections beyond the 2005 compliance year. In addition, Xstrata Coal and Bluescope Steel elected to become new participants in 2006.

All benchmark participants are required to lodge an annual benchmark statement with IPART by no later than 18 March of the compliance year.⁹ The statement calculates the greenhouse gas abatement benchmark, shortfall and any liability that may attract the greenhouse penalty. Benchmark participants can choose to carry forward to the following year a greenhouse shortfall of up to 10 per cent of their benchmark without having to pay a penalty. Any shortfall carried forward must be abated the following year.

Benchmark participants incur a financial penalty of \$11.00 per tCO₂-e if they choose not to carry forward any shortfall or for any amount of shortfall in excess of the 10 per cent allowable limit.¹⁰ Also if the amount carried forward is not abated in the following year, the benchmark participant will be subject to a penalty at the end of that year.

3.1 Overall compliance

IPART has assessed that all participants have complied with the Scheme for the 2005 compliance year, with only a few benchmark participants carrying forward a small allowable shortfall to 2006. More specifically, IPART found that:

- twenty-two of the benchmark participants surrendered sufficient abatement certificates to meet their greenhouse gas benchmark for 2005
- only five benchmark participants (one electricity retailer and four large electricity users) chose to carry forward a small allowable shortfall to 2006 of up to 10 per cent of their greenhouse gas benchmark
- five benchmark participants did not directly purchase or sell electricity in NSW and did not need to surrender any abatement certificates
- one new benchmark participant sold very little electricity in NSW, and as a consequence was not required to surrender any certificates
- no benchmark participants were required to pay a penalty for not meeting their abatement targets.

⁹ IPART has determined this deadline for submission of benchmark statements pursuant to section 97CB(1) of the *Electricity Supply Act 1995*.

¹⁰ The penalty may be adjusted annually in line with the movements of the Consumer Price Index. However, during periods of low inflation the penalty is not adjusted due to a rounding mechanism in the formula.

Table 3.1 shows benchmark participant's performance against compliance requirements in 2005. The table is broken down into sections of mandatory and elective participants involved in the Scheme and how each met their individual benchmark.

Table 3.1 NSW Benchmark participants compliance⁽¹⁾

MANDATORY PARTICIPANTS		
Surrendered Sufficient certificates to meet 2005 benchmark	Chose to carry forward an allowable shortfall up to 10% of benchmark to 2006	Did not directly purchase or sell enough electricity in NSW to require the surrender of certificates for 2005
AGL Electricity	Aurora Energy	ActewAGL Retail ⁽²⁾
AGL Sales (Formerly AGL Victoria)		Citipower ⁽²⁾
Australian Inland		Delta Electricity ⁽³⁾
Country Energy		Eraring Electricity ⁽⁴⁾
Delta Electricity ⁽³⁾⁽⁵⁾		Independent Electricity Retail Solutions
Energex Retail		Powercor ⁽²⁾
EnergyAustralia		
Ergon Energy		
Energy One (Formerly Ferrier Hodgson Electricity)		
Integral Energy		
Jackgreen (International)		
Macquarie Generation ⁽⁵⁾		
Origin Energy		
Powerdirect		
Tomago Aluminium Company ⁽⁶⁾		
TRUenergy (Formerly SPI Electricity/TXU)		
TRUenergy Yallourn Energy (Formerly Yallourn Energy)		
ELECTIVE PARTICIPANTS		
Amcor Packaging	Carter Holt Harvey Wood Products	NA
Boral Limited		
Norske Skog Paper Mills (Australia)	Hydro Aluminium Kurri Kurri	
Orica Australia	OneSteel NSW	
Visy Industries Holdings	OneSteel Trading	
TOTAL = 22	TOTAL = 5	TOTAL = 6

Notes:

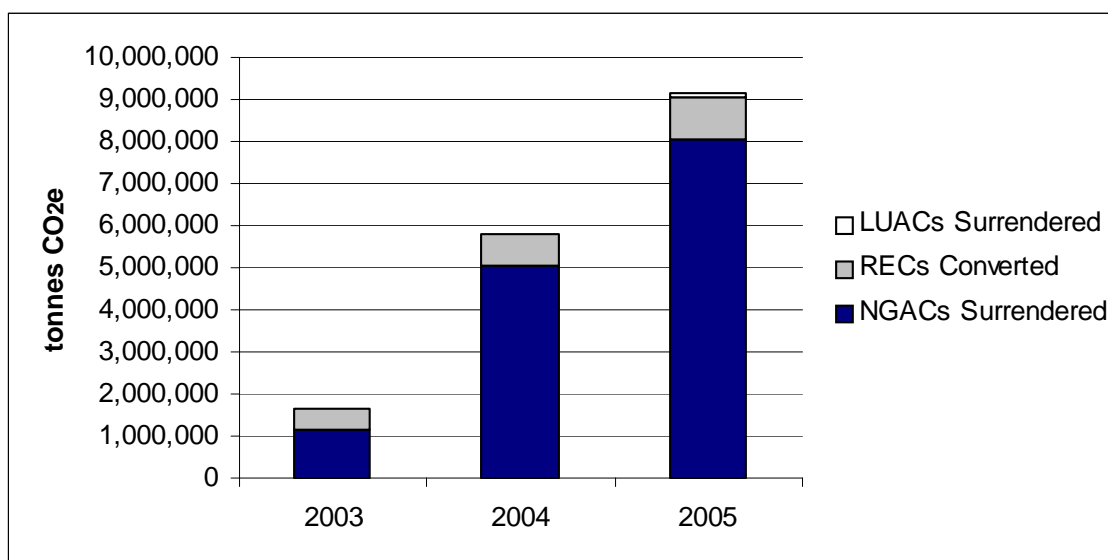
- (1) There are currently no Class 5 Benchmark Participants (State significant developments).
- (2) These participants did not purchase electricity directly from the NEM. Their electricity purchases were included in the returns of benchmark participants who purchased electricity from the NEM on their behalf.
- (3) This participant did not purchase or supply electricity (directly under their licenses) in NSW during the compliance year. Delta Electricity is counted twice as both a licensed NSW electricity retailer and a generator as prescribed by the legislation.
- (4) This participant did not supply electricity under its retail license in NSW during the compliance year.
- (5) A generator as prescribed under the *Electricity Supply (General) Regulation 2001*.
- (6) Registered with NEMMCO as a market customer, that is an electricity customer taking supply directly from the National Electricity Market.

3.2 Abatement/Renewable Energy Certificates surrendered in 2005

The number of certificates surrendered in NSW to comply with greenhouse gas abatement benchmarks has increased significantly since the Scheme began in 2003. For the 2005 compliance year, the number of NGACs surrendered and accepted has increased by approximately 58 per cent from 2004. Tradeable NGACs continue to make up the largest percentage of abatement certificates surrendered to meet required obligations (87 per cent).¹¹ Non-transferable LUACs represented just 0.7 per cent.¹²

The total number of certificates (NGACs, LUACs and RECs converted) required to meet NSW 2005 obligations was 9,150,547 t CO₂-e. This represents a 55 per cent increase in the total number of certificates required to meet obligations since 2004.

Figure 3.1 NSW total abatement/renewable energy certificates



In addition to abatement certificates, the Scheme allows benchmark participants to count RECs associated with electricity purchases in NSW to help meet their benchmark. RECs are surrendered under the *Renewable Energy (Electricity) Act 2000 (Cth)* (see note 2 of Table 3.2).

While the number of RECs counted has steadily increased since the Scheme began in 2003, the percentage of RECs in relation to the total number of abatement certificates required for compliance has decreased. This now represents just 11 per cent of the total abatement obligation in 2005, down from 29 per cent in 2003 when the Scheme first began.

¹¹ The percentages for total certificate liability for any one year is calculated by adding the NGACs/LUACs surrendered in that year, plus converting the RECs counted in that year to NGACs/LUACs (this is done by multiplying RECs by the Pool Coefficient) and then balanced out by the shortfall carry forward amounts.

¹² This is the first year that LUACs have been surrendered.

Table 3.2 NSW total abatement/equivalent renewable energy certificates

Compliance year	2003	2004	2005
Total NGACs surrendered and accepted for the compliance year ⁽¹⁾	1,166,866	5,037,847	7,982,204
Total LUACs surrendered and accepted for the compliance year	0	0	64,401
Total shortfalls carried forward to next compliance year	44,643	141,908	225,201
RECs counted towards compliance	544,518	841,194	1,117,907
(converted to equivalent number of NGACS) ⁽²⁾	(488,432)	(762,122)	(1,020,649)
RECs counted (expressed as equivalent Abatement Certificates) as a percentage of total abatement required for the compliance year	29%	13%	11%
Total Scheme obligation for the compliance year ⁽³⁾	1,699,941	5,897,236	9,150,547

Notes:

- (1) Totals exclude any NGACs offered for surrender in excess of a benchmark participant's requirements.
- (2) RECS are not directly equivalent to NGACs. To calculate the equivalent number of NGACs, the RECs counted figure is multiplied by the pool coefficient for that year (for 2005 that pool coefficient is 0.913 tCO₂-e/MWh). In 2005, the 1,117,906 RECs converted is equivalent to 1,020,649 NGACs. Renewable energy certificates counted are expressed as equivalent to abatement certificates.
- (3) Total Scheme obligation required to meet the NSW electricity sector benchmark for 2005 is calculated by adding NGACs (+7,982,204), LUACs (+64,401) and RECs converted (+1,020,649) in 2005 and then adjusted by the shortfall carry forward amounts for 2004 (-141,908) and 2005 (+225,201).

3.3 Carrying forward shortfall to 2006

Table 3.3 shows the five benchmark participants (four large users and one small retailer) that did not fully meet their 2005 benchmarks and chose to carry forward small shortfalls within the limits allowed by the Scheme. The total amount of the shortfalls being carried forward to 2006 is 225,201t CO₂-e.

It is important to note that all shortfalls carried forward to 2006 represented no more than 10 per cent of their benchmark. Two of those shortfalls represented less than one per cent of their benchmark.

Table 3.3 Benchmark participants carrying forward a shortfall to 2006

Benchmark participant	Greenhouse shortfall (as % of benchmark)
OneSteel NSW and OneSteel Trading	< 1%
Aurora Energy	1 < 5%
Carter Holt Harvey and Hydro Aluminium Kurri Kurri	5 ≤ 10%

3.4 Type of abatement certificates surrendered (NGACs/LUACs) in 2005

Accredited abatement certificate providers carrying out abatement activities under the Rules can create NGACs or LUACs. Providers can either trade certificates to the benchmark participants each year, or use them to help meet their own benchmark.¹³ The Scheme allows the creation of abatement certificates for the following abatement activities:

- low-emission generation of electricity (**Generation**)
- activities that result in reduced consumption of electricity (**Demand Side Abatement**)
- the capture of carbon from the atmosphere in forests (**Carbon Sequestration**)
- activities carried out by elective participants that reduce on-site emissions not directly related to electricity consumption (**Large User Abatement**)¹⁴

Generation activities continue to be the main source of abatement certificates surrendered, making up approximately 94 per cent of all abatement certificates offered for surrender. Generation certificates being surrendered have increased from 2004 by approximately 72 per cent. Demand side abatement makes nearly five per cent of the total abatement certificates surrendered this compliance year.

Table 3.4 Type of abatement certificates (NGACs/LUACs) offered for surrender and accepted^(*)

NGACs/LUACs	2003	2004	2005
Demand Side Abatement (DSA)	52,692	605,734	382,354
	4.5%	12.0%	4.8%
Generation	1,114,174	4,432,113	7,599,850
	95.5%	88.0%	94.4%
Large User Abatement	0	0	64,401
	0.0%	0.0%	0.8%
Total	1,166,866	5,037,847	8,046,605
	100.0%	100.0%	100.0%

(*) The figures include any NGACs offered for surrender in excess of a benchmark participant's requirements.

The 2005 compliance year saw LUACs surrendered for the first time to offset abatement obligations.¹⁵ LUACs were created by Boral Limited and Amcor Packaging as a result of a series of fuel efficiency improvements made by these companies.¹⁶ Due to the creation of LUACs and equivalent RECs counted in its benchmark statement, Boral Limited did not have to surrender any NGACs to meet its 2005 greenhouse gas benchmark and had a zero shortfall. Amcor Packaging was able to meet over a third of its total abatement certificate obligation for the compliance year with LUACs.

¹³ Some accredited abatement certificate providers are also benchmark participants.

¹⁴ LUACs are not directly related to electricity use in accordance with the Greenhouse Gas Benchmark (Large User Abatement Certificate) Rule No. 4 of 2003.

¹⁵ LUACs, like NGACs equate to one tonne of carbon dioxide equivalent by the large user as a result of their abatement activity.

¹⁶ Hydro Aluminium Kurri Kurri is also an accredited large user with fuel efficiency improvements, but did not create any LUACs this year.

4 ABATEMENT CERTIFICATE PROVIDERS

Parties who bring forward eligible abatement projects are called Abatement Certificate Providers (ACPs). ACPs are accredited by the Scheme Administrator to create certificates (NGACs and LUACs) each of which represents the abatement of one tonne of carbon dioxide emissions.

At the end of 2005, there were 146 accredited abatement certificate providers eligible to create certificates for abatement activity, a significant increase over the 93 providers accredited at the end of 2004. The Scheme Administrator accredited a total of 72 projects in 2005. Between 27 August 2003, the date of the first accreditation under the Scheme, and the end of 2005, a total of 206 individual abatement projects were accredited, and 60 project accreditations cancelled for reasons outlined below.

The Scheme Administrator is responsible for assessing applications for accreditation by potential ACPs. An applicant must demonstrate that it meets the criteria for accreditation according to the Act, Regulations and Rules in order to be accredited. Following accreditation, the Scheme Administrator monitors the ongoing compliance of ACPs with the Scheme rules and specific conditions of accreditation.

