

VEU Performance Report 2019

September 2020



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About this report

This report details our regulatory and administrative actions under the Victorian Energy Efficiency Target (VEET) Act 2009 for the 2019 reporting year. The Act established the creation of a scheme, currently known as the Victorian Energy Upgrades program and charged the commission with its implementation from 1 January 2009.

This report provides information on the 2019 calendar year and covers:

- our assessment of applications for new accounts and accreditation applications
- our assessment of the creation of Victorian energy efficiency certificates
- our findings on the compliance of accredited persons and relevant entities with program requirements, and product approval submissions from product applicants
- other key work and project we delivered to strengthen and manage the remaking of the VEET Regulations and expansion of project-based activities methods.

This report provides information required under section 67 of the Act and is published in accordance with section 7(3) of the Act. Table 1 sets out the information the commission must publish under section 67 of the Act.

Table 1. Information required to be published for the 2019 year

Information to be published	Measure
Relevant entities that had an energy efficiency certificate shortfall	1
Total of energy efficiency certificate shortfalls	6,711
Certificates created in 2019 (1 January to 31 December)	6,129,778
Certificates surrendered by relevant entities for the 2019 compliance year	6,013,061
Certificates surrendered by accredited persons in 2019 (1 January to 31 December)	40,792

Summary

Residential installations LED the way

The program facilitated over 470,000 installations across residences and businesses in Victoria during 2019, with over four million LEDs installed in more than 250,000 households. Installations under the program resulted in the creation of over 6.1 million and the registration of over 5.3 million certificates during the year.

Table 2 outlines program performance measures that complement those reported in Table 1.

Table 2. Key program performance measures - 2019

Activity	Measure
Certificates registered by the commission	5,345,539
Certificates withdrawn by accredited persons	348,993
VEU accounts created (program total of 1,962 accounts)	65
New accredited persons approved (program total of 216 accredited persons)	6
Expanded accreditation of persons (to include additional activity)	10
Energy saving products approved (program total of 16,034 products)	1,149

Greenhouse gas reductions



270,000 premises

During 2019, 274,381 residential and business customers across Victoria benefitted from energy upgrades.



6.1 million certificates

Installations resulted in the creation of over 6.1 million certificates, against an annual target for surrender of 6.3 million.



57 million tonnes of greenhouse gases

The total number of greenhouse gas savings over 10 years (equivalent to number of certificates registered) - this is equal savings to planting 40 million trees.



4 years

This is the equivalent to all cars in Victoria not emitting greenhouse gases for more than four years - or taking 17.3 million cars off the road for a year.

Our performance as regulator

We continued to undertake an effective and integrated risk-based compliance and validation program, before and after certificate creation and registration.

Our efforts to promote system-wide compliance with the Act, regulations and guidelines include:

- participant accreditation and audits
- certificate validation and registration
- approval of products, projects and third-party verification professionals.

2019 commission performance



90 per cent energy efficiency certificates

We registered 90 per cent of energy efficiency certificates within two days of our target timeframes.



100 per cent accreditation applications

We assessed 100 per cent of accreditation applications within the required legislative timeframe.



4,000 queries from stakeholders

We received 4,175 stakeholder queries and responded to 99 per cent within target timeframes.

We addressed specific compliance issues by conducting targeted investigations, field audits and independent product testing.

Our risk-based validation process before certificate registration identified and resolved over 3,600 potential compliance issues and contributed to the temporary withdrawal of over five per cent of the certificates created during the year. Our regulatory compliance activities led to the permanent surrender of 40,792 certificates during the year.

These validation and compliance activities give confidence that the certificates traded under the program genuinely reflect actual greenhouse gas and energy savings that benefit energy consumers and have been obtained in compliance with regulatory requirements.

There was also broad compliance by energy retailers, with 27 retailers (out of 28) surrendering enough certificates to meet their liability under the program.

2019 compliance and auditing



33 audit meetings

We completed eight new accreditations and 25 additional activity approval audit meetings.



3,600 compliance issues addressed

We followed up on 3,600 compliance issues during the certificate registration process.



1,378 installation audits

We completed 485 desktop audits, 458 field audits and 435 phone audits.



35 accredited person audits

We undertook 21 detailed audits and 14 investigations of accredited persons.

Our performance as administrator

Our efforts are focused on ensuring the right regulatory and administrative frameworks, and supporting IT systems, are in place to underpin the program's expansion.

Our 2019 work program was focused on delivery of:

- new training and licensing requirements for incandescent general lighting service (GLS) or compact fluorescent lamp (CFL) replacement activities (activity 21A)
- the introduction of six new gas efficiency activities in March 2019
- updates to the Victorian Energy Efficiency Target guidelines
- the start of new regulation provisions under the Victorian Energy Efficiency Target Regulations 2018 commencing on 10 June 2019
- changes commencing to e-waste management policy on 1 July 2019
- updates to the new Project-Based Activities Regulations in September 2019
- updates to our certificate validation request for further information process in November 2019.

We formally consulted with industry and delivered on initiatives to provide greater transparency and certainty to program participants, such as our certificate validation request for further information process.

We also sought targeted feedback from stakeholders on our certificate registration process. The feedback supported a continuation of our performance-based certificate processing timeframes and strengthened our stakeholder engagement.

We used this feedback to make changes to how we measure the performance of participants who do lighting upgrades for business premises against our assessment standards, and its impact on certificate validation timeframes.

Our work program was supported by changes to the VEU registry to facilitate the integration of new activity requirements and a better website experience for VEU account holders and commission staff. During 2019, we implemented more than 44 system changes to improve system performance and usability.

1. Overview of the VEU program

The emissions of greenhouse gases in Victoria have been steadily declining (over 10 per cent since 2005) and they are projected to be 104 million tonnes by 2020. Victoria is well on track to achieving its 2020 emissions reduction target of 15-20 per cent below 2005 levels by 2020.¹

Most emissions come from energy consumption, including electricity generation, gas and transport. In 2017, over 56 million tonnes of greenhouse gases were generated by the electricity sector (an emission reduction of 7.4 per cent between 2005 and 2017).¹

In addition to increasing renewable energy generation, improving energy efficiency is an effective long-term approach to reduce greenhouse gas emissions from electricity generation.

Energy efficiency programs are also an effective way to enable:

- reductions in energy bills for those who participate in the program while enjoying the same benefits from heating and cooling
- downward pressure on prices for all consumers.

1.1. The VEU program is the government's key mechanism for reducing greenhouse gas emissions

The VEU program is one of the Victorian Government's principal mechanisms for reducing greenhouse gas (GHG) emissions.² It is the largest energy efficiency program in Australia.

The program helps reduce Victoria's greenhouse gas emissions by providing access to discounted energy-saving products and activities³ via accredited businesses. When accredited businesses complete an eligible energy-efficiency improvement activity, they generate certificates (each representing one tonne of greenhouse gas avoided).

The 57 million tonnes of greenhouse gas emissions abated by the program to December 2019 are equivalent to running electricity generation in Victoria exclusively on renewable energy (which generated 56 million tonnes in 2017)¹ for an entire year. It is also equivalent to removing 17.3 million cars off the roads for a year or all cars in Victoria contributing zero emissions for over 4 years.¹

¹ Victorian Greenhouse Gas Emissions Report, Department of Environment, Land, Water and Planning, 2018 and 2019

² Victoria's Climate Change Framework, Department of Environment, Land, Water and Planning, 2016

³ This report uses the common term "activity" to refer to a prescribed activity with a corresponding Schedule number as listed in the 2008 VEET Regulations or their Part number in Schedule 2 of the 2018 VEET Regulations.

These certificates can be sold to energy retailers, many of whom are required by law⁴ to buy and surrender a certain number of certificates each year.

Our role in the program is to regulate the creation and surrender of certificates. Further information on our role in the VEU program can be found in appendix A.

1.2. The VEU program delivers savings

Since 2009, approximately 1.8 million households and 100,000 businesses have benefited from upgrades that reduce Victoria's greenhouse gas emissions. These consumers can also use less energy to achieve the same benefits in their home or businesses.

On average, households and businesses that undertake energy efficiency upgrades under the program save \$110 and \$3,700, respectively, on their annual energy bills.⁵

1.3. The VEU program delivers net benefits for all Victorians

All Victorian energy consumers benefit from the program, even if they do not participate.⁶ More efficient use of energy by consumers:

- reduces wholesale prices and delays the need for investment in new generation and transmission infrastructure
- can reduce energy demand at peak times and improves energy security.

Since 2009, the program has facilitated the introduction of more than 16,000 energy-saving products to the market, enabling the establishment or expansion of more than 210 businesses and expanding commercial opportunities for 4,000 new and existing trade professionals.

⁴ Under the Act, energy retailers that are required to surrender certificates are called relevant entities. Not all energy retailers are bound by the Act, as detailed in section 4.7

⁵ <https://www.victorianenergysaver.vic.gov.au/save-energy-and-money/discount-energy-saving-products> as accessed 18 September 2020

⁶ Regulatory Impact Statement (Victorian Energy Efficiency Target Regulations), Department of Environment, Land, Water and Resources, 2018

2. Our participants

The number of participants continued to increase in 2019. We currently have 1,982 businesses with a VEU account; 216 of those are accredited persons. The number of businesses able to undertake larger projects also continues to grow.

We evaluate and approve applications for new VEU accounts and ‘accredited persons’⁷ that allow participation in the VEU program.

VEU account holders are entitled to own, trade and surrender certificates, whereas only accredited persons can create certificates. To apply to be an accredited person, the applicant must hold a VEU account.

In 2019, we created 65 accounts for new program participants and approved six accredited person applications. Table 3 shows the number of accounts and accredited person approved in 2019 and the total number of accounts and accredited persons approved since 2009.

Table 3. Program accounts and accreditations

Accounts and accreditations	2019	Total (2009 – 2019)
Accounts created	65	1,962
New accredited persons approved	6	216

Figure 1 shows the progression by year of the cumulative number of VEU accounts, and Figure 2 shows the cumulative progression by year in the number of accredited persons since 2009.

⁷ This is the term used by the Act to describe a business or person accredited to create certificates in the program.

Figure 1. Cumulative number of VEU accounts by year – 2009-2019

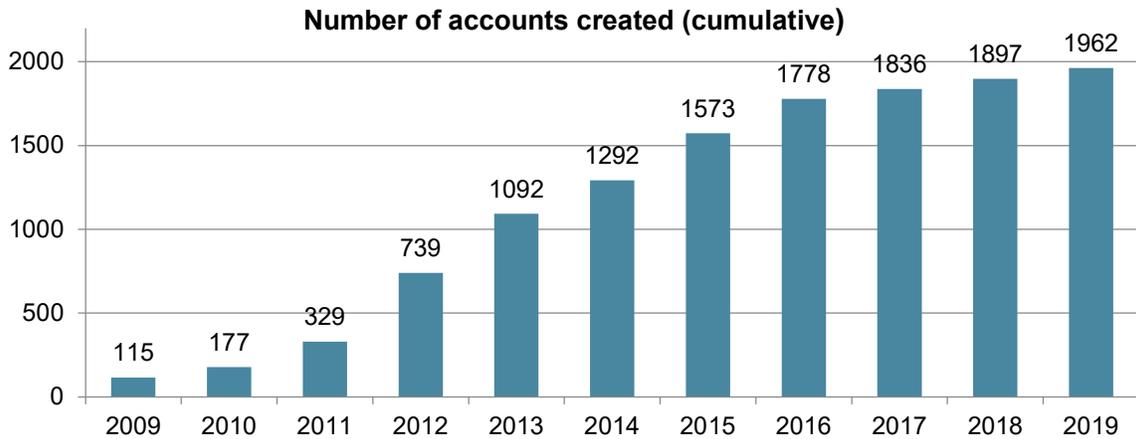
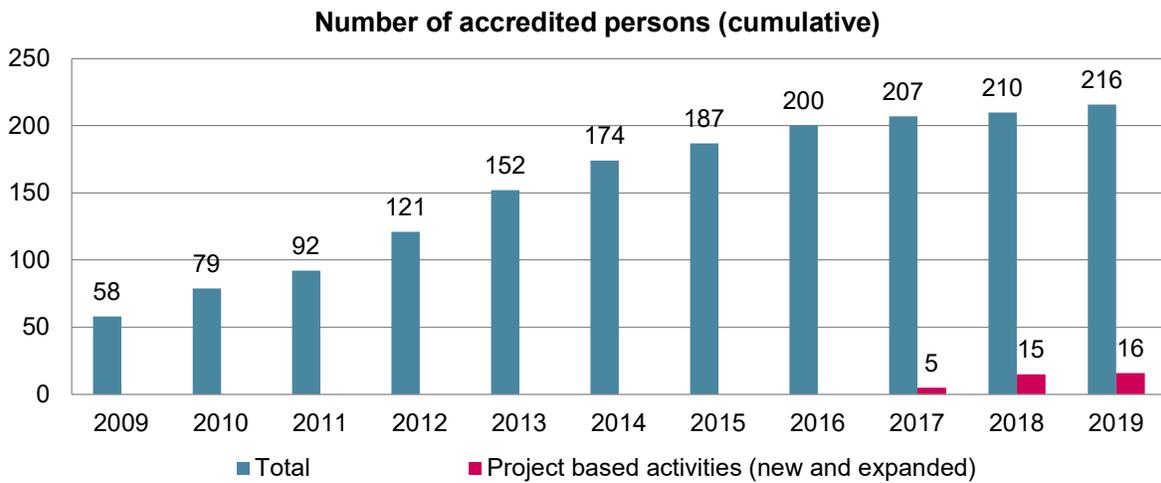


Figure 2. Cumulative total number of accredited persons by year – 2009 to 2019



In 2019, on top of the six new accredited person applications approved, we also approved 10 expanded accredited person applications (to allow them to complete additional activities). Of those new and expanded accreditations, one was for project-based activities. We also re-approved 27 applications of accreditation for the replacement of GLS and CFL lamps (activity 21A) under the 2018 VEET Regulations.

