IPART

Independent Pricing and Regulatory Tribunal
New South Wales

NSW Energy Savings Scheme Compliance and Operation in 2017

Annual Report to the Minister

Energy Savings Scheme

July 2018

ISBN 978-1-76049-243-4

The Tribunal members for this report are:

Dr Peter J. Boxall AO, Chair

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1 Executive summary

This is the Independent Pricing and Regulatory Tribunal of NSW's (**IPART's**) ninth annual report on the NSW Energy Savings Scheme (**ESS**), as required by section 174 of the *Electricity Supply Act 1995* (**Act**).[1] It summarises the scheme's performance during the 2017 calendar year, including the energy (electricity and gas) savings achieved and the compliance by Scheme Participants and Accredited Certificate Providers. It also outlines our actions and observations as Scheme Regulator and Scheme Administrator during 2017.

During 2017:

- The number of certificates created exceeded the number required to meet the ESS target for the year, and for the first time certificates were created from gas saving activities.
- The total certificate surplus remained steady and the reported certificate price ranged from $14 to $22, which is broadly in line with the historical price range.
- The compliance performance of both Scheme Participants and Accredited Certificate Providers was generally high.
- The cost of the scheme represented 0.7% of the total cost of supplying electricity to NSW residential customers, equivalent to $9 of the representative annual consumer electricity bill of $1,289.[2] We consider more work is needed to quantify the current benefits of the ESS.
- We continued to make significant improvements to the administration of the ESS.

We also identified several trends in certificate creation that could pose risks to the integrity of the scheme. In response, we are reviewing our systems to ensure they remain robust, scalable and flexible, and can promptly identify issues of concern. We also consider that some aspects of the scheme design could be reviewed to strengthen our ability to manage compliance.

1 A complete list of the legislative reporting requirements is included in the Appendix to this report.
2 Source: 2017 Residential Electricity Price Trends, Australian Energy Market Commission.

Box 1.1 About the Energy Savings Scheme

The ESS is a state-based scheme that aims to reduce the consumption of energy (electricity and gas) in NSW by providing a financial incentive to implement activities that save energy without reducing production or service levels. It is established under Part 9 of the Act.

The Act sets out **ESS targets** for each calendar year to 2025 and obliges all electricity retailers operating in NSW and other specified parties – known as **Scheme Participants** – to meet these targets by surrendering Energy Savings Certificates (**certificates**) or pay a penalty. Scheme Participants who need to purchase certificates for surrender create the demand for certificates.

The Act also provides for parties to be accredited to create those certificates from recognised energy saving activities.[a] These parties are voluntary participants in the ESS, and are known as **Accredited Certificate Providers**. This creates the supply of certificates.

The ESS target is applied to each Scheme Participant's annual liable acquisitions of electricity to determine its individual energy savings target for the year. The target started at 1% of liable acquisitions in 2009 and has increased annually to reach 7.5% in 2017. It will continue to increase until it reaches 8.5% in 2019, after which it will remain steady until 2025.[b]

[a] Certificates for energy saving activities may be created up to six months after the end of the calendar year in which the energy savings occur (or are deemed to occur), eg, 2017 vintage certificates may be created up until 30 June 2018.

[b] The ESS target for each calendar year is set out in Schedule 5 of the Act.

1.1 Number of certificates created exceeded the 2017 target

The ESS target for 2017 was 7.5% of all electricity purchased for supply to end-use customers in NSW, compared with 7% in 2016. After deducting allowed exemptions, the effective target for 2017 was 6.2%, which is equivalent to 4,076,779 megawatt hours (**MWh**) of electricity savings, or 4,076,779 certificates.[3]

Accredited Certificate Providers created 4,699,061 certificates in 2017, which exceeded the number required to meet the ESS target in 2017. For the first time, this number includes certificates created from gas saving activities.[4] Overall, the 2017 vintage certificates represented 4,379,535 MWh of electricity savings and 176,780 MWh of gas savings.[5] As in previous years, most of these certificates were created from commercial lighting activities.

Since the ESS commenced in July 2009, a total of 23,776,877 certificates have been created for activities implemented under the scheme. These certificates represent 22,363,865 MWh of electricity savings and 176,780 MWh of gas savings.[6]

3 To calculate the target (demand) for certificates each year, the electricity savings target (in MWh) is multiplied by the energy conversion factor (1.01 for the years 2009 to 2015, 1.0 for 2016 to 2025).

4 Changes to the *Energy Savings Scheme Rule of 2009* (**ESS Rule**) on 15 April 2016 made it possible for certificates to be created for gas saving activities as well as electricity saving activities.

5 To calculate the supply of certificates, the electricity savings and gas savings achieved (both in MWh) are multiplied by the relevant certificate conversion factor (1.06 for electricity and 0.39 for gas).

6 This compares with 19,154,333 certificates created (equivalent to 18,070,125 MWh of electricity savings) for activities implemented up until the end of the 2016 calendar year.

Box 1.2 IPART is the Scheme Regulator and Scheme Administrator

IPART is both Scheme Regulator and Scheme Administrator for the ESS. The Scheme Regulator role relates to activities of Scheme Participants, while the Scheme Administrator role relates to the activities of Accredited Certificate Providers.

Our mission is to administer the ESS efficiently and effectively, and to maintain the integrity of the scheme by ensuring that participants understand and adhere to the ESS requirements. To achieve these goals, we:

- publish detailed guidance about the ESS requirements
- present online workshops about specific aspects of the ESS and hold stakeholder forums and workshops
- use various online tools to improve our administrative efficiency and enhance the user experience of our stakeholders
- apply a risk-based approach to determine the compliance regime that applies to each accreditation over time
- require audits of participants' activities
- maintain robust systems and processes to minimise the risk of non-compliance with the ESS requirements, and
- monitor emerging issues and receive and act on intelligence.

1.2 Certificate surplus was steady and certificate price range was in line with previous years

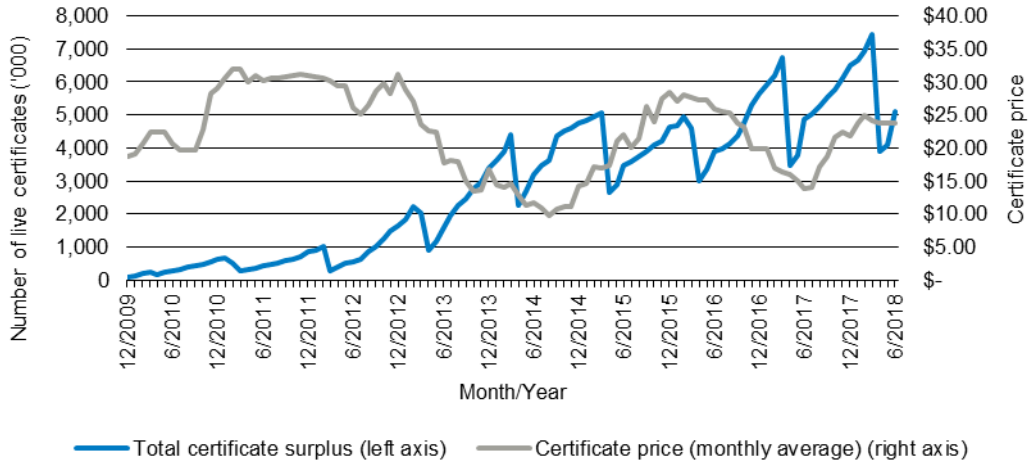
The total certificate surplus[7] at 30 June 2018 was 5.1 million certificates, which is broadly in line with the surplus at 30 June 2017 (see Figure 1.1). Typically, the surplus rises throughout the year as Accredited Certificate Providers register certificates, and falls sharply in March/April of the following year when Scheme Participants surrender certificates to meet their compliance obligations.

The indicative certificate price[8] varied across the year, from a low of $14 in mid-2017 to a high of $22 in late 2017 (see Figure 1.1). This is within the price range of $10 to $32 observed since the commencement of the ESS. As the certificates are tradeable, the certificate price varies based on the supply and demand for certificates.

7 Total certificate surplus comprises all vintages, including 2018 certificates that are unable to be surrendered to meet the 2017 target.

8 The price data is provided by third parties, as indicated in Figure 1.1. As it does not include price data for all certificate trades, it may not represent the actual average certificate price over time. Nevertheless, it provides a useful guide to broad movements in the certificate price.

Figure 1.1 Total certificate surplus and indicative certificate price (2009 to 2018)[a]



a Based on data provided by the financial brokers, Nextgen and TFS Green Australia, for all certificates traded through brokers in both the spot market and the forward market.

1.3 Scheme Participant compliance was high

Of the 65 Scheme Participants operating in NSW during the 2017 calendar year,[9] 60 complied with their obligations. Of these:

- 41 met their individual target by surrendering certificates,[10] and
- 19 reported no liable acquisitions in NSW.

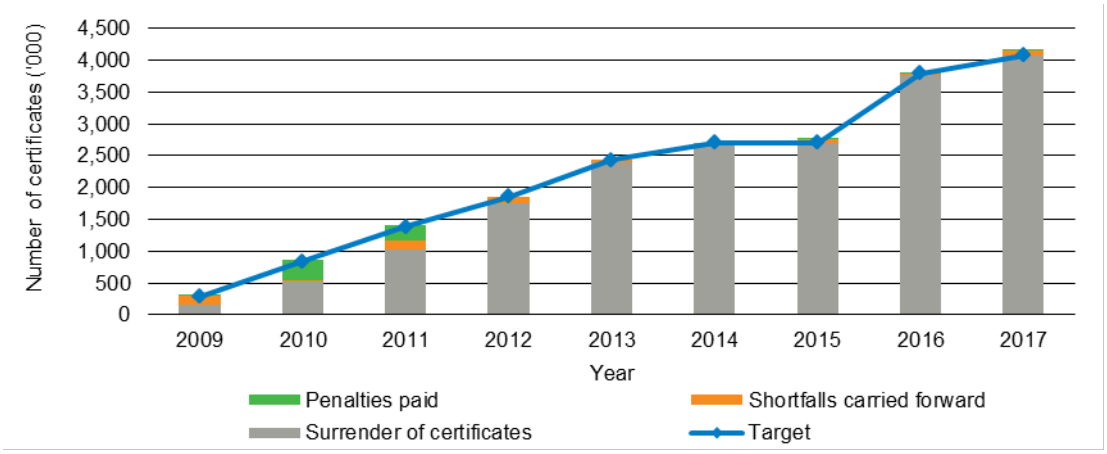
Of the remaining Scheme Participants:

- one submitted its Annual Energy Savings Statement (**AESS**) after the due date[11]
- two elected to meet their target by paying a penalty instead of surrendering certificates, but did not make payment by the due date, and
- two did not meet their target or submit an AESS.[12]

Figure 1.2 shows how Scheme Participants have met their energy savings target each year since the ESS began.

9 This compares to 62 Scheme Participants in the 2016 calendar year.
10 Of these Scheme Participants, 34 surrendered the full amount, while 7 surrendered at least 90% of the full amount and carried forward a shortfall of up 10% of their target, as permitted under the Act.
11 The Scheme Participant that submitted its AESS late reported no liable acquisitions in NSW.
12 See section 3.1 of the report for further details of these issues and the actions we are taking.