The growth in participation by organisations undertaking abatement and the increase in breadth of abatement activity type in 2005 reflects the increase in understanding of the scheme by the market. New ACPs were accredited under each of the Scheme rules which cover low or reduced emissions generation, electricity demand side abatement, non electricity abatement by large users and carbon sequestration through forestry.

During 2005 there was a generally strong compliance performance by participants in the Scheme. As the Scheme matures and personnel in organisations change, there is a need for strong compliance monitoring procedures to ensure that the ongoing requirements of the Scheme are met. As is detailed further in Section 4.7 below, there were some relatively minor instances of non compliance which came to the Scheme Administrator's attention.

In establishing the framework for accreditation and ongoing monitoring of ACPs, IPART as the Scheme Administrator has been conscious of the need to ensure Scheme integrity through robust assessment and quantification of abatement and the ongoing monitoring of ACPs' compliance with obligations arising from accreditation. It has also been conscious that these requirements create participation costs which may act as a barrier to entry or ongoing participation in the Scheme. The Scheme Administrator is seeking to find an appropriate balance between what are potentially competing objectives by reviewing, on an ongoing basis, its requirements for participation. It has, for example, developed a compliance monitoring strategy around a risk-based approach. This is further outlined in Section 6.3.

In managing its relationships with Scheme participants, IPART has sought to maintain effective and open communication and to deal with applications in a timely manner. It has been encouraged by feedback received through IPART's recent stakeholder survey¹⁷ in which IPART's leadership, consultation approach and professionalism were all highly rated with a particularly positive response in the greenhouse gas area of its work.

¹⁷ The results of the stakeholder survey are available on IPART's website at www.ipart.nsw.gov.au

4.1 Accreditations in 2005

Table 4.1 below sets out the number of projects accredited and cancelled for each year the Scheme has been operating identified by the Scheme Rule. Sections 4.2, 4.3, 4.4 and 4.5 set out an overview of the types of activities that have been accredited under each of the Scheme Rules and provide more detail about accreditation activity during 2005.

Table 4.1 Number of projects accredited by year and by Rule

	Generation	Demand Side Abatement	Large Users – non-electricity	Carbon Sequestration	Total
Accredited in 2003 ¹	14	3	1	0	18
Cancelled in 2003 ²	0	0	0	0	0
Accredited in 2004 ¹	67	48	0	1	116
Cancelled in 2004 ²	7	34	0	0	41
Accredited in 2005¹	25	43	1	3	72
Cancelled in 2005²	7	12	0	0	19
Total³: 146	92	48	2	4	146

Notes:

- 1 This represents the number of projects approved by IPART in the calendar year.
- 2 Projects may be cancelled due to a number of reasons including corporate restructure, completion of the project or a change in circumstances for the project.
- 3 This represents accredited projects still entitled to create certificates as at 31 December 2005.

Table 4.1 also shows that a number of accredited projects were cancelled in 2005. Where the cancellation occurred at the request of the ACP, due for example to a corporate restructure, the project was generally re-accredited under a different corporate entity. The 34 projects cancelled in 2004 under the Demand Side Abatement Rule were previously accredited under the Sustainable Energy Development Authority (SEDA). SEDA's enabling Act was repealed on 1 July 2004 and all functions were transferred to the Department of Energy, Utilities and Sustainability. Accreditations must be held by a legal entity, therefore these accreditations were cancelled and a number of the companies on whose behalf SEDA was accredited, subsequently applied for and were granted accreditation in their own name.

4.2 Generation Rule

4.2.1 Nature and scope of the Rule

The *Greenhouse Gas Benchmark (Generation) Rule No. 2 of 2004* ("the Generation Rule") enables electricity generators to create certificates for:

- producing electricity that has a lower emission intensity than the NSW Pool Coefficient (the Relative Intensity Approach), or
- improving the efficiency of electricity production by a generating system that is generally operating at an emissions intensity above the NSW pool coefficient (the Efficiency Improvement Approach).

The extent to which abatement certificates are created under either, or both, of these approaches is determined by the generating system's assigned Category (A, B, C or D) and its assigned NSW Production Baseline. For an explanation of these categories see Attachment 2.

The Generation Rule is the only Rule that allows abatement certificates to be created from activities outside NSW and the ACT, provided that the generating system's output is exported to a registered distribution or transmission system of the National Electricity Market (NEM), and is equipped with adequate metering and record-keeping procedures to support the calculation of certificates under the Generation Rule. This means that generators can create abatement certificates for that portion of electricity that is exported into the NEM.

The majority of generators in the Scheme are in NSW, with the remaining generators split between Victoria and Queensland and to a lesser extent, South Australia.

Other areas of eligible generation activity include the use of landfill gas, sewage gas, manufactured methane gas (biogas), and other eligible waste methane as fuel for generation. These types of generation also attract an added benefit in terms of abatement certificate creation because the Scheme recognises the avoidance of methane emissions via combustion of these fuels (methane having a global warming potential 21 times that of carbon dioxide).

The use of waste heat from cogeneration is also recognised within the Scheme, with the total greenhouse gas emissions of a generating system (which impacts its emissions intensity) being able to be adjusted downwards in recognition of the notional greenhouse gas emissions avoided through the beneficial capture and use of the waste heat.

4.2.2 Applications and accreditations

There were 92 generation abatement projects accredited to create certificates under the Generation Rule at the end of 2005. Of these, 25 accreditations were approved by IPART in 2005 and seven accreditations were cancelled.

A diverse range of projects have been accredited under the Generation Rule. Examples include:

- power station efficiency improvements (such as turbine upgrades) that reduce emissions intensity compared to a benchmark or prior measured performance
- gas fired generation with output above (pre 2002) baseline output
- electricity generation using waste gas from landfill sites, waste coal mine gas and coal seam methane
- cogeneration projects displacing the use of higher emissions intensity fuels
- fuel switch projects where high emission intensity fuels are replaced with lower intensity fuels.

From 2004, the Scheme Administrator commenced consideration of 'future projects' for accreditation. As a result, several new 'future projects' have been accredited under the Scheme based on cogeneration, LFG, biomass and coal seam methane. The first of these accredited future projects, a fuel switch, came online in December 2005.

Table 4.2 Generation Rule - Accreditation applications approved by year, fuel type and state

Category	Fuel Type	2003	2004	2005
New South Wales				
Category A	Biomass		3	
	Hydro		6	
	Landfill gas		3	
	Natural gas		1	
	Waste coal mine gas		2	
Category B	Coal		6	1
Category C	Landfill gas	1		
Category D	Biomass		2	
	Landfill gas	2	2	
	Natural gas			1
	Sewage gas			1
	Waste coal mine gas		2	
Total		3	27	3
Australian Capital Territory				
Category D	Landfill gas	2		
Total		2	0	0
Queensland				
Category A	Landfill gas		1	
Category C	Coal		1	
	Natural gas			2
Category D	Coal		1	1
	Landfill gas		8	
	Natural gas		1	1
	Waste coal mine gas		2	
Total		0	14	4
South Australia				
Category A	Landfill gas	4	2	
Category C	Natural gas		1	3
Category D	Natural gas		2	
Total		4	5	3
Victoria				
Category A	Hydro		7	6
	Landfill gas	5	6	1
	Natural gas		1	3
Category C	Coal		1	
	Natural gas		1	1
	Sewage gas		1	
Category D	Biomass			2
	Landfill gas		4	1
	Natural gas			1
Total		5	21	15
Total – all regions		14	67	25

4.2.3 Changes to Generation Rule

The Generation Rule was amended on 23 December 2005. Together with changes to improve the wording of the Rule, and clarifications to calculation methodologies, the major change was to Method 2.

The previous version of the Rule (11 June 2004) enabled generators to use Method 2 to claim certificates for efficiency improvements associated with a design change. This presented challenges in the identification of efficiency improvements associated with the actual design change (eg, turbine upgrade) as opposed to general improvements achieved through, for example, improved maintenance practices. Under the revised version of the Rule (23 December 2005), the trigger for using Method 2 remains a design change, however generators are now able to claim all performance improvements associated with the project. It is anticipated that the Rule change will attract additional Method 2 applications.

Generators seeking to create certificates for abatement in 2006 and subsequent years using Method 2 are now required to develop and implement a Performance Improvement Testing Regime (PITR). The PITR is required to establish the reference performance of the generating system prior to undertaking performance improvements, and then to set out an approach for measuring the post-improvement performance of the generating system at designated measurement periods into the future. The change to Method 2 occurred to more accurately measure abatement achieved by design change projects accredited under Method 2.

In response to the change to Method 2, the Secretariat is engaged in a project to develop guidance material on the changes to Method 2, including the development of PITRs and the incorporation of uncertainty calculations in the PITR documentation. The project has involved consultation with the policy maker, power generators and technical experts. The PITR Guidance Document is intended to be released in June 2006.

4.2.4 Managing applications for accreditation

Developing and assessing applications for accreditation under the Generation Rule provides some significant challenges for both applicants and the Scheme Administrator. These arise mainly from the scale and complexity of the projects, and the volume of data required to substantiate abatement and therefore NGAC calculations.

The highly technical nature of the projects put up for accreditation also poses challenges to assessing applications and undertaking ongoing monitoring of projects. Where projects are particularly complex, the Scheme Administrator has the ability to appoint expert consultants from the Audit and Technical Services Panel to provide an assessment of the technical aspects of the project. The results of the assessment can then be incorporated into the Scheme Administrator's consideration of the application.

The implementation of the Queensland 13% Gas Scheme has resulted in some Queensland generators indicating their preference to create GECs rather than NGACs. IPART is currently finalising administrative arrangements with the Queensland Department of Energy to ensure that no double counting of abatement occurs.

4.3 Demand Side Abatement Rule

4.3.1 Nature and scope of the Rule

The *Greenhouse Gas Benchmark (Demand Side Abatement) Rule No. 3 of 2003* (“the DSA Rule”) refers to activities that improve the efficiency of energy use. Because the Scheme is based on the use of electricity, actions which reduce the consumption of electricity result in fewer greenhouse gas emissions being produced. These actions are taken by the customer, rather than the supplier of electricity, and are therefore referred to as ‘demand side abatement’ activities.

The DSA Rule defines five main types of eligible projects:

- energy efficiency projects that modify existing energy consuming equipment, processes or systems (called ‘Installations’ in the DSA Rule), or which modify the usage of Installations
- energy efficiency projects that replace existing Installations, with other Installations that consume less electricity
- energy efficiency projects that install new Installations that consume less electricity than other Installations of the same type
- fuel switching projects that substitute one source of energy for another, and
- on-site electricity generation that replaces supply from the National Electricity Market.

The Scheme allows an organisation to create certificates from eligible DSA projects, or to nominate a third party to create certificates on their behalf. For example, a business that installs energy efficient lighting in residential households may apply to the Scheme to become accredited to create certificates, as long as the individual householder has nominated that business to do so. The form and content of the nomination is critical to the eligibility of these types of projects.

4.3.2 Applications and accreditations

There were 43 abatement projects accredited to create certificates under the DSA Rule in 2005. These projects covered a broad range of energy efficiency activities, ranging from residential projects, to projects carried out at commercial premises, to a project at a large energy intensive industrial facility. Of these, there were numerous projects accredited for small scale energy efficiency projects at facilities such as universities, hospitals, statutory authorities and industrial facilities. These projects covered a range of energy efficiency improvements, such as upgrades to lighting, heating and air conditioning systems, and industrial equipment.

Default Abatement Factor Method

During 2005 there was significant expansion of the use of the Default Abatement Factors (DAF) Method under the DSA Rule. The DAF Method is aimed at small scale energy efficiency projects where the abatement is accounted for or ‘deemed’ to have occurred at the time the project is installed. It relies on the use of default emissions abatement factors which are prescribed in Schedule A, Table 1 of the DSA Rule. Prior to being accredited, an applicant must specify which products they intend to use as part of the DAF Method project, and these product types must be listed in the Schedule to the Rule.

Another important feature of projects using the DAF Method is that in general the abatement is assigned to a third party. In doing so, the third party takes on the liability and any responsibility for reporting and compliance associated with the Scheme.

There were seven projects accredited under the DAF Method in 2005. All of these projects were in the residential sector and involved the installation of common energy efficient equipment such as AAA-rated (water saving) showerheads, compact fluorescent lamps and natural gas hot water systems.

When designing a DAF Method project, the ACP can choose three different distribution methods: installation by a qualified tradesperson, sales, and give-aways. An Installation Discount Factor (IDF) is applied to account for the risk that some products sold or given away are not actually installed. For example, where a product is installed by a tradesperson, there is certainty that abatement will occur and therefore no discount is applied (an IDF of one is used). Where a product is given away, because there is some doubt as to when the product will be installed, it is assigned an IDF of 0.8. The DSA Rule sets out the different criteria used when assigning an IDF, and how the factor is applied.

Table 4.3 DSA Rule - Accreditation applications approved by year

Type	Sector	2003	2004	2005
New South Wales				
Energy Efficiency	Residential		8	7
	Commercial	2	23	21
	Industrial	1	12	14
Energy Source Substitution	Commercial		1	
On-site Generation	Industrial		4	1
Total projects accredited each year		3	48	43

During 2005 the Scheme Administrator granted accreditation to 43 projects and 12 project accreditations were cancelled. At the end of 2005 there remained 48 projects accredited to create certificates under the DSA Rule.

4.3.3 Cancellations of DSA Accreditations

There were a number of DSA accreditations cancelled in 2005 where the accredited party ceased to exist or where there was a change in the corporate identity of the accredited party.

Some project accreditations were also cancelled at the request of the accredited parties. In these cases the organisations appear to have decided that they would be either unable to meet the on-going compliance requirements of the Scheme, or considered that the benefit gained from continued participation was outweighed by the costs of compliance. In most cases these were particularly small projects, with limited potential to create certificates (all but one project creating less than 300 certificates per year).