There has been a steady increase in the number of accredited persons from year to year. By the end of 2019, there were 216 accredited persons in the VEU program. During the program’s operation, two accreditations have been revoked by the commission and three cancelled by the accredited person. Not all accredited persons are regularly active. During 2019, 75 were active in creating certificates for 37 different types of upgrades eligible under the program.

3. VEU program performance in 2019

The certificates created and registered in 2019 and the surplus from previous years were sufficient to meet the 2019 certificate surrender target. Lighting activities in businesses and households continued to be the main source of certificates.

The market remains competitive, with a lot of creators competing in the lighting activities. Most installations occurred in metropolitan Melbourne upgrades, although the proportion of installations in regional Victoria increased significantly in the second half of the year.

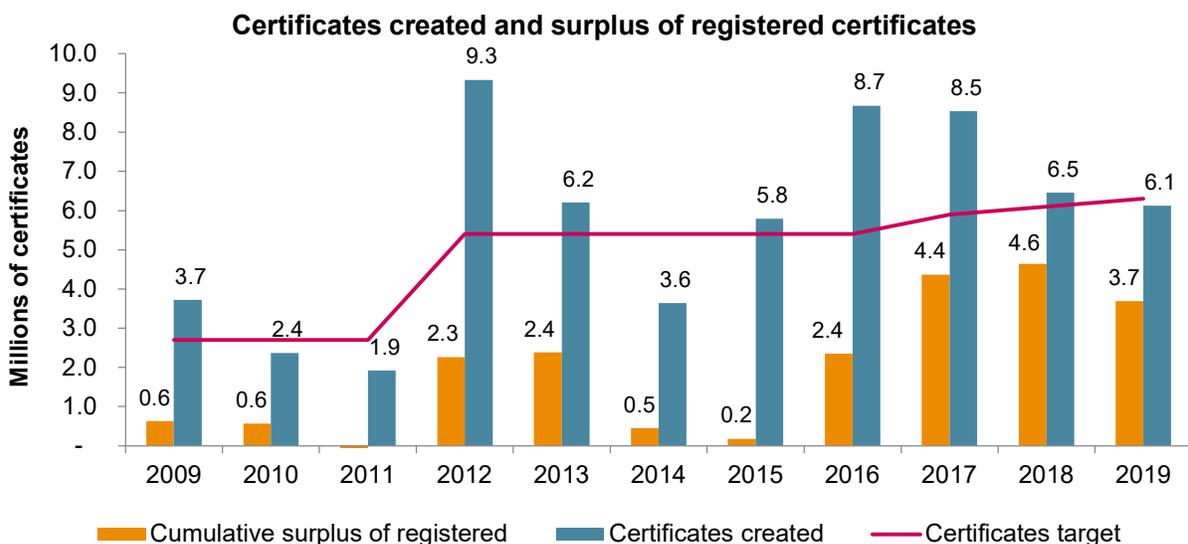
3.1. The VEU market provided enough certificates in 2019

There were over 6.1 million certificates created by accredited persons during the year. Of the certificates created, we approved and registered 5.3 million certificates in 2019. Only certificates which are registered can be used by energy retailers to meet the program targets set for the year.

The certificate surrender target for 2019 was 6.3 million certificates and is 6.5 million certificates for both the 2020 and 2021.

Figure 3 shows the number of certificates created for each year that the program has been in operation and the certificate surplus available each year to meet future targets. The number of certificates created or registered should be viewed in the context of the annual program target set for that year. Figure 3 shows there have always been enough certificates created to meet each year's surrender target, and a certificate surplus available each year.

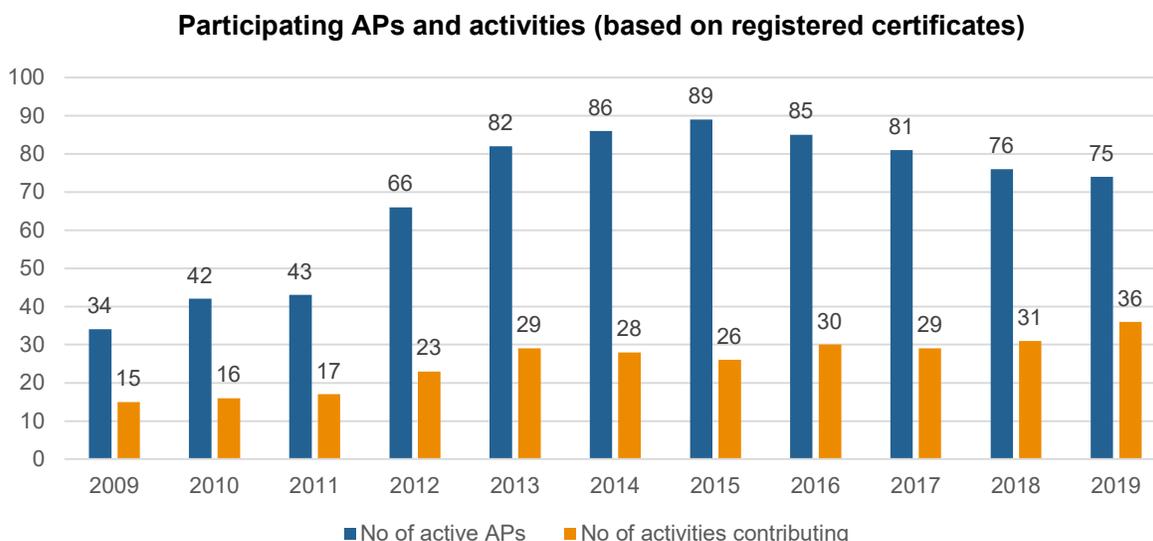
Figure 3. Certificates created and surplus of registered certificates by year – 2009 to 2019



3.2. The VEU market in 2019 remained efficient and effective

Overall, the number of accredited persons that are active has been declining since 2015, whilst the number and diversity of activities that contribute to certificates has been generally increasing, as shown in Figure 4. The data suggests there may be a trend towards stronger market positions for accredited persons that create certificates across numerous activities.

Figure 4. Number of accredited persons (APs) with registered certificates and the number of activities that contributed to those certificates in any given year



The achievement of the target also needs to be considered against the number of accredited persons and activity types that contributed to the target.

Of the 75 accredited persons that registered certificates under the VEU program in 2019:

- 58 businesses registered certificates for installations in residential premises across 28 activity types
- 55 businesses registered certificates for installations in non-residential premises across 20 activity types
- 38 businesses registered certificates for installations in both types of premises.

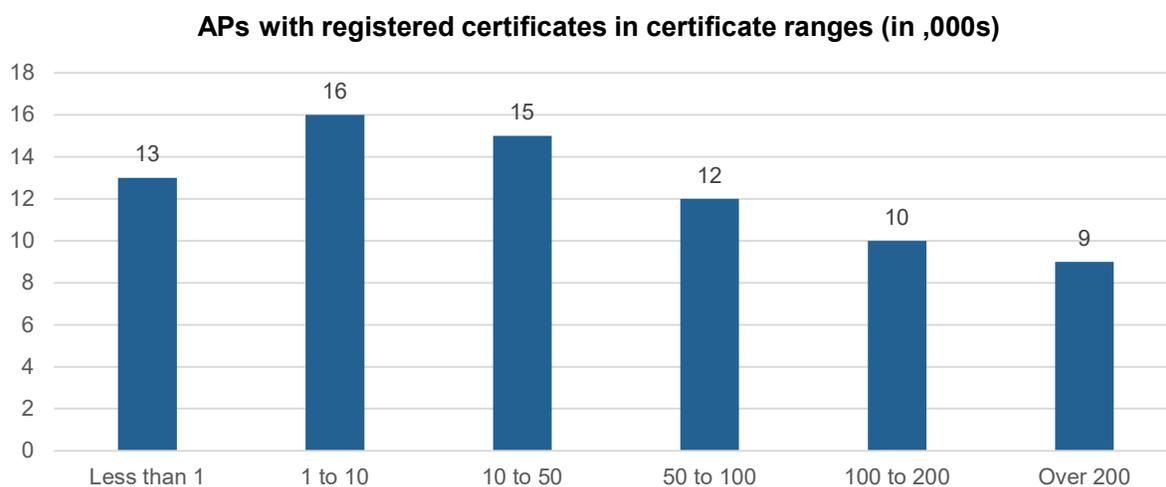
On average, 50 accredited persons registered certificates in any given month.

The data also suggests that most accredited persons contributed modest amounts of certificates. Figure 5 shows that during the 2019 year:

- 44 accredited persons (59 per cent) registered up to 50,000 certificates
- 12 accredited persons (16 per cent) registered between 50,000 and 100,000 certificates

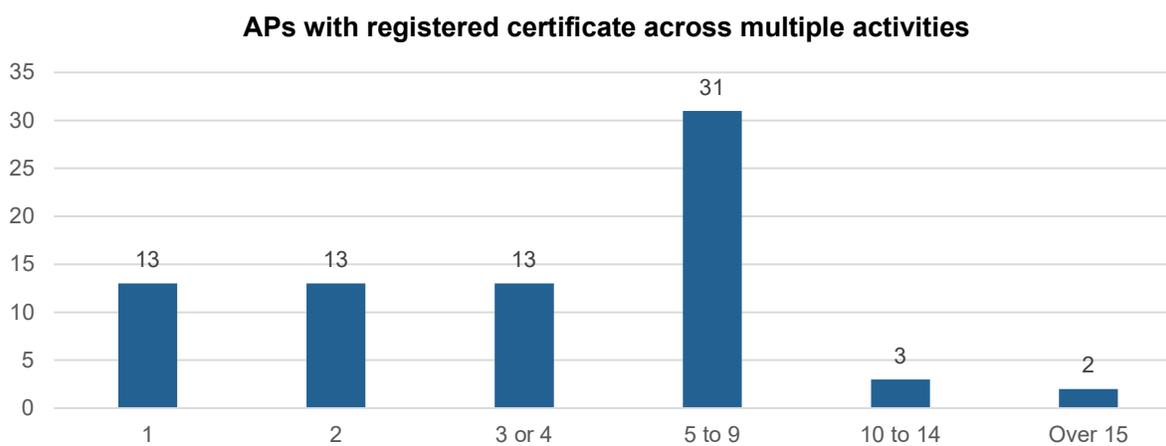
- 10 accredited persons (13 per cent) registered between 100,000 and 200,000 certificates
- nine accredited persons (12 per cent) registered over 200,000 certificates each.

Figure 5. Number of accredited persons (APs) with registered certificates in 2019 in certificate ranges



The data also suggests that most accredited persons focused on a small number of activities. As shown in Figure 6, 93 per cent registered certificates across a maximum of nine activities in 2019, with only two accredited persons registering certificates in over 15 different activities.

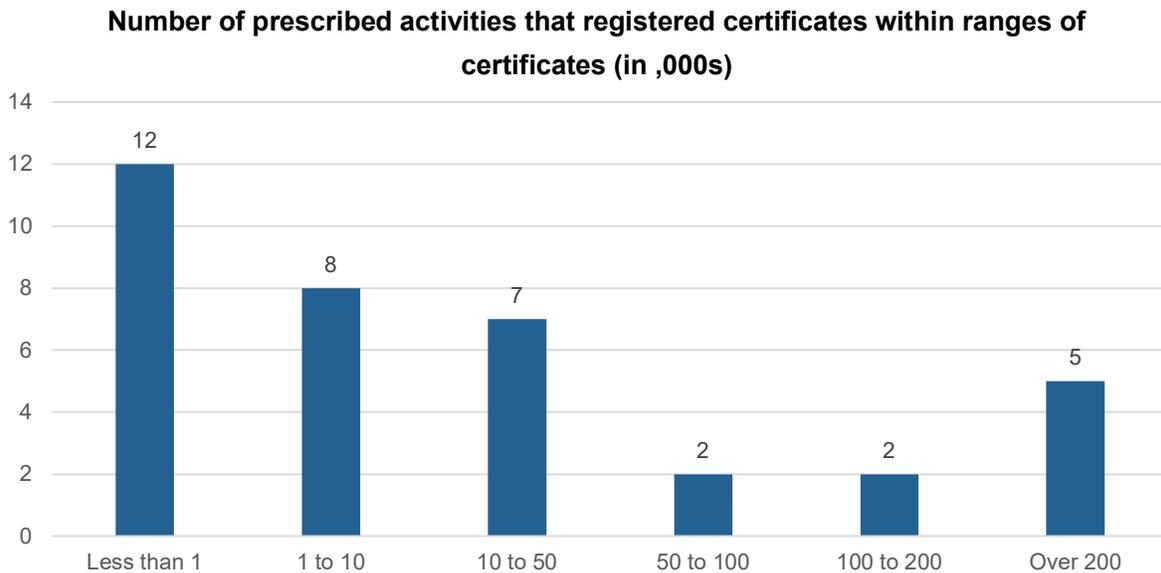
Figure 6. Number of accredited persons (APs) with registered certificates across multiple activities, depending on the number of activities



The joint analysis of the data in Figure 5 and Figure 6 suggests that there is a wide variety of business models and types of accredited persons within the market (small and focused accredited persons, large aggregators, and hybrid models), providing valuable competition for services.

The data confirms only a few activities are responsible for most certificates. Figure 7 shows that most of the program’s activities (75 per cent) contributed less than 50,000 registered certificates per activity type. Most registered certificates were derived from nine activities.

Figure 7. Number of prescribed activities (PAs) that contributed to registered certificates in 2019 split by ranges of certificates



The data from 2019 registrations indicates there were five activities that had over 30 accredited providers registering certificates in each of them, corresponding largely to the activities that contributed over 100,000 registered certificates each.