Figure 1.2 How the increasing ESS targets have been met each year (2009 to 2017)



1.4 Accredited Certificate Providers' compliance was generally high

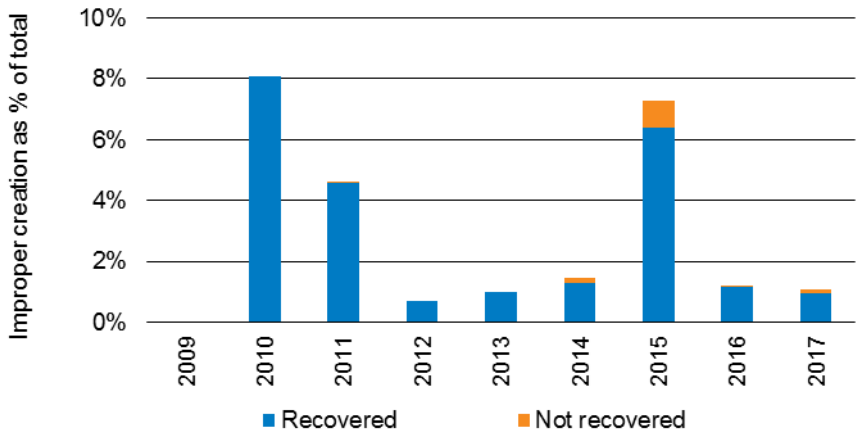
In 2017 the compliance of Accredited Certificate Providers was generally high. During the year, we identified 49,623 certificates (of various vintages)[13] as being improperly created due to a range of Accredited Certificate Provider errors. This is equivalent to 1.1% of all certificates created for 2017 activities (see Figure 1.3). We recovered all but 4,305 of these improperly created certificates (0.1% of all certificates created for 2017 activities).[14]

We continually undertake activities to minimise non-compliance so that Accredited Certificate Providers create certificates only where genuine energy savings have occurred. During 2017 these activities included:

- monitoring Accredited Certificate Providers' energy saving activities and using audits to verify savings, and
- using set-aside agreements to:
  - commit Accredited Certificate Providers to withhold from trade a percentage of the certificates they create until an audit of those certificates has been satisfactorily completed, and
  - require them to forfeit certificates to address any improper creation identified.

13 Some of the certificates we identified as improperly created in 2017 were created in previous years.
14 This was primarily due to our decision not to request forfeiture for two instances of non-compliance involving unique circumstances.

Figure 1.3 Identified improper certificate creation (2009 to 2017)[a]



a Refer to previous ESS Annual Reports for details of improper creation, and our recovery of improperly created certificates prior to 2017.

1.5 We identified and responded to trends that present risks to the scheme's integrity

Our mission as Scheme Administrator is to administer the ESS efficiently and effectively, and to maintain the integrity of the scheme by ensuring that participants understand and adhere to the ESS requirements. We apply a risk-based approach to managing the compliance of Accredited Certificate Providers. Our primary tools are third-party audits and legally binding set-aside agreements.

During 2017 we identified several trends and issues that present risks to the scheme's integrity. These include the failure of Accredited Certificate Providers to comply with the co-payment requirement under the Commercial Lighting Energy Savings Formula. We also observed that all the major instances of non-compliance identified since 2016 have involved very large certificate creators.[15] Prior to 2016, major instances of non-compliance typically involved smaller certificate creators.

In response, we continued to implement a range of actions, including:

- using market intelligence to better target our compliance activities
- expanding the scope of particular audits to include additional verification checks
- conducting formal investigation activities, and
- taking enforcement action.

15 The Accredited Certificate Providers responsible for all major instances of non-compliance are all among the largest 10 certificate creators (see section 4.2.2 and 5.1 for further detail).

1.6 Improved scheme design would minimise the potential for non-compliance

The availability of subsidies for energy efficiency upgrades under the ESS, particularly under the Commercial Lighting Energy Savings Formula, attracts operators of varying technical, professional and ethical standards. This represents a significant threat to the ongoing integrity of the scheme.

In particular, we consider there is scope for deliberate non-compliance with some parts of the ESS Rule, which can be difficult to detect and establish. For instance, the failure to comply with the co-payment requirement under the Commercial Lighting Energy Savings Formula remains a key compliance issue, even though the ESS Rule was changed to require payment before certificate creation. Recent representations by Accredited Certificate Providers to weaken this requirement – such as permitting post-registration repayment of the minimum amount – would make our monitoring and verification task even more difficult.

We are exploring new compliance strategies and enhanced powers to address this issue. However, our assessment is that the design of the ESS Rule needs to be improved to minimise the scope for deliberate non-compliance. This includes reviewing some of the requirements for which it is difficult to obtain evidence to verify compliance. We consider that expert advice in scheme design and Rule development, specifically to minimise the opportunity and incentive for deliberate non-compliance, could effectively address this.

We are working with the scheme policy makers to ensure that the significant expansion of activity in the ESS into the residential sector does not increase the likelihood and consequences of non-compliance.[16] This will require careful scheme design and enhanced enforcement powers for IPART.

1.7 We continued our core administrative activities

During 2017 we continued to conduct our core administrative activities and make improvements to our systems and processes. For example, we:

- approved 26 new accreditations, and made 64 amendments to the conditions of existing accreditations[17]
- accepted 1,887 lighting products for use in the scheme, bringing the total number of products accepted since 2011 to 5,820
- managed 109 audits of accreditations[18]
- cancelled 22 accreditations,[19] and

16 On 3 September 2017 the Premier announced an energy affordability package for households and small businesses. One component of the package relates to the ESS.

17 Some accreditations had their conditions amended multiple times. Most amendments were to change the maximum number of certificates to be created between audits, or change the activities allowed under the accreditation.

18 These audits were undertaken by members of our Audit Services Panel.

19 We typically cancelled these accreditations because we were satisfied that the Accredited Certificate Provider had breached its accreditation conditions or was no longer eligible to be accredited, or because the Accredited Certificate Provider requested cancellation.

- made improvements to the ESS Portal[20] to increase administrative efficiency and improve how Accredited Certificate Providers and auditors interact with us.

In addition, we continued our 'face-to-face' interaction with stakeholders to help improve their understanding of ESS requirements, including holding a public stakeholder forum. We also increased the number and scope of our online training workshops.

1.8 Functions of Scheme Regulator and Scheme Administrator were exercised by Tribunal and ESS Committee

For the period of 1 August to 31 October 2017, the Tribunal exercised the functions of Scheme Regulator and Scheme Administrator. During this time, the Tribunal comprised:

- Dr Peter J. Boxall AO as Chair, and
- Ms Deborah Cope and Mr Ed Willett as Tribunal Members.

From 1 January to 31 July 2017, and from 1 November to 31 December 2017, the Tribunal delegated these functions to the ESS Committee,[21] which comprised:

- Mr Ed Willett as Chairman, and
- Dr Brian Spalding and Ms Fiona Towers as Committee Members.

The Secretariat continued to exercise certain administrative functions previously delegated to it by the Tribunal to improve administrative efficiency.

1.9 Report structure

The remainder of this report discusses the compliance performance and operation of the ESS during 2017 in more detail:

- Chapter 2 focuses on the scheme's performance in terms of energy savings achieved and certificate market activity
- Chapters 3 and 4 discuss the compliance performance of Scheme Participants and Accredited Certificate Providers respectively, and
- Chapter 5 outlines our activities in administering the scheme.

Further information about the ESS is available on our website.[22] For example, see "How the scheme works" for an overview of the scheme.[23]

20 The ESS Portal is an online system we use to manage compliance activities.
21 Section 152(4) of the Act allows IPART, with the approval of the Minister, to delegate the exercise of its functions as Scheme Regulator and Scheme Administrator to another person or body.
22 See *www.ess.nsw.gov.au*.
23 See *www.ess.nsw.gov.au/How_the_scheme_works*.

2 Scheme performance

The principal objective of the ESS is to create a financial incentive to reduce the consumption of energy (electricity and gas) by encouraging energy saving activities by electricity consumers.[24] To assess the scheme's performance against this objective each year, we estimate the energy savings it has achieved from certificate creation. In 2017 we found that:

- the number of certificates created exceeded the number required to meet the ESS target for the year
- the scheme continued to achieve significant actual energy savings, and
- the level of activity in the certificate market was similar to 2016.

2.1 The number of certificates created exceeded the 2017 target

The ESS target for 2017 was 7.5% of all electricity purchased for supply to end-use customers in NSW, compared with 7% in 2016. After deducting allowed exemptions (see section 3.2), the effective target for 2017 was 6.2%. This is equivalent to 4,076,779 MWh of electricity savings, or 4,076,779 certificates.[25]

Accredited Certificate Providers created 4,699,061 certificates in 2017. For the first time, this included certificates created from gas saving activities.[26] Overall, the 2017 vintage certificates represented 4,379,535 MWh of electricity savings and 176,780 MWh of gas savings.[27]

2.2 The ESS continued to achieve significant actual energy savings

As a result of certificates created between 2009 and 2017, we estimate that the ESS has achieved or will achieve (over the lifetime of the energy-saving activities) actual electricity savings of 22,363,865 MWh and actual gas savings of 176,780 MWh (see Figure 2.1). These savings comprise:

- 8,408,981 MWh of electricity savings achieved during the period 2009 to 2016
- 2,333,968 MWh of electricity savings and 30,182 MWh of gas savings achieved during 2017, and

24 The objectives of the ESS are specified in section 98 of the Act.

25 To calculate the target (demand) for certificates each year, the electricity savings target (in MWh) is multiplied by the energy conversion factor (1.01 for the years 2009 to 2015, 1.0 for 2016 to 2025).

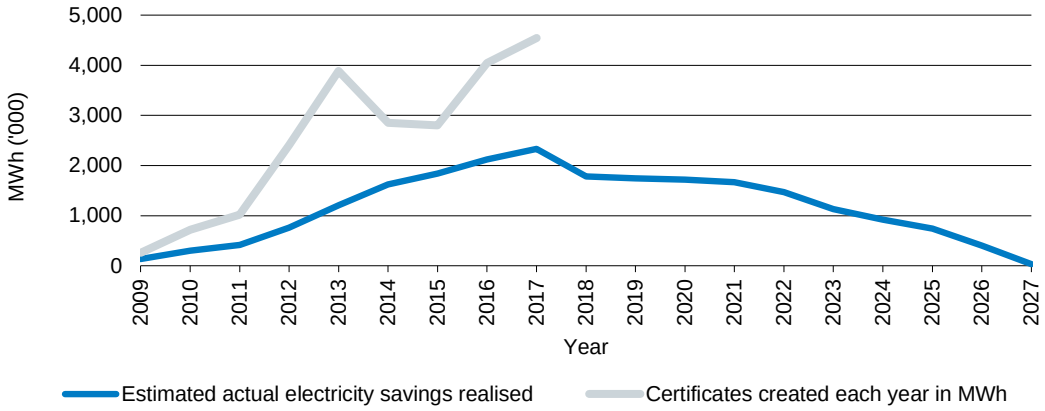
26 Changes the Energy Savings Scheme Rule of 2009 (ESS Rule) on 15 April 2016 made it possible for certificates to be created for gas saving activities as well as electricity saving activities. But no such certificates were created until 2017.

27 To calculate the supply of certificates, the electricity savings and gas savings achieved (both in MWh) are multiplied by the relevant certificate conversion factor (1.06 for electricity and 0.39 for gas).

- 11,620,917 MWh of electricity savings and 146,598 MWh of gas savings estimated to be achieved over the 10 years from 2018 to 2027 (Table 2.1 and Table 2.2).

The reason some of these energy savings will be realised in future years is that Accredited Certificate Providers may, under some of the ESS calculation methods, create certificates in advance of the savings occurring (see Box 2.1). To estimate these future savings, we pro rate the certificates created in each year across the forward-creation or deeming period of the relevant energy saving activity.

Figure 2.1 Certificates created (2009 to 2017) compared with estimated actual electricity savings (2009 to 2027)[a]



[a] Estimated actual gas savings to date are not included on this graph as the savings to date are comparatively small (see Table 2.2).

Box 2.1 Certificate creation in advance of actual energy savings

For some recognised energy saving activities (**RESAs**), specifically all accreditations under the Metered Baseline Method, certificates can only be created in the year that the energy savings occurred. However, for other RESAs, certificates may be created in advance of the actual energy savings occurring where those savings will continue up to 15 years into the future. This is referred to as forward creation and deeming.

Under the Project Impact Assessment Method and the Project Impact Assessment with Measurement and Verification Method, it is possible to forward-create certificates (at the start of the energy savings period) for up to 5 years and 10 years respectively, based on estimated energy savings. The certificates are discounted by an approved percentage to account for some uncertainty, and may later be 'topped up' if additional actual savings can be verified.

Under the Deemed Energy Savings Method, which includes the Commercial Lighting Energy Savings Formula, the lifetime or deemed energy savings are estimated up-front and the certificates are forward-created from the time the activity is implemented. The deeming period depends on the type of activity, and typically ranges between 7 years and 15 years.