The Scheme Administrator recognises that on-going reporting and compliance requirements mean that it may not be cost effective for small individual DSA projects to become accredited. During 2005, the Scheme Administrator worked with organisations to increase the level of understanding of the requirements for participating in the Scheme.

In addition, the Scheme Administrator had discussions with organisations seeking to act as ‘aggregators’, enabling the bundling of similar small scale DSA projects into one accreditation. One model accredited in 2005 involved a project proponent bundling a number of different projects under an Energy Performance Contract, thereby minimising transaction costs for the project. In addition, the Scheme Administrator progressed a model for bundling with a project proponent under a single accreditation where the calculation methodology is common to all sites. Central to any bundling approach is that all records need to be held by the accredited party or ‘aggregator’.

Table 4.4 gives a break down of the number of projects accredited and cancelled under the DSA Rule during 2005.

Table 4.4 DSA Rule - Project accreditation and cancellations of accreditations in 2005

	Accredited in 2005	Cancelled in 2005	Net increase in 2005
Energy Efficiency: Commercial	21	9	12
Energy Efficiency: Industrial	14	2	12
Energy Efficiency: Residential	7	1	6
On-site Generation: Industrial	1*	0	1
Total	43	12	31

* Future project.

4.3.4 Changes to DSA Rule and management of DSA project accreditations in 2005

The DSA Rule was amended on 9 December 2005. The most significant amendment was the extension to coverage of the Rule to include projects in the ACT. The ACT Government enacted legislation which took effect on 1 January 2005. The legislation mirrors the NSW Scheme and allows DSA projects to be accredited in the ACT.

In addition, the definition of demand side abatement was clarified to include projects that reduce electricity consumption where there is no negative effect on production or service levels.

The Rule change also expanded the range of project and product types for which accreditation using default abatement factors can be sought. These include; compact fluorescent lamps (several new longer life categories have been added), infrared coated halogen lamps, and AAA rated flow restrictor devices. A new activity was added which recognises the abatement from the removal of ‘backup’ refrigerators, 10 or more years old, that are still in working order. This addition is intended to result in the appropriate disposal of inefficient refrigerators that are operating with only a small amount of contents inside for much of the year.

As indicated above, there was a significant increase in the number of certificates created from projects using the DAF Method. Most of these were projects involving the give-away distribution of compact fluorescent lamps (CFLs) and water saving showerheads to residential households. Projects using the DAF Method must have well documented record keeping systems, as the primary evidence of abatement is the nomination forms signed by the electricity consumer.

To manage the growth of these types of projects, the Scheme Administrator developed new requirements during 2005 to try to ensure that abatement equal to the number of certificates created is occurring. This included placing limits on the number of products that can be either sold or given away to residential households. The Scheme Administrator also developed and applied new audit regimes for DAF Method projects in 2005. These innovations have been explained in a new Fact Sheet titled "*Creating NGACs using the Default Abatement Factors Method*" which is available on the Scheme website.

As shown in Section 5, residential energy efficiency projects registered nearly one million certificates in 2005. All of these projects were accredited using the DAF Method. More than 430,000 certificates were created from on-site generation of electricity, which reduced the electricity demand from the NEM. More than 80,000 certificates were created from commercial and industrial energy efficiency projects in 2005.

4.4 Large User Abatement Certificate (LUAC) Rule

4.4.1 Nature and Scope of the Rule

The Greenhouse Gas Benchmark (Large User Abatement Certificates) Rule No. 4 of 2003 ("the LUAC Rule") provides for the creation and calculation of non-tradable abatement certificates (LUACs) through the abatement of on-site industrial process-related greenhouse gas emissions not directly related to the consumption of electricity.

In the LUAC Rule, the person entitled to create abatement certificates is called a 'large user'. Persons who qualify as large users are:

- large electricity customers, who use more than 100GWh per year at one or more sites that they own or occupy in NSW with at least one using more than 50GWh per year, who have elected to manage a greenhouse gas benchmark (Elective Benchmark Participant), or
- market customers whose electricity usage levels pass the threshold applied to large customers (ie, 100GWh per year at one or more sites that they own or occupy in NSW with at least one using more than 50GWh per year).

By electing to become a benchmark participant, a large electricity customer takes on the obligation of managing its greenhouse gas emissions associated with their electricity purchases. This would otherwise be managed on their behalf by an electricity retailer who passes through the costs to the large electricity customer.

Eligibility to become an elective benchmark participant is assessed by the compliance regulator (market customers are mandatory benchmark participants). Once eligibility and usage levels have been accepted, activities that can be carried out by a large user to create LUACs include:

- increasing the efficiency of on-site fuel use
- switching to lower emission intensity fuels
- abating on-site greenhouse gas emissions from industrial processes, and
- abating on-site fugitive greenhouse gas emissions.

These activities must occur in NSW at a site covered by the large electricity customer's election to manage its own greenhouse gas benchmark. Emissions reductions accounted for by the activity must be within a category reported in the National Greenhouse Gas Inventory (NGGI) and must not be as a result of compliance with statutory requirements (although emissions reductions beyond the statutory requirements may be claimed).

A LUAC project may be a single activity or a mixture of activities implemented either as a one-off action or as part of an ongoing program. To accommodate this variability, a large electricity customer can choose between three different methods for calculating how many LUACs may be created from its project:

- Project Impact Assessment Method
- Baseline Method for an Existing Plant, or
- Baseline Method for Plant Extensions or New Plant.

The Project Impact Assessment Method is generally more appropriate where a single activity is undertaken as a one-off project while the Baseline Method is applicable where a mixture of multiple activities are undertaken as part of an ongoing program to reduce the greenhouse intensity of the industrial output of the plant.

4.4.2 Applications and Accreditations

There are currently 10 participants who are eligible to utilise the LUAC Rule (nine large electricity customers and one market customer). By the end of 2005, the Scheme Administrator had accredited two Large Users covering the upgrade of an aluminium smelter (abating on-site greenhouse gas emissions from industrial processes) and improvements in the efficiency of on-site fuel use at a paper mill.

Following its accreditation in early 2006, the first LUACs were registered by Boral Ltd from its upgrade of Kiln 6 at its Blue Circle Southern Cement Berrima cement works. The registration brought to account emissions abated by reducing the greenhouse intensity of clinker production from improvements in the efficiency of on-site fuel use. The creation was in relation to abatement which occurred during the 2005 calendar year (hence Vintage 2005) and enabled Boral to fully comply with its benchmark obligation through the surrender of these internally generated LUACs.

Table 4.5 LUAC Rule - Accreditation applications approved by year

Grouping	Sector	2003	2004	2005
New South Wales				
Aluminium	Industrial Process	1	0	0
Paper & Wood	Increased Fuel Efficiency	0	0	1
Total		1	0	1

4.4.3 Potential for Expansion

During 2005, the *Electricity Supply Amendment Act 2005* amended the provisions of the Act relating to eligibility requirements for election as a benchmark participant by large electricity customers. The amendments expanded the range of company structures, including holding companies, which are able to elect to manage their own greenhouse gas benchmark on behalf of a corporate group.

This has delivered important benefits to the Scheme by allowing a number of companies to bring to account abatement of greenhouse gas emissions from a wider range of sites than previously possible. It is anticipated that more large electricity customers will make use of the expanded election options in future years providing additional benefits both to the Scheme and the participant companies.

4.5 Carbon Sequestration Rule

4.5.1 Nature and scope of the Rule

The Scheme's *Greenhouse Gas Benchmark (Carbon Sequestration) Rule No. 5 of 2003* ("the CS Rule") makes provision for organisations to create certificates for carbon sequestered in eligible forests in NSW. Carbon sequestration is the result of photosynthesis, a chemical reaction that naturally occurs in plant life. Photosynthesis removes carbon dioxide from the atmosphere. The CS Rule is consistent with Article 3.3 of the Kyoto Protocol, and recognises carbon sequestration through 'aforestation' and 'reforestation' activities.

Under the CS Rule, there are three key areas of eligibility which the Scheme Administrator assesses in applications:

- capability of the organisation to account for carbon sequestered through forestry activities, and to maintain the long-term commitments involved
- eligibility of the actual forest, including the land's status as at 31 December 1990, and the forest's physical characteristics including height and crown cover (key criteria for consistency with the Kyoto Protocol), and
- demonstration that the applicant has the ownership/control of registered carbon sequestration rights on the title of the eligible land.

4.5.2 Applications and accreditations

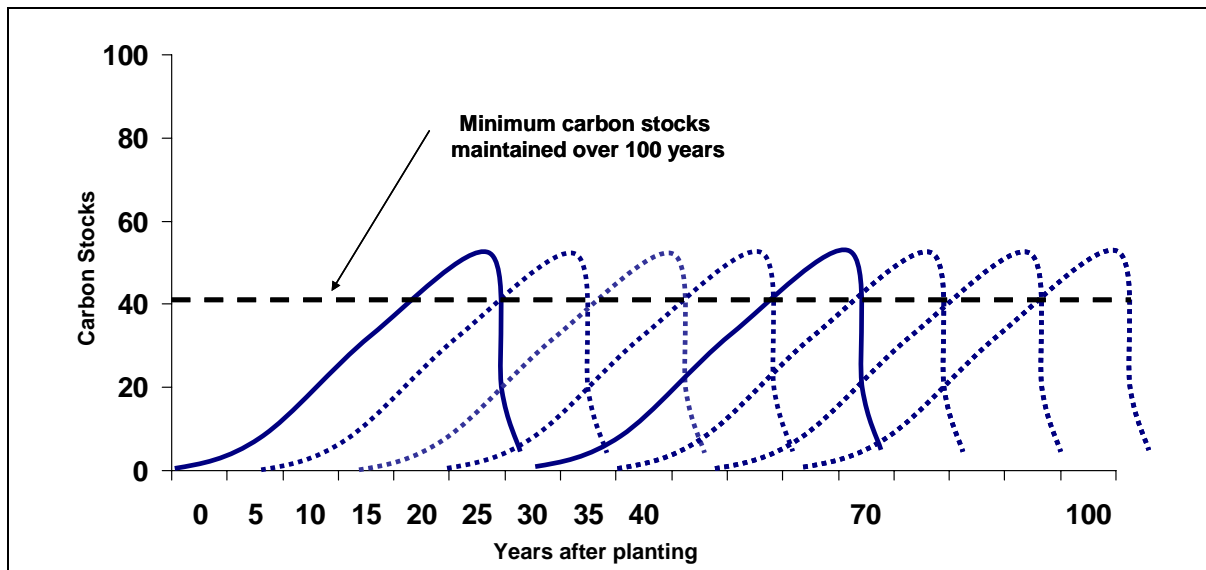
In 2005 three organisations were accredited as sequestration pool managers, bringing the total accreditations under the CS Rule to four. Interestingly, no two accredited sequestration pool managers have the same business model. The forestry activities range from permanent, conservation-style forestry to commercial, rotational harvest forestry.

Table 4.6 Carbon Sequestration Rule - Accreditation applications approved by year

Grouping	2003	2004	2005
New South Wales			
Carbon Sequestration	0	1	3

The sequestration pool manager’s business model plays a significant role in determining the sophistication of the carbon accounting methodology required to calculate eligible certificate creation. Commercial forestry that is intended to be harvested on a rotational basis requires not only a significant portfolio of forests, but also an accounting system that is adequate to ensure the carbon sequestration stocks never decrease below the threshold of certificates created. Figure 4.1 graphically depicts the stocks of carbon sequestration that can be achieved through a series of forest plantings and harvests on a staggered, rotational basis.

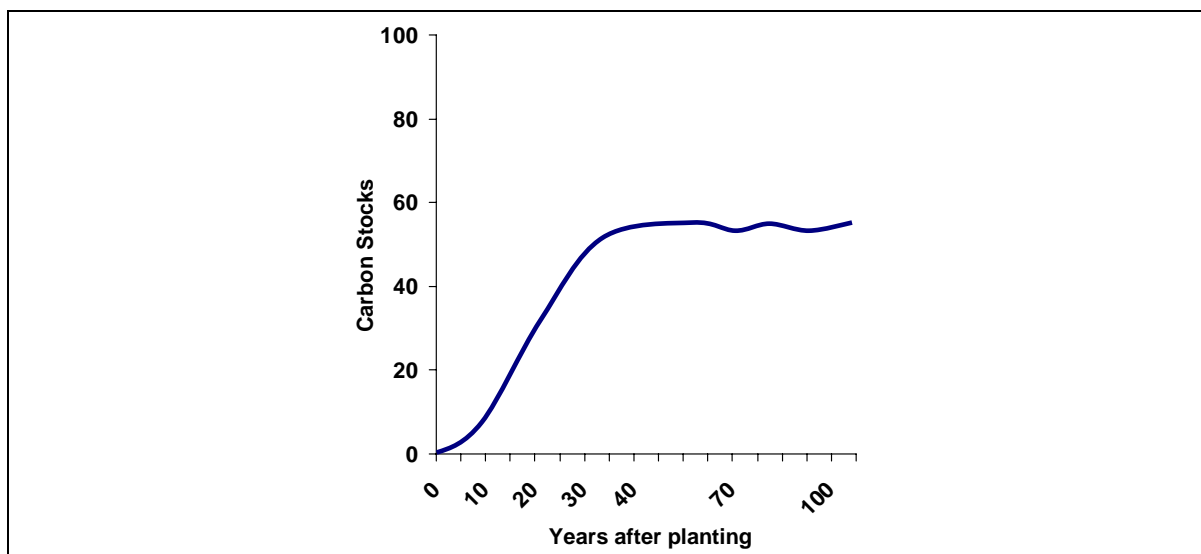
Figure 4.1 Plant-grow-harvest carbon storage



Each line on the graph represents the growth of a forest that is included in the Sequestration Pool. By staggering the planting and harvest times of the forests, it is possible to maintain a permanent volume of carbon storage, depicted by the horizontal dashed line in Figure 4.1.