Collectively, the data suggests the VEU market is made up of both large operators creating large volume of certificates across multiple activities, and specialised operators creating a smaller number of certificates across a smaller number of activities each, but collectively a large variety of activities.

3.3. Certificate assessment checks remain efficient and effective

Once created, we assess certificates before they are registered and available for trade. We take a risk-based approach to certificate validation based on batches. An accredited person may withdraw their submitted certificates from a given installation if, after our checks, they are not able to provide evidence that the installation occurred as claimed.

In 2019, these pre-registration assessment protocols selected and targeted 25,746 high-risk installations (6.6 per cent of installations processed) and found 3,296 potential compliance issues on 2,745 of those installations (10 per cent of high-risk installations, or 0.7 per cent of installations processed). More information on the final validation figures can be found in section 4.3.2.

Once we are satisfied we have received all relevant information confirming the installation is compliant, we register certificates. We may refuse certificate registration if we establish that a certificate has not been created correctly.

Over 90 per cent of our checks were completed within two days of target timeframes. On average, over 44 per cent of certificates created in our system were registered within the same month or the following month during 2019. The time between creation and registration is a direct reflection of the accredited person risk rating and their ability to timely respond to our requests for information during the pre-registration validation checks.

Table 4 shows the number of certificates created, registered, withdrawn, refused and surrendered by accredited persons in 2019, and since the program started in 2009. Any analysis of 2019 figures in Table 4 must consider that some of the certificates registered in 2019 were created in 2018, some of the certificates created in 2019 were registered in 2020, and some of the certificates withdrawn were later registered.

Table 4. Certificates created, registered, withdrawn and surrendered

Certificate transactions in 2019	2019	Total (2009 – 2019)
Certificates created	6,129,778	62,762,078
Certificates withdrawn by accredited persons	348,993	4,311,114
Certificates registered	5,345,539	57,085,045
Certificates refused registration	0	117,355
Certificates surrendered by accredited persons	40,792	297,634

Over 5.3 million certificates were registered in 2019. Registered certificates may be surrendered by accredited persons if our post-registration compliance activities find errors that the accredited person cannot address (as detailed in chapter 4)⁸. Certificates surrendered cannot be traded.

While the number of certificates registered in 2019 was less than required to meet the nominal surrender target for 2019, the surplus of certificates from previous years ensured that there were sufficient certificates for energy retailers to meet their 2019 surrender obligations. The total certificate surplus on 31 December 2019 was 3.66 million certificates.

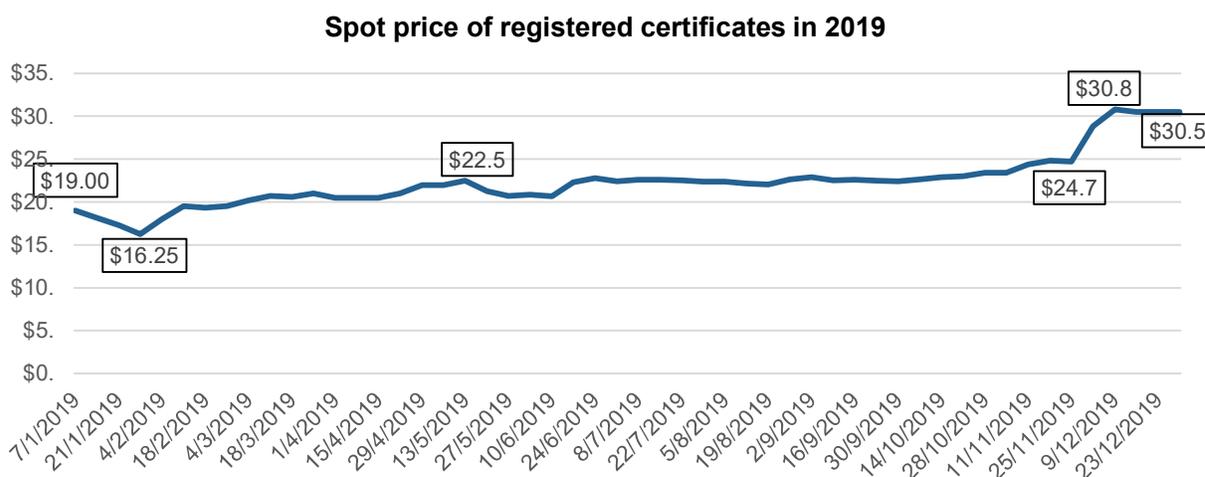
⁸ Accredited persons make a mandatory surrender in line with a commission enforcement action under sections 38, 39 and 40 of the Act. Alternatively, accredited persons may make a voluntary surrender under section 25 of the Act to rectify occurrences where installations created did not comply with program requirements. This surrender is undertaken following discussions with the accredited person.

3.4. Overall increase of certificate price during 2019

The certificate spot price⁹ increased during the 2019 year, from a low of \$19.00 in January to a high of \$30.50 in December 2019 (see Figure 8). As the certificates are traded in a free market, their price varies over time.

As shown in Figure 8, the spot price increased marginally but steadily between February and November 2019. There was a comparatively large increase in spot price reported between 25 November and 9 December 2019.

Figure 8. Spot price for certificates as reported on Mondays in 2019



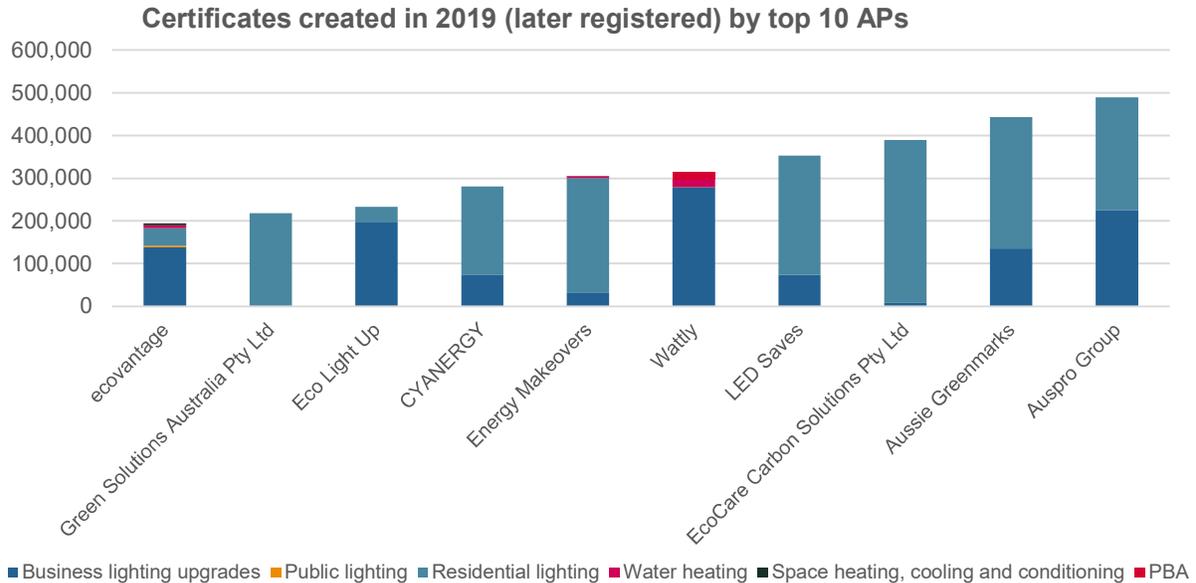
3.5. 56 per cent of certificates were from the top 10 creators

The top 10 largest accredited persons were responsible for over 250,000 installations (58 per cent of total installations) across 28 activity types. Nine of these accredited persons contributed a total of over 1.4 million registered certificates from installations replacing CFLs with LEDs (activity 21A). Nine of these accredited persons also contributed over 1.1 million registered certificates from business lighting upgrades (activity 34).

As shown in Figure 9, the largest creator of certificates in 2019 (later registered) was Auspro Group, followed closely by Aussie Greenmarks and EcoCare Carbon Solutions.

⁹ The commission does not administer the pricing of certificates under the program. The spot price reported here is based on trades made by one organisation. The spot price also only reflects the price of purchase of certain certificates, outside of contracts made directly between accredited providers and other traders or energy retailers.

Figure 9. Certificates created in 2019 and subsequently registered by each of the top 10 accredited persons



Only three of these accredited persons created and registered certificates across nine or more activity types, with the majority focusing on residential lighting and business lighting upgrades.

3.6. Majority of installations in residential premises

In 2019, the market continued to pivot from business lighting upgrades (activity 34) to residential lighting replacements (activity 21) when the replacement of CFLs by LEDs was incentivised under activity 21A as part of the new 2018 Regulations (which commenced on 11 December 2018).

The data summarised in Table 5 shows the significant increase in installations and premises visited focused exclusively in residential premises, but the dominance only translated partially when it came to certificates created in 2019.

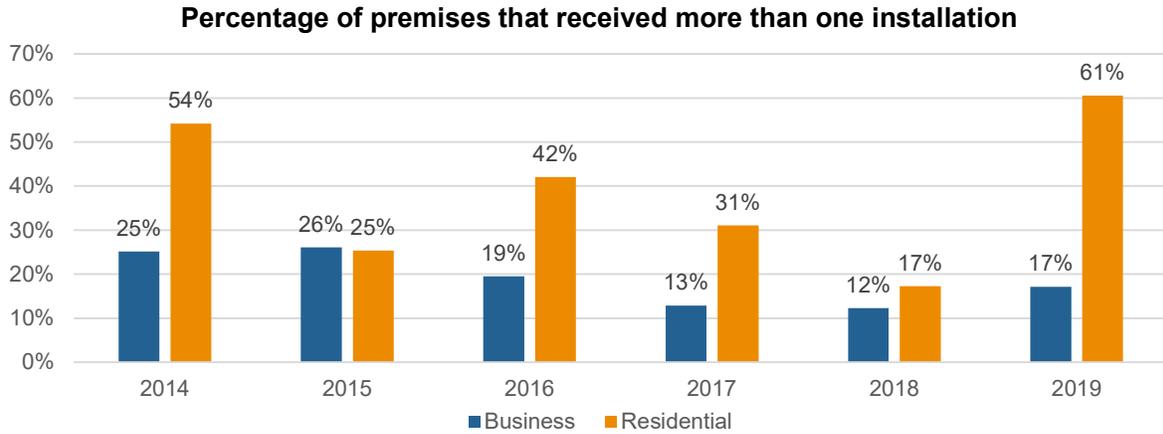
Table 5. Premises visited and installations undertaken to create certificates in 2019

Sector	Premises visited		Installations		Certificates	
	Number	Percentage	Number	Percentage	Number	Percentage
Residential	263,955	96 %	423,715	97%	3,426,184	56%
Business	10,426	4%	12,212	3%	2,703,594	44%
Total	274,381	100%	435,927	100%	6,129,778	100%

The data also shows that there were significantly more installations than premises visited, meaning a significant proportion of premises received more than one installation. As shown in Figure 10,

over 61 per cent of residential premises received more than one installation, whereas 17 per cent of business premises benefited from more than one installation or replacement.

Figure 10. Percentage of premises that receive more than one installation per sector – 2014 to 2019

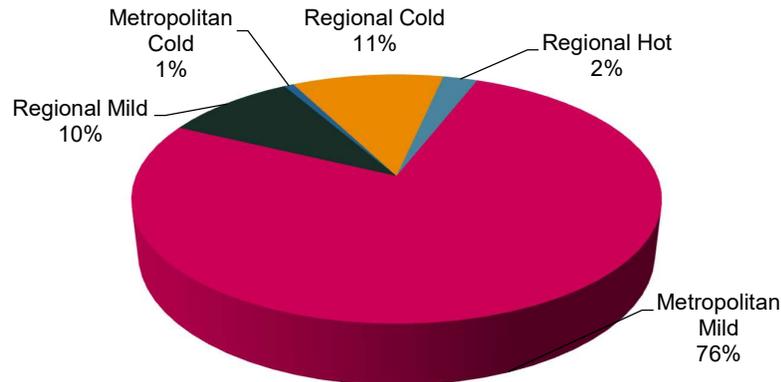


The main contributor to that figure of 61 per cent are multiple residential lighting installations in the same address. Our installation records show that premises that benefited from a replacement of CFLs by LEDs under activity 21A also benefited from an additional replacement of incandescent reflector lamps (activity 21B, 46 per cent) or 12-volt halogen lights (activity 21C, 13 per cent).

3.7. Majority of certificates and installations in metropolitan Melbourne

The focus on installations in residential premises means that most installations continued to occur in the Melbourne metropolitan region. The distinction of mild metropolitan and cold metropolitan regions was introduced under the 2018 VEET Regulations. The combined proportion of certificates created increased from 72 per cent in 2018 to 77 per cent in 2019, as shown in Figure 11.