Table 2.1 Estimated actual electricity savings (in MWh) by calculation method (2009 to 2027)[a]

Calculation method	2009-16[b]	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027[d]	Total
Deemed Energy Savings Method													
Commercial Lighting Formula	3,840,876	1,573,603	1,575,297	1,574,562	1,573,212	1,531,121	1,342,097	1,008,840	802,298	627,035	323,107	2,969	**15,775,016**
Sale of New Appliances	92,988	89,287	89,287	89,287	89,287	89,287	89,286	89,275	89,268	87,272	58,601	29,035	**982,162**
Default Savings Factors	649,076	40,531	1,419	210	113	23	0	0	0	0	0	0	**691,372**
Removal of Old Appliances	60,862	19,380	19,380	14,636	8,504	6,453	4,755	1,688	0	0	0	0	**135,657**
Installation of High Efficiency Appliances for Business	558	1,053	1,053	1,053	1,053	1,053	1,053	928	620	0	0	0	**8,427**
Public Lighting Formula	0	3,374	3,374	3,374	3,374	3,374	3,374	3,374	3,374	3,374	3,374	2,024	**35,767**
Home Energy Efficiency Retrofits	0	1,093	1,117	1,117	1,117	1,117	1,117	1,117	1,117	1,117	1,117	24	**11,173**
Power Factor Correction Formula	129	22	22	22	22	0	0	0	0	0	0	0	**215**
High Efficiency Motor Formula	269	135	135	135	135	135	135	135	135	135	0	0	**1,480**
Subtotal	**4,644,758**	**1,728,478**	**1,691,084**	**1,684,397**	**1,676,817**	**1,632,563**	**1,441,817**	**1,105,358**	**896,813**	**718,933**	**386,199**	**34,051**	**17,641,269**
Metered Baseline Method[c]													
Baseline per unit of output	1,723,789	230,021	0	0	0	0	0	0	0	0	0	0	**1,953,810**
Baseline unaffected by output	104,621	22,991	0	0	0	0	0	0	0	0	0	0	**127,611**
NABERS baseline	283,336	25,421	0	0	0	0	0	0	0	0	0	0	**308,757**
Normalised baseline	545,126	166,494	0	0	0	0	0	0	0	0	0	0	**711,620**
Subtotal	**2,656,872**	**444,927**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,101,798**
Project Impact Assessment Method	**1,098,876**	**133,892**	**66,396**	**32,991**	**14,749**	**6,124**	**0**	**0**	**0**	**0**	**0**	**0**	**1,353,027**
Project Impact Assessment with Measurement and Verification Method	**8,474**	**26,671**	**26,777**	**26,777**	**26,777**	**26,777**	**26,777**	**26,777**	**26,777**	**25,919**	**19,160**	**106**	**267,770**
TOTAL SAVINGS	**8,408,981**	**2,333,968**	**1,784,257**	**1,744,165**	**1,718,343**	**1,665,464**	**1,468,594**	**1,132,135**	**923,590**	**744,853**	**405,359**	**34,157**	**22,363,865[e]**

a See Box 5.1 for an explanation of the calculation methods. Methods for which certificates are yet to be created (eg, Aggregated Metered Baseline Method) are not included in this table.

b For the period from 1 July 2009 to 31 December 2016.

c Certificates can only be created under the Metered Baseline Method after the savings have occurred (ie, there is no forward creation or deeming as with other methods).

d Section 174(2)(e) of the Act requires the Scheme Administrator to estimate electricity savings over the next 10 years having regard to the number of certificates created.

e Represents total electricity savings achieved under the ESS based on total certificates created to date.

Note: Totals may not add exactly due to rounding. All data is in MWh. While the ESS closes at the end of 2025 (Section 178 of the Act), savings will be realised beyond that date. Small differences in data compared with previous annual reports reflect certificates that have been forfeited after the report was released.

Table 2.2 Estimated actual gas savings (in MWh) by calculation method (2009 to 2027)[a]

Calculation method	2009-16[b]	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027[d]	Total
Deemed Energy Savings Method													
Installation of High Efficiency Appliances for Business	0	3,224	3,224	3,224	3,224	3,224	3,224	3,224	3,224	0	0	0	**25,792**
Subtotal	**0**	**3,224**	**3,224**	**3,224**	**3,224**	**3,224**	**3,224**	**3,224**	**3,224**	**0**	**0**	**0**	**25,792**
Metered Baseline Method[c]													
Baseline per unit of output	0	12,593	0	0	0	0	0	0	0	0	0	0	**12,593**
Normalised baseline	0	1,204											**1,204**
Subtotal	**0**	**13,797**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13,797**
Project Impact Assessment with Measurement and Verification Method	**0**	**13,161**	**13,719**	**13,719**	**13,719**	**13,719**	**13,719**	**13,719**	**13,719**	**13,719**	**13,719**	**558**	**137,191**
TOTAL SAVINGS	**0**	**30,182**	**16,943**	**16,943**	**16,943**	**16,943**	**16,943**	**16,943**	**16,943**	**13,719**	**13,719**	**558**	**176,780[e]**

a See Box 5.1 for an explanation of the calculation methods. Methods for which certificates are yet to be created are not included in this table.

b For the period from 1 July 2009 to 31 December 2016.

c Certificates can only be created under the Metered Baseline Method after the savings have occurred (ie, there is no forward creation or deeming as with other methods).

d Section 174(2)(e) of the Act requires the Scheme Administrator to estimate gas savings over the next 10 years having regard to the number of certificates created.

e Represents total gas savings achieved under the ESS based on total certificates created to date.

Note: Totals may not add exactly due to rounding. All data is in MWh. While the ESS closes at the end of 2025 (Section 178 of the Act), savings will be realised beyond that date. Small differences in data compared with previous annual reports reflect certificates that have been forfeited after the report was released.

Table 2.3 compares, by calculation method, the number of certificates created from 2009 to 2017 with the estimated actual electricity savings from 2009 to 2017 (ie, it does not include electricity savings that are estimated to occur after 2017).

It shows that the Deemed Energy Saving Method (which includes commercial lighting activities) accounts for 79% of the certificates created to date, but only 59% of the estimated actual electricity savings to date. This is because forward-creation of certificates is permitted under this method, and most of the electricity savings associated with the certificates created under the method to date will be realised after 2017.

In contrast, the Metered Baseline Method Deemed Energy Saving Method accounts for 14% of the certificates created to date, but 29% of the estimated actual electricity savings to date. Forward-creation of certificates is not permitted under this method, and so all of the electricity savings associated with certificates created under this method to date were realised before or during 2017.

Table 2.3 Calculation method proportions – certificate creation vs estimated actual electricity savings (2009 to 2017)

	Certificate creation (2009-2017)	Estimated actual electricity savings in MWh (2009-2017)
Deemed Energy Savings Method	18,712,040 (78.7%)	6,373,236 (59.3%)
Metered Baseline Method	3,293,287 (13.9%)	3,101,798 (28.9%)
Project Impact Assessment Method	1,434,209 (6.0%)	1,232,768 (11.5%)
Project Impact Assessment with Measurement and Verification Method	337,341 (1.4%)	35,146 (0.3%)
Total	**23,776,877 (100.0%)**	**10,742,948 (100.0%)**

2.3 Level of activity in the certificate market was similar to 2016

As Scheme Administrator, we maintain publicly available registers of Accredited Certificate Providers and energy savings certificates on the ESS Registry.[28] This Registry records information about all Accredited Certificate Providers, their activities and the certificates they create. It also records information about each certificate, including the creator, vintage, energy saving calculation method used and activity undertaken. In addition, it tracks the status of a certificate – which is either live (available for transfer or surrender), surrendered or forfeited.

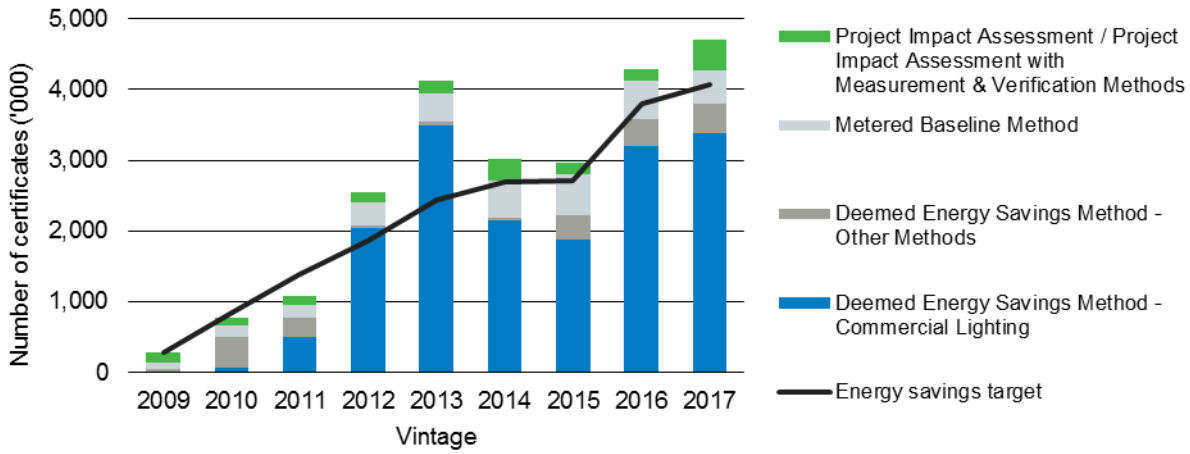
Our analysis of this information indicates that the level of activity in certificate market in 2017 was similar to 2016. The number of certificates created was broadly in line with last year, and certificate registration and transfer activity continued to fluctuate across the year.

28 See *www.ess.nsw.gov.au/Registry*.

Accredited Certificate Providers created 4,699,061 certificates of 2017 vintage,[29] compared with 4,315,029 in 2016. The proportion of certificates created under the different calculation methods in 2017 was similar to 2016, with 72% of the certificates created from commercial lighting activities (see Figure 2.2 and Table 2.4). However, we also identified some differences:

- The number of certificates created under the Project Impact Assessment Measurement and Verification Method in 2017 was more than three times that in 2016 (256,603 compared with 71,648).
- For the first time, certificates were created under the Public Lighting Energy Savings Formula in 2017 (40,058 certificates).

Figure 2.2 Certificate creation by calculation method and vintage (2009 to 2017)



We anticipate that there may be changes in the proportion of certificates created under different methods in future years, including:

- an increase in activity in the residential and small business sectors, partly due to the NSW Government's announcement of new energy efficiency measures for households and small businesses that will be delivered in part through the ESS[30]
- an increase in certificate creation under Project Impact Assessment Measurement and Verification Method, as the industry builds capacity to execute the requirements of the method, and
- a likely decrease in certificate creation from commercial lighting activities, as the NSW Government is considering reducing incentives under the Commercial Lighting Energy Savings Formula because of the market's uptake of energy efficient light emitting diode (**LED**) lighting.[31]

29 2017 vintage certificates relate to energy saving activities undertaken during the 2017 calendar year. However, certificates may be created up to six months after the end of the calendar year. Therefore, a 2017 vintage certificate can be registered from 1 January 2017 to 30 June 2018.

30 On 3 September 2017, the Premier announced an energy affordability package for households and small businesses. One component of the package relates to the ESS.

31 In December 2017, the NSW Government consulted on proposed changes to the ESS Rule, including to the Commercial Lighting Energy Savings Formula, which it plans to introduce in 2018.