By comparison, forestry that is planted for permanency or conservation purposes is likely to attract a simpler carbon accounting methodology. As shown in Figure 4.2, carbon stocks in permanent forests can be more easily accounted.

Figure 4.2 Permanent forest carbon storage



The single line on the graph could represent one forest or numerous forests in the Sequestration Pool. Accumulation of stocks would continue on a trajectory until flattening at maturity, assuming there are no depletion events such as fire.

Once an organisation is accredited as a sequestration pool manager, there are provisions in the accreditation conditions which allow additional forests to be brought into the sequestration pool, or alternatively removed if required. The flexibility of the Sequestration Pool allows forests to be added or removed, so long as the total amount of carbon stocks in the Sequestration Pool always remain equal to or greater than the number of certificates created.

Early in 2005 the first certificates were registered under the CS Rule. The registration brought to account sequestration which occurred during the 2004 calendar year (hence Vintage 2004). It is understood that these certificates were a world-first for carbon sequestration in a mandatory scheme. Vintage 2005 certificates for carbon sequestration totalled 538,471. This significant increase over 2004 is an encouraging sign of the growth in this area of the Scheme.

4.5.3 Potential for expansion

Once an organisation is accredited as a sequestration pool manager, it can bring additional forest(s) into its pool by submitting updated details regarding approved carbon accounting practices, and information regarding the eligibility of the additional forest(s). It is understood that most of the existing accredited sequestration pool managers intend to add to their sequestration pools in 2006.

To assist in participation by both existing accredited sequestration pool managers, and potential applicants, the Scheme Administrator has continued to contribute to the drafting of the Interim Australian Standard for Carbon Accounting for Greenhouse Sinks (AS4978.1). This Standard is a key reference for the CS Rule in the Scheme as it provides sequestration pool managers with important guidance on the development of their carbon accounting methodology.

The interest in carbon sequestration from forestry is continuing to grow. In 2005 the Secretariat received an increasing number of enquiries. Based upon enquiries with interested parties over the last year, it is anticipated that new applications will be received in 2006. These applications are likely to range from purely commercial ventures, to organisations seeking to achieve sustainability or conservation objectives through participation.

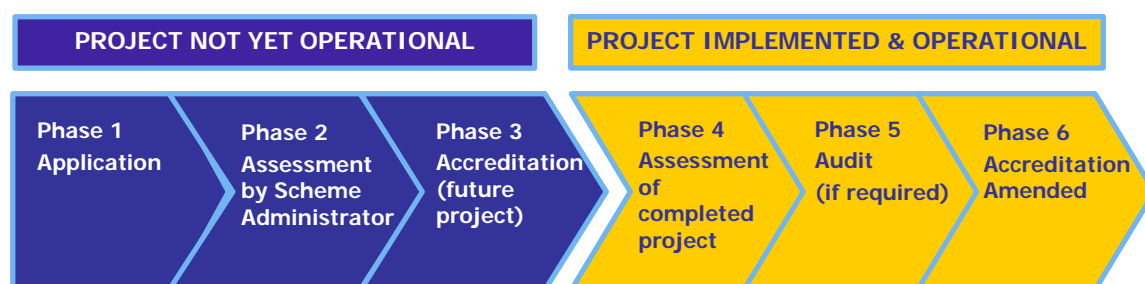
4.6 Accreditation of future projects

The Scheme was amended in October 2004 to take account of projects in the planning and development phase by allowing consideration for accreditation by the Scheme Administrator. This type of accreditation is intended for eligible projects that have not yet been implemented. In 2005, there were seven applications that were accredited as future projects.

4.6.1 Future Project Application Process

The application process for accreditation of a future project is similar to applying to have an existing project accredited under any of the Scheme rules. The key difference is the re-consideration of the project's accreditation once the project is implemented. Figure 4.3 depicts the two stage process, whereby a project firstly obtains future project accreditation, and then once implemented, the accreditation is amended to reflect its operational status.

Figure 4.3 Phases of the Accreditation process - Future Project to Existing Project



Future project accreditation is granted once the Scheme Administrator has assessed the eligibility of the proposed project as described in the application form.

In 2005 there were seven projects accredited as future projects, and all were generation projects except for one project accredited using the generation emissions methodology of the DSA Rule. None of these projects progressed into Phase 4 as illustrated in Figure 4.3. Each project is accredited with an approved business plan with agreed milestones and reporting arrangements. The Scheme Administrator must be informed if there are any changes to these arrangements, such as delays to the timing of completion of the project.

4.6.2 Creating certificates following accreditation

Once a future project is implemented and operational, the Scheme Administrator is formally notified by the participant. This notification is the opportunity to present any differences between the project as described in the original application form and the project as implemented. To assist participants, the Scheme Administrator has created a template called *Notification of the Implementation of an Accredited Future Project* which provides fields for the ACP to fill in details about the final project.

The Scheme Administrator determines if the project is still eligible under the Scheme Rules depending on the subsequent details provided on the implemented project. The Scheme Administrator may require that aspects of the project should be audited. Once the Scheme Administrator is confident the implemented project remains eligible, new conditions of accreditation will be issued that allow the accredited party to create certificates. It is expected that during 2006, many of the projects currently accredited as future projects will progress through to the final phase, with amended accreditation conditions and the ability to create certificates.

4.7 Compliance outcomes

Overall compliance by ACPs with the Scheme, Act, Rules and accreditation conditions, remains high. Of the 146 project accreditations (as of 31 December 2005), there were 27 instances of minor technical contraventions of conditions of accreditation. These events were discovered both through voluntary declaration by the accredited party (8 of 27), and through the compliance audit process (19 of 27).

Contraventions are described in the Electricity Supply Act and relate to four key areas:

- contravening the conditions of accreditation (s97DD)
- improper creation of certificates (s97J)
- obstructing the Scheme Administrator (s97JA)
- supplying false or misleading information (s97JB).

In 2005, 22 instances of contravention related to the improper creation of certificates, while five related to breaches to conditions of accreditation.

4.7.1 Improper creation of certificates

There were 20 accreditations found to have over-created certificates during 2005. The reasons and number of instances for over-creation are:

- incorrect use of a Rule default factor (1)
- incorrect application of a Rule Equation (1)
- incorrect figure provided for the number of RECs created during the period of abatement (9)
- incorrect fuel energy figure provided due to change in engine efficiency (1)
- use of a NSW Production Baseline figure other than that provided in the accreditation (1)

- data input errors (1), or
- incorrect period provided for the eligible abatement activity (6).

In addition, another ACP voluntarily declared that it had inadvertently over-created certificates from two of its accreditations, and this is currently under investigation by the Scheme Administrator.

4.7.2 Over-creation of certificates

During 2005, these 20 instances (outlined above) resulted in a total of 2,457 certificates being over-created with the companies involved agreeing to forfeit the incorrectly created certificates, thereby ensuring that the number of certificates in the Scheme represents valid abatement.

Another type of improper creation occurs when an ACP attempts to register more than 110 per cent of the nominated number of certificates without previously notifying the Scheme Administrator. In 2005 there were three examples of this. The Scheme Administrator manages this by placing limits within the Registry which prevent further transactions from being completed once the nominated number is reached. With all accreditations, if circumstances change, for example if a project is more successful than originally anticipated, the ACP must contact the Scheme Administrator and seek an amendment to their accreditation. In the case of the three contraventions referred to above, once formally advised of the reasons for increasing the nominated number of certificates, the Scheme Administrator was satisfied and allowed the transactions to be completed. The conditions of accreditation were subsequently amended to reflect the revised nominated number of certificates for the respective accreditations.

4.7.3 Contravening the conditions of accreditation

Conditions of accreditation were breached by one ACP when, during a scheduled audit, two of its accreditations were found to be calculating certificate entitlement using a different Distribution Loss Factor to that specified in the conditions of accreditation (although no certificates had been created at the time). When the Scheme Administrator investigated this, it was evident that the new Distribution Loss Factor was a more appropriate and updated figure. However, it is the ACP's responsibility to notify the Scheme Administrator and to seek approval for any change to the conditions of accreditation. Approval was subsequently provided by the Scheme Administrator and the conditions of accreditation were amended to reflect the use of a revised Distribution Loss Factor figure.

5 REGISTRY

The Scheme Administrator maintains an online Registry to support the Scheme. In accordance with legislative requirements, the Scheme Administrator maintains the registers of:

- Accredited Abatement Certificate Providers, and
- abatement certificates.

The content of the registers are prescribed by the *Electricity Supply Act 1995 (Sections 97GA and 97GB of the Act)*.

LogicaCMG was appointed, following a competitive tender process, under a contract to IPART to operate the Registry for an initial period of three years, until September 2006. The Registry is functioning effectively and efficiently under this arrangement. The internet address of the Registry is: www.ggas-registry.nsw.gov.au.

Abatement certificate providers, benchmark participants and members of the public may access the Registry. Members of the public may either log in as a 'guest' or may register either as an organisation or as an individual, to own certificates.

The Registry is not a trading platform. It tracks the ownership and status of a certificate at any point in time. When a trade in certificates has occurred - whether bilaterally, through brokers or through other trading platforms - the Registry records only the change in ownership details for those certificates.

There is currently no charge for the transfer of certificates on the Registry. There is, however, a \$0.15 charge imposed on the registration of each abatement certificate at the time of creation, payable prior to the certificate being released for transfer or surrender. This charge (under the Act) is to cover the cost of establishing, operating and maintaining the Registry over the life of the Scheme, as well as to partially fund some of the activities of the Scheme Administrator.

The Registry provides a valuable source of information for market participants. Whilst Registry information that may be made public is subject to legislative restriction, outlined below are some key statistics showing some trends in NGAC creation since the Scheme commenced.

Data in this chapter is taken as at 30 June 2006.

5.1 Register of abatement certificates

5.1.1 Certificate creation trends

Table 5.1 shows the total number of 2003, 2004 and 2005 vintage certificates registered (which reflect abatement activity undertaken in these years).

Table 5.1 Certificates created to date

	2003	2004	2005
DSA	345,141	742,233	1,509,199
Generation	6,317,835	6,744,229	7,936,816
Carbon Sequestration	0	166,005	538,471
Large User	0	0	94,277
Totals	6,662,976	7,652,467	10,078,763

Table 5.1 and Figure 5.1 shows the total number of certificates (24,394,206) registered in the Scheme for 2003, 2004 and 2005 vintage, separated by rule. This figure clearly shows that the Generation Rule dominates certificates registered. However, creation under the Demand Side Abatement Rule is steadily increasing and accounted for 15 per cent of certificates created in 2005.

Figure 5.1 Certificates created to date

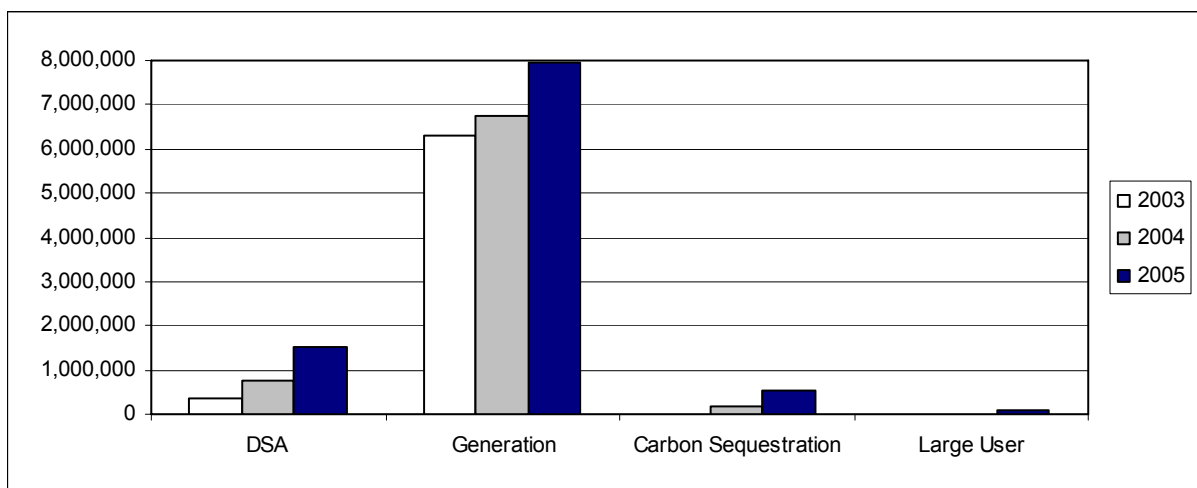


Figure 5.2 depicts the source of certificates on a regional basis. Certificates can only be created outside of NSW and the ACT from electricity generation activities where the generating system is connected to the National Electricity Market (NEM).