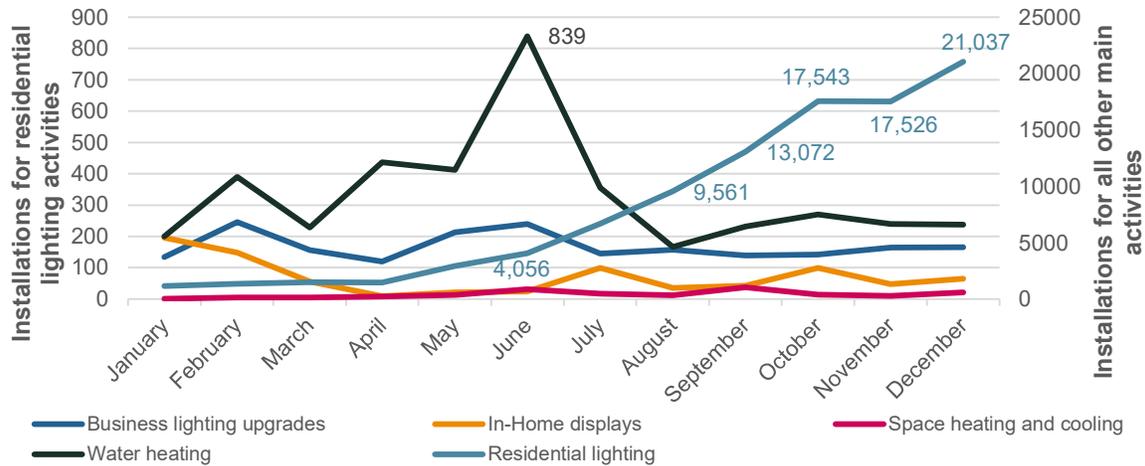
Figure 11. Split of certificates created by climate region in 2019



Note: Certificates created for public lighting (activity 27), which is one per cent of overall certificates, are excluded from the above chart as the installation can cover multiple postcodes.

Whilst the focus remains on metropolitan Melbourne, the reach of the program in regional Victoria significantly increased and we observed in 2019 an expansion from installations largely focusing on business lighting upgrades and water heating to residential lighting, as shown in Figure 12.

Figure 12. Evolution by month of installations in regional Victoria in 2019 by main activity type



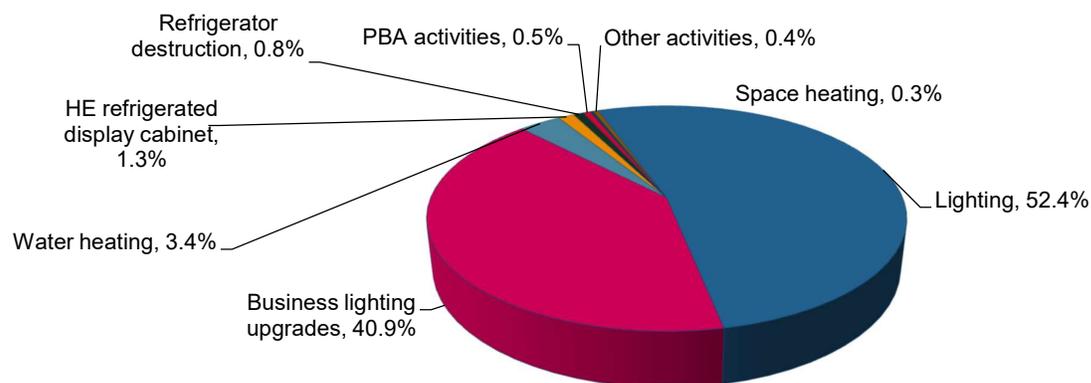
3.8. Lighting activities were the main activity

The most common installations carried out by accredited persons in 2019 were lighting activities. These include:

- replacement of incandescent lamps with low energy lamps in residential and business premises (activity 21)
- business lighting upgrades, which may include installation of ancillary lighting equipment at business premises (activity 34).

Figure 13 shows the certificates created for all main activities. More than 91 per cent of all certificates created in 2019 were from either residential lighting installations (activity 21) or business lighting upgrades.

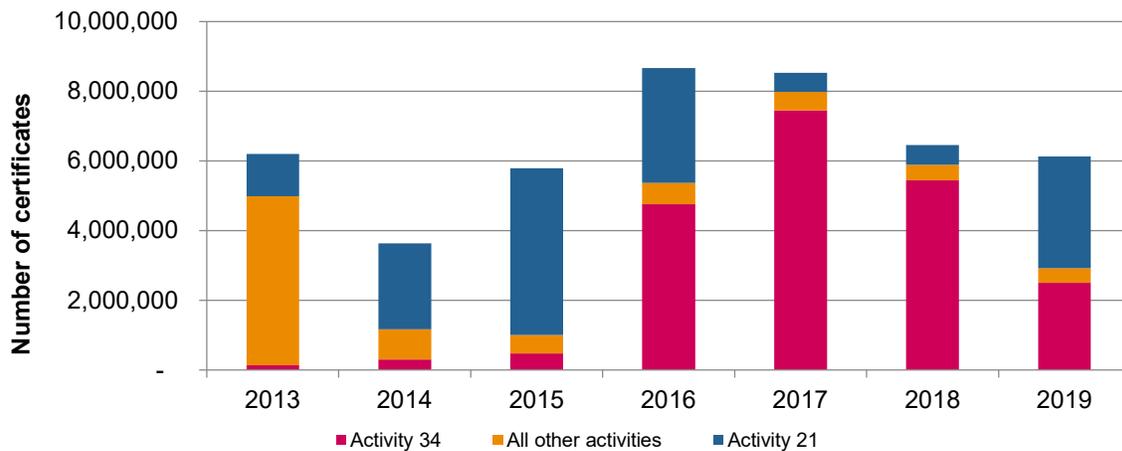
Figure 13. Percentage of total certificates created by activity type in 2019



The resurgence of residential lighting activities, predominantly activity 21A, has coincided with a reduction in certificate creations and installations for business lighting upgrades, as shown in Figure 14. This trend was not reflected in the number of accredited persons creating certificates under business lighting upgrade activities, as it remained constant at 41 participants.

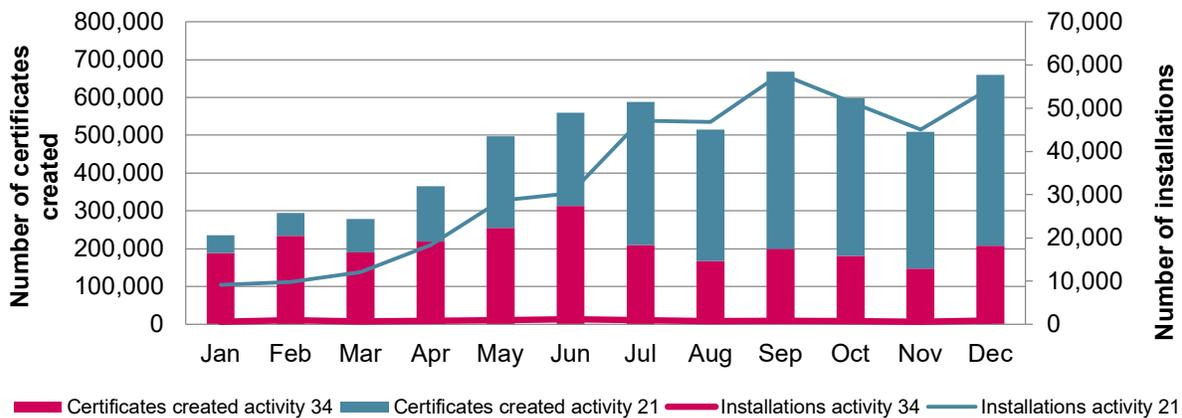
The increase in certificates from activity 21 lighting was largely driven by a change in the activity 21A definition which allowed accredited persons to replace CFL lamps with LED lamps under the 2018 VEET Regulations. This increase in certificate creation was matched with an increase of participants creating certificates in that category, with a 24 per cent increase from 33 businesses in 2018 to 41 businesses in 2019.

Figure 14. Certificates created for lighting activities vs other activities - 2013 to 2019



The dominance of residential lighting activities (activities 21A, 21B, 21C, 21D, 21E and 21F) is highlighted when analysing the evolution over 2019. Figure 15 below shows that it took approximately three months for participants to set up their business models and installation pipelines (activity 21A was introduced in December 2018). From April 2019, we see a marked increase in certificates and installations that stabilised in the last quarter of the year.

Figure 15. Monthly certificates created and corresponding installations for activity 34 and activity 21 in 2019



Certificates created under activity 21A surpassed 2.3 million, with four million LED lamps installed in 2019 in over 210,000 premises by over 700 different licensed electricians. On average, 88 electricians were installing LED lamps under the program in six different houses any given day.

The top 24 towns or suburbs with the most visited premises under activity 21A in 2019 are shown in Table 6. They account for 20 per cent of the premises, indicating installations were widespread.

Table 6. The number of premises that benefitted from the installation of LEDs under activity 21A in 2019 for each of the 24 towns or suburbs in Victoria with the highest number of premises visited.

Town/Suburb	No of premises	Town/Suburb	No of premises	Town/Suburb	No of premises
Glen Waverley	2,631	St Albans	1,849	Doncaster East	1,599
Reservoir	2,545	Craigieburn	1,805	Melbourne	1,596
Werribee	2,294	Mill Park	1,796	Epping	1,588
Hoppers Crossing	2,221	Mount Waverley	1,754	Narre Warren	1,569
Tarneit	2,184	Shepparton	1,751	Rowville	1,522
Pakenham	2,162	Thomastown	1,735	Hampton Park	1,503
Berwick	2,097	Endeavour Hills	1,691	Narre Warren South	1,481
Point Cook	2,085	Noble Park	1,672	Lalor	1,451

A critical aspect of activity 21A is that it provides for the replacement of CFLs that may have been installed as part of the program under previous residential lighting activities. An analysis showed that over 50 per cent of premises that received LED upgrades during 2019 had installed the CFLs being replaced under previous activities of the program.

An analysis of LED installation numbers per premise shows that, on average, the number of LEDs installed in 2019 were similar to the number of LEDs and CFLs installed under previous residential lighting activities, providing a reassuring level of confidence in those installations.

3.9. Other activities continue to deliver certificates

The top 10 activities responsible for most certificates created in 2019 are summarised in Table 7.

Business lighting upgrades (activity 34) created the highest number of certificates with replacement of incandescent GLS/CFL lamps (activity 21A, revamped after the 2018 VEET Regulations) having the largest amount of installations (over 227,000). The replacement of incandescent reflector lamps (activity 21B) had over 140,000 installations, the second highest number across all activities and almost double the amount in 2018.

Table 7. Installations, certificates created and certificates registered for the top 10 activities in 2019

Period	1 Jan 2019 – 31 Dec 2019			1 Jan 2009 – 31 Dec 2019		
	Installations	VEECs created	VEECs registered	Installations	VEECs created	VEECs registered
34: Building based lighting upgrade	9,823	2,509,579	2,400,773	74,211	21,095,394	18,644,546
21A: Replacing incandescent GLS/CFL lamp	227,777	2,334,044	1,756,719	644,698	6,476,812	5,413,539
21B: Replacing incandescent reflector lamp	134,595	445,206	475,276	330,415	1,296,305	1,158,044
21C: Replacing 12 volt halogen lamp	30,253	297,577	247,434	386,979	8,136,673	7,903,103
1D: Heat pump replacing electric resistance	3,350	135,735	106,156	9,859	528,957	493,779
21E: Replacing mains voltage halogen lamp	18,216	119,827	94,776	44,902	472,953	431,681
32: Installing high efficiency refrigerated display cabinet	163	79,384	75,377	489	199,213	180,162
19: Destruction of old refrigerator or freezer	9,069	51,009	52,011	117,375	548,692	537,022
1B: Gas/LPG instantaneous replacing electric	922	37,118	36,244	22,600	963,660	955,106
PBA measurement and verification	5	33,382	19,992	6	33,518	20,128
Other activities	6,456	86,917	80,781	2,903,334	23,009,901	21,347,935
Total	440,629	6,129,778	5,345,539	4,534,868	62,762,078	57,085,045

There was a significant increase in the overall number of installations under the program from 139,043 in 2018 to over 470,000 in 2019, largely driven by the increase in installations of lighting in

residential premises under activity 21A. This is higher than those in 2016 (373,615 installations), when a similar quantity of certificates was created from residential lighting activities.

However, the increase in installation numbers was not mirrored in an increase in certificate creations, with a five per cent reduction in certificate creation from 2018 to 2019 (6.45 to 6.12 million). This was largely due to a 50 per cent reduction in business lighting upgrade (activity 34) installations from 2018 to 2019 which have a high average certificate creation per installation.

Water heating activities remains in the top 10 activities for 2019, although overall their contribution to certificates created decreased by over 25 per cent from 2018. Over the past three years, 95 per cent of installations have occurred in residential premises and over 80 per cent in regional Victoria.

The installation of heat pumps to replace electric resistance water heaters (under activity 1D) became the preferred water heater activity over the installation of electric boosted solar replacing electric resistance water heaters (under activity 1E in the 2008 VEET Regulations and activity 1C in the 2018 VEET Regulations).

In 2019, over 130,000 certificates were created for replacement of electric resistance water heaters under activity 1D, compared to 232,251 certificates created in 2018 under activity 1E. Activities 1E and 1C were responsible for the creation of over 28,000 certificates in 2019. Meanwhile, the certificates created for other water heating activities remained comparatively subdued and continuing a declining trend over the last three years.

The installation of high efficiency refrigerated cabinets under activity 32 saw a steady level of installations and they generated over 79,000 certificates (over an average of 40 per cent increase in certificates and productivity per installation compared to 2018), indicating some of these may be targeting larger units or different types than in 2018.

3.10. Project-based activities pipeline grows significantly

Project-based activities is a group of methods that are tailored for large and complex upgrades. They are generally more effort-intensive and take longer to implement than other activities under the program. The method is, however, a more accurate reflection of the savings made by the upgrade.

Due to this complex nature of the method, and the associated level of expertise required, there are a smaller number of participants using this method. Table 8 below shows that the number of applications for accreditation for participants to undertake project-based activities reduced from 2018 to 2019.

There are currently two methods available under project-based activities, the measurement and verification method and the benchmark rating method. The measurement and verification method

is the preferred avenue for most of these participants as it allows accredited persons to forward create certificates for up to ten years into the future.

Table 8 also shows that whilst one accredited person application was approved, the participation levels by the sixteen accredited persons approved to undertake project-based activities increased. In 2019, there was a significant increase in the number of projects received and approved by the commission (reflected in the scoping plans, project plans numbers).