Table 2.4 Number of certificates created by energy savings calculation sub-method (2009 to 2017) [a]

Calculation method	2009-2014[a]	2015	2016	2017	Total
Commercial Lighting Formula (DESM)	8,262,669	1,874,927	3,209,685	3,374,327	**16,721,608**
Sale of New Appliances (DESM)[b]	24,432	335,051	343,064	338,545	**1,041,092**
Project Impact Assessment with Measurement and Verification Method	0	9,090	71,648	256,603	**337,341**
Baseline per unit of output (MBM)	1,147,178	349,549	330,489	248,734	**2,075,950**
Normalised baseline (MBM)	275,604	154,679	147,551	176,953	**754,787**
Project Impact Assessment Method	997,340	168,721	95,308	172,840	**1,434,209**
Public Lighting Energy Savings Formula (DESM)	0	0	0	40,058	**40,058**
NABERS baseline (MBM)	227,789	35,776	36,771	26,946	**327,282**
Baseline unaffected by output (MBM)	55,402	27,898	27,598	24,370	**135,268**
Installation of High Efficiency Appliances for Business (DESM)	0	1,843	1,829	15,320	**18,992**
Removal of Old Appliances (DESM)[b]	95,916	12,600	22,758	12,522	**143,796**
Home Energy Efficiency Retrofits (DESM)	0	0	0	11,843	**11,843**
Default Savings Factors (DESM)[b]	732,854	0	0	0	**732,854**
High Efficiency Motor Formula (DESM)	0	1,569	0	0	**1,569**
Power Factor Correction Formula (DESM)	228	0	0	0	**228**
Aggregated Metered Baseline (MBM)	0	0	0	0	**0**
1-for-1 Residential Downlight Replacement (DESM)[b]	0	0	0	0	**0**
Total	**11,819,412**	**2,971,703**	**4,286,701**	**4,699,061**	**23,776,877**

a See Box 5.1 for an explanation of the calculation methods.

b Refer to previous ESS Annual Reports for a breakdown of the number of certificates created during these years.

c As part of changes to the ESS Rule in 2014, the Default Savings Factors sub-method was replaced with three new sub-methods: 1-for-1 Residential Downlight Replacement, Removal of Old Appliances and Sale of New Appliances. Some existing accreditations under the Default Savings Factors sub-method transitioned into the new sub-methods (see section 6.1 of the 2014 ESS Annual Report, available on our website).

Note: Small differences in data compared with previous annual reports reflect certificates that have been forfeited after the report was released. DESM stands for Deemed Energy Savings Method, MBM stands for Metered Baseline Method.

Table 2.5 Number of certificates created by project type (2009 to 2017)

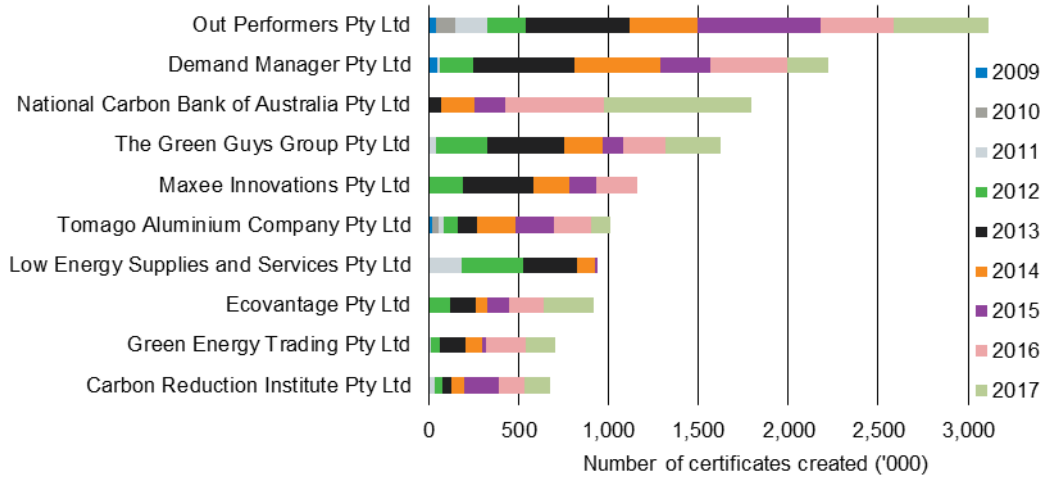
Project type	2009-2014[a]	2015	2016	2017	Total
Lighting	8,496,338	1,874,927	3,209,685	3,425,493	**17,006,443**
Multiple activities	553,789	276,725	267,085	458,720	**1,556,319**
New Appliances	25,391	335,051	343,064	338,545	**1,042,051**
Process Change/Control Systems	1,120,071	297,403	245,418	137,100	**1,799,992**
HVAC	236,900	57,490	77,676	129,603	**501,669**
Fans/Pumps	82,350	19,016	21,564	50,626	**173,556**
Building Upgrade	216,811	26,057	46,134	49,044	**338,046**
Refrigeration	116,187	40,292	28,083	41,734	**226,296**
Compressed Air	116,981	29,451	16,190	28,841	**191,463**
Air Handling Fans Ventilation	0	0	0	25,702	**25,702**
Refrigerator & freezer removal	95,916	12,600	22,758	12,522	**143,796**
Power Systems	26,455	1,122	1,668	1,131	**30,376**
Showerheads	728,025	0	0	0	**728,025**
Industrial Refrigeration and Freezing	0	0	7,376	0	**7,376**
High Efficiency Motors	3,970	1,569	0	0	**5,539**
Power Factor Correction	228	0	0	0	**228**
Home Retrofit	0	0	0	0	**0**
Total	**11,819,412**	**2,971,703**	**4,286,701**	**4,699,061**	**23,776,877**

a Refer to previous ESS Annual Reports for a breakdown of the number of certificates created during these years.

Note: Small differences in data compared with previous annual reports reflect certificates that have been forfeited after the report was released.

Out Performers Pty Ltd has created 3.1 million certificates to date, the most of any Accredited Certificate Provider. Other large creators include Demand Manager Pty Ltd, National Carbon Bank of Australia Pty Ltd and The Green Guys Group Pty Ltd – each of which has created more than 1.5 million certificates since the ESS began (see Figure 2.3). The 10 largest creators of certificates account for 59% of the total number of certificates created under the ESS to date.

Figure 2.3 Accredited Certificate Providers – 10 largest certificate creators (2009-2017)



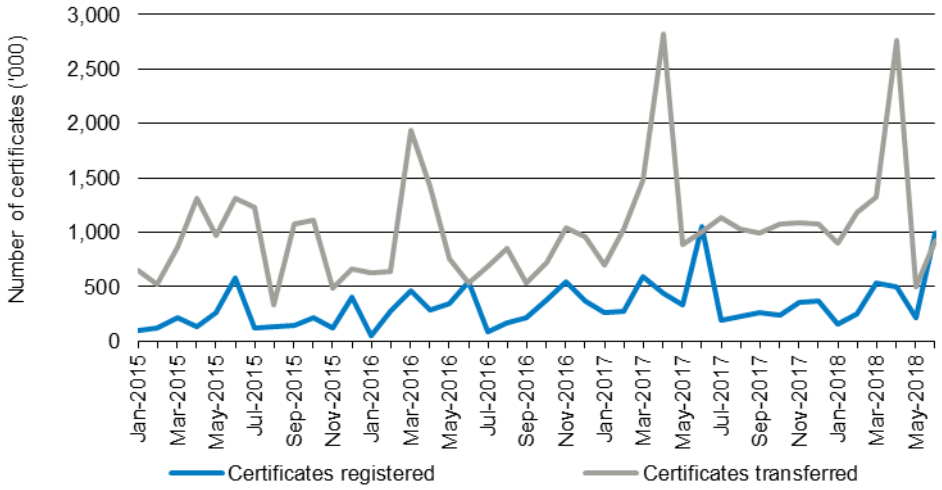
Note: Low Energy Supplies and Services Pty Ltd was wound up in 2015.

2.3.1 Certificate registration and transfer activity continued to fluctuate across the year

As in previous years, monthly certificate registration and certificate transfers fluctuated across the year (Figure 2.4). The average monthly certificate registration was 384,622, with peaks in March (598,186 certificates registered) and June (1,056,643 certificates registered). These peaks may have been due to:

- the 30 April deadline for Scheme Participants to surrender certificates, and
- the 30 June deadline for registering certificates for activities that were implemented in the previous calendar year.

Figure 2.4 Number of certificates registered and transferred each month for 2015-2018



The total number of certificate transfers[32] in 2017 was 1,816, involving 14.3 million certificates. This is more than three times the number of certificates registered in 2017. This indicates that most certificates were transferred multiple times between their initial creation and final surrender.

2.3.2 All certificates surrendered were to meet regulatory obligations

The ESS Registry recorded the surrender of 4,063,989 certificates for 2017. All of these certificates were surrendered by Scheme Participants to meet their regulatory obligations.

2.3.3 Some certificates were forfeited due to incorrect certificate creation issues

The ESS Registry recorded 73 instances where certificates were voluntarily forfeited by Accredited Certificate Providers and cancelled in the Registry. These instances involved 64,888 certificates, which were forfeited to:

- address improper certificate creation identified through audit or other means[33]
- correct errors identified during the certificate registration process, such as registering a certificate as the incorrect vintage, or
- correct errors identified by the Accredited Certificate Provider.

2.3.4 Cumulative certificate surplus remains high

At 30 June 2018, there were 4,325,428 certificates of 2017 vintage or older available for surrender in future compliance years (see Table 2.5). The surplus has remained above 2.5 million certificates since 2013. This is due to the high level of certificate creation in 2013,

32 Each time there is a change in ownership of certificates, it is recorded as a transfer in the ESS Registry.

33 In some cases, certificates were identified as improperly created after the Accredited Certificate Provider had transferred them to another owner. In these cases, other valid certificates owned by the Accredited Certificate Provider at the time were cancelled to meet the forfeit.

and annual certificate creation since that time being similar to, or exceeding, the amount required to be surrendered each year.

Further information about creation, transfer and surrender of certificates is available from the ESS Registry.[34]

Table 2.6 Supply and surplus of certificates (2009 to 2017)

Year	Total certificates created[a]	Total certificates surrendered	Surplus for the compliance year	Revived certificates[b]	Cumulative surplus
2009	276,942	148,928	128,014	0	128,014
2010	764,385	651,655	112,730	0	240,744
2011	1,079,407	1,063,564	15,843	0	256,587
2012	2,553,627	1,885,240	668,387	0	924,974
2013	4,121,802	2,491,055	1,630,747	0	2,555,721
2014	3,023,249	2,700,190	323,059	26,603	2,905,383
2015	2,971,703	2,706,669	265,034	0	3,170,417
2016	4,286,701	3,766,762	519,939	0	3,690,356
2017	4,699,061	4,063,989	635,072	0	4,325,428

a Small differences in data compared with previous annual reports reflect certificates forfeited after the reports were released.

b The certificates that were revived in 2014 increased the cumulative surplus at the end of the 2014 calendar year (see sections 2.2.6 and 3.3 of the 2014 ESS Annual Report, available on our website for further detail).

34 See *www.ess.nsw.gov.au/Registry*.

3 Compliance by Scheme Participants

Scheme Participants include all holders of NSW electricity retail licences; NSW electricity generators that supply directly to retail customers in NSW; and market customers in NSW that purchase electricity directly from the National Electricity Market. Scheme Participants have legislated obligations under the scheme (see Box 3.1). To assess each participant's compliance performance each year, we check whether it met these obligations, including meeting its individual energy savings target and submitting its Annual Energy Savings Statement (**AESS**) by the compliance date.

During 2017 there were 65 Scheme Participants in the ESS (compared with 62 in 2016), including 62 retail electricity suppliers, two direct suppliers, and one market customer. Of these Scheme Participants, all but five complied with their obligations. In addition, all Scheme Participants that were required to have their AESSs audited did so, and no issues were identified.

Box 3.1 Scheme Participant obligations

Scheme Participants' key compliance obligations include:

- Calculating their individual energy savings target for the year.
- Meeting their individual energy savings target by either obtaining and surrendering certificates, carrying forward an energy savings shortfall (within the 10% limit) to the next year, or paying an energy savings shortfall penalty.
- Lodging their AESS by the compliance date, and ensuring it is complete and correct, covering:
  - the Scheme Participant's calculation of its individual energy savings target
  - the particulars of its liable electricity acquisitions and any deductions in respect of exempt loads
  - the extent to which it met the target by surrendering certificates
  - any energy savings shortfall it is carrying forward, and
  - any penalty it is required to pay.
- Lodging an independent audit report of the AESS, if required.[a]

We assess each AESS by reviewing the data it contains (and any audit report), cross-checking certificate numbers with the ESS Registry, and undertaking a reasonableness check. Where an error or misstatement is identified, the Scheme Regulator may make an amendment. We advise Scheme Participants that the certificates they have offered for surrender have been accepted (or refused in certain cases) in the ESS Registry, and of any energy savings shortfall penalties they must pay.

a An audit is typically required if the AESS includes data about liable acquisitions from non-market sources or seeks exemptions for any electricity loads (see sections 3.2 and 3.4). The exempt entity must provide details of their exempt load to the electricity retailer in order to claim the exemption.