Figure 5.2 Source of 2005 certificates created

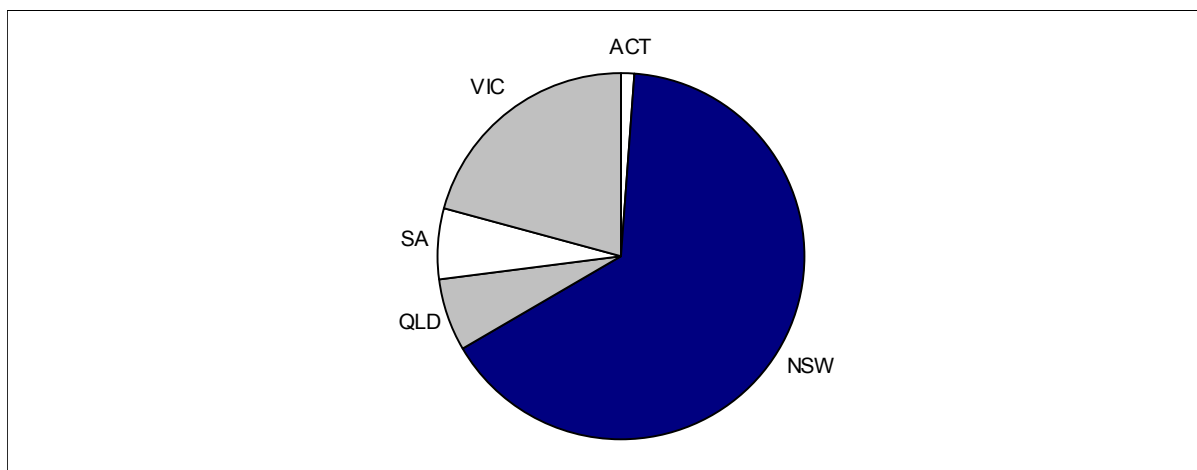


Table 5.2 provides a greater level of detail on the types of activities that created certificates in each region. Note that although no DSA certificates were created from activities in the ACT in 2005, seven DSA projects are now accredited to undertake energy efficiency activities into the ACT in 2006.

Table 5.2 Source of certificates by region*

Rule, Grouping & Sector	2003	2004	2005
Australian Capital Territory			
Generation			
Category D	94,198	99,268	110,062
ACT totals	94,198	99,268	110,062
New South Wales			
Carbon Sequestration			
	0	166,005	538,471
DSA			
	345,141	742,233	1,509,199
Generation			
Category A	3,272,785	3,129,352	2,911,523
Category B & C	318,556	418,581	498,952
Category D	517,184	775,509	1,060,731
Large User			
	0	0	94,277
New South Wales totals	4,453,666	5,231,680	6,613,153
Queensland			
Generation			
Category A, B, C	36,569	90,116	133,581
Category D	297,748	612,340	509,741
Queensland totals	334,317	702,456	643,322
South Australia			
Generation			
Category A	334,162	372,471	409,969
Category B	0	0	0
Category C	284,984	70,642	198,116
Category D	12,135	17,524	18,351
South Australia totals	631,281	460,637	626,436
Victoria			
Generation			
Category A	775,132	844,612	864,075
Category B	0	0	0
Category C	311,873	229,332	1,105,367
Category D	62,509	84,482	116,348
Victoria totals	1,149,514	1,158,426	2,085,790

* Some Generation categories in some jurisdictions have been combined in this table where to do otherwise may reveal potentially commercially sensitive information.

Table 5.3 shows detail of the sources of certificates for each year under each rule. It provides an insight into the main areas of growth in the Scheme. The growth in carbon sequestration sourced certificates is indicative of the increased interest and understanding in this area of the Scheme.

Table 5.3 Source of certificates by category*

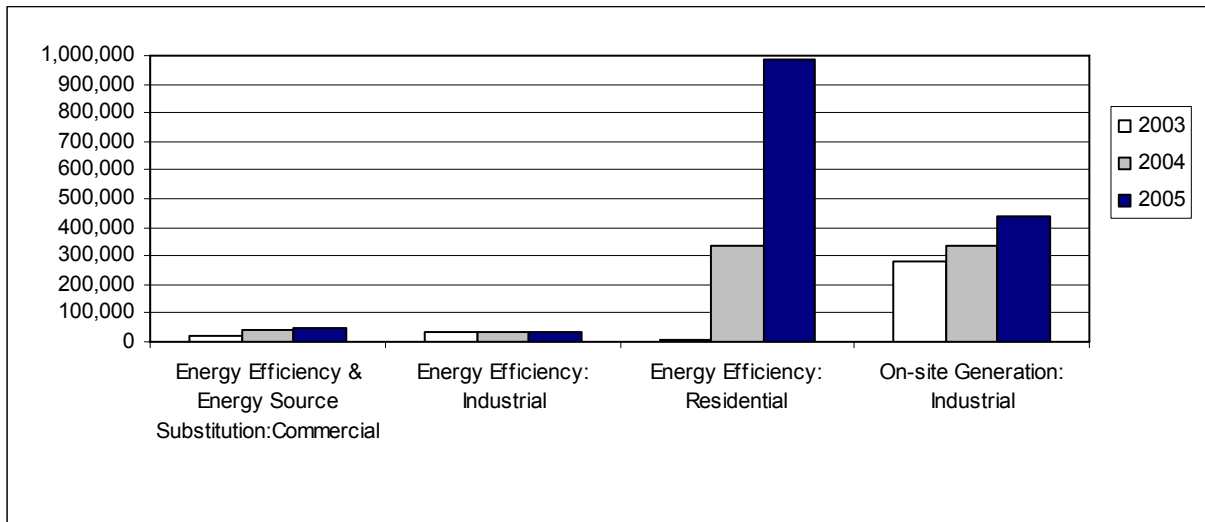
Rule, Grouping & Sector	2003	2004	2005	Totals
Carbon Sequestration	0	166,005	538,471	704,476
DSA				
Energy Efficiency: Commercial	22,720	40,249	47,924	110,893
Energy Efficiency: Industrial	35,572	32,867	36,814	105,253
Energy Efficiency: Residential	8,387	336,831	989,245	1,334,463
Energy Source Substitution: Commercial	65	65	0	130
On-site Generation: Industrial	278,397	332,221	435,216	1,045,834
Subtotal	345,141	742,233	1,509,199	2,596,573
Generation				
Category A: Biomass	10,895	14,901	0	25,796
Category A: Hydro	132,869	123,615	148,267	404,751
Category A: Landfill Gas	1,216,141	1,327,515	1,379,033	3,922,689
Category A: Natural Gas	590,324	621,065	675,775	1,887,164
Category A: Waste Coal Mine Gas	2,468,419	2,301,104	2,029,783	6,799,306
Category B: Coal	286,985	418,581	498,952	1,204,518
Category C: Coal	251,199	167,243	1,082,864	1,501,306
Category C: Landfill, Natural & Sewage Gas	377,229	181,082	306,909	865,220
Category D: Biomass	542	10,973	30,521	42,036
Category D: Coal	0	130,665	159,493	290,158
Category D: Landfill Gas	732,187	889,874	1,241,413	2,863,474
Category D: Natural Gas	240,853	388,725	102,374	731,952
Category D: Waste Coal Mine Gas	10,192	168,886	281,432	460,510
Subtotal	6,317,835	6,744,229	7,936,816	20,998,880
Large User	0	0	94,277	94,277
Totals	6,662,976	7,652,467	10,078,763	24,394,206

* Some Generation categories have been combined in this table where to do otherwise may reveal potentially commercially sensitive information.

Certificate creation under the DSA Rule for 2005 has approximately doubled compared to 2004. In percentage terms the growth between 2004 and 2005 in certificates from generation was the smallest although to date abatement from generation has been the primary source of Scheme certificates. Of particular interest is the change in certificate numbers between 2005 and previous years from each of the groups and sectors of electricity generation. Category D is the fastest growing group in terms of certificate creation.

Category D generators are new generators and are not assigned a baseline. Depending on their participation in other eligible schemes, all electricity output is eligible for certificate creation. The additional generation activities from landfill gas and waste coal mine gas reflects the commercial benefits available to such generators under the Scheme.

Figure 5.3 Source of DSA Rule certificates by category



As indicated in Figure 5.3, residential energy efficiency was the key area of growth in 2005. As discussed previously, most of these residential certificates were created using the DAF Method of the DSA Rule. Outside of the residential sector, energy efficiency in the commercial and industrial sector declined slightly. Many factors influenced this reduction, but it does point to the scope for increased participation for proponents of commercial and industrial energy efficiency projects under the Scheme.

Figure 5.4 Source of Generation Rule certificates by category

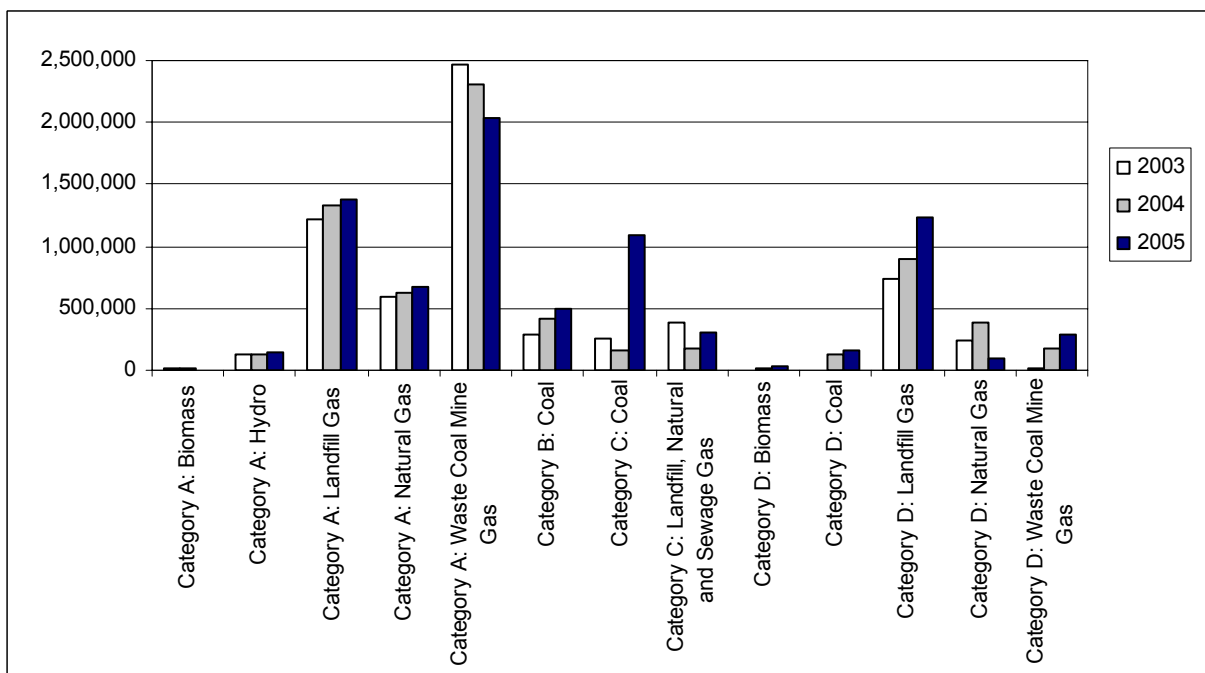


Figure 5.4 graphically depicts the certificate creation from each category of generator and fuel type. Overall there has been an increase in certificates created under the Generation Rule, however within each category and fuel type, some variations have occurred. Notably certificate creation from landfill gas in Category D has continued to increase. Some natural gas-fired stations are now also participants in the Queensland 13% Gas Scheme, and in 2005 chose to create certificates in the Queensland scheme as opposed to this Scheme. (For an explanation of the Generation Rule categories see Attachment 2.)

5.1.2 Certificate transfer trends

The Registry also tracks the ownership of each certificate over time. The Registry provides a summary of transfer activity undertaken in any month to the public, giving the total number of transfers that month and the total number of certificates involved. It should be noted that the Registry records a transfer as the change in ownership of certificates between any two owners, irrespective of any other relationship that may exist between the parties, such as a subsidiary company transferring certificates to its parent entity.

Since the Scheme commenced in 2003, there have been 744 transfers of certificates between parties, involving more than 22.4 million certificates. Of these transfers, 18.3 million generation certificates were transferred, compared to 3.9 million demand side abatement certificates and over 189,000 carbon sequestration certificates. Table 5.4 and Figure 5.5 provide information about the number of certificates traded per year and illustrate the dominance of generation certificates traded under the Scheme. Figure 5.6 shows the numbers of certificates traded during any year and highlights the variable nature of trading activity, with the most activity occurring just prior to the compliance deadline.

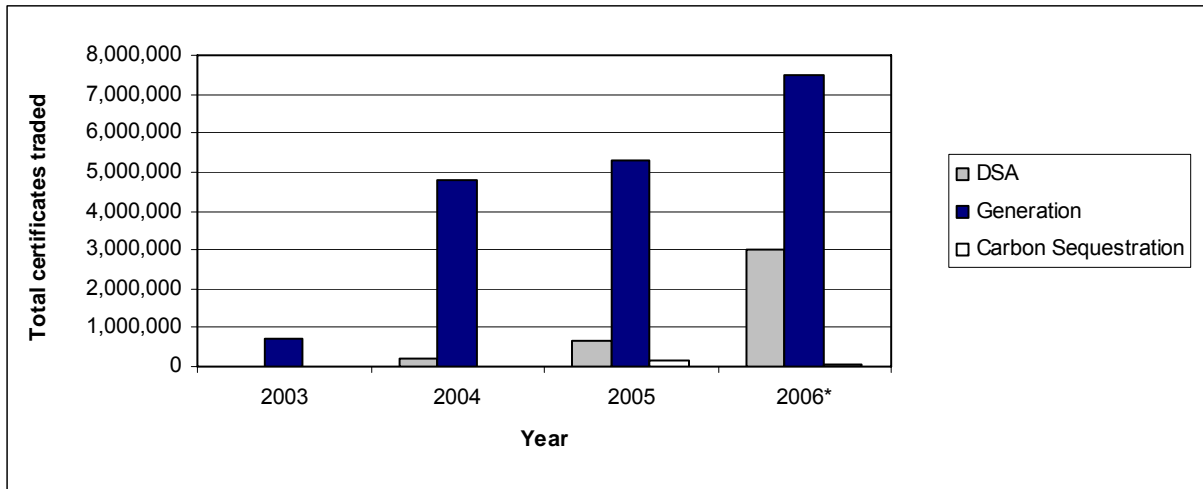
Table 5.4 Number of certificates traded by rule

	2003	2004	2005	2006*
DSA	18,001	220,506	667,992	3,020,483
Generation	707,774	4,795,183	5,296,564	7,509,619
Carbon Sequestration	0	0	142,320	47,563
Totals	725,775	5,015,689	6,106,876	10,577,665

*From 1 January to 30 June 2006.