The comparatively lower numbers for project plans reflect the length of time required for most projects to get to that stage.

Table 8. Project-based activities uptake in 2019

Application type	2018		2019	
	Received	Approved	Received	Approved
Accreditation for project-based activities	8	10	1	1
Scoping plans	49	48	175	166
Project plans	37	19	171	61
Impact reports	2	1	4	4
Measurement and Verification Professionals	3	4	2	2

Figure 16 below shows a breakdown of the types of technology (by generic category) of projects submitted to us (via scoping plan application) in 2019.

The data shows us that the most popular type of projects are upgrades to motors and drives, heating ventilation and air conditioning systems, refrigeration systems and electrical infrastructure upgrades.

The data also indicates there may be some occasions where it makes more sense to do a business lighting upgrade project under a project-based activities method rather than a business lighting upgrade (activity 34) deemed method.

Figure 16. Project-based activities projects by type of technology, as submitted in 2019

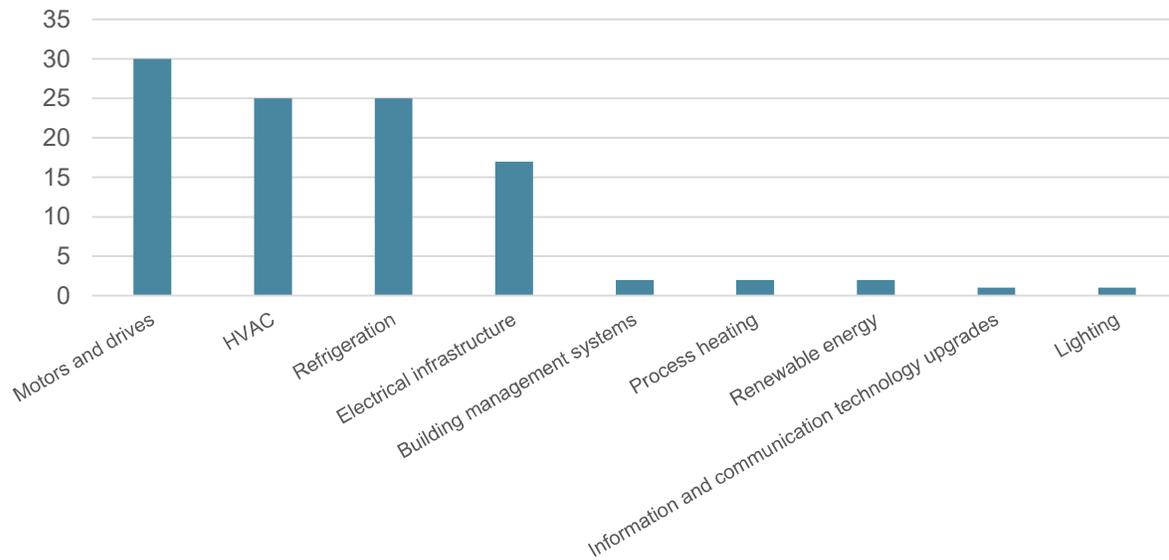
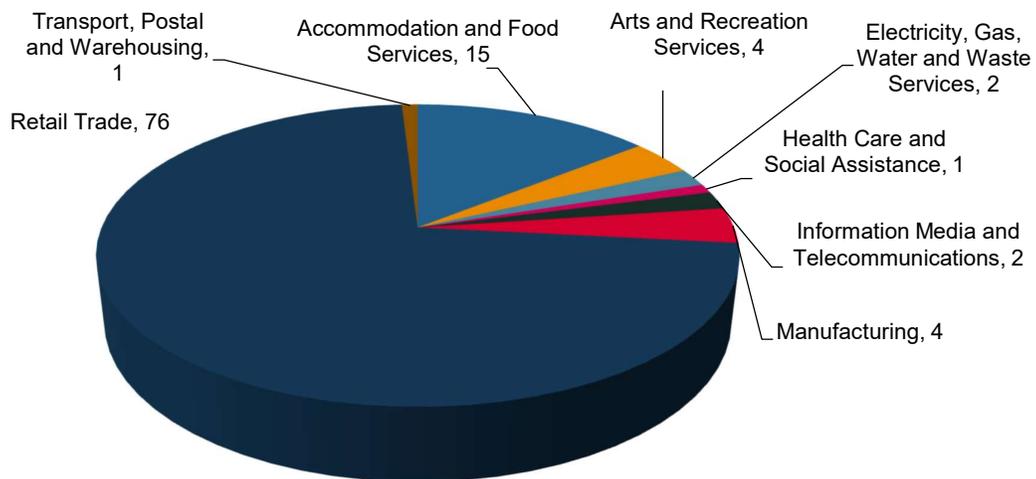


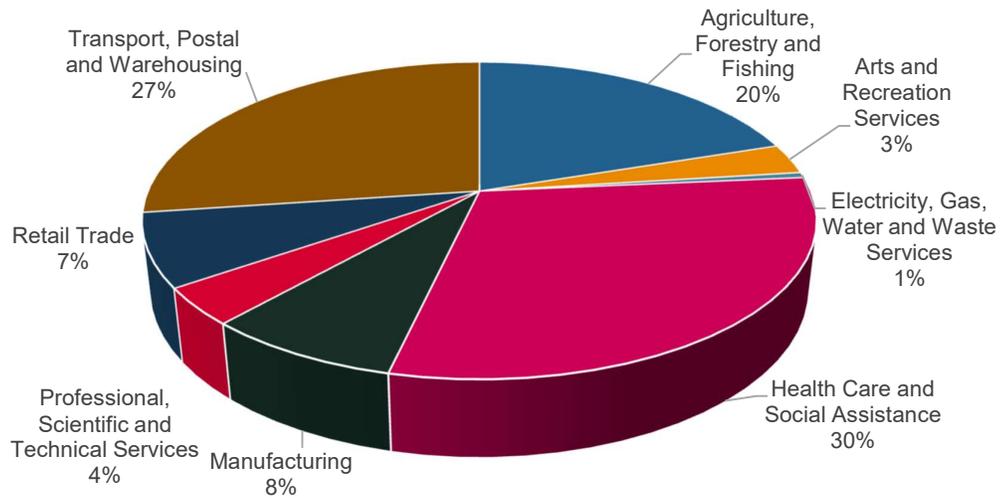
Figure 17 shows the breakdown of 2019 projects (by number of projects) by the sector the project was undertaken in. This data shows that the retail trade sector had by far the greatest volume of projects.

Figure 17. Number of project-based activities projects assessed by sector in 2019



In Figure 18 we show the breakdown based on the number of certificates expected by each sector. Interestingly, this shows that the retail trade sector, whilst having a significantly greater volume of projects, only has 20 per cent of the expected volume of certificates. The largest volume of certificates is, rather, expected to come from health care and social assistance, and the transport, postal and warehousing sectors (as well as the retail sector).

Figure 18. Percentage of certificates (in parenthesis) expected to be created from project-based activities projects assessed in 2019 split by sector



Despite the complex nature of these upgrades and the method, we continued to maintain very efficient processing times over 2019. Table 9 shows an improvement over the already short processing times achieved in 2018. These were significantly below the time legislated in the PBA Regulations. We publish the latest average processing times on the commission website.

Table 9. Average times and legislated times for project-based activities in 2019

Project documentation	Average time during 2018 (days elapsed)	Average time during 2019 (days elapsed)	Legislated time in PBA Regulations (days elapsed)
Scoping plan	1.4	0.8	60
Project plan	5.3	1.1	180
Impact report	N/A	5.0	120

4. VEU program compliance

In 2019, we held eight pre-accreditation audit meetings and 25 extended and re-approval accreditation audit meetings. We also:

- identified and resolved over 3,600 compliance issues during our pre-registration checks
- conducted nearly 1,500 audits of claims made by accredited persons
- completed 21 detailed audits and 14 investigations of accredited persons' operations
- secured the surrender of over 40,000 registered certificates and completed enforcement action against Wattly.

4.1. Our risk-based compliance methods

To achieve our key goal of safeguarding the integrity of the program, we implement an integrated risk-based framework to all our regulatory functions and regularly engage with stakeholders to discuss improvements. Table 10 list the various methods we use to engage with different program participants to safeguard compliance. More information is available in the chapters that follow.

Table 10. Compliance-focused engagement methods with VEU program participants

Participant	Compliance engagement methods
Accredited persons	<ul style="list-style-type: none">• Pre-accreditation audit• Detailed accredited person audits• Audit investigations• Project audits (for project-based activities)• Phone, desktop and field audits• Pre-registration checks• Consumer complaints
Energy retailers	<ul style="list-style-type: none">• Audit of obligatory surrender of certificates• Enforcement of shortfall penalties
Product applicants	<ul style="list-style-type: none">• Applications and approvals• Product testing

We perform three types of audit:

- Pre-accreditation audits of prospective accredited persons
- Scheduled and unscheduled accredited person audits, including:
 - detailed audits, with frequency varying depending on the risk profile of the accredited person, certificate creation rates, and other risk criteria
 - project-based activities project audits, prior to certificate registration
 - audit investigations, which are significant audits arising out of intelligence indicating the possibility of significant non-compliance.
- Phone, desktop and field audits – these are specific contacts with consumers to obtain intelligence and data or support scheduled and unscheduled audits and investigations.

Our pre-registration checks include:

- first creation audits of installations and certificates
- assessment, validation and registration of certificates in batches, in which activities are grouped into discrete batches (by accredited person and activity type) and individual installations are assessed according to risk
- phone audits, involving contacting specific consumers to obtain intelligence and data to confirm the eligibility of an activity
- escalations, which occur when certificates are removed from regular validation to conduct further compliance checks across a population.

We have a dedicated stakeholder contact channel that addresses queries from the public, accredited persons, relevant entities and product manufacturers.

4.2. Auditing those that want to join or expand their opportunities in the program

We conduct pre-accreditation audits of anyone applying to become a new accredited person in the program or expand their existing accreditation to include a new activity. Accreditation audits always involve at least one meeting with the business. These audits allow both the commission and the business to discuss the expectations and requirements for VEU activities.

As part of the audit, we complete a risk assessment of the accredited person. We use this assessment to calculate a risk rating score. We regularly update this rating to reflect any accredited person's compliance performance. This process enables us to adopt a risk-based approach when we assess certificates and plan our audit and investigation program.

4.3. Validating creations from accredited persons

4.3.1. First creation audits

To confirm a compliance focus by accredited persons, we also carry out first creation audits. This is when an accredited person creates certificates for the first time under their new accreditation or for a new activity. The first creation audit provides an opportunity for a thorough validation of the certificates created and complements the pre-accreditation audit work.

These extensive interactions with accredited persons prior to, and at their first creations allow us to validate that they have the systems and processes in place to undertake compliant installations, that they implement them, and that they can provide the evidence required for it. The first creation audit step is vital to underpin our risk-based batch checks.

4.3.2. Certificate batch checks

We validate certificates before they are registered, taking a risk-based approach that checks whether the installation, as undertaken, is likely to be eligible to create certificates.

Table 11 summarise the extent of these validations. Depending on the validation requirements for an activity, our assessment may include a review of the certificate assignment form, certificates of electrical safety or photographic evidence. This helps us ensure that created certificates qualify for registration.

Table 11. Pre-registration certificate batch checking activities

Description	Measure
Certificates processed ¹⁰	5,725,045
Activities processed	386,984
Batches processed	4,646
Activities requiring further information	10,499
Compliance issues identified	3,681
Certificates withdrawn by accredited persons ¹¹	348,993

¹⁰ Includes certificates created that have been subsequently registered or withdrawn, and includes certificates processed as part of regular batches and first creation batches.

¹¹ The majority of these certificates may have been resubmitted and registered at a later date where the accredited person is able to provide us with the evidence to satisfy the pre-registration checks.

We evaluate in batches of maximum 10,000 certificates, selecting batches based on the risk factor of the activity being undertaken and the risk of the accredited person creating the certificates. Accredited persons may be required to provide additional evidence to show that the created certificates meet the relevant requirements.

The highest proportion (78 per cent) of certificates withdrawn were linked to business lighting upgrades (activity 34), followed by replacement of incandescent GLS or CFL lamps (activity 21A) with 12 per cent.

In terms of installations numbers, more activity 21A installations were withdrawn than any other activity (52 per cent of the total number of installations withdrawn). The next highest was replacement of incandescent reflector lamps (activity 21B) with 23 per cent.

Over 13 per cent of installations withdrawn had a compliance issue flagged. Out of the installations withdrawn with compliance issues, activity 21A represented 37 per cent, activity 34 represented 26 per cent, activity 21B represented 18 per cent and water heating activities seven per cent. In terms of the certificates withdrawn with compliance issues, over 125,000 (87 per cent) related to activity 34 installations, representing over a third of the total certificates withdrawn.

The reasons an accredited person may withdraw certificates are varied and may be linked to their own business processes or our validation processes. Some of these certificates may have been re-submitted and registered later where the accredited person is able to supply us with the evidence to satisfy our assessment checks.

4.4. Targeted installation audits

Once certificates are registered, we use phone, desktop, and field audits to check that installations undertaken correspond with the parameters used to create certificates.

We use phone audits to talk to consumers and validate creation claims. We review specific evidence to support certificate creation during a desktop audit and inspect installation premises during a field audit. These audits inform our detailed audits and investigations of accredited persons. A summary of the different type of activity audits we conducted during 2019 is provided in Table 12.

Table 12. Summary of installation audits for 2019

Description	Measure
Phone audits	435
Desktop audits	485
Field audits	458

4.5. Detailed audits and investigations of accredited persons

Our auditing program focuses on both random and targeted audits of accredited persons. Detailed audits provide a detailed assessment of the accredited person's systems, processes and controls. As part of these audits, we interview key personnel and installers to gain assurance that they are participating in accordance with the program requirements.