3.1 Most Scheme Participants complied

As noted above, 60 of the 65 Scheme Participants in 2017 complied with their obligations under the scheme (see Table 3.1).

Table 3.1 Scheme Participants' performance in 2017

Surrendered certificates to fully meet their individual energy savings target	34	complied
Surrendered certificates to meet at least 90% of their target and carried forward a shortfall of no more than 10% of their target to 2018	7	
Target of zero[a] and submitted AESS by 30 April 2018	19	
Target of zero[a] but did not submit AESS by 30 April 2018	1	did not comply
Elected to pay a penalty for the shortfall and paid penalty late	1	
Elected to pay a penalty – payment outstanding	1	
Did not submit an AESS and did not surrender certificates	2	
Total Scheme Participants	**65**	

[a] Target was zero as it reported no direct purchases or sales of electricity in 2017.

The five that did not comply were Positive Energy TM Pty Ltd (**Positive Energy TM**), Sumo Power Pty Ltd (**Sumo Power**), Mojo Power Pty Ltd (**Mojo Power**), Urth Energy Pty Ltd (**Urth Energy**), COzero Energy Retail Pty Ltd (**COzero Energy Retail**):

- Positive Energy TM had an individual energy savings target of zero as it had no direct purchases or sales of electricity. However, it still had an obligation to submit an AESS by 30 April 2018. It did not comply with this obligation, as it submitted its AESS on 1 May 2018. It is Positive Energy TM's first year as a Scheme Participant.
- Sumo Power had an individual energy savings target of one ESC and elected to pay an energy savings shortfall penalty of $27 in lieu of surrendering one ESC. However, it did not make payment until 1 July 2018, after the due date of 30 June 2018.
- Mojo Power also elected to pay an energy savings shortfall penalty. Its energy savings shortfall penalty was $78,263 and payment was due by 30 June 2018. It has not paid the penalty. We are pursuing the debt with Mojo Power.
- Urth Energy went into administration in February 2017 and failed to meet its individual energy savings target or submit an AESS in both 2016 and 2017.
- COzero Energy Retail failed to meet its individual energy savings target or submit an AESS in 2017.

As Urth Energy and COZero Energy Retail failed to meet their targets, they were liable for energy savings shortfall penalties. We made default assessments of their liabilities, and issued invoices for the shortfall penalties of $5,303 to Urth Energy's administrators and $72,602 to COZero Energy Retail.

Table 3.2 summarises the compliance performance of individual Scheme Participants.

Table 3.2 Scheme Participant compliance in 2017

Surrendered sufficient certificates to meet 2017 individual energy savings target	
1st Energy Pty Ltd	Pacific Hydro Retail Pty Ltd (t/as Tango Energy Pty Ltd)
Alinta Energy Retail Sales Pty Ltd	People Energy Pty Ltd
Blue NRG Pty Ltd	Pooled Energy Pty Ltd
Cova U Pty Ltd	Powershop Australia
Diamond Energy	Progressive Green Pty Ltd
Energy Locals Pty Ltd	Red Energy Pty Ltd
EnergyAustralia Pty Ltd	Sanctuary Energy Pty Ltd
EnergyAustralia Yallourn Pty Ltd	Simply Energy
ERM Power Retail Pty Ltd	Stanwell Corporation
Infigen Energy Markets Pty Limited	Tomago Aluminium Company Pty Ltd
Lumo Energy (NSW) Pty Ltd	WINenergy
M2 Energy Pty Ltd (formerly Dodo Power and Gas Pty Ltd)	Click Energy Pty Ltd (t/as Amaysim energy Pty Ltd)
Momentum Energy Pty Ltd	Delta Electricity (Sunset Power International Pty Ltd)
Next Business Energy Pty Ltd	Enwave Mascot Pty Ltd (formerly Brookfield District Energy (GX) Pty Ltd)
Online Power and Gas Pty Ltd	Macquarie Bank Limited
Origin Energy Electricity Limited (& Origin Uranquity & Sun Retail P/L & Cogent Energy P/L)[a]	
Surrendered certificates to meet part of 2017 individual energy savings target and chose to carry forward the remaining energy savings shortfall to 2018	
AGL Macquarie Pty Ltd[b]	Enova Energy Pty Ltd
AGL Sales (Queensland Electricity) Pty Ltd	Powerdirect Pty Ltd
AGL Sales Pty Ltd (& AGL South Australia)[c]	Qenergy Pty Ltd
Did not directly purchase or sell electricity in NSW in 2017 so individual energy savings target was zero	
ActewAGL Retail Ltd	Ozgen Retail Pty Ltd
Aurora Energy Pty Ltd	Savant Energy Power Networks Pty Limited
CS Energy	Trustpower Australia Holdings Ltd (Tilt Renewables Australia Pty Ltd)
EDL Retail Pty Ltd	Flow Systems Pty Ltd
ElectrAg Pty Ltd	Positive Energy TM Pty Ltd[d]
Infigen Energy Holdings	Power Club Limited
International Power (Retail) Pty Ltd	PowerHub Pty Ltd
Locality Planning Energy Pty Ltd	Sustainable Savings Pty Ltd
Metered Energy Holdings Pty Ltd	SIMEC ZEN Energy Retail Pty Ltd)
Neighbourhood Energy Pty Ltd	
OC Energy Pty Ltd	
Chose to pay an energy savings shortfall penalty against their 2017 individual energy savings target but did not make payment by the due date	
Mojo Power Pty Ltd[e]	Sumo Power Pty Ltd (formerly SparQ Pty Ltd)[f]
Did not surrender certificates and did not submit an annual energy savings statement	
COzero Energy Retail Pty Ltd	Urth Energy Pty Ltd[g]

a Classified as 4 Scheme Participants

b A direct supplier of electricity.

c Classified as 2 Scheme Participants.

d Submitted its AESS on 1 May 2018 - after the due date of 30 April 2018.

e Did not pay the penalty.

f Paid the penalty on 1 July 2018 - after the due date of 30 June 2018.

g In voluntary administration.

As section 1.1 discussed, the energy savings target for 2017 was equivalent to 4,076,779 certificates. Table 3.3 reconciles the certificates required to meet Scheme Participants' combined compliance obligation for 2017 with the certificates they offered for surrender (and we accepted).

Table 3.3 Reconciliation of certificates required to meet combined compliance obligations and certificates surrendered in 2017

Certificates required to meet 2017 compliance obligations	**4,076,779**
Add: Certificates required to meet shortfalls carried forward from 2016	77,545
Less: Shortfall carried forward to 2018	(84,651)
Less: Certificate equivalent value of penalties to be paid in lieu of certificate surrender (Mojo Power, Sumo Power, COzero and Urth Energy)	(5,684)
Total certificates surrendered	**4,063,989**

3.2 Deductions for exempt loads were similar to 2016

Under Section 119 of the Act, the Minister can grant exemptions from the ESS for part of the electricity load used by entities in emissions-intensive and trade-exposed industries or activities.[35] The entities with an exemption are listed in a Ministerial Order published each year in the Government Gazette.[36] Scheme Participants that supply electricity to these entities are entitled to deduct the exempt portion of their sales when calculating their annual liable acquisitions, thereby reducing their individual energy savings target (in MWh).

During 2017, 28 entities claimed exemptions for 30 locations (all with 90% exemptions of the load). They undertake various manufacturing activities at these locations, including aluminium smelting, integrated iron and steel manufacturing, and the production of various chemicals, and glass and paper products.

Eleven Scheme Participants supplied electricity to these entities at these locations. In total, they claimed deductions for exempt loads of 11,590,515 MWh, equivalent to 18% of the total electricity supplied in NSW in 2017. This was similar to 2016.

More information on the Ministerial Order and the Exemptions Rule is available on our website.[37]

3.3 Energy savings shortfalls were carried forward and some penalties paid

A Scheme Participant with an energy savings shortfall in a given year can elect to carry forward at least some of this shortfall to the next year – up to a maximum of 10% of its

35 These entities must provide details of their exempt load to the electricity retailer in order to claim the exemption. The retailer then deducts this proportion of the load from its annual liable electricity acquisitions, thereby reducing its individual energy savings target (in MWh). It is then a matter for the exempt party and the retailer to negotiate any adjustment to pass through costs.

36 The Ministerial Order lists each entity that has an exemption, the type and location of the activity it undertakes, and the proportion of the load that is exempt under the ESS (90% for all loads in 2017). The amended Ministerial Order published on 16 December 2016 applied for the 2017 year (NSW Government Gazette no. 117 of 2016: see *www.ess.nsw.gov.au/Scheme_Participants*).

37 See *www.ess.nsw.gov.au/Scheme_Participants*.

individual energy savings target. Any shortfall carried forward must be met in the following compliance year.

In 2017 seven Scheme Participants elected to carry forward a total obligation of 84,651 certificates to the 2018 compliance year. This represents around 2% of Scheme Participants' combined compliance obligation for 2017, similar to the proportion that was carried forward in 2016.

Additionally, two Scheme Participants elected to pay an energy savings shortfall penalty (ie, they did not surrender any certificates).

3.4 All Scheme Participants complied with audit requirements

A Scheme Participant is generally required to have its AESS audited where it includes either of the following data inputs:

- data relating to liable acquisitions from non-market purchases,[38] or
- data relating to exempt electricity loads (ie, in relation to emissions-intensive trade-exposed exemptions).

In 2017 the AESSs of 31 Scheme Participants met the above criteria for an audit. Members of the ESS Audit Services Panel conducted audits of these 31 AESSs. These audits verified that:

- inputs and arithmetical calculations were correct
- claims for exemptions for electricity sold to exempt parties were supported by appropriate evidence, and
- any energy savings shortfalls had been calculated correctly.

We were satisfied with the outcome of all audits of AESSs.

38 A Scheme Participant is not required to have its AESS audited if its non-market purchases are less than 1,000 MWh and it can provide evidence of these purchases, and its AESS has been previously audited with no issues identified.

4 Compliance by Accredited Certificate Providers

Accredited Certificate Providers include all organisations accredited to create certificates from Registered Energy Savings Activities (**RESAs**) in NSW, and they have a range of legislated obligations (see Box 4.1). We actively manage and monitor their compliance with these obligations (see Box 4.2 and Chapter 5). We use third-party audits, independent of Accredited Certificate Providers, to verify the energy savings they claim. Where we detect non-compliance, we take action to protect the integrity of the ESS.

On 31 December 2016 there were 90 Accredited Certificate Providers holding 171 accreditations. During 2017 we granted 26 new accreditations and cancelled 22 accreditations. As a result, there were 91 Accredited Certificate Providers holding 175 accreditations on 31 December 2017.

Of these, 56 Accredited Certificate Providers and 77 accreditations were active,[39] and created certificates from energy saving activities at thousands of sites across NSW.[40]

Most of these Accredited Certificate Providers complied with their obligations. As in previous years, most non-compliance was due to improper creation of certificates. A common reason for improper creation in 2017 was non-compliance with the co-payment requirement under the Commercial Lighting Energy Savings Formula. This issue is discussed further in sections 5.1 and 5.2.

All material instances of non-compliance were resolved, but we continue to monitor the reasons for non-compliance as they may present a risk to the integrity of the ESS.

Box 4.1 Accredited Certificate Provider obligations

Accredited Certificate Providers' key obligations include complying with:

- the requirements of the Act, the Regulation and the ESS Rule, and
- the conditions of accreditation set out in their Accreditation Notices, such as engaging auditors to undertake the audits of their certificate creation and record keeping.

The Act sets out offences relating to non-compliance with these obligations, including:

- improperly creating certificates (section 133)
- contravening the conditions of accreditation (section 138)
- obstructing the Scheme Administrator (section 157)
- supplying false or misleading information (section 158).