Note that the year refers to the point in time when the transfer occurred, not the certificate vintage year.

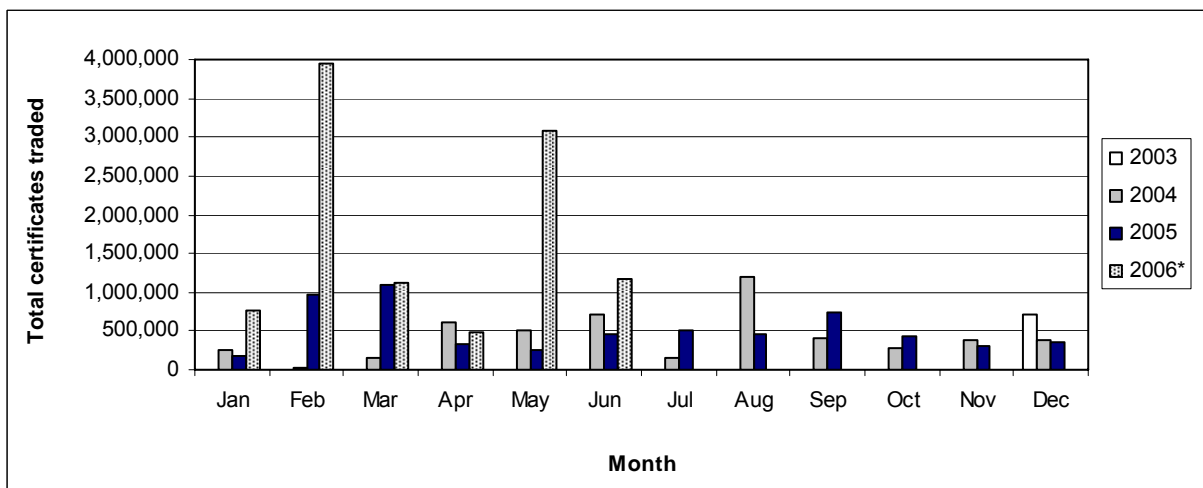
Figure 5.5 Certificates traded by rule



*From 1 January to 30 June 2006.

Note that the year refers to the point in time when the transfer occurred, not the certificate vintage year.

Figure 5.6 Certificates traded by month



*From 1 January to 30 June 2006.

Note that the year refers to the point in time when the transfer occurred, not the certificate vintage year.

5.2 Registry upgrade

In 2005, the ACT Government finalised an agreement with IPART regarding the extension of the Scheme in the ACT. To enhance the ACT's participation, it was agreed to enhance the Registry to incorporate some specific ACT requirements. In December 2005, LogicaCMG were contracted to upgrade the Registry to provide additional functionality for the ACT compliance regulator, and enhance the existing functionality for the Scheme Administrator and NSW compliance regulator.

These enhancements were completed in May 2006 and incorporated into the Registry.

5.3 Password security

As part of the ongoing improvement of Registry security, new password requirements were implemented during August 2005. Passwords are now required to be a minimum of eight characters in length, contain at least two numeric digits, contain at least one alphabetic character, may contain non-alphanumeric characters and are case sensitive.

During December 2005, Penetration Testing was performed to determine the strength of Registry user passwords. The results were very encouraging.

LogicaCMG and IPART are continually reviewing security of the Registry with further enhancements to come during 2006.

5.4 2005 Customer Satisfaction Survey

LogicaCMG, as the IT Services provider for the Scheme Registry, undertook a survey of Registry users in July 2005. The Survey asked for information about usage patterns and user-friendliness of the Registry and helpdesk. The survey was conducted in an anonymous manner, and no specific response from a single user was identified to the Scheme Administrator. Overall, the response was very positive. The following is a summary of the key findings:

- most respondents agreed that the helpdesk was accessible and effective in providing prompt resolution to their enquiries
- most respondents agreed that the Registry was available during business hours and the performance of the Registry met their business needs
- most respondents found the Registry easy to use and provides the functions required for them to participate in the Scheme.

The results of the customer satisfaction survey are available on the GGAS website at www.greenhousegas.nsw.gov.au.

6 AUDIT FRAMEWORK

The audit framework is aimed at assisting in providing assurance that the Scheme is operating in accordance with the relevant legislation and that information provided by Scheme participants is reliable, complete and fairly represented.

The Scheme Administrator has established an audit framework which uses independent third party audits to confirm specific elements of Scheme participants' compliance (benchmark participants and abatement certificate providers) with the Scheme. In general the Scheme Administrator applies a risk-based approach to deciding an audit regime for a particular accredited party. Types of risk include the size of the company involved, the complexity of the project and the calculation methodology used and the number of certificates to be created from any one project. Whether or not the company has other projects accredited under the Scheme is also considered when applying an audit regime.

All audits are undertaken by members of the Audit and Technical Services Panel (the Panel), which has 23 members. A list of all members of the Panel is available from the Scheme website¹⁸.

The key objectives of the audit framework are to:

- support the policy objectives of the legislative framework and Scheme Rules
- minimise the risk of:
 - inappropriate accreditation of abatement certificate providers
 - invalid creation of abatement certificates
 - incorrect calculation of liabilities by benchmark participants
- assist the compliance regulator and the Scheme Administrator in monitoring Scheme participants' compliance with relevant legislation and the Rules
- ensure that information provided by Scheme participants is reliable, complete and fairly represented, and
- support the general transparency and integrity of the Scheme.

6.1 Audit and Technical Services Panel

The Scheme Administrator has established the Panel to undertake audit activities for Scheme participants, the compliance regulator and the Scheme Administrator and to provide technical services to the Scheme Administrator as required. Firms may apply to become a member of the Panel at any time and their applications will be assessed against specific selection criteria.¹⁹ Once appointed to the Panel all services are undertaken in accordance with the Audit and Technical Services Panel Agreement ("the Panel Agreement").

6.1.1 Selection and management of auditors

Audits associated with the accreditation of abatement certificate providers are undertaken by a member of the Panel selected and engaged by the Scheme Administrator. In most

¹⁸ www.greenhousegas.nsw.gov.au

¹⁹ A Panel Application Form and a Guide to Applying are available from the Scheme website.

cases, the auditor is selected through a competitive process, in consultation with the project proponent.

For audits of the creation of abatement certificates and the annual greenhouse gas benchmark statements, the auditor is selected and engaged by the Scheme participant. However, such appointments and the ensuing detailed scope of works for the audit are subject to approval by the Scheme Administrator or the compliance regulator, as appropriate.

The Panel Agreement establishes a unique arrangement for the conduct of audits. Regardless of whether an auditor is selected and engaged by the Scheme Administrator or a Scheme Participant, the auditor's primary duty of care is always to conduct the audit in the interests of the Scheme Administrator. While this is significantly different from the usual contractual arrangements where the duty is owed to the engaging party, all audits are undertaken to assist the Scheme Administrator and the compliance regulator to ensure that the Scheme is operating in accordance with the relevant legislation and that information provided by Scheme participants is reliable, complete and fairly represented. Experience to date has shown that this contractual arrangement has been a highly effective mechanism for ensuring the integrity of the audit framework and abatement in the Scheme.

6.1.2 Auditor training and feedback

It is a requirement of the Scheme that all personnel performing audits under the Scheme attend auditor training conducted by the Scheme Administrator. Training is held on demand and covers fundamental aspects of the Scheme and the audit framework including:

- scope and conduct of audits
- engagement of auditors
- case studies of the audit framework at work, and
- expectations of the Scheme Administrator.

During 2005, the Scheme Administrator trained an additional 20 auditors to undertake audits under the Scheme. On 1 August 2005, the Scheme's second annual auditor feedback workshop was held. The purpose of the workshop was to:

- communicate to the Panel changes to the Scheme audit framework
- provide feedback on the performance of the Panel over the previous 12 months of the Scheme and issues identified by the Scheme Administrator, and
- seek feedback from the Panel on the operation of the audit framework.

6.2 Audit activity in 2005

Table 6.1 provides summary data on the audit activity across the three audit types in 2005.

Table 6.1 Audit activity in 2005

Type of audit	Number of audits	Number of projects covered
Accreditation of abatement certificate providers	11	17
Certificate creation audits	29	74
Benchmark statement audits*	25	33

* Conducted in the first quarter of 2006 covering the 2005 compliance year for Benchmark Participants.

The Act states that the cost of audits will be borne by the Scheme participant, even in the circumstance where the Scheme Administrator selects and engages the auditor.

For audits undertaken as part of the accreditation process, applicants are advised of the audit costs prior to the conduct of any such audit activity and must lodge the fees with the Scheme Administrator prior to the audit commencing. Scheme participants are offered the choice to either proceed with the audit at that time, ask for another auditor to be selected, or withdraw their application without penalty.

Of the 72 projects accredited by the Scheme Administrator in 2005, 11 were subject to an accreditation audit. The total cost of accreditation audits in 2005 was \$114,208, giving an average of approximately \$6,715 for each of the projects audited.

As the Scheme matured and the number of accreditations increased, an increasing proportion of the Scheme Administrator's focus has been on monitoring compliance with existing accreditations. During 2005, the Scheme Administrator managed 29 certificate creation audits covering a total of 74 projects to verify abatement. Where possible the Scheme Administrator has allowed ACPs with multiple projects accredited to conduct a single audit to cover the portfolio of accreditations to help reduce transaction costs.

The audits of benchmark statements covered compliance for the 2005 year, but were conducted in March 2006, to meet the reporting timeframe for benchmark participants. These audits need to be carried out in 2006 in order to capture all electricity sales or purchases by benchmark participants for the 2005 calendar year.

6.3 Compliance and performance monitoring strategy

The Scheme Administrator has adopted a framework for compliance and performance monitoring whereby an applicant undergoes a rigorous assessment during the accreditation phase ("validation"), including where necessary, the use of pre-accreditation audits to verify the information provided. Once accredited, the ACP is subject to further auditing requirements as a means of ensuring ongoing compliance under the Scheme ("verification").

In 2005, the Scheme Administrator finalised the *Compliance and Performance Monitoring Strategy for Abatement Certificate Providers*. The Strategy aims to:

- provide transparency in the administration of the Scheme
- assist participants to understand their obligations under the Scheme
- minimise the incidence of invalid creation of abatement certificates
- provide cost effective compliance options
- encourage a culture of compliance among participants, and
- provide for credible enforcement options in the event of non-compliance.

The Strategy sets out how the Scheme Administrator monitors the performance of ACPs through a combination of Annual Reports and audit requirements tailored to the individual ACP's circumstances. The Strategy is designed to be flexible so that over time the Scheme Administrator can recognise good compliance performance and, if appropriate, relax an ACP's compliance monitoring regime.

The requirement to submit Annual Reports is consistent across the Scheme, regardless of the type of project involved. Templates have been developed to assist ACPs in their reporting requirements. These are signed by a person authorised to sign on behalf of the company with provision of false and misleading information subject to penalty.

The audit requirements vary across accredited ACPs and these are detailed in the conditions of accreditation. When an applicant is accredited, they are informed of any special conditions of accreditation, including the requirement for on-going audits of information and certificate creation.

Auditing under the Scheme ranges from pre-registration audits, where prior to any NGAC creation an ACP must have received positive assurance, to annual audits which are generally conducted after registration of certificates, to periodic and then spot audits.

Where an ACP is creating very large volumes of certificates, a modified approach to conducting audits has been employed whereby an audit is triggered by a threshold quantum of certificate creation. This has meant more frequent auditing for these types of projects, however the approach is warranted because the risk to the Scheme is high if there is invalid certificate creation. This type of periodic audit is seen as the best method to manage compliance of these types of projects.

In general, the Scheme Administrator adopts a risk-based approach to determining the appropriate audit regime for an ACP. The Scheme Administrator takes account factors including the nature of the abatement project, its scale, past performance of the ACP and the extent to which the ACP is already participating in the Scheme.

7 FUTURE DEMAND AND SUPPLY OF ABATEMENT CERTIFICATES

As part of the Scheme Administrator's role in operating the Scheme, the demand and supply of certificates is monitored. The main purpose for performing this work is to assist in providing reports of a "current status" nature. The Scheme Administrator does not undertake forecast modelling, but projects supply of certificates based upon knowledge of existing participants, future project accreditations, applications for accreditation, and wherever necessary, some conservative assumptions.

7.1.1 Current projection

Three key observations could be made from the chart of demand and supply presented in the 2004 Annual Report:

- more certificates were created in years 2003 and 2004 than were required for the respective compliance years
- the projected number of certificates to be created in 2005 was approximately equal to the number of certificates required for 2005 compliance, and
- the surplus of certificates created in years 2003 and 2004 (which are bankable) would assist in meeting demand for the 2006 and 2007 compliance years.

One year later, there have been some significant developments in terms of new supply and additional demand. In 2005 the Scheme Administrator accredited a further 72 projects²⁰. In addition to these new projects, several accreditations were amended to allow an increased number of certificates to be created. Such amendments include improved operating efficiencies of generators and expansions of energy efficiency activities. These developments have had a positive effect on the supply projection.