Audit investigations may arise from a detailed audit of an accredited person or initiated further to the discovery of potential systemic issues of non-compliance in respect of certificates claimed by an accredited person.

Table 13 summaries our compliance activities in respect of detailed audits and audit investigations. Only audits and investigations that have been completed are reported.

Table 13. Number of detailed audits and investigations of accredited persons in 2019

Type of compliance action	Number	Activity
Detailed audits	21	21, 34 and PBA
Investigations	14	21 and 34

Our audits and investigations resulted in the surrender of 40,072 certificates by accredited persons due to non-compliance during 2019. There have been 297,634 certificates surrendered by accredited persons since the start of the program in 2009 and up until 31 December 2019.

In 2019, the key enforcement action focused on Wattly Pty Ltd. Wattly was found to have created certificates for lighting activities undertaken by a subcontractor across 34 sites that did not meet our compliance requirements including:

- overstating the number of energy-efficient lamps installed
- incorrectly stating the type of lights in place before the upgrade was undertaken
- overstating the level of pre-upgrade energy use.

Following a 10-month investigation, we determined that Wattly must:

- surrender 37,919 certificates claimed for the activities deemed to be non-compliant
- engage an independent auditor to review its internal processes and procedures to ensure this does not happen again.

4.6. Types of consumer complaints

We facilitate resolution of issues between consumers and accredited persons. We received 361 compliance-related complaints from consumers in 2019 and have resolved 359 of these complaints

to date. The relative increase in numbers compared to 2018 (63 complaints) is largely due to the increase in installation numbers for the program in 2019 (from almost 120,000 premises to over 270,000) given the program pivoted to lighting upgrades in residential premises during the year. The number of consumer complaints we received represented 0.13 per cent of premises visited in 2019.

Of those complaints:

- 326 related to residential lighting (activities 21A to 21E)
- 26 related to business lighting upgrades (activity 34)
- three related to water heating installations (activities 1 and 3)
- two related to shower rose installations (activity 17).

The complaints for lighting installations mainly related to product faults, consumer law issues, and accredited providers not attending to installation warranty claims.

Business lighting upgrade (activity 34) complaints in 2019 mainly related to faulty products, incomplete lighting upgrades, and intelligence from the public regarding non-compliance that informed our audit and investigations program. The small number of complaints associated with water heating and shower rose installations related to product faults and unsuitable products.

4.7. Compliance by relevant entities

The program requires energy retailers (relevant entities) to surrender certificates if they are:

- energy (electricity and gas) retailers with at least 5,000 residential customers
- retailers with program acquisitions of at least 30,000 MWh of electricity or at least 350,000 GJ of gas in one compliance year.

Energy retailers must surrender certificates in accordance with the calculations prescribed by the Act¹². The number of certificates an energy retailer must surrender depends on the target for the year, and the amount and type of energy they sold to eligible premises for the year.

Retailers must send us an annual energy acquisition statement and an independent audit report detailing the amount of electricity and/or gas sold to eligible premises for the year. Their statement must be submitted, and the required number of certificates surrendered, by 30 April each year.

Over 6.1 million certificates were surrendered by energy retailers in 2019. The result of our audit of their submissions and certificate surrenders is summarised in Table 14.

¹² Energy retailers (relevant entities) make an obligatory surrender to acquit their liability under the Act (section 33 of the Act).

Table 14. Details from annual energy acquisition statements

Details	Measure
Energy retailers identified as relevant entities	28
Relevant entities that submitted their annual energy acquisition statement and independent audit report	28
Relevant entities that surrendered sufficient certificates to meet their annual liability	27
Relevant entities that had an energy efficiency certificate shortfall	1
Number of certificates required to meet relevant entities' 2019 liability	6,046,956
Number of certificates surrendered by relevant entities for 2019	6,013,061 ¹³
Amount of relevant entities' energy efficiency certificate shortfalls	
	<i>People Energy Pty Ltd</i> 6,711

In September 2019, Energy Australia Pty Ltd paid a shortfall penalty of \$8,117.50 for their 2018 surrender shortfall of 170 certificates.

4.8. Product applications and approvals

We assess and list products in our Register of Products to ensure they meet technical specifications and save energy for consumers. We approved more than 1,100 products for listing in our register, most of which were lighting products. The total number of approved products by 31 December 2019 was 16,034.

Table 15 shows the number of products submitted and approved by product category type for 2019.

¹³ Number of certificates surrendered adjusted for scheduled activity premises exemption claims for 2018 which had not been claimed by a relevant entity in 2018

Table 15. Summary of product applications and approvals in 2019

Product category type	Product applications	Product approvals
Lighting	1,126	1,020
Water heating	70	59
Refrigerator/freezer	28	28
Space heating and cooling	19	36
Weather sealing and insulation	2	0
Low flow shower rose	5	5
Clothes dryer	3	1
Total	1,253	1,149

5. Changes in the legislative framework

During 2019, several program changes took place associated with the introduction of new regulations, subsequent updates to regulations, as well as changes further to updates under the Environment Protection Act 1970.

5.1. Training and licensing requirements for activity 21A

We undertook a public consultation on the training and licensing requirements for installers undertaking the replacement of CFLs and halogen lamps (activity 21A) under the VEU program further to the introduction of the revised activity under the 2018 VEET Regulations on 10 December 2018.

We consulted with industry as part of our review, to better understand their views on appropriate regulatory measures to safeguard against:

- electrical risks (electrocution)
- physical risks (cuts, grazes, eye injuries, etc.)
- long term toxicity risks (mercury exposure).

Following consultation with industry, we announced our training and licensing requirements for installers undertaking installations under activity 21A on 12 February 2019. Installers undertaking installations under activity 21A were required to:

- be licensed electricians registered with Energy Safe Victoria.
- have been provided training on how to deal with mercury risks and spillages (e.g. how to properly clean up after a breakage of a lamp).

5.2. Introduction of gas efficiency activities

On 1 March 2019, six activities aiming to improve gas efficiencies in non-residential premises were introduced to the program. They can be summarised in two groups:

- decommissioning and installing primary infrastructure (activities 37, 38 and 41)
- installing secondary components on existing primary infrastructure (activities 39, 40 and 42).

A description of each new activity is provided in Table 16.

Table 16. List of gas efficiency activities introduced on 1 March 2019

Activity	Baseline	Upgrade
37	Decommissioning an existing inefficient gas-fired steam boiler	Energy efficient gas-fired steam boiler
38	Decommissioning an existing inefficient gas-fired Type B appliance (hot water boiler or water heater)	Energy efficient gas-fired hot water boiler or water heater
41	Burner on a gas-fired Type B appliance (steam boiler, hot water boiler or water heater)	Installing electronic gas/air ratio control on that burner
39	Burner on a gas-fired Type B appliance (steam boiler, hot water boiler or water heater) which has an existing gas/air ratio controller	Installing combustion trim control on that burner
40	Decommissioning an existing inefficient old burner on a gas-fired Type B appliance (steam boiler, hot water boiler or water heater).	Installing a new burner
42	Gas-fired Type B appliance (steam boiler, hot water boiler or water heater)	Installing an economizer

5.3. Updated guidelines

Following the introduction of the VEET Regulations 2018 and updates to the PBA Regulations 2017, we conducted a review of the Victorian Energy Efficiency Target Guidelines during the year. This review resulted in the guidelines being updated with changes that include:

- changes to Register of Products requirements
- allowing products contained in the greenhouse and energy minimum standard register and National Electricity Market Load Tables for Unmetered Connection Points to be installed under the VEU program
- the ability for us to set requirements for certain installations (e.g. minimum standards for lighting equipment)
- addition of benchmarking as a measure of energy use for project-based activities
- amendments to reflect:
 - rebranding from the Victorian Energy Efficiency Target scheme to the Victorian Energy Upgrades program
 - the use of both the VEU Registry and the commission website to support the administration of the program
 - changing the name of explanatory notes to guidance document

- confirming our power to require accredited persons to provide certain training and has the power to require APs to use licensed installers.

The amended guidelines were gazetted on the Victorian Government Gazette on 16 May 2019 and took effect on 3 June 2019.

5.4. Regulatory changes commencing 10 June 2019

The 2018 VEET Regulations had embedded some regulatory changes that were scheduled to become effective on 10 June 2019. In addition, the Department of Environment, Land, Water and Planning also introduced changes to the VEU Specifications and aligned those changes with the implementation date of 10 June 2019.

These changes are summarised in Table 17.

Table 17. Summary of regulatory changes commencing 10 June 2019

Activity	Change/update
Water heating (activity 1 and 3)	<ul style="list-style-type: none"> • Commencement of fresh start • Change in certificate calculations • New product approval requirements for activity 1D requiring new products applications to be modelled in zone 5. • Changes to VEU specifications to: <ul style="list-style-type: none"> – correct auxiliary energy factor values for activity 1C, 1D, 1F and 3B – clarify zone 5 requirements for heat pump water heaters – clarify certificate calculation inputs for activity 1D for transitioned products during the transition period (to 9 June 2020).
Shower rose (activity 17)	<ul style="list-style-type: none"> • Commencement of fresh start and increase in product limits from two to three. • Updated product requirements requiring installed product to have a flow rate of 7.5 l/min or less.
Weather sealing (activity 15)	<ul style="list-style-type: none"> • Changes to VEU specifications to amend the lifetime input value to 10 (for purposes of calculating certificates) for products with a warranty period of five years.
Building based lighting upgrades (activity 34)	<ul style="list-style-type: none"> • Changes to VEU specifications to:

Activity	Change/update
	<ul style="list-style-type: none"> – correct the reference to A3 of the Building Code of Australia (BCA) – include unlisted space type under table 34.12 (no change to current implementation regime).
Non-building based lighting upgrades (activity 35)	<ul style="list-style-type: none"> • Update of standard reference to AS 2560.1:2018 following a revision to the standard.
Gas efficiency activities (activities 37 to 42)	<ul style="list-style-type: none"> • Changes to VEU specifications to: <ul style="list-style-type: none"> – clarify the ‘thermal efficiency’ terminology for total nominal gas consumption is referring to gross thermal efficiency (activities 37 and 38) – specify burner replacement (activity 41) must occur in the same boiler/heater – clarify nominal gas consumption value for certificate calculations for activity 41.

5.5. Reflecting new e-waste management policy

We updated our guidance documents to reflect new e-waste management requirements set by the Environment Protection Authority under the Environment Protection Act 1970, banning e-waste from landfill from 1 July 2019.

In response to this new policy, we updated VEU program guidance documents and forms to:

- provide a general understanding of the requirements of the authority’s e-waste policy
- include provision of e-waste management practices as part of applying for accreditation or activity approval
- include a declaration of compliance with e-waste policy in assignment forms for lighting activities.

5.6. Updates to the measurement and verification specifications

The measurement and verification specifications were updated by the Department of Environment, Land, Water and Planning to allow multi-site projects from 12 September 2019. These are projects which have multiple premises where the upgrades at each premises are essentially identical.

We updated our VEU registry portal and guidance documents to allow for application for multi-site projects from the specifications change date.

6. Improvements to our administration and systems

We regularly review how we can improve our administrative framework settings to optimise the program's operations for both us and program stakeholders

6.1. Updates to our evidentiary requirements and eligibility determinations

We regularly review our evidentiary requirements and eligibility determinations to ensure they are balanced and proportionate in addressing compliance and program risks, and in response to queries raised by program participants.

Key decisions made and communicated during the year to our program participants were:

- Clarification of the evidentiary requirements for geo-tagged photos under activity 21 (31 January).
- Changes to the business lighting upgrade Victorian energy efficiency certificate assignment form template to ensure installations are undertaken in compliance with the Electricity Safety Act 1998 (7 February).
- Clarification of what licenses must be held by electricians for lighting activities (4 April).
- Guidance on eligible lamp/ballast combinations for each lamp type for activities 27, 34 and 35 (4 April).
- Clarification of eligibility and requirements for open air car parks for activities 34 and 35 (4 April).
- Clarification of decommissioning and reconciliation evidence for activities 34 and 35 (4 April).
- Clarification of minimum phone and field audit requirements for activity 21 (4 April).
- Extended the transition period for installation of non omni-directional lamps under activity 21A by one month (1 May).
- Clarification for use of safe portable ladders by VEU installers (3 May).
- Clarification on eligibility of off-grid sites (17 July).
- Clarification on eligibility of faulty heat pump or gas/electric boosted solar water heaters (9 August).
- Updates to our installer requirements, evidentiary requirements and VEEC assignment form requirements to reflect inclusion of app-based in-home display units (13 September).
- Updated product evidentiary requirements to reflect new Electrical Equipment Safety System (EESS) requirements for lighting products (1 October).
- Clarification on the types of lighting upgrades which can be claimed as an activity 34 J6 upgrade (9 October).

- Update to product requirements to reflect inclusion of mains powered in-home display units (18 October).
- Updates to evidentiary requirements for heating and space heating and cooling activities (28 November).

6.2. Changes to our certificate validation request for further information

From 18 November 2019, we implemented an automated request for further information that improved the efficiency of our certificate validation process. This system improvement enhanced the efficiency of our certificate validation process, thereby freeing up resources to undertake more certificate assessment checks.

6.3. Enhancements to the IT system

6.3.1. Maintenance of existing IT system

Given our focus has been on developing and testing a new IT system, we have limited the number of changes made to the existing VEU registry platform. Changes made to the existing VEU registry solution have focused on changes to support the commencement of VEET Regulations changes and PBA Regulations changes (as discussed in chapter 5 above).

Other notable system improvements made to support program participants during the year include:

- creating a new user role for accredited persons which allows a user to view but not carry out certificate transfers
- added search features for the activity register
- changes to our certificate creation form for several activities which enabled accredited persons to claim for multiple installed products in the single activity claim.