39 Active accreditations are those for which the Accredited Certificate Provider registered certificates for implementations conducted in 2017.

40 For comparison, 50 providers and 70 accreditations were active in 2016.

4.1 Most Accredited Certificate Providers complied with obligations

In 2017 we identified 59 instances of non-compliance by Accredited Certificate Providers. As Table 4.1 shows the number and types of instances were broadly in line with previous years. We addressed all significant instances of non-compliance through a variety of actions. In some instances, we imposed stricter audit requirements, such as requiring pre-registration audits of proposed energy savings certificate creation (see Box 4.2).

Table 4.1 Instances of non-compliance by Accredited Certificate Providers (2011-2017)

Type of non-compliance	2011	2012	2013	2014	2015	2016	2017
Improper creation of certificates (section 133 of the Act)	14	21	45	50	39	36	49
Failure to meet record keeping requirements (clause 46 of the Regulation)[a]	-	-	-	-	-	5	4
Failure to submit a report statement by required deadline (section 138 of the Act)	15	19	14	57	N/A[b]	N/A[b]	N/A[b]
Failure to engage an auditor by the required deadline (section 138 of the Act)	1	4	3	25	4	6	4
Failure to meet other Accreditation Notice conditions (section 138 of the Act)	0	1	3	0	1	0	2
Total	**30**	**45**	**65**	**132**	**44**	**47**	**59**

[a] We first reported this category of non-compliance in 2016.

[b] The requirement to submit periodic reports was removed during 2015 due to the introduction of a new requirement in 2015 to submit implementation data before applying for certificate registration.

Box 4.2 How we manage Accredited Certificate Providers' compliance

When we accredit an organisation as an Accredited Certificate Provider, we impose audit and reporting requirements as part of the conditions of accreditation. We determine these requirements using a risk management approach and with reference to our Accredited Certificate Provider Compliance Guide.[a]

We typically require post-registration audits, which occur after the certificates have been created. However, where we consider the risk of improper creation to be high (eg, where the Accredited Certificate Provider has had significant instances of non-compliance, or has no compliance history), we may require pre-registration audits. These audits must be completed (with a satisfactory result) before the Accredited Certificate Provider can register (and trade) certificates.

We also require the Accredited Certificate Provider to enter into a set-aside undertaking[b] to mitigate these risks. In general, the undertaking requires the Accredited Certificate Provider to:

- withhold from trade a portion of the certificates it creates[c] until an audit is completed, and
- surrender certificates that it has withheld from trade to address any improper creation identified by an audit.

We can also require, by order, that an Accredited Certificate Provider forfeit certificates. In addition, we may amend, suspend or cancel accreditations in response to non-compliance and issue penalty notices in certain circumstances.

a See www.ess.nsw.gov.au/Audits_and_Compliance/Audit_and_compliance_guides

b Prior to the introduction of mandatory set-aside undertakings in 2016 under clause 40 of the Regulation, we requested the Accredited Certificate Provider to enter into a voluntary set-aside deed, which had the same requirements.

c Typically, the portion to be set-aside depends on the risk rating of the accreditation and reduces to zero after three successive audits with no material error.

4.2 Most non-compliance was due to improper creation of certificates

We identified 49 instances of improper creation of certificates in 2017, which involved 49,623 certificates of various vintages. These improperly created certificates are equivalent to 1.1% of all certificates created from 2017 activities. Seven of these instances were material,[41] and accounted for 59% of the total number of improperly created certificates (see Table 4.2).

Table 4.2 Improper creation of certificates in 2017

Type of error and means of identification	Number of instances	Number of certificates improperly created
Material improper creation identified by audit	7	29,493
Non-material improper creation identified by audit	41	14,202
Improper creation identified by other means[a]	1	5,928
Total	**49**	**49,623**

a See section 4.2.2.

41 Material improper creation is improper creation that exceeds 5% of the certificates audited.

We took a range of actions to recover the improperly created certificates, and recovered all but 4,305 of them. These unrecovered certificates were equivalent to 0.1% of all certificates created from 2017 activities.

The primary reason we did not recover all improperly created certificates was that we decided not to pursue forfeiture of certificates for two instances of improper creation. In both cases, we made the judgement that although the certificates were improperly created, we were confident there were genuine energy savings. We decided that it would be unreasonable to pursue the forfeiture of certificates under the circumstances.

In comparison, in 2016 we identified that 51,132 certificates (of various vintages) had been improperly created, and recovered all but 1,633 of them.

4.2.1 Improper creation of certificates occurred for a variety of reasons

As in previous years, the improper creation of certificates occurred for a range of reasons. These included Accredited Certificate Providers:

- not meeting the requirements of the method used to calculate the energy savings – most commonly, failing to meet the co-payment requirement under the Commercial Lighting Energy Savings Formula (see Box 4.3)
- not providing sufficient or consistent evidence to support certificate claims
- creating certificates before the project's implementation date or before accreditation
- not being nominated as the energy saver as at the implementation date
- creating certificates from energy savings that were the result of a reduction in production or service levels
- creating certificates for equipment that had not been accepted for use, and
- creating certificates of the incorrect vintage.

Box 4.3 Co-payment requirement – Commercial Lighting Energy Savings Formula

The co-payment requirement in clause 9.4.1(e) of the ESS Rule specifies that prior to an Accredited Certificate Provider creating certificates for a lighting upgrade:

- the purchaser of the lighting upgrade must have paid a minimum of $5 (excluding GST) per MWh of electricity savings, which must not be reimbursed, and
- the Accredited Certificate Provider must maintain adequate evidence of the payment.

We have identified various instances of non-compliance with this requirement including:

- the customer having paid an amount that is less than $5 per MWh of electricity savings
- the Accredited Certificate Provider, or its representatives, reimbursing the customer, so that the net co-payment is less than $5 per MWh of electricity savings
- the customer making the required payment after the Accredited Certificate Provider has created certificates, which may involve the customer making payments over time via financing arrangements, and
- the Accredited Certificate Provider having unsatisfactory evidence of the payment.

4.2.2 Seven material instances of improper creation were identified

We identified, through post-registration audits, seven material instances of improper creation, which involved six Accredited Certificate Providers (see Table 4.3 for more detail). These included four major instances under the Commercial Lighting Energy Savings Formula that involved three of the largest certificate creators under the ESS – Demand Manager Pty Ltd, The Green Guys Group Pty Ltd, and National Carbon Bank of Australia Pty Ltd.

Most of the improper creation resulted from these Accredited Certificate Providers failing to obtain a co-payment of at least $5 per MWh of energy savings from the purchaser of the lighting upgrade, or making errors in their energy savings calculations.

The seven material instances resulted in the improper creation of 29,493 certificates, which were addressed as follows:

- in five instances, the Accredited Certificate Providers forfeited the full amount, and
- in two instances, we decided to not require forfeiture because we considered the improper creation arose in unique circumstances.

One instance of improper creation was identified by other means. In July 2017 we identified that one Accredited Certificate Provider, Greenmoola.com Pty Ltd, had created 5,928 certificates from a duplicate batch of energy savings certificates in the ESS Registry. Greenmoola.com Pty Ltd acknowledged that it had improperly created energy savings certificates and voluntarily forfeited all 5,928 certificates.

Table 4.3 Material instances of improper certificate creation identified by post-registration audits

Accredited Certificate Provider	Accreditation	Number of improperly created certificates	Error rate (%)	Certificate forfeiture
Out Performers Pty Ltd	OP022 Voltage Optimisation RESA	685	24.7	0[a]
The Green Guys Group Pty Ltd	Commercial Lighting Replacement	3,753	6	133[b]
National Carbon Bank of Australia Pty Ltd	NCBA Commercial Lighting Upgrade	4,472	6.4	Forfeited full amount
Demand Manager Pty Ltd	Commercial Lighting Aggregation Project	3,316[c]	7.4	Forfeited full amount
Boral Cement Limited	Cement Mill Grinding Aid	299	7.7	Forfeited full amount
Haron Robson Energy Pty Ltd	Chiller Up-Grade	297	19.5	Forfeited full amount
Demand Manager Pty Ltd	Commercial Lighting Aggregation Project	16,211[c]	42.8	Forfeited full amount
Total		**29,943**		**25,188**

a We decided not to require the forfeiture of the 685 improperly created certificates.

b We decided not to require the forfeiture of 3,620 improperly created certificates.

c These two instances of improper creation are part of a larger matter, for which we took enforcement action in the 2018 reporting period (see section 4.4).

4.3 Other non-compliance was due to failures to meet other obligations

In 2017, we identified four material instances where an Accredited Certificate Provider failed to keep records in accordance with the requirements set out in the Act, Regulation and its conditions of accreditation. In each instance, we required the Accredited Certificate Provider to detail the steps it would undertake to rectify the issue, and for its next audit to examine whether it had implemented these actions.

We also identified four instances where an Accredited Certificate Provider failed to engage an auditor by the required date. In each instance, we requested the Accredited Certificate Provider address the non-compliance and advised that it would be recorded in its compliance history.

We identified a further two instances where an Accredited Certificate Provider breached other conditions of its accreditation.

In one of those instances, Watt Efficiency Pty Ltd did not provide sufficient resources for the auditor to complete an audit of its accreditation, as required by its conditions of accreditation. We requested Watt Efficiency Pty Ltd to arrange for completion of the audit, but it did not comply with this request. Consequently, we cancelled Watt Efficiency Pty Ltd's accreditation.

In the other instance, Greenmoola.com Pty Ltd created 5,928 certificates from a duplicate batch of certificates in the ESS Registry, and subsequently rectified the improper creation (see section 4.2.2).

4.4 Further major non-compliance identified in 2017 was resolved in 2018

In 2017 we identified several other instances of non-compliance, including major instances involving Maxee Innovations Pty Ltd (**Maxee**) and Demand Manager Pty Ltd (**Demand Manager**). However, as the audits examining these issues were not concluded until 2018, they are not included in the statistics for this report. They will be included in the 2018 ESS Annual Report statistics.

Both instances were due to the Accredited Certificate Provider's failure to comply with the co-payment requirement. In response:

- We cancelled Maxee's accreditation (on 9 May 2018), and are continuing to investigate the conduct of Maxee and its officers.
- We asked Demand Manager to voluntarily forfeit all improperly created certificates (which it did), and issued it with a $20,000 fine on 9 January 2018 (the first penalty notice issued under the ESS).
- We also reduced the number of certificates Demand Manager can create before requiring an audit from 100,000 to 50,000.[42]

42 Further details will be included in the report for the 2018 compliance year.

5 Scheme administration

As Scheme Administrator, our mission is to administer the ESS efficiently and effectively, and to maintain the integrity of the scheme by ensuring that participants understand and adhere to the ESS requirements. To achieve this mission, we:

- publish detailed guidance about the ESS requirements, present online workshops about specific aspects of the ESS and hold stakeholder forums and workshops
- use various online tools to improve our administrative efficiency and enhance the user experience of our stakeholders
- apply a risk-based approach to determine the compliance regime that applies to each accreditation over time
- maintain robust systems and processes to minimise the risk of non-compliance with the ESS requirements, and
- monitor emerging issues and receive and act on intelligence.

During 2017 we identified and responded to trends that present risks to the scheme's integrity. We also identified aspects of the ESS design that affect our ability to manage the compliance of Accredited Certificate Providers. We continued to make incremental improvements to our systems and processes, and efficiently perform our core administrative tasks.

5.1 We identified and responded to trends that pose risks to scheme integrity

We observed several trends that may pose a risk to the integrity of the ESS. These include:

- Accredited Certificate Providers continuing to not comply with the co-payment requirement under the Commercial Lighting Energy Savings Formula (see section 4.2), and
- Accredited Certificate Providers developing more devolved business models to deliver energy efficiency projects, where they have less direct oversight of implementations, and
- very large certificate creators accounting for all major instances of non-compliance identified since 2016[43] (prior to 2016, major instances of non-compliance typically involved smaller certificate creators).

In response, we have been reviewing our systems to ensure they remain robust, scalable and flexible, and we can readily identify issues. Some of the specific actions we are taking include:

43 For the 10 largest certificate creators to date, see Figure 2.3. For the major instances of non-compliance identified in 2017, see Table 4.3.