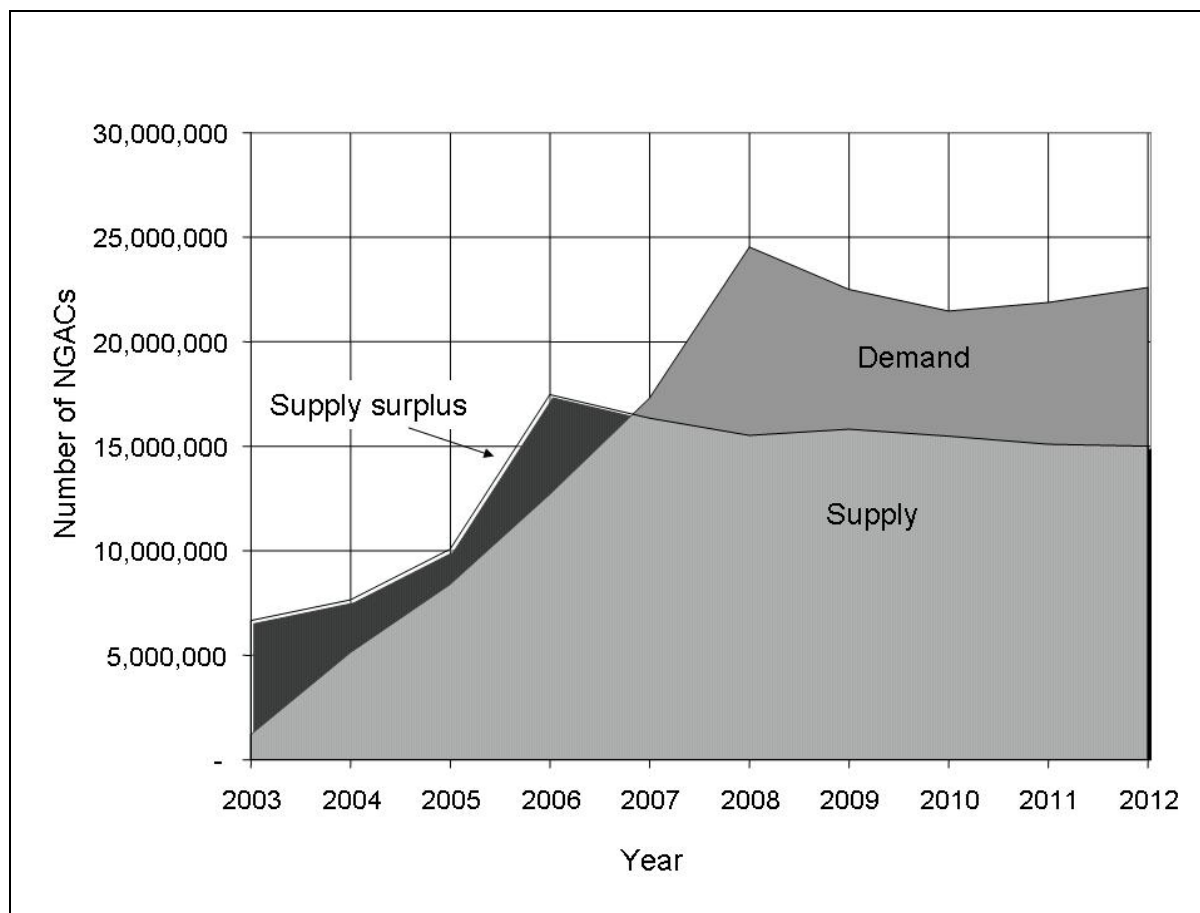
Demand has also increased for certificates. The ACT participation in the Scheme brings to account further electricity sales which require certificates to meet the relevant benchmark. In addition, the projected increase in energy efficiency (DSA) activities has also had the effect of increasing the projected demand. Demand side abatement both reduces the electricity demand and creates certificates. To avoid double counting of this benefit, the electricity savings associated with DSA certificates created for a calendar are added to the total electricity demand for the calendar year two years after the certificate creation. For example, the electricity savings from DSA certificates of vintage 2005 are added to the total electricity demand for calendar year 2007²¹. However, despite this additional demand, there has been an overall favourable adjustment to the demand/supply balance during 2005.

²⁰ As shown in Section 4, 72 new projects were accredited in 2005, 19 cancelled resulting in an end of year net increase of 53 projects.

²¹ For further information on this process, please refer to the Greenhouse Gas Benchmark Rule (Compliance) No. 1 of 2003.

Presented in Figure 7.1 is the updated projection of demand and supply for certificates²².

Figure 7.1 Projected demand and supply of certificates



The current projection indicates that NGAC supply for 2006 will exceed the annual demand (in addition to 2003, 2004 and 2005). As certificates are bankable, this surplus of supply for the first four years of the Scheme will assist in meeting projected demand in 2007 and 2008.

Projected demand for certificates has increased, and the adjustment upwards is primarily a response to the increase in certificate creation under the DSA Rule and adoption of the Scheme by the ACT. The projected supply curve has also moved upwards. Activities under the Generation Rule and DSA Rule are the two largest sources of certificates. However, owing to the nature of the projects, the pattern of supply from each is quite different. Typically Generation Rule projects yield a smooth supply of certificates, whilst activities under the DSA Rule can lead to certificate creation that is a once-only occurrence. The minor peak depicted in supply for 2006 is based upon information the Scheme Administrator has regarding a number of energy efficiency campaigns planned for that year, and assumes they are not repeated on the same scale in subsequent years. There is a corresponding peak in demand for 2008, two years after the peak in supply of 2006. This is due to the DSA certificate adjustment in total electricity demand that is required under the Compliance Rule.

²² As at 30 June 2006.

During 2005 there were several accreditations under the DSA Rule of projects with a very similar business model, and as such some assumptions have been made about the relative success of some of these projects and the likely numbers of certificates that will be created by each (see Assumptions below). Additionally, following the 2006 peak, the plateau established reflects the planned commencements of a number of future projects that are accredited, but not yet operational.

7.1.2 Assumptions in projection

The projection of the demand and supply of certificates makes a number of conservative assumptions:

- mid range estimates of electricity demand, NSW and ACT population growth, and the NSW/ACT pool coefficient
- projection of distribution loss factors is based on the actual weighted average from the returns of 2005 benchmark statement
- the number of RECs²³ counted is anticipated to rise incrementally based on expected increases in electricity demand and the renewable power percentage²⁴
- the projection of supply is based upon existing accreditations (including future project accreditations) and applications for accreditation currently being processed
- Queensland Generators eligible to create Gas Electricity Certificates (GECs) under the 13% Scheme will prioritise GEC creation over certificates, and
- the volume of certificates created from a number of similar DSA projects will peak in 2006 and then diminish in some cases (dependant on project type) quite rapidly in successive years.

The projection is sensitive to small movements in some of the key factors used in determining the State and Territory greenhouse gas benchmarks. The Scheme Administrator cautions persons making decisions based upon the demand/supply balance depicted here.

7.1.3 New sources of certificates

The Scheme Administrator anticipates that the supply of certificates will continue to grow, as the trend over the last two years suggests. Such growth is likely to occur for two distinct reasons. Firstly, the understanding of the opportunities in the Scheme by both existing participants, and interested potential participants continues to grow. This is particularly reflected in the growing number of applications being received from large users, and the diversification of existing participants into other methods and rules of the Scheme. Additionally, it is recognised that the value of certificates has continued to increase since the Scheme's inception. Such an increase may move the tipping point for bringing forward projects for accreditation that were previously not financially viable.

²³ In addition to surrendering NGACs or LUACs, benchmark participants are permitted to account for RECs surrendered under the *Commonwealth Scheme (Renewable Energy (Electricity) Act 2000 (Cth))*. Only RECs associated with electricity purchases in NSW and the ACT can be counted.

²⁴ This is the process for determining the actual number of RECs which must be surrendered each year to discharge a liability, as specified in the *Renewable Energy (Electricity) Regulations 2001 (Cth)*.

7.2 Increase in the pool coefficient

The 'NSW Pool Coefficient' is an indicator of the average emissions intensity of electricity sourced from the National Electricity Market in NSW. It represents the emissions of greenhouse gases (in tonnes of carbon dioxide equivalent) per MWh of electricity supplied from the 'pool' of major power stations serving the NSW electricity grid.

The Scheme uses the NSW Pool Coefficient when calculating benchmark participants' responsibilities or 'attributable emissions' under the Scheme. The emission of greenhouse gases for which a benchmark participant is responsible under the Scheme is calculated by multiplying the benchmark participant's 'electricity purchases' by the NSW Pool Coefficient.

The NSW Pool Coefficient is also used in the calculation of the number of certificates that an accredited ACP can create.

The NSW Pool Coefficient for each compliance year is announced by the Tribunal in November the previous year²⁵. The NSW Pool Coefficient for a year is the simple average of the five 'Annual Pool Values' from previous years, lagged by two years. For example, the NSW Pool Coefficient for 2005 is the average of the Annual Pool Values for the years 1999 to 2003. The averaging smoothes the impact of any one-off highs or lows in the Annual Pool Value in a particular year and thus makes the pool coefficient more stable and predictable. The two year time lag reflects the practicalities of obtaining data and calculating and publishing the NSW Pool Coefficient in advance of the year to which it applies.

An adjustment is also made to the calculation of the NSW Pool Coefficient to remove reductions in emissions for which abatement certificates have been created. This is necessary to avoid double counting this abatement benefit.

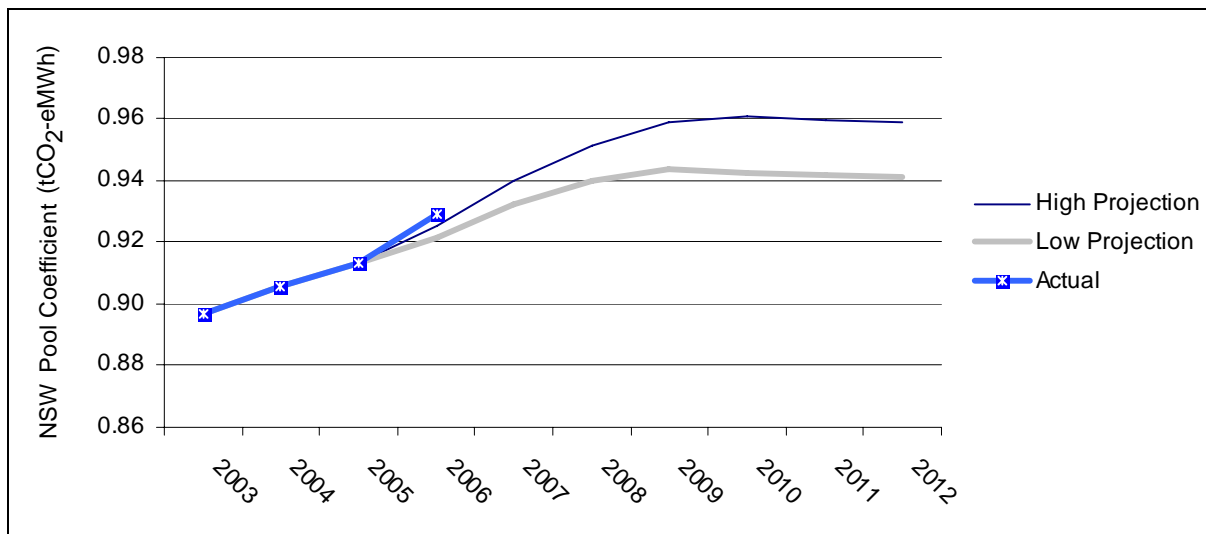
IPART has made some forecasts of the Pool Coefficient until 2012. The purpose of these estimates is to give a broad indication of the possible trends in the Pool Coefficient.

An upward trend in the NSW Pool Coefficient is predicted until about 2008 or 2009. This is largely due to the introduction of an improved methodology for determining Annual Pool Values introduced at the commencement of the Scheme. The lagged five year rolling average has smoothed the increase to the NSW Pool Coefficient as designed. IPART anticipates that around 2009 the value of the NSW Pool Coefficient will level off as the impact of the historically rising Annual Pool Value diminishes. This upward trend in the NSW Pool Coefficient will lead to increased demand for abatement certificates.

²⁵ The pool coefficient is determined pursuant to clause 9.1 of the Greenhouse Gas Benchmark Rule (Compliance) No. 1 of 2003.

Figure 7.2 illustrates the possible range of values for the NSW Pool Coefficient until 2012.

Figure 7.2 Forecast of the Pool Coefficient



IPART determined the actual value of the 2006 NSW Pool Coefficient to be 0.929 t CO₂-e per MWh (compared to 0.913 t CO₂-e per MWh for 2005). It is interesting to note that the 2006 NSW Pool Coefficient slightly exceeded the upper range forecast.

There are a number of factors that are taken into account when determining the NSW Pool Coefficient. The following factors impacted the 2006 calculation of NSW Pool Coefficient:

- increases in Annual Pool Values impacting the five year rolling average used to determine the NSW Pool Coefficient (previously described)
- the combustion CO₂-intensity of coal used in generation fell
- the fugitive²⁶ CH₄-intensity of coal used fell, and
- the efficiency of generation increased (offset by certificates created by generators being added back to the pool).

However, the increase to the 2006 NSW Pool Coefficient was primarily due to a significant fall due to drought conditions of hydro power generation supplied to NSW. The Tribunal will revisit its forecasts of the NSW Pool Coefficient if hydro generation supply to NSW continues to be low compared to long term averages used in the current methodology.

²⁶ Emissions associated with the mining/production of coal used.

8 POLICY DEVELOPMENT AND LINKS WITH OTHER SCHEMES

The Scheme was one of the first mandatory greenhouse gas emissions trading schemes in the world to become operational. It has now been joined by the European Union Emissions Trading Scheme (EU ETS) which commenced in 2005, and more recently the Kyoto Protocol's Clean Development Mechanism (CDM). Over the coming years, more emissions trading schemes will emerge in a variety of forms and with a range of specific objectives

In assisting to develop and refine the Scheme, IPART has kept abreast of related debates and development work both in other Australian jurisdictions and worldwide. It is already contributing - and is well placed to further contribute - to the development of greenhouse gas abatement strategies and the successful implementation of programs in Australia and around the world.