6.3.2. Development of new IT system

We commenced the development of a new IT system to replace the VEU Registry (our current web-based portal) in late 2019. The system is being developed on the Microsoft Dynamics 365 platform and is expected to be deployed by mid-2021.

6.4. Working with program participants

A key principle of our regulatory approach is to engage with businesses participating actively and regularly in the program.

We work with program participants to ensure they understand the program's regulatory framework, performance requirements and administrative processes. We also provide prompt responses to

telephone and email inquiries, regularly meet with stakeholders, and consult with accredited persons and stakeholders on proposed changes to processes.

In 2019, we held public information forums in May and December, which were attended by more than 200 stakeholders. Each forum included presentations on the status of the program, compliance issues, and how to meet program requirements.

In the May forum, we ran concurrent workshops to cover important information about the program's operational framework and highlight recent key developments. We held the forum in two parts. The first part included presentations from the chief executive officer of the commission, VEU Director, VEU audit and compliance, the Department of Environment, Land, Water and Planning and Energy Safe Victoria.

In the second part, we held seven workshops on different aspects of the Victorian Energy Upgrades program. The workshops ran in three parallel streams to provide an opportunity for stakeholders to engage with us on a few of our key administrative processes.

The focus of the December forum focused on developments and engagement with industry on issues found in water heaters, activity 21A photos and products applications. All presentations given at public forums, consultation documents and explanatory notes for program participants are available on our website (www.esc.vic.gov.au/veu-publications).

We held an individual workshop with the single (in 2019) newly accredited business participating in PBA to ensure they had a thorough understanding of their roles and requirements.

We formally consulted with industry on the training requirements for installers undertaking activity 21A and the transition period for non omni-directional lamps installed under activity 21A.

We also consulted and delivered on initiatives that provide greater transparency and certainty to program participants, such as our VEEC validation request for further information process.

We used feedback from industry to make changes to how we measure the performance of participants who undertake business lighting upgrades against our assessment standards and how it impacts the length of time we take to process their certificate creations.

In the products area, we implemented various improvements to streamline our product approval process.

6.5. Working with other government agencies

During the year, we met and liaised with officers from other state and federal energy efficiency programs, including:

- the Australian Capital Territory Energy Efficiency Improvement Program
- the New South Wales Energy Savings Program

Improvements to our administration and systems

- the South Australian Retailer Energy Efficiency Program
- the Commonwealth's Clean Energy Regulator.

The purpose of these meetings was to share information and experiences, and to coordinate between programs where appropriate.

A focus of our interactions with federal regulators was to prepare for the introduction of proposed changes to the large energy user's exemption regime under the program. We also engaged with the Australian Energy Market Operator on this matter.

We also worked closely with the following Victorian Government agencies:

- Energy Safe Victoria, to link and report non-compliant electrical installations to them.
- Environment Protection Authority Victoria and Sustainability Victoria, to understand the new requirements of e-waste management.
- Consumer Affairs Victoria (CAV) to address increased marketing and other consumer related complaints. In November 2019 we commenced the development and have agreed a process to refer marketing and other consumer complaints to CAV for their review, investigation and action where breaches of Australian Consumer Law are found. We are hopeful this will alleviate increasing consumer concerns in this area.

Glossary

Term	Definition
accredited person (AP)	Person accredited under the VEU program. Once accredited, a person is eligible to create certificates in the VEU program in respect of prescribed activities.
Building Code of Australia (BCA)	The Building Code of Australia (BCA) is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia. The BCA is given legal effect through the Building Act 1975.
certificate created	Victorian energy efficiency certificate created as part of the program representing one tonne of carbon dioxide equivalent of greenhouse gases to be reduced by the prescribed activity.
certificate registered	Victorian energy efficiency certificate created as part of the program and registered by the commission. Only registered certificates are available for trading or surrender under the program.
certificate surrendered	Victorian energy efficiency certificate surrendered to the commission by either a relevant entity to acquit their legislative obligations, or by an accredited person as a result of compliance and enforcement actions initiated by the commission.
certificate withdrawn	Victorian energy efficiency certificates created but then withdrawn by the accredited person. These certificates may be re-submitted and registered later.
CFL	Compact fluorescent lamp
commission	Essential Services Commission, established under the Essential Services Commission Act 2001.
compliance year	Period over which each annual target must be achieved, which is a full calendar year.
DELWP	Department of Environment, Land, Water and Planning (the policy setting was previously part of the former Department of Economic Development, Jobs, Transport and Resources)
energy acquisition statement	Annual statement by a relevant entity about the amounts of electricity and gas acquired under program acquisitions during the year.
energy efficiency certificate shortfall	Number of certificates for which a relevant entity has failed to acquit its share of the program target.

Term	Definition
energy efficiency shortfall penalty	Civil pecuniary penalty for which a relevant entity is liable in the event of an energy efficiency certificate shortfall.
GJ	Gigajoule
GLS	General lighting service
greenhouse gas	Carbon dioxide, methane, nitrous oxide, sulphur hexafluoride, hydrofluorocarbons, perfluorocarbons and any other gas prescribed to be a greenhouse gas.
greenhouse gas reduction rates	Rates, fixed annually by ministerial order, in respect of electricity and gas for a particular compliance year.
guidelines	The program guidelines made by the commission.
liability	The liability of relevant entities to surrender certificates under the program.
MWh	Megawatt hour
prescribed activity	An activity, prescribed under the Act, resulting in a reduction in greenhouse gas emissions that would not otherwise have occurred if the activity was not undertaken.
prescribed greenhouse gas program	Voluntary offset program or mandatory greenhouse gas program or any other arrangement that promotes the reduction of greenhouse emissions and is prescribed by the program.
program acquisition	Purchase by a relevant entity, for on-sale to Victorian customers, of electricity or gas, or both, within the provisions of the program.
Register of Accredited Persons	Public register, maintained by the commission, containing the names and certain other particulars of accredited persons.
Register of Victorian Energy Efficiency Certificates	Public register, maintained by the commission, containing information about energy efficiency certificates as required by the program.
Register of Products	Public register, maintained by the commission, containing particulars of certain allowable products that may be used for the purposes of prescribed activities.
relevant entity	Entity that sells electricity or gas, or both, to at least 5,000 Victorian customers, or makes a program acquisition of 30,000 MWh or more of electricity, or 350,000 GJ or more of gas in one compliance year.
the PBA Regulations	The Victorian Energy Efficiency Target (Project-Based Activities) Regulations 2018

Term	Definition
the VEET Regulations	The Victorian Energy Efficiency Target Regulations 2008, or the Victorian Energy Efficiency Target Regulations 2018, made under the Act
the Act	Victorian Energy Efficiency Target Act 2007
VEEC	Victorian energy efficiency certificate representing one tonne of carbon dioxide equivalent of greenhouse gases to be reduced by the prescribed activity.
Victorian Energy Upgrade program	The public facing name of the VEET scheme established under the Act
VEU accounts	Accounts used by participants to carry out transactions in the VEU program.

Appendix A: VEU program framework

Overview

We administer the Victorian Energy Efficiency Target Act 2007 (the Act) and regulates the creation of certificates by participants in the Victorian Energy Efficiency Target (VEET) scheme. The scheme started in 2009 and is currently publicly promoted as the Victorian Government's Victorian Energy Upgrades (VEU) program, designed by the Department of Environment, Land, Water and Planning.

The Act promotes the reduction of greenhouse gas emissions by encouraging the efficient use of electricity and gas in the residential and business sectors. To achieve the Act's purpose, the program is designed to make energy efficiency improvements more affordable for consumers.

The program operates as a market-based economic mechanism trading Victorian energy efficiency certificates and is the flagship energy efficiency program in Victoria. For each tonne of carbon dioxide equivalent (CO₂-e) abated because of activities undertaken under the program, one certificate is created.

We regulate the creation of certificates under the program. To create certificates under the program, a person needs to satisfy our process requirements, product requirements, installation requirements and compliance requirements. We apply an integrated risk-based framework to our regulatory functions and regularly engage with stakeholders to discuss improvements.

Certificates are created by businesses accredited by us to undertake a range of prescribed activities specified under regulations and referred to in the Act as 'accredited persons'.

The types of activities and their requirements were outlined in the schedules of the Victorian Energy Efficiency Target Regulations 2008 (2008 VEET Regulations) and the Victorian Energy Efficiency Target (Project-Based Activities) Regulations 2018 (PBA Regulations) until 10 December 2018. From 10 December 2018, the Victorian Energy Efficiency Target Regulations 2018 (2018 VEET Regulations) replaced the 2008 VEET Regulations.

In addition, from 11 December 2018 the PBA Regulations were updated to incorporate the addition of the benchmark rating method, which allow businesses to claim certificates for improvements in National Australian Built Environment Rating System (NABERS) rating in buildings.

The program operates by placing a liability on large energy retailers in Victoria to surrender a specified number of Victorian energy efficiency certificates (certificates) every year. Energy retailers with a liability under the program are known as 'relevant entities'. They can create certificates directly or purchase certificates in a competitive market.

We also ensure that all energy retailers captured by the program surrender the right amount of certificates every year, which depends on the certificates target set for the year and how much electricity or gas they sell.

The revenue generated through certificate sales enables accredited persons to pass on benefits to households and businesses, which makes these energy saving activities more affordable. As the program is market based, the level of incentive offered to consumers varies depending on the market activity and certificate price.

For the first three-year phase of the program (2009-11), the program target was 2.7 million certificates per annum. The target was increased to 5.4 million certificates per annum for the second three-year phase of the program (2012 to 2014) and maintained in 2015 and 2016. In 2017, the target was 5.9 million certificates. This increased further to 6.1 million for 2018, 6.3 million in 2019, and 6.5 million in 2020. The target for 2021 was set in 2020 at 6.5 million.

Legislative framework

The program is governed by the Act, the regulations, the specifications and the guidelines.

The Act

The Act came into operation on 1 January 2009. It is the primary legislation establishing the program and enables the authority of regulations and guidelines to be made.

We administer the Act and discharge our regulatory responsibilities as set in regulations and guidelines. One of our main functions is to enforce the imposition of energy efficiency shortfall penalties on retailers captured by the program if they fail to surrender sufficient certificates in any given compliance year.

The Act also requires certain matters relating to the program to be specified through an Order in Council published in the Government Gazette.

The Regulations

The Act is supported by the Victorian Energy Efficiency Target Regulations 2008 (the VEET Regulations) and the Victorian Energy Efficiency Target (Project-Based Activities) Regulations 2018 (PBA Regulations). The VEET Regulations were remade in December 2018.

The VEET Regulations specify what activities can create certificates and include details regarding the products that can be installed, installation requirements and the greenhouse gas abatement for each activity.

The PBA Regulations were introduced on 19 June 2018. They set out the requirements for project-based activities and introduced the first method of calculating energy efficiency savings – measurement and verification.

The Specifications

In remaking the VEET Regulations in December 2018, DELWP introduced a new legal instrument, known as the VEU Specifications. The VEU Specifications contain the technical requirements for activities prescribed in the VEET Regulations and the methods and variables for determining the amount of greenhouse gas equivalent emissions reduced by each activity prescribed in the VEET Regulations.

Under the PBA Regulations, there are two separate specification documents:

- The Measurement and Verification in the Victorian Energy Upgrades Program - Specifications which sets out the rules for defining the methods and variables to be used when calculating the abatement of a prescribed activity using the Measurement and Verification method
- The Benchmark Rating in Victorian Energy Upgrades - Specifications'. sets out the rules for defining the methods and variables to be used when calculating the abatement of a prescribed activity using the Benchmark Rating method

The VEET guidelines

We issue guidelines to provide a framework for regulatory and administrative processes under the program. This includes, but is not limited to:

- how program participants can become accredited
- how certificates can be created, registered, transferred, withdrawn or surrendered
- details on how to undertake some prescribed activities
- what occupational health and safety training is required for installers
- the process that retailers captured under the program need to follow to surrender certificates
- how we undertake our validation, compliance and enforcement responsibilities
- the records that accredited persons and relevant entities need to keep and provide
- what information we collect for our registers of accredited persons and certificates
- any other matters relevant for us to discharge our duties under the program.

Role and functions of the commission

The commission is responsible for administering the Act and regulating the creation of certificates under the program. Our responsibilities include to:

- accredit persons who may create certificates
- monitor and enforce compliance of the creation of certificates

- administer registration, transfer and surrender of certificates
- approve energy efficient products that can be installed under the program
- monitor compliance with the Act, VEET Regulations, PBA Regulations and guidelines
- issue shortfall statements and enforce energy efficiency shortfall penalties
- maintain electronic registers.¹⁴

Accredited persons

Individuals and companies must be accredited under the program to create certificates. Each business or person that we accredit (known as accredited person) under the program is allocated a unique registration number that is publicly available on the Register of Accredited Persons on the VEU Registry. We charge a once-only \$500 fee to cover some of the administrative costs of assessing and accrediting an applicant.

We also process applications for account holders in the program. An account holder may trade (that is, buy and sell) certificates but may not create them. All accredited persons must hold accounts. We do not charge a fee to become an account holder.

Creation, registration, transfer and surrender of certificates

Certificates are created electronically by accredited persons and we assess their validity before registering them. We adopt a risk-based assessment approach. During the assessment process we may issue a request for further information to the accredited persons that created the certificates based on the risk ratings of the accredited person and the activity. We also use 'risk flags' and trends analysis that direct our assessment on claimed certificates.

Our compliance checks include:

- requests for further information seeking supporting evidence for certificates claimed
- random consumer phone audits
- requests for internal field and phone audit results.

Where the information provided by an accredited person is insufficient to demonstrate that certificates have been properly created, we give the accredited person the option of withdrawing the certificates.