- using market intelligence to better target our compliance activities
- expanding the scope of particular audits to include additional verification checks
- conducting formal investigation activities
- taking enforcement action, and
- reviewing applications for increases to certificate creation limits on a case-by-case basis to manage the risks of non-compliance.

5.2 We identified aspects of the ESS design that need to be improved

The ESS, and particularly the Commercial Lighting Energy Savings Formula, attracts operators of varying technical, professional and ethical standards. During the year, we found that several aspects of the scheme continued to present challenges for us in maintaining its integrity.

The current scheme design provides scope for deliberate non-compliance, especially with the co-payment requirement under the Commercial Lighting Energy Savings Formula. In addition, some requirements of the ESS are difficult to verify. We are exploring new compliance strategies and enhanced powers to address this issue. However, we consider that changes to the ESS Rule are needed to minimise the scope for such activity and we will continue to work with the Scheme policy makers to address these issues.

Additionally, we expect that activity in the ESS in the residential sector[44] will expand, and we are working with the scheme policy makers to adequately manage the additional risks of non-compliance. This will require careful scheme design and enhanced enforcement powers for IPART.

5.3 We continued to make improvements to our systems and processes

During 2017 we undertook a range of actions towards our goal of continually improving the administration of the ESS and reducing non-compliance. These included further developing the ESS Portal, revising our ESS compliance framework, publishing a new IPART Compliance and Enforcement Policy and working to improve stakeholder understanding of ESS legislation and requirements.

5.3.1 Further developing the ESS Portal

The ESS Portal is our primary administration system. During 2017 we continued to develop the ESS Portal to improve the efficiency of our administration of the ESS and our interactions with Accredited Certificate Providers and auditors. In particular, we:

- implemented automated reminders for Accredited Certificate ACPs about their auditing obligations

44 On 3 September 2017 the Premier announced an energy affordability package for households and small businesses. One component of the package relates to the ESS.

- streamlined our process for reviewing and approving an auditor's scope of work to conduct an ESS audit
- implemented broader and more efficient reporting and data capturing processes for IPART staff, and
- adjusted the implementation data submission and validation process to accommodate changes to the ESS Rule.

We also designed changes to the dashboards used by auditors and Accredited Certificate Providers to provide them easier access to the ESS information they require. These changes will be implemented in 2018.

5.3.2 Revising our compliance framework

During 2017 we replaced our existing ESS Compliance and Performance Monitoring Strategy with the Accredited Certificate Provider Compliance Guide. The new guide:

- better explains how we monitor and prevent non-compliance, and our approach to managing non-compliance
- provides further information about changes an Accredited Certificate Provider may request to its conditions of accreditation, and
- outlines the process for an Accredited Certificate Provider to apply for an amendment to its conditions of accreditation, including the information it must provide, and how we conduct our assessment of the application.

IPART also published a new Compliance and Enforcement Policy, which outlines IPART's approach to compliance and enforcement across all of IPART's regulatory compliance functions, including the ESS.

5.3.3 Improving stakeholder understanding of ESS legislation and requirements

We continued to hold in-person and online workshops for existing and potential Accredited Certificate Providers and auditors to help them understand the ESS requirements. We held 15 workshops during the year, with a total of 145 participants. Of these, 12 were online workshops and three were in-person workshops. We also updated the content of our existing workshops to reflect changes to legislation and our administrative processes.

In addition, we held a stakeholder forum with 56 attendees. We hold these forums to improve the administration of the ESS, to discuss current issues, and assist us to be more efficient and effective in our administration of the ESS.

Further information about our workshops and forums, and registration for all of our events, is available on our website.[45]

45 See *www.ess.nsw.gov.au/Events*.

5.4 Core administrative tasks

During 2017 we continued to conduct our core administrative task. In particular, we:

- adjusted guidance and processes to reflect changes to the ESS Rule
- assessed applications for accreditation as an Accredited Certificate Provider and granted 26 new accreditations
- amended 64 accreditations and cancelled 22 accreditations
- assessed applications to have emerging lighting technologies accepted for use in the ESS, and accepted 1,887 new products
- managed the membership of the Audit Services Panel and approved 3 additional Measurement and Verification Professionals
- managed 109 audits of Accredited Certificate Providers, and
- continued working with governments in other jurisdictions to align the ESS with other energy efficiency and emissions reduction schemes.

5.4.1 Adjusting guidance and processes to reflect changes to the ESS Rule

The Minister made changes to the ESS Rule on 31 March 2017.[46] These included:

- enabling sampling under the Project Impact Assessment with Measurement and Verification method
- adding new ways to measure gas savings under the High Efficiency Appliances for Business method, and
- opening up the Home Energy Efficiency Retrofit method to more small businesses, reducing the co-payment requirement and removing the minimum saving threshold for high cost activities.

In response to these changes, we updated our guidance and processes.

5.4.2 We granted 26 new accreditations

During 2017 we granted 26 new accreditations, compared with 22 in 2016. They comprised:

- twelve using the Commercial Lighting Energy Savings Formula, which is a sub-method of the Deemed Energy Savings Method
- eight using the other sub-methods of the Deemed Energy Savings Method, which cover activities such as the sale or installation of more energy efficient appliances, and power factor correction activities
- four using the Project Impact Assessment with Measurement and Verification Method, and
- two using the Metered Baseline Method.

46 See www.resourcesandenergy.nsw.gov.au/energy-consumers/sustainable-energy/efficiency/scheme/energy-savings-scheme-rule-change-2016-17.

(Box 5.1 explains how the different calculation methods relate to energy saving activities.)

The number of new accreditations under the Commercial Lighting Energy Savings Formula in 2017 was the highest since 2013. In contrast, the number of new accreditations under the Project Impact Assessment with Measurement and Verification Method in 2017 was the lowest since we began granting accreditations under this method in 2015 (see Table 5.1).

Our average time for processing applications for accreditation was 118 calendar days, compared with 92 days in 2016.[47] The increase in the average processing time in 2017 was due to a range of factors, including poor quality applications, complex applications, and applicants requesting additional time to provide the required information. In response, we have modified our guidance documentation to try to improve the understanding of our requirements. (For further information on the application process, see our website.[48])

47 Processing times include days taken by the applicant to respond to requests for information.
48 See *www.ess.nsw.gov.au/How_to_apply_for_accreditation.*

Box 5.1 How the calculation methods relate to energy saving activities

The ESS Rule outlines how energy savings, and consequently certificates, are determined. It comprises four calculation methods, some of which include a number of sub-methods, which detail how energy savings are measured and calculated depending on the type of energy saving activity.

The **Deemed Energy Savings Method** provides a wide range of energy saving activities, many of which can be applied in the residential sector. These calculation methods deem that energy savings commence at implementation and continue into the future (see Box 2.1). Deemed methods are specific to the type of activity:

- **Sale of New Appliances** encourages retailers to sell energy efficient appliances over less efficient ones.
- **Commercial Lighting Energy Savings Formula** encompasses the replacement of inefficient lights with more efficient lights.
- **Public Lighting Energy Savings Formula** covers the upgrade of traffic signals, or lighting for roads and public spaces.
- **Power Factor Correction Energy Savings Formula** covers the installation of capacitors to more efficiently manage the power supply to commercial or industrial sites.
- **Removal of Old Appliances** encourages the removal and destruction of old inefficient fridges and freezers.
- **Home Energy Efficiency Retrofits** provides for activities that improve the energy efficiency in homes and small businesses.
- **Installation of High Efficiency Appliances for Business** covers the installation of energy efficient heating, cooling and refrigeration units.

The **Project Impact Assessment with Measurement and Verification Method** requires the development of complex energy models to accurately predict energy savings at commercial and industrial sites. It replaced the **Project Impact Assessment Method** which allows an engineering assessment, measurement or modelling to be used to calculate energy savings. Accredited Certificate Providers accredited to use this method on or before 30 September 2014 may still use it to calculate energy savings.

The **Metered Baseline Method** encompasses a range of sub-methods designed to achieve energy savings by measuring electricity or gas consumption before and after an activity is carried out. Unlike the other methods, it does not allow deeming, or forward creation, of certificates. It includes the **NABERS Baseline** sub-method, which uses commercial buildings ratings from the National Australian Built Environment Rating System to measure improvements in energy efficiency.

Figure 5.1 New accreditations each year by calculation method (2009 to 2017)

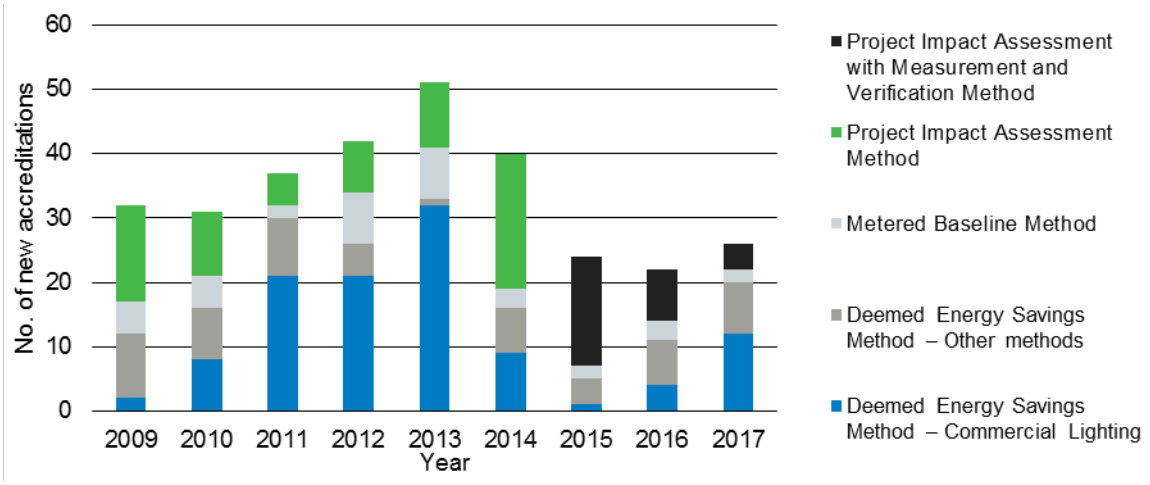


Table 5.1 Change in number of accreditations by calculation sub-method during 2017

Method	As at 31 December 2016	As at 31 December 2017
Commercial Lighting Energy Savings Formula (DESM)	59	56
Project Impact Assessment Method	38	33
Project Impact Assessment with Measurement and Verification Method	25	29
Baseline unaffected by output (MBM)	9	7
NABERS baseline (MBM)	7	7
Project Impact Assessment Method & Project Impact Assessment with Measurement and Verification Method[a]	6	6
Sale of New Appliances (DESM)	5	5
Baseline per unit of output (MBM)	5	4
Baseline per unit of output, Baseline unaffected by output & Normalised baseline (MBM)[a]	1	3
Home Energy Efficiency Retrofits (DESM)	2	7
Installation of High Efficiency Appliances for Businesses (DESM)	5	7
Commercial Lighting Energy Savings Formula & Public Lighting Energy Savings Formula (DESM)[a]	0	4
Public Lighting Energy Savings Formula (DESM)	1	2
Removal of Old Appliances (DESM)	1	2
Normalised baseline (MBM)	7	2
High Efficiency Motor Energy Savings Formula (DESM)	1	1
1-for-1 Residential Downlight Replacement (DESM)b	2	0
Power Factor Correction Formula (DESM)	1	0
Total	**171**	**175**

a These accreditations comprise more than one calculation method.

b The 1-for-1 Residential Downlight Replacement sub-method has been discontinued and replaced by another sub-method, and accreditations under this method are being cancelled or amended to the other sub-method.

Note: DESM stands for Deemed Energy Savings Method, MBM stands for Metered Baseline Method.

The total number of accreditations in the ESS increased from 171 as at 31 December 2016 to 175 as at 31 December 2017 (see Table 5.1). The number of accreditations under the different calculation methods remained similar to 2016. In particular, the number of new accreditations we granted under the Commercial Lighting Energy Savings Formula (12) was similar to the number of existing accreditations we cancelled under this calculation sub-method (15).