In November 2005 the NSW Greenhouse Plan, announced by the Premier of NSW, indicated that the Scheme would be extended to 2020 and beyond on a 15 year rolling basis if agreement on a national approach to emissions trading is delayed. As noted below, development of a national emissions trading approach is being progressed by states and territories and the policy implications of this work and the extension of the Scheme are being considered by Government.

8.1 Australian developments and schemes

A range of national and state-based schemes in Australia have among their objectives reducing emissions and enhancing removal of greenhouse gases. This Scheme has been designed, and continues to be developed, to ensure that there is a clear and transparent interaction with these other schemes as they develop and emerge.

In addition to the schemes discussed below, Commonwealth and State governments are continuing to respond to the issue of climate change with a wide variety of regulatory, voluntary and incentive-based programmes. Almost all states now have an explicit greenhouse strategy, and the Commonwealth continues to provide valuable support to the establishment of robust and consistent quantification systems and frameworks. Summaries of this work are available from the respective greenhouse agencies in state and Commonwealth government.

The most significant development over 2005 in this area has been the ongoing design of a National Emissions Trading Scheme (NETS) for Australia. In early 2005 first ministers from state and territory governments endorsed a set of 10 design principles and instructed the National Emissions Trading Taskforce, consisting of representatives of all state and territory governments, to continue with its investigation of the most appropriate design of a national scheme. The design principles include use of a "cap and trade" approach, coverage of the stationary energy sector, the use of offsets, and mechanisms to recognise early abatement activities²⁷. The work of the Taskforce is ongoing, and it is expected that a comprehensive green paper will be released for ministerial consideration in the middle of 2006.

²⁷ Detail on the work of the National Emissions Trading Taskforce is available from the NETT Secretariat's website www.emissionstrading.nsw.gov.au

If the Taskforce is instructed to proceed with the detailed design of the NETS, then it is anticipated that NETS would commence operation in 2010, primarily cover the stationary energy sector by capping the emissions of large installations, and would have clear and explicit provisions for harmonisation with existing schemes. The Taskforce is also recommending a broad range of offsets projects be included in the NETS, which will provide some continuation of the project-based approach to emissions reductions and removal enhancement that has been so successful within this Scheme.

Below is a brief description of each of the relevant schemes currently in place and how they interact with the Scheme.

8.1.1 Mandatory Renewable Energy Target (MRET)

This is a national scheme that places a legal liability on wholesale purchasers of electricity to proportionately contribute towards the generation of an additional 9,500GWh of renewable energy per year by 2010, with that same target continuing to 2020. MRET uses Renewable Energy Certificates (RECs) to provide incentives for the development of renewable energy sources. RECs are denominated in electricity output (rather than emissions of CO₂-e) and during 2005 were worth significantly more than certificates in the market.

A REC and an NGAC cannot be created for the same activity (ie, if a REC is created for a MWh of output, an NGAC cannot be created with respect to that output), however, where a renewable energy project is also reducing methane emissions, it is possible to create certificates for the methane emissions that are being avoided.

Benchmark participants can use RECs to assist in their annual compliance obligations under the Scheme (see section 3 of this report for further information on the conversion of RECs to NGACs for compliance purposes).

8.1.2 Queensland 13% Gas Scheme

This scheme commenced on 1 January 2005 and requires Queensland electricity retailers and other liable parties to source at least 13 per cent of their electricity from gas-fired generation. It uses Gas Electricity Certificates (GECs) to mandate a proportion of Queensland's electricity consumption to be gas-fired and thereby reduce greenhouse gas emissions in the State.

GECs are denominated in electricity output (MWh, rather than emissions of CO₂-e) and have initially been priced slightly higher than NGACs. The Queensland Government has made substantial progress in developing the administrative processes required to implement the GECs scheme, and it is anticipated that the detail of these processes will be bedded down across 2006.

The Department of Energy, Utilities and Sustainability and the Scheme Administrator are working with the Queensland Government to ensure that the interaction of the GECs scheme and the Scheme is efficient and transparent, and that no 'double-counting' of GECs and NGACs is possible.

8.1.3 Generator Efficiency Standards (GES)

The GES is a long-standing scheme developed by the Australian Greenhouse Office. The objectives are to provide an approach for power generators to voluntarily work towards achieving best practice in terms of efficiency and greenhouse gas emissions intensity. The calculation methodologies and testing procedures prescribed in the GES are used within the Generation Rule – Method 2 to assist in determining appropriate baselines and performance improvements for generating systems operating above the NSW Pool Coefficient.

A review of the GES Technical Guidelines, commenced in 2004, is ongoing and it is hoped that the AGO will be in a position to release revised documentation before the end of 2006. The Scheme Administrator has had some input into this review, and will continue to use the methodologies and approaches prescribed in the GES once the review has been finalised. (See section 4.2.3 for details of recent amendments to the Generation Rule – Method 2.)

8.1.4 Australian Building Greenhouse Rating Scheme (ABGR)

The ABGR provides a consistent and robust approach to evaluating the greenhouse performance of commercial office buildings, and employs a ‘star rating’ to allow differentiation within the industry.

The DSA Rule refers to the ABGR in one of its methodologies. Through the integration of the required NGAC calculations for this demand side abatement methodology into the templates that are used by ABGR assessors, it is possible to provide valid NGAC calculations without the need for further analysis or auditing. There are currently 20 buildings included in accredited projects and there has been increasing interest in this methodology from property developers, building managers and tenants.

8.1.5 Green Power

This scheme was developed by the former Sustainable Energy and Development Authority (now incorporated into the Department of Energy, Utilities and Sustainability) and is a national accreditation program that sets stringent environmental and reporting standards for renewable energy products offered by electricity retailers to households and businesses across Australia.

The Green Power scheme provides a certification mechanism for the provision of zero emissions electricity to consumers across Australia. Organisations who purchase Green Power (usually as a given percentage of their total electricity consumption) cannot claim that initiative as an emissions reduction under the Scheme. Green Power is administered by the Department of Energy, Utilities and Sustainability.

8.2 International consistency

The Scheme seeks to maintain broad consistency with existing and developing international frameworks such as the European Union Emissions Trading Scheme, the UN’s Kyoto Protocol and the Regional Greenhouse Gas Initiative (RGGI) being implemented by a number of North Eastern States in the USA. Through various working groups and international conferences, the Scheme Administrator communicates with governments, associations, and multinational organisations.

The lessons learned during the implementation of the Scheme are now being used by other policy implementers and scheme regulators across the world. Valuable insights into project methodologies, administrative structures, and monitoring and verification are being transferred to assist others to accelerate their development of robust and efficient frameworks to achieve the objectives of emissions trading and project-based mechanisms – emissions reductions at least cost.

Communication with international players and involvement in the development of international standards and protocols is also contributing to the Scheme Administrator's efforts to ensure that the Scheme retains a high degree of consistency with the technical approaches used internationally to quantify emissions reductions and removals enhancements. One highlight of these activities in 2005 was the meeting of the ISO working group on climate change that took place in Sydney in July, where experts met to deliberate over the final draft of ISO14064 – Greenhouse Gases. This work has now progressed to the release of International Standards that can be used across the world for consistent monitoring, reporting and verification of greenhouse gas emissions for organisations and for projects.

ATTACHMENT 1 IPART'S FUNCTIONS UNDER THE SCHEME

The Tribunal has two main functions under the Scheme. The first of these, compliance regulator, relate to IPART's current role as Licence Regulator for energy licence holders in NSW. The second, Scheme Administrator, relates to IPART's role administering the Scheme as a whole. These functions are set out in Sections 97H to 97I of the Act.

Compliance Regulator functions

The Tribunal conducts certain core functions of the Scheme, such as:

- determining the NSW pool coefficient, which is the average emissions intensity of all electricity supplied to NSW customers in a particular year
- monitoring and reporting to the Minister on benchmark participants' compliance, and
- imposing penalties on benchmark participants if they fail to meet their benchmarks.

Scheme Administrator functions

The Scheme Administrator is appointed by the Minister for Energy and Utilities to oversee the:

- accreditation of ACPs
- administration of the Registry
- auditing of greenhouse gas abatement activities which ACPs wish to have (or have already) reflected in abatement certificates and
- monitoring and reporting to the Minister on ACPs compliance with the Scheme Rules and their conditions of accreditation.

The Tribunal is currently the Scheme Administrator, but the Minister may appoint an alternate organisation to perform some or all of the Scheme Administrator's functions.

ATTACHMENT 2 CATEGORIES OF THE GENERATION RULE

Under the Scheme, generating systems are assigned to certain Categories, which dictate the approach to NGAC creation and the accordant NSW Production Baseline.

Category A

Category A generating systems are those which pro-actively entered into power purchase agreements (PPAs) with electricity retailers under the previous NSW voluntary benchmarks scheme, and have 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 is eligible for abatement for generation below the resultant baseline figure, whilst the generator (counter-signatory to the PPA) is eligible for abatement associated with generation above this baseline figure.

Category B

A Category B generating system is essentially an existing and prescribed NSW 'base-load' generating system, which in the case of a coal fired power station, effectively operates at an emissions intensity equal to, or greater than, the NSW Pool Coefficient. As such, it is unable to use the Relative Intensity Approach to create certificates, but may 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 is demonstrated (confirmed via testing) determines the eventual numbers of abatement certificates created.

Category C

A Category C generating system on the other hand, is generally one that commenced operations prior to the announcement of GGAS and in the case of fossil fuel fired generating systems, has a NSW Production Baseline equal to its average annual output during the years 1997-2001. Under the Relative Intensity Approach, this category of generation creates abatement certificates on the basis of each MWh (of lower emissions intensity generation) above its respective NSW Production Baseline Figure.

Category D

Category D generating systems (broadly, those commissioned after GGAS was first announced by the NSW Government in January 2002) are generally representative of newer and 'cleaner' technologies and have a designated NSW Production Baseline of zero MWh. This effectively means that using the Relative Intensity Approach, a generator for this category of power station may create abatement certificates for each MWh (of lower emissions intensity generation) above its 0 MWh baseline, reflecting the difference in emission intensity between the generation and the NSW Pool Coefficient.

Category and fuel source

Figure A2.1 breaks down the accreditation 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.

Figure A2.1 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: Hydro	Hydropower
Category A: Landfill Gas	Gas derived from degradation of waste in landfills
Category A: Natural Gas	Natural gas (fossil fuel)
Category A: Waste Coal Mine Gas	Coal seam gas drained from mines for the purpose 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 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	Drained from coal mines 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	Coal seam gas drained from mines for the purpose 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)

ATTACHMENT 3 GLOSSARY

This glossary provides a general guide to the terminology used in the Scheme. It is designed to be read in conjunction with the Act, Regulation and Greenhouse Gas Benchmark 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 Greenhouse Gas Benchmark Rules.

Term	Meaning
Abatement Certificate	A certificate represents one tonne of carbon dioxide equivalent (tCO ₂ -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.
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.
Attributable Emissions	Determined for each benchmark participant each year by multiplying the total electricity purchased (at the transmission node ie from NEMMCO 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 Building Greenhouse Rating Scheme	The Australian Building Greenhouse Rating (ABGR) Scheme is one acceptable methodology to use to normalise baselines for new or existing office buildings, after adjusting for any Green Power purchases. Generally a new office building must exceed a minimum 4 star rating before any NGACs may be created.
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 ₂ -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 (Carbon Sequestration) Rule No. 5 of 2003</i>
Compliance Rule	<i>Greenhouse Gas Benchmark (Compliance) Rule 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.

Compliance and Operation of the NSW Greenhouse Gas Abatement Scheme during 2005

Term	Meaning
Consumer Price Index (CPI)	Under the Scheme, 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).
Default Abatement Factor	Used to calculate the number of abatement certificates that may be created from the installation of common equipment such as compact fluorescent lamps, AAA rated showerheads, refrigerators and certain electric motors.
Demand Side Abatement	Activities that reduce emissions by reducing electricity consumption through increased efficiency of electricity consumption, eligible on-site electricity generation, and substitution of sources of energy for electricity or substitution of electricity for other sources of energy.
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 (Demand Side Abatement) Rule 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 (Generation) Rule No. 2 of 2003</i>
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 Abatement Program (GGAP)	An environmental initiative administered by the Commonwealth Government's Australian Greenhouse Office to reduce Australia's net greenhouse gas emissions by supporting activities that are likely to result in substantial emission reductions or substantial sink enhancement.

Term	Meaning
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 ten per cent 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 (Large User Abatement Certificate) Rule 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 Abatement Scheme.
MRET	The Mandatory Renewable Energy Target (MRET) Scheme. Introduced by the Commonwealth government through the <i>Renewable Energy (Electricity) Act 2000</i> , the MRET places a legal liability on wholesale purchasers of electricity to proportionately contribute towards the generation of an additional 9,500GWh of renewable energy per year by 2010.
National Electricity Market Management Company (NEMMCO)	The body corporate responsible for the administration and operation of the wholesale national electricity market in accordance with the National Electricity Code.
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 Abatement Scheme.
Office of the Renewable Energy Regulator (ORER)	The Commonwealth Regulator of the Mandatory 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.

Compliance and Operation of the NSW Greenhouse Gas Abatement Scheme during 2005

Term	Meaning
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 Mandatory Renewable Energy Target (MRET) Scheme that may be brought to account against a benchmark participant's benchmark in the NSW Greenhouse Gas Abatement Scheme, based on NSW sales.
Renewable Power Percentage (RPP)	Under the Commonwealth MRET scheme, NSW retailers must surrender RECs to ORER each year equivalent to a certain percentage of the electricity sold.
Retail Supplier	A mandatory benchmark participant under the Greenhouse Gas Abatement Scheme. Includes all holders of an electricity retail licence in NSW.
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.
Scheme Registry	An online registry of Abatement Certificate Providers and Abatement Certificates.
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 NEMMCO, 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.