For certificates to be registered, the accredited person must pay a \$1 fee per certificate. This fee covers the administrative costs of assessing, registering, transferring, surrendering and auditing

¹⁴ The registers are maintained at www.veu-registry.vic.gov.au

certificates. Once paid, the created certificates are registered and available for transfer by its creator. We maintain a publicly accessible register on our website that records the creation, transfer of ownership and surrender of certificates.

Energy retailers captured by the program (known as relevant entities) are required to surrender certificates to acquit their required energy efficiency liabilities for a compliance year. They need to offer to surrender sufficient certificates by 30 April of the following year. We require a third-party verified audit of their acquisition statements.

Approval of energy efficient products

Before certificates can be created, we must have approved the product and listed it in our Register of Products. This approval process is intended to provide accredited persons with assurance that the products they intend to install meet program requirements. It also streamlines the process for registration of certificates following the installation of the products.

Applications can be made by account holders and must be accompanied by documentary evidence that a product meets the criteria set out in the principal Regulations. We assess applications and write back to applicants explaining the outcome. If we approve the product, we add it to the Register of Products and accredited persons may use these products to create certificates.

Compliance and enforcement

Our key goal is to safeguard the integrity of the program by maintaining confidence in the energy efficiency upgrades delivered to consumers and providing confidence to participants on a fair and level-playing field.

We implement an integrated risk-based framework to all our regulatory activities and to regularly engage with stakeholders to discuss improvements.

We seek to continuously improve the integrity of the program while managing its expansion and added risks.

We build the program's integrity through an effective and integrated risk-based compliance program before and after certificate creation and registration.

Our tools to build system-wide compliance levels are participant accreditation, participant audits, certificate registration audits and product registration. Our tools to address specific compliance issues are targeted investigations, field audits and independent product testing.

The compliance-driven functions we undertake are:

- audits on relevant entity statements to ensure they surrender enough certificates to match their liabilities under the program

- interviews and audits of proposed program participants before becoming accredited persons or when extending their accreditation
- audits of accredited persons to ensure their systems and processes remain robust and provide confidence in the installations they undertake
- risk-based validations of representative activity batches (maximum 10,000 certificates per batch)
- risk-based audits (phone, desktop or field audits) of the installations undertaken to ensure the upgrades claimed comply with the program's legislation
- registration of products and independent testing of high-volume products that can be installed under the program, to ensure they meet the required performance and installation standards.

As per our published compliance and enforcement policy, our approach to enforcement is to resolve any performance issues using administrative tools, where possible and appropriate. This means the largest outcome of our compliance activities is the voluntary withdrawal or surrender of certificates by accredited persons. If we believe that non-compliance has occurred and that an administrative solution is not appropriate or an administrative solution has not been complied with, we may commence enforcement action.

Enforcement action may include:

- warning or imposing conditions on an accredited person's accreditation
- requiring an accredited person to surrender certificates found to be improperly created
- suspending or revocation of an accredited person's accreditation to create certificates
- seeking declarations and orders from a court for a failure to pay a shortfall penalty or a failure to comply with a certificate surrender notice
- initiating a prosecution if a participant fails to comply with certain provisions that are offences under the Act.

Shortfall statements and enforced energy efficiency shortfall penalties

Relevant entities determine the number of certificates they are required to surrender each year by calculating their annual greenhouse gas emissions liability. This liability is calculated by multiplying each of that year's electricity and gas acquisitions with the relevant greenhouse gas reduction rate. For 2019, the greenhouse gas reduction rates were fixed at 0.15419 for electricity and 0.00778 for gas.

We may issue a shortfall statement imposing an energy efficiency shortfall penalty on a relevant entity if it fails to surrender sufficient certificates to acquit its liability in a given year. This civil penalty is determined by multiplying the relevant entity's certificate shortfall (in tonnes of carbon dioxide equivalent of greenhouse gases) for that year by the prescribed shortfall penalty. In

accordance with section 28 of the Act, for 2019 the shortfall penalty rate was fixed at \$50 per tonne of carbon dioxide equivalent of greenhouse gases.

Maintain electronic registers

We maintain the following electronic registers associated with operating the program as required by the Act, VEET Regulations and PBA Regulations:

- Register of Accredited Persons – contains the names and details of accredited persons and account holders
- Register of Victorian Energy Efficiency Certificates – contains information about certificates
- Register of Products – contains information of products that may be used
- Register of Approved Projects Plans – contains information on projects that have been approved in principle under the project-based activities method
- Register of Approved Measurement and Verification professionals – contains the names and details of professionals that can undertake project impact assessment validation functions for project-based activities

We also maintain a Register of Scheduled Activity Premises (a register which contains the sites classified as scheduled activity premises (i.e. large energy user sites)) to provide transparency and clarity for program participants in order to determine which premises are scheduled activity premises.

These registers are publicly accessible on the VEU registry website www.veu-registry.vic.gov.au

Appendix B: Certificates created and registered

Table 18: Activities – installations, certificates created and certificates registered in 2019

Activity type	Installations	VEECs created	VEECs registered
Water heating activities			
1A - Water heating - Gas/LPG storage replacing electric resistance	72	2,773	2,591
1B - Water heating - Gas/LPG instantaneous replacing electric resistance	922	37,118	36,244
1C(18) - Water heating - Electric boosted solar replacing electric resistance	119	4,604	4,095
1D(18) - Water heating - Heat pump replacing electric resistance	3,350	135,735	106,156
1E(08) - Water heating - Electric boosted solar replacing electric resistance (revoked)	500	23,646	30,264
1F - Water heating - Gas/LPG boosted solar replacing electric resistance	35	2,031	2,095
3B - Water heating - Gas/LPG boosted solar replacing gas/LPG	32	316	308
Space heating & cooling activities			
5(08) - Ducted gas replacing ducted gas (revoked)	13	136	176
5(18) - Ducted gas heater	472	13,845	11,708
6(08) - Ducted gas replacing central electric resistance heater (revoked)	4	1,257	1,257
7(18) - Ducted air heat pump replacing ducted air heat pump	3	414	414
8(08) - Ducted air heat pump replacing central electric heater (revoked)	2	366	366
9(08) - Gas/LPG space heater (revoked 9/12/18)	2	9	9
9(18) - Gas/LPG room heater	9	129	123
10(08) - Space air to air heat pump (revoked)	20	166	134
10(18) - Room air to air heat pump	1	19	-

Activity type	Installations	VEECs created	VEECs registered
20(08) - High efficiency ducted gas heater (revoked)	2	12	12
Space conditioning activities			
15 - Weather sealing	198	752	1,127
Lighting activities			
21A(08) - Lighting - Incandescent GLS lamp replacement (revoked)	330	4,449	22,320
21A(18) - Lighting - Incandescent GLS or CFL replacement	227,447	2,329,595	1,734,399
21B - Lighting - Incandescent reflector lamp replacement	134,595	445,206	475,276
21C - Lighting - 12V halogen lamp replacement	30,253	297,577	247,434
21D - Lighting - 12V downlight and transformer replacement	497	13,476	12,680
21E - Lighting - Mains voltage GU10 halogen lamp replaced with GU10 lamp	18,216	119,827	94,776
21F - Mains voltage GU10 downlight replaced with integrated downlight	2	46	23
34 J6(08) - Building based lighting upgrade (revoked)	13	12,844	12,422
34 J6(18) - Building based lighting upgrade	11	16,846	1,363,711
34 Non J6(08) - Building based lighting upgrade (revoked)	1,785	583,876	1,018,174
34 Non J6(18) - Building based lighting upgrade	8,014	1,896,013	6,466
34 NBB(08) - Non-building based lighting upgrade	3	604	604
27(18) - Public lighting upgrade	3	5,525	-
35(18) - Non-building based lighting upgrade	4	5,174	-
Refrigerator/freezer activities			
19 - Destruction of pre-1996 refrigerator or freezer	9,069	51,009	52,011
32 - Refrigerated display cabinet	163	79,384	75,377
Standby power controller activities			

Activity type	Installations	VEECs created	VEECs registered
29(08) - Standby power controller (revoked)	1	2	1,290
Water efficiency activities			
17 - Low flow shower rose	3,020	8,273	8,298
Appliances			
30 - In-home display unit	1,442	3,342	3,207
Project-based activities (PBA)			
PBA measurement and verification	5	33,382	19,992
Total	440,629	6,129,778	5,345,539

Note: After a certificate is created by an accredited person, certificates are assessed against criteria in the program legislation by commission staff before being validated and registered. This is the reason for the variance in the numbers for created and registered certificates. The status of all certificates (updated daily), is listed on the VEU website at www.veu-registry.vic.gov.au.

Table 19. Activities – installations, certificates created and certificates registered between 1 January 2009 and 31 December 2019

Activity type	Installations	VEECs created	VEECs registered
Water heating activities			
1A - Water heating - Gas/LPG storage replacing electric resistance	5,038	200,889	199,769
1B - Water heating - Gas/LPG instantaneous replacing electric resistance	22,600	963,660	955,106
1C(08) - Water heating - Electric boosted solar replacing electric resistance (revoked)	19,171	812,166	811,226
1C(18) - Water heating - Electric boosted solar replacing electric resistance	119	4,604	4,095
1D(08) - Water heating - Gas/LPG boosted solar replacing electric resistance (revoked)	6,505	393,007	387,623
1D(18) - Water heating – Heat pump replacing electric resistance	3,354	135,950	106,156

Activity type	Installations	VEECs created	VEECs registered
1E(08) - Water heating - Electric boosted solar replacing electric resistance (revoked)	19,403	888,449	864,236
1F - Water Heating - Gas/LPG boosted solar replacing electric resistance	848	50,224	48,892
2(08) - Water heating - Solar retro-fit kit (revoked)	7	155	155
3A - Water heating - Solar replacing gas/LPG (revoked)	8,711	91,084	90,715
3B - Water heating - Gas/LPG boosted solar replacing gas/LPG	955	10,201	10,094
4(08) - Water heating - Solar pre-heater (revoked)	3	21	21
Space heating & cooling activities			
5(08) - Ducted gas replacing ducted gas (revoked)	5,532	70,076	69,791
5(18) - Ducted gas heater	474	13,876	11,708
6(08) - Ducted gas replacing central electric resistance heater (revoked)	2,364	666,671	643,143
7(08) - Ducted air heat pump replacing ducted air heat pump (revoked)	1	6	6
7(18) - Ducted air to air heat pump	3	414	414
8(08) - Ducted air heat pump replacing central electric heater (revoked)	44	7,280	6,681
9(08) - Gas/LPG space heater (revoked)	2,983	25,324	24,964
9(18) - Gas/LPG room heater	9	129	123
10(08) - Space air to air heat pump (revoked)	184	1,883	1,723
10(18) - Room air to air heat pump	1	19	-
20(08) - High efficiency ducted gas heater (revoked)	634	3,724	3,720
28 - Gas heating ductwork	859	16,308	538
Space conditioning activities			
11(08) - Ceiling insulation (revoked)	1,168	56,918	56,918

Activity type	Installations	VEECs created	VEECs registered
12 - Underfloor insulation	1	17	17
13 - Double glazed window	1	81	81
15 - Weather sealing	343,172	1,169,772	1,077,989
Lighting activities			
16 - Lighting (revoked)	555,181	5,270,073	5,107,907
21A(08) - Lighting - Incandescent GLS lamp replacement (revoked)	417,249	4,147,214	3,679,140
21A(18) - Lighting - Incandescent GLS or CFL replacement	227,449	2,329,598	1,734,399
21B - Lighting - Incandescent reflector lamp replacement	330,415	1,296,305	1,158,044
21C - Lighting - 12V halogen lamp replacement	386,979	8,136,673	7,903,103
21D - Lighting - 12V downlight and transformer replacement	44,040	750,634	731,204
21E - Lighting - Mains voltage GU10 halogen lamp replaced with GU10 lamp	44,902	472,953	431,681
21F – Mains voltage GU10 downlight replaced with integrated downlight	2	46	23
34 J6(08) - Building based lighting upgrade (revoked)	32	38,424	37,222
34 J6(18) - Building based lighting upgrade	11	1,903,747	1,363,711
34 Non J6(08) - Building based lighting upgrade (revoked)	66,129	19,136,377	17,237,147
34 Non J6(18) - Building based lighting upgrade	8,039	16,846	6,466
34 NBB(08) - Non-building based lighting upgrade	3	604	604
27(18) - Public lighting upgrade	3	5,525	-
35(18) - Non-building based lighting upgrade	4	5,174	-
Refrigerator/freezer activities			
18 - Purchasing HE refrigerator or freezer (revoked)	1	1	1
19 - Destruction of pre-1996 refrigerator or freezer	117,375	548,692	537,022

Activity type	Installations	VEECs created	VEECs registered
22 - High efficiency refrigerator and freezer	263	509	505
32 - Refrigerated display cabinet	489	199,213	180,162
Standby power controller activities			
29(08) - Standby power controller (revoked)	1,412,634	11,396,865	10,173,239
Water efficiency activities			
17 - Low flow shower rose	397,196	1,222,488	1,147,675
36 - Water efficient pre-rinse spray valve	7	59	-
Appliances			
24 - High efficiency television	25,116	129,387	125,358
25 - Energy efficient clothes dryer	79	323	323
26 - High efficiency pool pump	899	7,298	7,282
30 - In-home display unit	56,182	127,546	125,058
Motors			
33 – Refrigeration /ventilation fan motor	39	3,078	1,737
Project-based activities (PBA)			
PBA measurement and verification	6	33,518	20,128
Total	4,534,868	62,762,078	57,085,045

Note: After a certificate is created by an accredited person, certificates are assessed against criteria in the program legislation by commission staff before being validated and registered. This is the reason for the variance in the numbers for created and registered certificates. The status of all certificates (updated daily), is listed on the VEU website at www.veu-registry.vic.gov.au.