Further information about Accredited Certificate Providers and their accreditations is available from the ESS Registry.[49]

5.4.3 We amended 64 accreditations and cancelled 22 accreditations

From time to time, we amend the conditions of accreditation imposed on Accredited Certificate Providers. During the 2017 calendar year, we approved 64 amendments to the conditions of existing accreditations.[50] Most of the amendments were to:

- change the limit on the number of certificates that can be created between audits
- expand or change the description of the activity allowed, or
- change the audit requirement or audit due date.

We also cancelled 22 accreditations, typically either because:

- we were satisfied that the Accredited Certificate Provider had breached its accreditation conditions, or
- we determined that the Accredited Certificate Provider was no longer eligible to be accredited, or
- the Accredited Certificate Provider requested cancellation.

Some of the cancellations were a result of our ongoing process of identifying and actively managing accreditations that were either inactive, or held by Accredited Certificate Providers that were no longer eligible (eg, where the company had been wound up).

5.4.4 We accepted 1,887 emerging lighting technology products

During 2017 we received 714 applications for acceptance of emerging lighting technologies (**ELT**) covering 2,006 products.[51] We accepted 1,887 of these products for use in the scheme (which included 198 products previously approved under the VEET scheme).[52] In comparison, we accepted 2,399 products in 2016. This took the total number of products we have accepted since 2011 to 5,820.

Our average time for processing ELT applications, which includes the time for an applicant to respond to requests for further information, was 15 days. This is a substantial

49 See *www.ess.nsw.gov.au/Registry*.
50 This compares with 96 amendments in 2016.
51 Some applicants subsequently withdrew their applications.
52 We apply a streamlined application process for products that are already approved under the VEET scheme.

improvement on 2015 and 2016, when the averages were 41 days and 35 days respectively. This is largely due to improvements in our process and guidance and receiving better quality applications.

Further information about applying for acceptance of ELTs is available on our website.[53]

5.4.5 We managed membership of the Audit Services Panel

During 2017 we removed one firm from the Audit Services Panel, and one lead auditor. These changes reduced the number of members to 16 firms and 32 lead auditors.

We also removed one auditor from our specialist category for audits of Accredited Certificate Providers using the Project Impact Assessment with Measurement and Verification Method. This change decreased the number of auditors under this specialist category to six.

All audits must be undertaken by a member of our ESS Audit Services Panel, with IPART (either as Scheme Administrator or Scheme Regulator) as the principal client. Applications for panel membership may be made at any time. We assess applicants against specific selection and eligibility criteria to ensure they have the institutional capacity to support the audit process, and also have lead auditors with demonstrated qualifications, skills and experience. Further information about the Audit Services Panel, including a list of panel members, is available on our website.[54]

5.4.6 We managed 109 audits of Accredited Certificate Providers

In 2017 the Audit Services Panel undertook 109 audits of Accredited Certificate Providers (compared with 92 audits in 2016 and 83 audits in 2015), covering 65 accreditations, comprising:

- 67 post-registration audits (compared with 66 in 2016)
- 40 pre-registration audits (compared with 23 in 2016), and
- two record keeping audits (compared with three in 2016).

A post-registration audit occurs after the certificates have been created, and it examines whether the certificates have been validly created and are supported by appropriate records. A pre-registration audit involves the same procedures, but reduces risk as it occurs before the certificates are created. A record keeping audit examines whether the Accredited Certificate Provider's system and processes meet the ESS requirements, but does not examine certificate creation. Most post-registration and pre-registration audits also examine record keeping.

On average, these audits took 53 days to complete, compared with 56 days in 2016 and 47 days in 2015.

53 See www.ess.nsw.gov.au/Projects_and_equipment/Emerging_lighting_technologies.
54 See *www.ess.nsw.gov.au/For_Auditors*.

5.4.7 We approved three more Measurement and Verification Professionals

Accredited Certificate Providers approved to use the Project Impact Assessment with Measurement and Verification method must use an approved Measurement and Verification Professional to validate their use of the method to calculate energy savings. To become approved as a Measurement and Verification Professional, an applicant must submit an application to IPART. We publish a list of approved Measurement and Verification Professionals.

We assess applications against specific selection and eligibility criteria to ensure that the applicants have the relevant qualifications, skills and experience and a demonstrated understanding of the Project Impact Assessment with Measurement and Verification method requirements.

In 2017 we approved three more Measurement and Verification Professionals. This took the total number of approved Measurement and Verification Professionals to 11.[55]

Further information about the Measurement and Verification Professional approval process and the list of approved Measurement and Verification Professionals is available on our website.[56]

5.4.8 We continued to work with other regulators

We continue to work with regulators in other states and territories and the Commonwealth Government to align the operation of the ESS with other energy efficiency schemes, reduce red tape for participating businesses and address common compliance issues. Examples of this interaction include:

- accepting for use in the ESS most categories of lighting products approved under the Victorian Energy Efficiency Target (**VEET**) scheme (the VEET scheme also recognises ESS accepted products)
- considering an organisation's compliance performance in the VEET scheme when it applies to be accredited under the ESS
- working with the ACT Government to allow the creation of certificates for activities in the ACT where the savings are calculated using ESS calculation methods[57]
- working with the Commonwealth Government's Clean Energy Regulator to ensure there is no overlap between the ESS and the Emissions Reduction Fund (ERF),[58] and
- meeting with other scheme regulators periodically to share relevant information between jurisdictions.

55 Our published list only shows 10 Measurement and Verification Professionals as at 31 December 2017, as one Measurement and Verification Professional requested that his name not be published on the list.

56 See www.ess.nsw.gov.au/Methods_for_calculating_energy_savings/Project_Impact_Assessment_with_MV.

57 Energy savings certificates for activities in the ACT would be used to meet ACT targets, not NSW targets.

58 More information on the Emissions Reduction Fund is available on the Clean Energy Regulator's website, see *www.cleanenergyregulator.gov.au*. We liaise with the Commonwealth Government to ensure that organisations do not obtain benefit for the same activity under both the ESS and the ERF.

Glossary

This glossary provides a general guide to the terminology used in ESS. It is designed to be read in conjunction with the Act, Regulation and ESS Rule. 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, Regulation or ESS Rule.

Term	Meaning
Accredited Certificate Provider	A person accredited by the Scheme Administrator to create Energy Savings Certificates relating to a Recognised Energy Saving Activity.
Act	The *Electricity Supply Act 1995,* which establishes the ESS.
Baseline	The level of energy consumption or energy intensity against which improvements are measured, and from which the calculation of Energy Savings Certificates is made.
Certificate Conversion Factor	The factor to be applied to convert energy savings in megawatt hours to a number of energy savings certificates. As specified in section 130 of the Act, the factor is 1.06 for electricity savings and 0.39 for gas savings.
Default Savings Factors	A default figure which may be used to calculate the number of Energy Savings Certificates for each activity listed in Schedule A of the ESS Rule. The use of Default Savings Factors allows all the energy savings associated with the activities listed in Schedule A to be brought forward to the point at which the activity takes place.
Energy Saver	The person who has the right to create certificates for particular Energy Savings arising from an implementation of a RESA, as defined in the relevant calculation method of the ESS Rule.
Energy Savings	The calculated reduction in electricity consumption arising from implementation of a RESA and calculated according to the ESS Rule.
Energy Savings Certificate (ESC)	A transferable certificate under Part 9 of the Act, which is created in accordance with the ESS Rule. A certificate has a value of one notional megawatt hour.
ESS Rule	The *Energy Savings Scheme Rule of 2009* made by the Minister for Resources, Energy and Utilities, and the Arts, sets out the primary eligibility requirements, calculation methods and arrangements for the creation of Energy Savings Certificates. It is amended from time to time.
Energy Savings Shortfall	If a Scheme Participant fails to surrender enough Energy Savings Certificates to meet its Individual Energy Savings Target for the year, it has an Energy Savings Shortfall for that year and is liable to pay a penalty for each Energy Savings Certificate it has failed to surrender.

Term	Meaning
Energy Savings Target	The Energy Savings Target refers to a figure, specified in Schedule 5 of the Act, that is applied to the total Liable Acquisitions in NSW to determine each Scheme Participant's Individual Energy Savings Target for each calendar year.
Exempt Electricity Load	An Exempt Electricity Load is the load attributed to a person or class of person which has been granted exemption (90% from the scheme by the Minister, as specified in the Ministerial Order).
Implementation Date	The Implementation Date is generally the date on which the Energy Savings from the RESA commence and is defined for each calculation method in the ESS Rule.
Individual Energy Savings Target	The Individual Energy Savings Target is the value (in MWh) of energy savings that a Scheme Participant must meet each year. This target is determined by multiplying the Energy Savings Target for that year by the total liable acquisitions in that year and the certificate conversion factor.
Liable Acquisition	Any purchase of electricity by a Scheme Participant which is purchased from the Market Operator, or from parties not registered with the Market Operator for supply to end users in NSW whose loads have not been listed as Exempt Electricity Loads.
Market Operator	The entity responsible for the administration and operation of the wholesale national electricity market in accordance with the National Electricity Law (currently the Australian Energy Market Operator (AEMO)).
Ministerial Order	The Ministerial Order is published annually, or when required, and lists all emissions intensive trade exposed industries, their location and proportion of electricity load granted an exemption (90% under the ESS).
National Australian Built Environment Rating System (NABERS)	A ratings methodology administered by the NABERS Administrator (currently the Office of Environment and Heritage (OEH)) which can be used to calculate Energy Savings under the Metered Baseline Method. This method can be used for new or existing buildings.
Recognised Energy Saving Activity (RESA)	A specific activity implemented by an Energy Saver that increases the efficiency of energy consumption or reduces energy consumption without reducing production or service levels.
Regulation	The *Electricity Supply (General) Regulation 2014*.
Retail Supplier	A Scheme Participant under the Energy Savings Scheme. Includes all holders of an electricity retail licence for operation in NSW.
Scheme Administrator	The body responsible for administering functions such as accrediting Accredited Certificate Providers, verifying energy saving activities and maintaining a registry of certificates. The NSW Independent Pricing and Regulatory Tribunal (IPART) is the Scheme Administrator for the Energy Savings Scheme.

Term	Meaning
Scheme Participant	A person who is required to comply with an Individual Energy Savings Target. Scheme Participants include all Retail Suppliers of electricity in NSW, any person directly supplying a customer in NSW or any person directly purchasing electricity from the Market Operator (other than a Retail Supplier).
Scheme Regulator	The body that monitors the compliance of Scheme Participants with their Individual Energy Savings Targets under the Act. The NSW Independent Pricing and Regulatory Tribunal (IPART) is the Scheme Regulator for the Energy Savings Scheme.
Victorian Energy Efficiency Target (VEET) scheme	Similar to the ESS, the VEET scheme is a Victorian Government initiative designed to make energy efficiency improvements more affordable, contribute to the reduction of greenhouse gases, and encourage investment, employment and innovation in industries that supply energy efficiency goods and services.

Appendix – Legislative reporting requirements

The table below lists the legislative requirements that IPART must report upon to the Minister, and where this information is contained in this report.

Requirement of the Act	Section of the Act	Section(s) in report
Name of each Scheme Participant and its performance of each Scheme Participant in relation to its individual energy savings target	174(2)(a)	3.1
Total number of certificates surrendered in the year to which the report relates	174(2)(b)	2.3.2, 3.1
Total number of certificates created in the year to which the report relates	174(2)(c)	1.1, 2.3.4
Number of certificates created in previous years but not yet surrendered	174(2)(c1)	2.3.4
Assessment of the extent of any over or under supply of certificates	174(2)(c2)	1.2, 2.3.4
Estimate of actual energy savings realised in the year to which the report relates and for the next 10 years, in respect of certificates created	174(2)(d),(e)	2.2
Functions delegated by the Scheme Regulator or Scheme Administrator and the person or body to whom they were delegated	174(3)	1.8
Scheme Regulator to report to the Minister on compliance by Scheme Participants	152(1)	1.3 Chapter 3
Scheme Administrator to report to the Minister on compliance by Accredited Certificate Providers	154(1)	1.4 Chapter 4